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hosted in Vietnam

University Of Economics Ho Chi Minh city

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TECHCOMBANK

VIETNAM TECHNOLOGICAL AND COMMERCIAL JOINT STOCK BANK
GICS Sector: Financials
GICS Industry: Banks

DATE: 11th November, 2022
TICKER: HSX:TCB (Ho Chi Minh Stock Exchange)
LAST CLOSE: VND 22,800
RECOMMENDATION: BUY (62% UPSIDE)
TARGET PRICE: VND 37,000

TCB: TAKE IT THROUGH A TOUGH TIME

Techcombank is Vietnam's most profitable commercial bank by ROA, leading in numerous operational metrics in the banking sector. However, Vietnam's stringent measures to improve market transparency and safeguard its macroeconomy have caused the market to overreact and misprice the bank's resilient fundamentals. We believe the bank outperforming financial metrics, first-grade capital buffer, and superior digitalization strategies will fulfill its vision to become a top regional bank.

INVESTMENT SUMMARY

*We issue a **BUY** recommendation for Techcombank with a one-year target price of VND 37,000, representing an 62% upside potential from current level of VND 22,800 on 11/11/2022. Our rating is based on 3 key theses: **[1]** Techcombank's resilient business model being largely underestimated by the market; **[2]** favorable demographics dynamics expecting to fuel the bank's growth; and **[3]** the bank's diversified business model able to effectively conquer Vietnam's undercapitalized markets.*

A RESILIENT BUSINESS MODEL UNDERESTIMATED BY THE MARKET

The First Bank To Get Hit by Market downfall…: While Vietnam's economy is seeing a strong recovery from the aftermath of the pandemic (9M/2022 GDP YoY reaches 8.83% - highest in the past decade), multiple global economic headwinds are approaching and starting to sweeping the country's capital market, namely the Russia-Ukraine geopolitical tensions, global economic downturn led by inflations in major economies, and Chinese Zero COVID policy. As these economic headwinds are approaching, The State Bank of Vietnam (SBV) remains under significant pressure to ensure currency stability, hence has been hiking policy rates by 200 basis points (YTD).

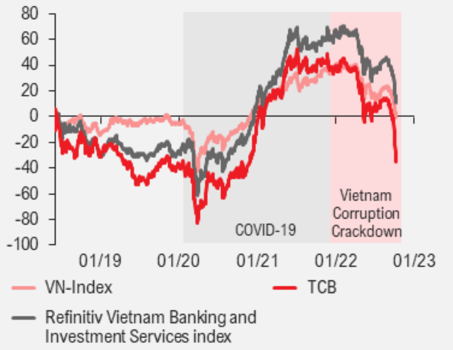
Furthermore, to clear the way for the economic rebound, stringent methods have been taken to improve market transparency, among them is the government's crackdowns (Appendix W,X) on corruption in the private sector. This campaign being enacted during a turbulence time of global economy, has rattled investors' confidence and swept away the country stock exchange – VN-INDEX $72.3 billion in capitalization (-30% YTD). Given the market crackdowns and negative news surrounding the bond and real estate market, coupled with Techcombank's notable level of exposure to c-bond, ReCoM loan, and mortgage loan (Fig.03), the bank had been caught up in the storm and felt in full force the market reaction on its share price (Fig.01). In our Relative P/B Premium to top local banks basis, Techcombank is now traded lower than 1 standard deviation (Fig.02). While this discount should reflect a poorly performed company, TCB is a rare bank that saw stable growth during the pandemic, ending FY21 with industry-leading operational metrics and market shares. Therefore, we believe the market has mispriced an efficient business, and Techcombank deserves a rerating.

…The Last To Fall Thanks To Prudent Ecosystem Approach: With macro-headwinds approaching, and a market faced by investors' irrationalities, institutions with the strongest foundation from its core will be expected to withstand. Techcombank's resilient ecosystem approach, backed up by top-tier conglomerate partnerships, who are positioned strongly during the market downfall, will be more prudent and resilient when: **[1]** The bank's ecosystem approach includes partnership with country's top financial healthy listed companies; **[2]** This is an economic moat of TCB allowing it to lock in cashflow within the value chain of its blue-chip partners (Fig.04); **[3]** This strategy allows the bank to have high visibility over the entire value chain, at the same time connects the bank with low-risk affluent customers, ensuring the bank's asset quality. This leads the bank to a secured NPL ratio and a country-leading capital buffer. We expect the bank will undertake more prudent measures to defend itself when headwinds are approaching, by increasing provision expense, while maintain bank's liquidity complying to under-85% Loan-to-Deposit Ratio (LDR), and under-30% Short-term Funding for Medium- and Long-term Loans ratio (SFMLL) requirements of SBV. Given the bank's prudent fundamentals we anticipate the market will be soon to realize TCB's intrinsic value once macro stabilizes.

Unjustified discount for a well-positioned bank with a high capital buffer and strong return on risk-weighted assets (RORWA): TCB has the highest CAR and CET1 ratio amongst the listed commercial banks in Vietnam (Fig.05). Not only well-capitalized, the bank is also highly prudent in its provisional policies with LLR of 165% to absorb even the worst losses. Also, the bank's secured loans over all loans is 93.4%. At the same time the bank has a competitive Return on Risk-weighted assets (RORWA) compared to local peers, making it one of the rare banks that has both secured capital buffer and high returns for investors. This unprecedented low risk – high return position of the bank is attributable to: **[1]** the bank's prudent approach to maintain NPL low relative to peer during the pandemic, **[2]** the bank's $1 billion syndicated loan earmarked for Digital Transformation, and inherited high Current Account Savings Account Ratio (CASA) able to optimize Cost of Fund; and **[3]** strong non-interest income generation stemmed from the bank's diverse mix of market leading products and solutions – (a) Top 2 Bancassurance sales by APE, (b) Top 5 Stock brokerage firm in terms of market share on HSX, (c) Top 1 Bond brokerage firm by market share.

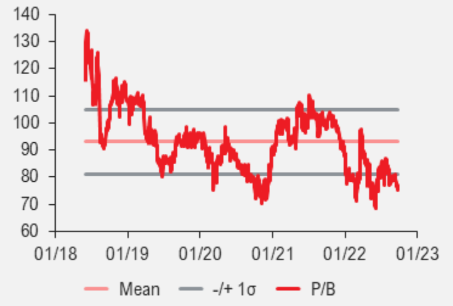
In short, we believe Techcombank solid financials and high-performing business model should not be traded at such a discount. Given the bank's future strategic directions able to capitalize on multiple market favorables, we expect the bank to maintain its prudent strategies during the current market turbulence, and once the market stablelizes, the bank will be the first to be benefited from multiple tailwinds.

Fig.01: Share Price History, TCB, VN-Index, and Industry Index[%]



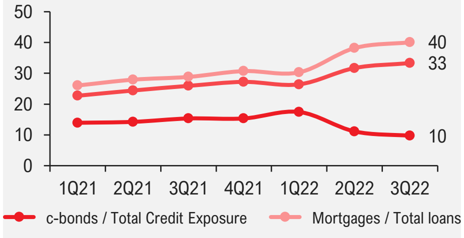
Source: Refinitiv, Team's analysis

Fig.02: TCB P/B Premium to the Major Banks [%]



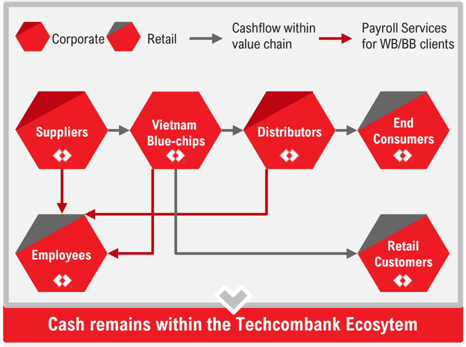
Source: Refinitiv, Team's analysis

Fig.03: Credit Exposure of TCB's c-bonds and Real Estate-related loan[%]



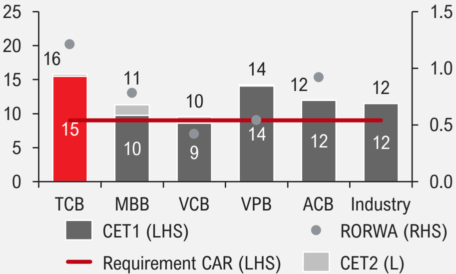
Source: TCB, Team's analysis

Fig.04: Illustration of TCB's Ecosystem Approach



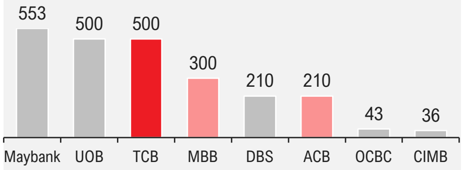
Source: TCB, Team analysis

Fig.05: Q2/2022 CAR and RORWA of TCB vs. other Local Banks [%]



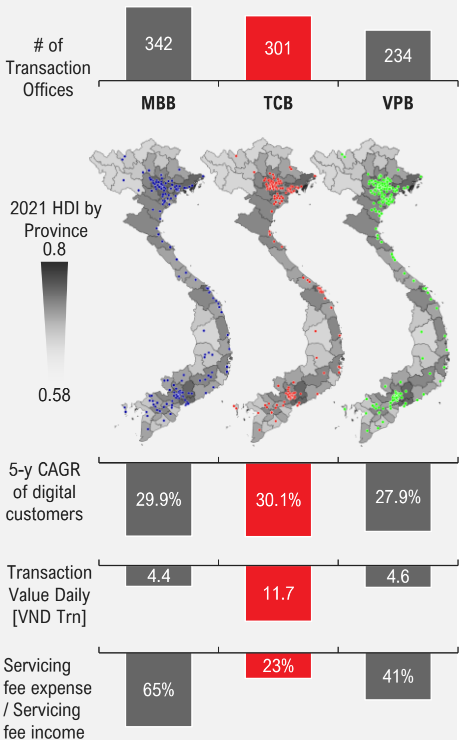
Source: TCB, Team analysis

Fig.06: IT Spending of SEA banks (2019-22) and TCB's planned IT Spending (2022-25) [USD mn]



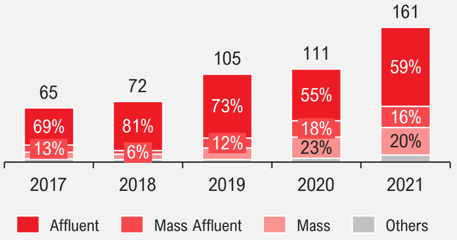
Source: Desktop Research, Team Analysis

Fig.07: Techcombank Positioning Analysis



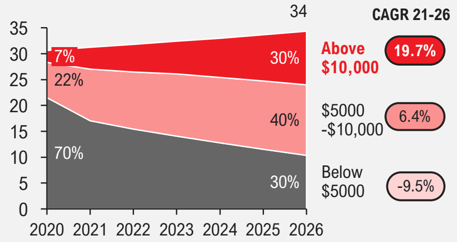
*Source: Team analysis *Non-exhaustive*

Fig.08: Techcombank Retail Loan by Income Group [VND Trillion]



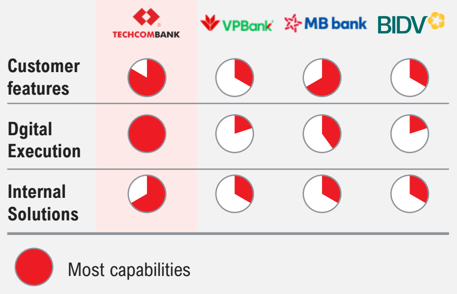
Source: TCB, Team analysis

Fig.09: Household Income Breakdown, 2020-26 ['000]



Source: Fitch Solutions, Team analysis

Fig.10: Digital capabilities and offerings by leading local banks as of 2021 (Details in Appendix R)



Source: KPMG, Team analysis

MARGIN EXPANSION THANKS TO FAVORABLE DEMOGRAPHICS AND TECHNOLOGY INVESTMENT

Well-positioned to Capitalize on Favorable Demographic Shift: As Vietnam's economy eventually recovers, high-income groups will continue their strong expansions with number of household earning USD 10,000 and above (Mass Affluent and Affluent) sees 19.7% growth CAGR (21-26) (Fig.09). This class mobility unlocks great opportunities for all banks, with Techcombank being the biggest beneficiary of all since: **[1]** Wealthy retail clients typically own high-end properties, and with the bank's partnerships with tier 1 real estate developers, a pipeline of high-quality homeowners demanding mortgages and other financial products is omnipresent; **[2]** Affluent and mass affluent customers account for nearly 75% of TCB's book and the bank retains high market share on both groups at 50% and 11% respectively; **[3]** Based on Bain and Company, and Google's research, higher-end retail customers are less likely to switch banking services while holding the highest deposit share in the banking system. These give the bank larger database and deeper insights into the consumer behaviors of these groups than competitors, allowing TCB to attract the right-fit customers more effectively. These advantages will help TCB to capture more customers which will enhance its CASA base and sustain its industry-leading CASA ratio. We anticipate a 19% 2021-26 CAGR for its retail CASA, ultimately accounting for 70% its total CASA.

Strategic Geographic Positioning ensures Digital Expansion Success: Our geospatial analysis indicates that TCB positions its branches in provinces with high HDI scores and close to its ecosystem's partners (Fig.07) where areas with the highest income level witnessing the most offices (Appendix R). This strategic position allowed TCB to capitalize on the changing demographics and execute its digital expansion plan more effectively, which will be the main focus as it cuts down on physical expansion. We are confident in the bank's ability to attract customers without building new offices since it has demonstrated this capability in the past by doubling its digital customer base in less than 2 years (from 2.7 to 5.6 million customers) (Fig.12) with 30% 5y CAGR, faster than its peers (Fig.07). The initiative, as a result, will have 2 cost-reduction effects: **[1]** Less capital expenditure from new branches and; **[2]** Reduced operating cost since digital customers are less costly to service (Fig.07)**.**

Superior Efficiency with Superior Execution in Data – Digital – Human Tripod: Alongside the cost-savings to be realized through its digital expansion, TCB's highly competitive investment in technology (Fig.06) will make its operations more efficient through: **[1]** Cloud-based banking with data analytics and AI systems that leverage on big data lake from up to 6 sources to recommend more personalized product offerings at a better cost, resulting in lower operating cost per customers (Fig.07); **[2]** Comprehensive digitalization and seamless omnichannel marketing across all customer journeys even from physical branches which reduce headcount and grow its sticky customer base with high transaction value (Fig.07); and **[3]** Attractive compensation and agile management model helping TCB to gather and leverage a competent executive lineup with established track record in leading digital transformation efforts at their previous banks (Fig. 21) and improve employee productivity. With TCB's history of pioneering in new technologies (corebanking, digital and online transactions, etc) and execution quality that resulted in strong operational metrics (highest CASA, highest TOI/Employee, lowest Operating cost/Customer, etc), we believe TCB management will continue its streak of successes thanks to upcoming investment in tech and talents.

DIVERSIFIED BUSINESS MODEL ABLE TO CAPITALIZE ON VIETNAM UNDERDEVELOPED MARKETS

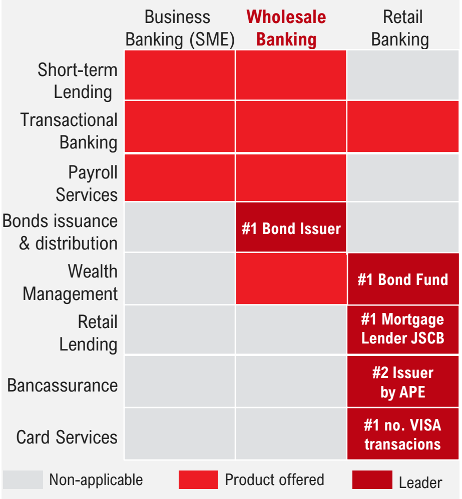
Underpenetrated but quickly growing financial markets: Vietnam is an emerging economy with many markets are still underdeveloped and have high growth potentials, one of which is its capital market. Vietnam's bond market is still underdeveloped, accounting for only 14.84% of GDP (compared to region's 23.75%). With the government's initiative to increase this to 20% in 2025 and 25% in 2030, we see huge growth potentials. Similarly, its stock market population participation rate is only 6% compared to the US' 55%. Last but not least, Vietnam's underinsured market (only 2% compared to the regional average of 8.28%) will promise strong bancassurance growth prospects regarding its remarkable growth in recent years (over 65% CAGR from 2019 to 2021).

Unmatched Leadership In Digital Wealth Management: While the common goal of many banks in Vietnam to provide banking services to retail customers, Techcombank has been emerging as a leading provider of wealth-tech services with the first-in-market launch of its robo-advisory tools and integrative digital wealth platforms. Even when fintech start-ups and asset management firms in Vietnam are all aiming for the shares in this market, we believe Techcombank will maintain its leadership since: **[1]** It is the first and only bank in the market thus far to create a one-stop-shop application (saving – lending – investing – financial planning and advisory, etc.) for customers with wealth management needs; **[2]** The bank 50% market share in the affluent customers' group will be translated into a goldmine of future wealth management services; **[3]** Techcombank is the only bank that provides the most digital capabilities and offerings to its high net worth customers (Fig.10). In our analysis, the pipeline the bank uses for customers acquisition comes from an extensive big data analytic model able to shortlist, track behaviors, and cross-sell personalized financial solution based purely on customers' data. We believe, the bank's fee incomes, while being tightened during the current macro headwinds, will take off in value thanks to this digital strategy.

Effective Product-mix Strategy Acting as Income Safe Haven During Volatile Time: While Vietnam's economy is yet to face a recession, SBV's stabilization policies have led to an interest hike environment. With every bank in the economy is facing a NIM squeeze in short run, having alternative revenue streams to cover NIM loss is of great importance. Techcombank's Non-Interest Income (Non-II) is led by a market leading investment banking business that have: (a) A market leading bond business that works with Vietnam top-tier local firms in bond issuance, (b) A market defining multi-asset (Fixed-income, Equity, Alternatives Investments) trading platform utilizing technology within every corner of the operation. Furthermore, the bank's bancassurance business is now fused with a cutting-edge online insurance advisory platform, enhancing customer's experience and improve conversion by 10x. We believe the bank will largely benefit from its leadership in Non-II business besides its interest-driven traditional bank model.

Hence, Techcombank's value should not be dictated by a market overreaction. The bank's outstanding strategies soon will materialize in its financial performance, and by then we expect TCB to be traded at a new deserved premium**.**

Fig.11: TCB's holistic financial solutions*

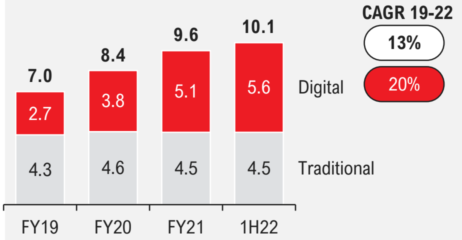


	Business Banking (SME)	**Wholesale Banking**	Retail Banking
Short-term Lending	🟥	🟥	⬜
Transactional Banking	🟥	🟥	🟥
Payroll Services	🟥	🟥	⬜
Bonds issuance & distribution	⬜	**#1 Bond Issuer**	⬜
Wealth Management	⬜	🟥	**#1 Bond Fund**
Retail Lending	⬜	⬜	**#1 Mortgage Lender JSCB**
Bancassurance	⬜	⬜	**#2 Issuer by APE**
Card Services	⬜	⬜	**#1 no. VISA transacions**

⬜ Non-applicable 🟥 Product offered ■ Leader

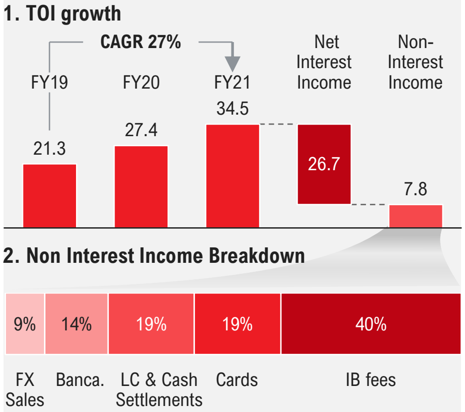
*Source: TCB, Team analysis *Non-exhaustive*

Fig.12: TCB's customer base



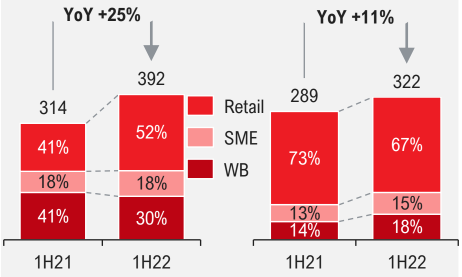
Source: TCB, Team analysis

Fig.13: TOI growth and NII Breakdown [VND Trn]



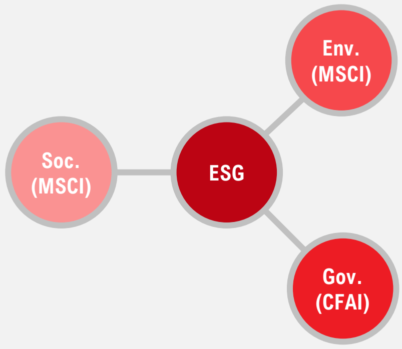
Source: TCB, Team analysis

Fig.14: Loans Mix (L) and Deposit Mix (R) [VND Trn]



Source: TCB, Team analysis

Fig.15: TCB's ESG assessment framework



Source: MSCI, CFA, Team analysis

BUSINESS DESCRIPTION

Technological and Commerical JSCB,. (Techcombank, HSX:TCB) was founded in 1993 during the transitional period of Vietnam economy from a conservative economy to a market-oriented economy. The bank is now the most profitable by ROA and operationally efficient bank in Vietnam. Growing alongside the top-performing economy of Vietnam, the 29 year-old bank enjoys leadership in multiple operational and financial fronts, which is attributable to the unique ecosystem strategy, and enormous technological capabilities, both propelled by a world-class management team.

BUSINESS MODEL

Techcombank serves 10.1 million customers through a network of 307 offices across the country, all are tied to an omnichannel approach able to grow the bank's digital customer base 20% CAGR in the last 4 years (Fig.12). Three main groups of customers the bank identifies include: Business Banking (BB) – SME, Wholesale Banking (WB) – Large enterprises, and Retail Banking, with each group the TCB can provide award winning and market leading holistic financials solutions such as: Transactional Banking, Investment Banking, Bancassurance etc.

Interest Income: Similar to local banks, lending is still TCB's main business activity, the main loan products the bank provide are: **[1]** Mortgage loan, **[2]** Corporate Bond, **[3]** ReCoM (Real Estate, Construction, and Manufacturing) loan. Despite market leading position with these products, TCB's loan book is restructuring in a more diversified approach to mitigate the impacts of upcoming economic and regulatory headwinds. For its sources of funds, the bank relies mostly on the low-cost CASA from its customers. The bank has introduced many initiatives and products to capture deposits from the market namely: **[1]** Zero-fee program – the first bank in the market to provide online banking transaction free of charge, **[2]** Banking on the entire ecosystem – TCB is one of the rare bank that can finance a whole value chain and in turn benefit from all the stakeholders within that same chain. Now, TCB has the market leading CASA with one of the most competitive cost of fund in the market.

Non-Interest Income: Aside from loans and deposits, TCB also has a diverse mix of non-interest income streams with major categories like investment banking services, bancassurance, card services, and transaction banking (Fig.13). Most notably, the bank's investment banking subsidiary – Techcom Securities (TCBS) contributed 40% to the bank's fee income in 1H22, thanks to market leading position in the bond business, alongside with a rising equity trading business that topped the market regarding 2021 profit, TCBS is expected to be a long-term value driver of the bank.

CORPORATE STRATEGY

Segmentation: Retail customers are TCB's prized possessions, representing 67% of customer deposits and 52% of the bank's loan mix, making it both the largest funding source and the biggest revenue generator for the bank (Fig.14). The bank's strategic customer base lies in the affluent and mass affluent groups who have greater ability and propensity to spend. These groups grow hand-in-hand with the Vietnam economy's prospects and are expected to drive the cross-sell potentials of many Techcombank's products and services.

Ecosystem Approach: Unlike other banks, Techcombank is able to capitalize on the synergy and the switching cost that results from its ecosystem of large corporate clients and their stakeholders. With WB, the bank is more focused on the "rainmaker" corporates (Appendix Q). Key partners of TCB include Vietnam's biggest blue-chip companies whose value chains able to generate a huge cashflow circulation, which TCB can in turn, bank on. This strategy allows Techcombank to sustain massive CASA and achieve lower funding costs from serving all stakeholders from suppliers to end-users.

Digitalization: The digital banking trend has been recently accelerated by the pandemic that impedes mobility and deters brick & mortar banking activities. In 2021, TCB doubled down on its own digital transformation strategy through a historic syndicated loan of $1 billion to fund its $500 million investment in transformation. The bank plans to acquire mass retail customers digitally and create data-driven operations that can access credit risks, accurately and swiftly recommend tailor-fitted solutions to customer, and at the same time provide digital banking solutions to corporates with a more capable and secured integrative platform. To prepare for this substantial strategic shift, the bank has recruited executives with experience leading digitalization initiatives at their former banks.

ESG INVESTMENT FRAMEWORK

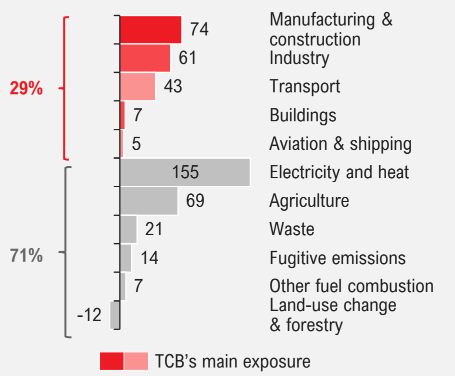
*Techcombank is led by an executive team with international banking experience with 22% of the the shareholder of the bank being foreign investors. TCB are making sure ESG standards are met across its operations, our 3 key highlights include **[E]** Already financing ESG leaders but still lagging behind itself, **[S]** People-centric culture – Investing on both its people and its community, and **[G]** Local bank with Global managment. Since Vietnam is a frontier market, data availability is still scarce, and we believe giving a proxy scoring to the bank is largely subjective. Therefore, we based MSCI's framework and criteria coupled with CFAI's governance scorecard in our ESG analysis (Fig.15)**).***

ENVIRONMENT – FINANCING ESG LEADERS AND EMERGING INITIATIVES FOR GREEN FINANCING

The bank that support the country's ESG Leaders…: Techcombank's key clients include Vingroup and Masan. **[1]** Vingroup is a leading developer that drives sustainability better than any other Vietnamese companies with ground-breaking sustainable investments such as: Vietnam's first Electric Automobile company – Vinfast, Award-winning Green Building Techno Park Tower - Vinhomes, and Bio-diversity-preserving Safari – Vinpearl Phu Quoc (all three companies were financed by Techcombank). **[2]** Masan – a leading FMCG conglomerate that has been doubling down on CSR activities with VND 500 billion invested in 2021 to drive its operations towards a more sustainable path and support the public during 2021 pandemic.

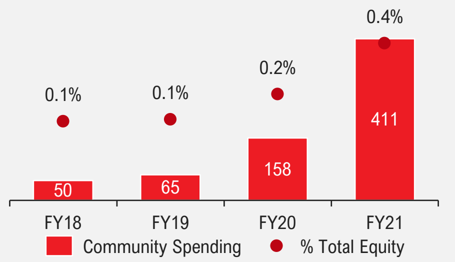
…but still mainly gives loans to sectors contributing to country's GHG emissions: TCB's outgoing funds to many sustainable partners have positioned the bank to be a sustainable lender and a strong ESG-pursuer

Fig.16: Vietnam's Greenhouse gas emissions by sector, 2019 [Million tons]



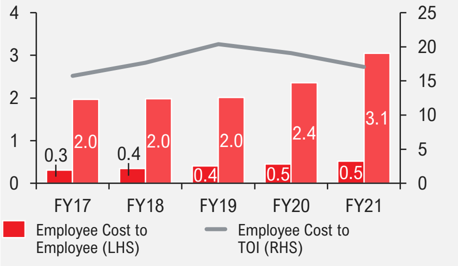
Source: Our World in Data

Fig.17: Community Spending (FY18-21) Value and % of Total Equity [VND Billion]



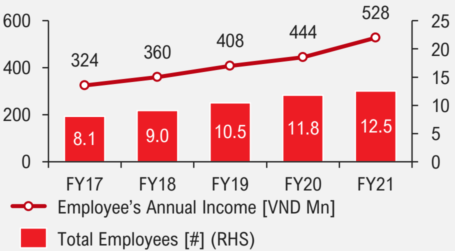
Source: TCB, Team's analysis

Fig.18: OPEX Expenses and TOI per Employee (FY18-21) [VND Billion]



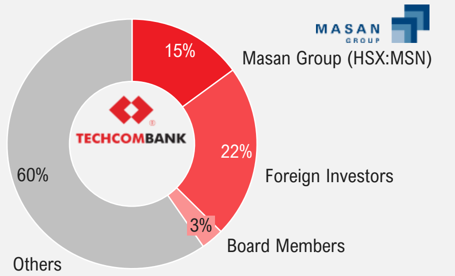
Source: TCB, Team's analysis

Fig.19: Total employees, Average Annual Income per employee, FY17-21 [#, VND Million]



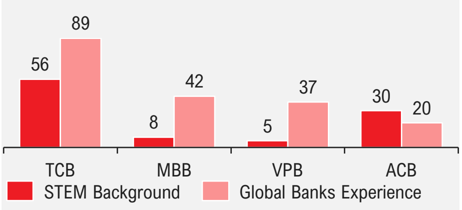
Source: TCB, Team's analysis

Fig.20: Techcombank Ownership Breakdown



Source: TCB, Team's analysis

Fig.21: % of Executives with STEM Background and Experience at Global Banks



Source: Team's analysis

amongst its peers. But looking into the corporate loan book of the bank, ReCoM, a group of sectors that contributes up to 29% to Vietnam's GHG emissions (Fig.16), is still a major group that contributes largely to the bank's interest income (Fig.03). As Vietnam is supporter of COP-26 and commits to achieve net-zero emissions by 2050, we expect drastic regulatory revisions in financing carbon-intensive industry. Even though TCB has been diversifying its loan book structure, the bank has yet o announce a clear ESG-focus goals and plans to make sure it is driving its loan book to a more sustainable path.

However, the bank's loan diversification and classification approach, in compliance with international standards are expected to drive sustainable changes: While certain pitfalls are omnipresent at the heart of the operations, Techcombank has been developing an Environmental and Social Management System in line with IFC requirements. This system is able to classify and identify any potential damages of a project to the surrounding environments on many levels, hence aiding the bank's frontlines in terms of loan appraisal. This strategy and its ongoing loan book restructuring plan will welcome new, more eco-friendly clients to its ecosystem making it more sustainable in the long-term. But for now, we believe Techcombank is still falling short to international requirements and needs to do more to meet ESG-cautious investors' demands.

SOCIAL – THE BANK THAT STANDS ALONGSIDE THE COMMUNITY AND ITS PEOPLE

Product Liability and Community Access to Finance – Digital capabilities to bring services to everyone: The relaunch of the new Techcombank mobile application has allowed customers from all over the country to experience its superb banking services. Via an effective eKYC process customers do not need physical branch visit, and cards are shipped directly to their home once finished. Furthermore, the bank applies big data analytic in credit assessments, taking an average of 3 minutes for Techcombank to collect data, assess credit risk, and rate customers' credit virtually. Even at the absence of a physical location, TCB's digital capabilities have made access to finance easier, more convenient and more effective.

Community Relations – Active CSR initiatives to support the community: Techcombank has a clear Corporate Social Responsibilities (CSR) Scheme to be able to distribute the banks' earnings to the society. In 2021, the bank supported the communities most impacted by the pandemics via a multiple aid packages valued VND 411 billion, this grows 4 times comparing to the amount in 2020, and on a CSR-investments to Equity basis, TCB contribute 0.4% of its Equity to CSR initiatives in 2021, doubled the previous year. In short, as the bank grows, it still deems social initiatives a pivotal task and therefore, will continue to a strong supporter of the community.

Human Capital – Sizable people investments: Human resource is one of the long-term growth pillars of the bank, Techcombank has been actively investing on **[1]** Incentives that could drive productivity including salary and bonus raise, **[2]** Talent Management Model able to drive internal efficiency, **[3]** Learning and Development model that nurture and retain talents. In unison, these key initiatives have developed highly efficient labor force with leaner Employee Cost, increasing annual income per staff, and a surging TOI / Employee (Fig.18 & 19).

GOVERNANCE – WORLD-CLASS MANAGEMENT FOR THE BEST-IN-CLASS LOCAL BANK

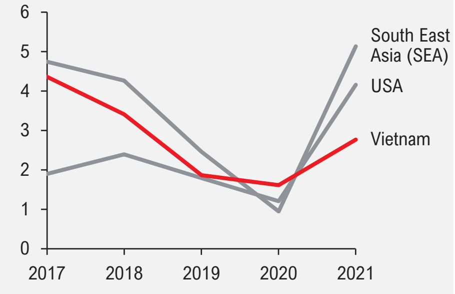
We assess Techcombank's overall governance performance using CFA Institute Governance Scorecard (Appendix P), while the assigned scorecard gives a 3.8/4.0 ratings, indicating the bank's limited downside risk from its governance structure. We highlight certain concerns and merits from the governance model of Techcombank, notably: **[1]** Techcombank lagged in terms of gender diversity in its board structure, **[2]** Potential agency problems from its relationship with Masan group, **[3]** The bank has an executive management team with extensive knowledge and background balcing both Technology and Banking.

Foreign ownership – Locked out for better control: While foreign investors are encouraged to invest in the growth of Vietnam, SBV set up a certain quota for foreign ownership. As stated in Decree No. 01/2014/ND-CP, the cap for total foreign ownership in a local bank is 30% and local banks are allowed to decide their foreign ownership structure. Techcombank took the chance by locking its foreign ownership at 22.49% in 2020, and now foreign institutions' share reaches 22% in FY21 (Fig.20), we see this as both challenges and opportunities for the bank to attract and main capital from international investors.

Strategic investor coincides with the bank's Board : Techcombank was founded initially as a right-hand man for Masan Group – Vietnam's Third Biggest Private Company by Market Capitalization, The Biggest FMCG company on the exchange. Via our analysis, Techcombank's Board is still seeing exposure with Masan since 4/9 Board Members has affiliations with Masan Group (2 members are Masan's board members and 2 members are board members of Masan's susidiaries). This does pose as an agency risk potential where shareholders' value can be conflicted by external parties. However, we look at this as an strategic potential since Masan is a fast-growing conglomerate in Vietnam that has varied operational model. With an annual revenue reaching VND 88 trillion, Masan has allowed Techcombank to tap into a massive banking potentials through its partnership with the bank. In short, the 15% stake of Vietnam top conglomerate Masan Group (Fig.20) should be deemed as a potential agency problem that investors need to take into account, and at the same time this is a strong partnership able to be drive both side's values.

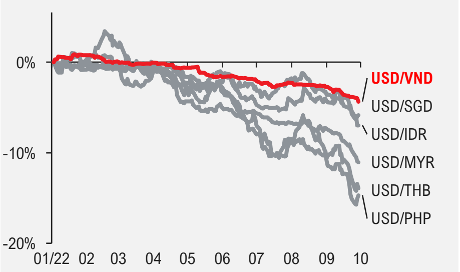
People and Technology: As the bank doubles down on its technology investments, TCB's highly experienced leadership team will be the factor to deliver its technology-driven initiatives better than its rivals. TCB's Board of Management has high seniority in the industry, long track-record of international initiatives, and had been able to drive the value of their past employing banks forward. We further look into the background of the 16 executive members and found competitive qualities (Appendix P) yet to be matched by its peers via: **[1]** Diversified experience – All executive members has more than 10 years of working in the banking industry across multiple markets, functions, and levels, **[2]** A large group of executives with STEM background, via our in-dept Linkedin research and profile screening 10/16 Techcombank members have a STEM education or past Digital Transformation projects, **[3]** Expanding compensation level in change for an effective leadership. Techcombank has been deploying new and improved leadership model during FY21, and the executive board being highly invested is a sign of an investment well-capitalized, we are expected positive results of the bank co-created by the bank's executives.

Fig.22: Inflation, GDP deflator [annual %]



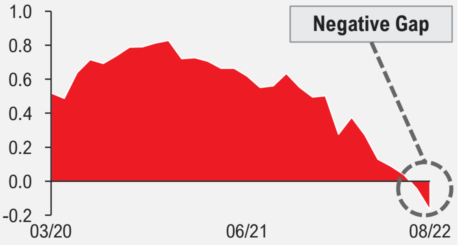
Source: World Bank, Team analysis

Fig.23: Vietnam Currency change vs other currencies in SEA [%]



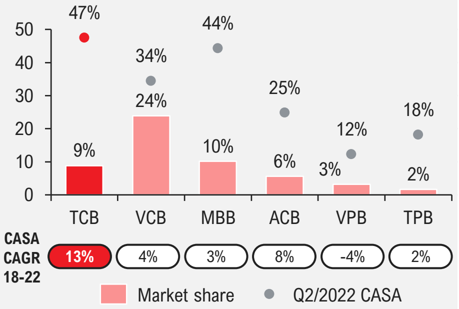
Source: Refinitiv, Team analysis

Fig.24: Vietnam's Banking system's Gap in Capital Mobilization vs. Credit Balance [VND Billion]



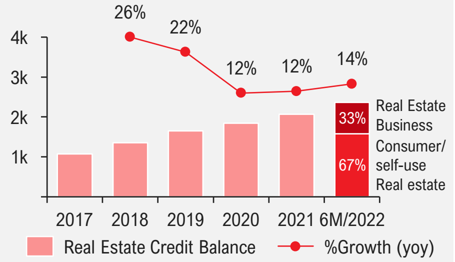
Source: Refinitiv, Team analysis

Fig.25: CASA and CASA Market share of major local banks [%]



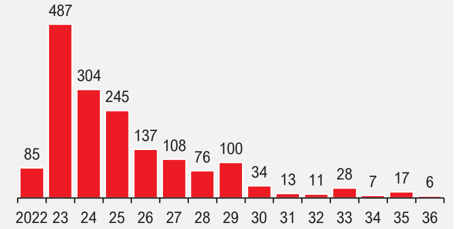
Source: Refinitiv, Team analysis

Fig.26: Real Estate Credit balance and H1/22 break down by usage [VND Trillion]



Source: SBV, Team analysis

Fig.27: Total value of corporate bonds matured from 2022 – 2036 [VND Trillion]



Source: VBMA, Team analysis

INDUSTRY OVERVIEW

Vietnam's current macro is still rather unstable with [1] turbulent economic conditions [2] hawkish interest rate environment and [3] a regulation-induced liquidity crunch in the real estate sector. Nevertheless, Vietnam's resilient economic recovery and quickly stabilizing economic indicators compared to regional peers have led us to believe that the aforementioned risks will either be temporary or eventually subdued. Over the horizon, Vietnam is still one of the fastest growing economies in SEA with low penetration in most banking products and relatively humble capital markets, implying huge rooms for credit growth, bancassurance, and investment products.

VIETNAM'S MACRO IS ON A ROLLER-COASTER

The worst of inflation is yet to come

Currently, the world economy is facing 3 main challenges, [1] Zero-Covid in China, which disrupts the global supply chain, increases the cost of transportation and raw materials; [2] Geopolitical tensions between Russia and Ukraine cause gasoline and gas prices to soar, which is even more dangerous when winter is coming; [3] Major economies such as the US and EU show signs of entering a recession. Although currently, GDP and CPI indicators in Vietnam are still being evaluated as positive compared to the region (GDP 2022 and 2023 is estimated at 7% and 6% respectively (Appendix O), but since Vietnam's economy always lags behind the world, we expect that 2023 will be the peak of Vietnam's inflation.

Intensifying exchange rate risk may worsen trade balance deficit

Vietnam is suffering from a huge burden on exchange rate (Fig.23) as well as cash outflow, the decrease in newly registered FDI (Appendix O) shows the anxiety of foreign investors about the domestic situation. Global economic difficulties are expected to affect remittances by the end of this year. In addition, in order to ensure exchange rate stability, the State Bank had to sell foreign currencies in large quantities, leading to its current inadequate national foreign exchange reserve of only about 10 weeks of imports, lower than the IMF's recommendation for short-term shocks. Moreover, the SVB widened the dong's trading band from 3.0% to 5.0% in order to tolerate greater FX volatility and protect international reserves. The failure to attract financial cash flow will be a forecast of the trade balance deficit this year and next year. From our macro analysis, we forecast credit growth for the period 2021-2026F at 13.88%.

Hawkish interest environment is squeezing banks' NIM, but this is temporary

Since the middle of this year, the banking system has faced the story of liquidity strain (Fig.24) and running out of credit room. High inflation causes people and businesses to withdraw more money for spending, which causes the whole system to decline. While deposit growth only reached 4.04%, credit growth increased by 11.05% in first 9 months of this year, which further increased liquidity stress. Commercial banks are racing to increase interest rates. This will cause NIM to shrink in the medium term. Banks that maintain a high CASA ratio will have less pressure than banks that do not have an advantage in it (Fig.25).

REAL ESTATE LIQUIDITY CRUNCH IS CRITICAL BUT NOT UNCONTROLLABLE

Hawkish interest environment has reduced liquidity and increased credit risk

In line with the global monetary tightening cycle, the SBV is anticipated to continue tightening through 2023. Two rate increases in fast succession support the idea that, in the future, SBV will probably prefer interest rate increases over open market operations in an effort to protect its foreign reserves. Leading to commercial banks simultaneously increasing deposit interest rates, leading people and investors to switch investment channels to deposit money at commercial banks, leading to difficulties in business investment and sales of businesses, especially for real estate companies.

Real estate is stalling with risks associated with large companies. High interest rates have made buyers afraid to disburse capital. It gets worse when real estate companies are having big cash flow problems, a large amount of bonds are due to mature next years (Fig.27), the risk of default and bankruptcy is gradually increasing, which leads to a potential bad debt for the banking system.

Bond scandals ignite regulatory whiplash, but the purpose is sustainable growth

In addition, the State Bank, for the purpose of controlling inflation, has controlled and tightened credit capital in real estate investment. After the scandals about the bonds of Tan Hoang Minh (Appendix W) and Van Thinh Phat, investor confidence dropped, affecting the funding of other developers. Decree 65 was issued with strict regulations, making it difficult for companies wishing to issue bonds to access the private placement market. However, in the long term, with the government intention to make push bond to account for 20% of GDP by 2025 and 25% by 2026, we expect that the crisis would soon be alleviated either by the government increasing liquidity and loosening its policy to not overly hurt the market.

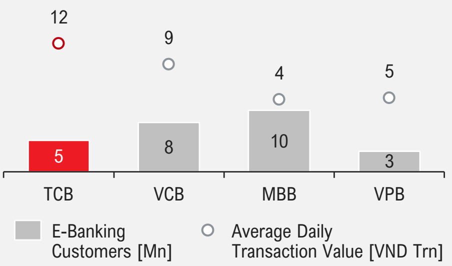
INSURANCE AND INVESTMENT PRODUCTS TO THRIVE AS LIVING STANDARDS AND INCOME RISE

Bancassurance: Bank's bancassurance growth has been a remarkable 65.28% CAGR (2019 – 2021). Vietnam's potential for the life insurance industry is exceptionally high due to its low penetration rate 2%) (Appendix O) compared to regional average (8.28%), high urbanization rate to add 5 million more city-dwellers in 2025. Coupled with increasing utilization of the bancassurance as a sale channel (39% in 2021 compared to 10% in 2016) we anticipate bancassurance to be a key fee income stream for banks in the foreseeable future, seeing 15% CAGR (2021 – 2026F).

Investment products: Vietnam has the quickly expanding mass affluent and affluent classes to increase by nearly 3 times from 2020 to 2026F welcoming nearly 4.4 million new household with $10,000 annual income or higher - the wealth/asset management rule of thumb income mark when investment demand accelerates – are bound to benefit TCB's wealth/asset management divisions.

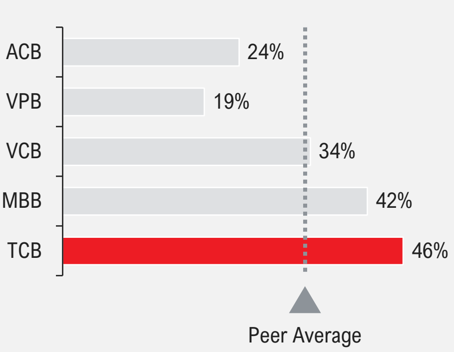
Bond & Stock markets: TCB's industry-leading bond business can also originate enough bond to serve customers' investment demand thanks to a humble bond market (only 14.84% of GDP compared to regional 23.75%) (Appendix O). With the government's initiative to make bond/GDP reach 20% in 2025, we expect TCB is well-positioned to benefit from this. Similarly, Vietnam's stock market is also underpenetrated (only 6% of the population involved), indicating a huge room for future growth.

Fig.28: E-Banking customers, Transaction TCB vs Peers, FY2021



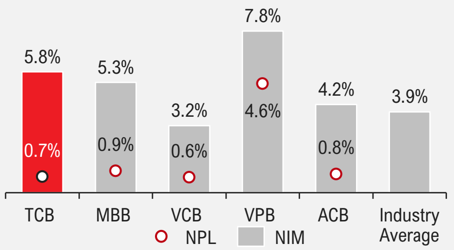
Source: Desktop Research, Team analysis

Fig.29: TCB vs Peers, CASA ratio



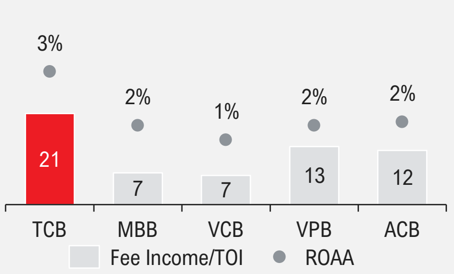
Source: TCB, Team analysis

Fig.30: NPL & NIM trade-off, TCB vs. Peers, FY2021



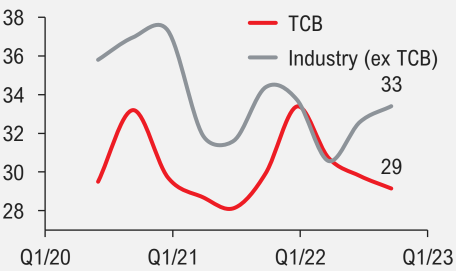
Source: Refinitiv, Team analysis

Fig.31: Fee Income/TOI & ROAA, Q3-2022 [%]



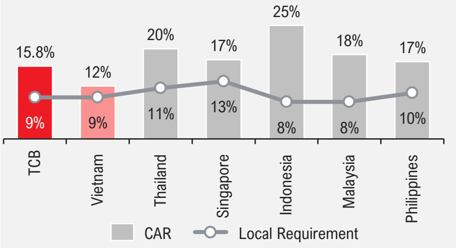
Source: TCBS, Team analysis

Fig.32: Cost-to-Income Ratio (CIR), [%]



Source: Desktop Research, Team analysis

Fig.33: Regional banking market's CAR vs Techcombank (2021)



Source: Desktop Research, Team analysis

COMPETITIVE POSITIONING

*Top 1 JSCB in mortgage lending, top 1 in bond advisory, top 1 in card transaction value, top 2 in bancassurance, etc. Techcombank is unique positioned in many respects thanks to **[1]** Strong partnerships with Vietnam's largest conglomerates **[2]** Cost leader in Transaction Banking **[3]** Leading in bond service with a fee-driven business model and **[4]** Highest CAR with the safest credit rating. Draw on its first advantage, Techcombank has captured a large portion of Vietnam's affluent class and solidified its presence in the bond advisory space, setting it up to fully capitalize on Vietnam's soaring bond market and rapidly expanding upper-classes.*

TOP OF THE LINE CASA FROM STRATEGIC PARTNERSHIPS & TECHNOLOGY PIONEERING

Techcombank CASA ratio is highest in the industry at 47.46%, almost three times higher than the industry average (Fig.29). The bank attracts massive CASA through a tight-knit ecosystem of industry giants, its low-cost transaction banking services, and customer-centric omnichannel marketing able to retain customers.

Partnerships with Vietnamese Blue-chips: First, by financing entire value chains, Techcombank effectively locks in those cash flows in its ecosystem, retains not only high but sticky CASA. (Fig.29). Second, by cross-selling payroll services to those companies, it attracts additional CASA from employees. And third, since its ecosystem covers 6 anchor industries, it ensures that these companies that will see their cash flows increase over time, maximizing the CASA extractable (Fig.29). We do not see this advantage to erode since it can be very complex to build and very difficult to find partners comparable to VinGroup, Masterise, and Masan as they are some of Vietnam's largest conglomerates.

Boosting CASA through a Dual Digital Strategy: In addition, TCB's transaction services have: **[1]** The most competitively pricing model despite replication from peers, giving it high CASA with even higher transaction value (Fig.28), signifying its customer stickiness. **[2]** The most minimalistic app design with the least touchpoints on every step of the customer journey (Appendix T), aligning with "simplicity" and "eKYC" as the top 1 retail and business customer criteria in a banking app respectively.

SUSTAINABLY PROFITABLE WITH PRISTINE ASSET QUALITY AND HIGH NIM

TCB has the best balance between asset quality and profitability (Fig.30). It's NIM is only surpassed by VPB, whose focus on low-income high-risk consumer lending has rendered its bad debts piling. On the other hand, VCB has the best asset quality but its cost leadership positioning leaves it margins among the lowest. TCB instead focuses on affluent and mass affluent customers and sells mostly high-maturity mortgages, which means higher yields. In combination of its high CASA, which implies lower cost of funds, these advantages have result in TCB's outstanding NIM. The bank gets its customers from the real estate partners (e.g. VinHomes, Masterise) whose customers are upper-class, giving it a huge pool of affluent homebuyers. At the same time, its asset quality is well-secured thanks to: **[1]** The inherently low-risk nature of high-income customers; **[2]** Its policy to lend only to businesses that have been its customer for at least 3 years; **[3]** The bank's central position in the ecosystem giving it a 360-view on businesses. However, the bank's loan book is quite exposed to real estate than other banks, making the bank more likely to be underpriced in these times of liquidity strains and regulatory whiplashes into real estate and bond.

THE BEST FEE-GENERATING BANK WITH DOMINATING MARKET SHARES IN MANY PRODUCTS

TCB's Fee income-to-TOI of 18.84% is unrivaled compared its peer average of 11.92%. Aside from its mortgage business, the bank's approach is pretty "asset light", meaning prioritizing the generation of fee incomes instead of excessively expanding the balance sheet. When large business clients demand long-term capital, the bank prefers to offer bond advisory services and earns fees instead of lending. By originating bonds, TCB could also offer them to other customers as investments, earning from both sides of the business. TCB's relationships with large conglomerates, high-income customer base, ensuring high demands for its financial services, and a more extensive product portfolio (that is also digitalized) than competitors (Fig.10) have led to its leadership position in multiple fee products:

Bond Advisory: Top 1 Market Share (13%) by bond value originated.

Bond Brokerage: Top 1 Bond Fund (86.98% of bond value), Top 1 Bond broker (38.87% market share).

Stock Brokerage: Top 5 by market share.

Other Fee Streams: Top 2 Bancassurance seller by APE and Top 1 Card service by Transaction Value.

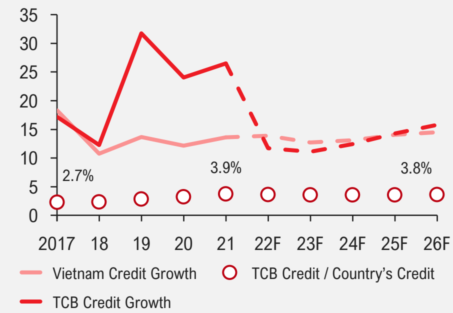
HIGHER - THAN - AVERAGE EFFICIENCY FROM AGGRESSIVE TECHNOLOGY MASTER PLAN

Techcombank's CIR is the most competitive in the industry (Fig. 31) which we expect to be sustained and even decreased over time although at a slower rate since the bank's cost-base is already so low. Compared to its most technology-intensive peers, TCB's investments in technology (data lakes, AI, and digitalization), employee productivity, and quality of management are all superior. Furthermore, the bank's unique focus on digital expansion and its fewer but more strategically placed physical branches than peers will promise lower capital expenditure and operating cost in the future, which is already happening.

SAFEST CAR & CREDIT RATING WITH THE SOUNDEST PROFITABILITY

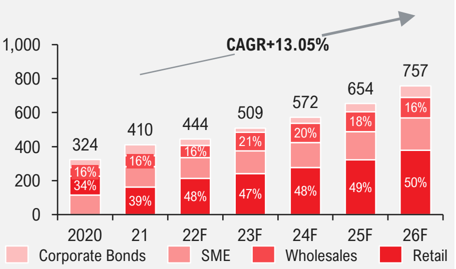
Vietnamese banks' lower CAR compared to the region can discourage investors but with the highest-in-the-country CAR of 15.83%, Techcombank is the closest in its peers to reach the regional average (Fig.33). The bank sees its higher CAR as a competitive advantage, helping it to endure economic volatility more reliably, deploy capital more freely, and attain first-grade credit rating (recently raised to Ba2 by Moody, equal to country's). Instead of being incapacitated by its high capital buffer, Techcombank's return on risk-weighted asset (RORWA) (Fig.05) and return on average asset (ROAA) (Fig.42) also outperform all of its peers. Its business model being both low-risk and high-return has reinstated its mastery in financial management and excellent execution quality. We expect this business model to be highly sustainable into the foreseeable future with its partnership with the most financially sound conglomerates, bulletproofing its asset quality and leveraging the incoming demographic structural shift, while its digital initiatives will reduce its cost base and generate more fee income than any other banks.

Fig.34: TCB and Vietnam Credit growth [%]



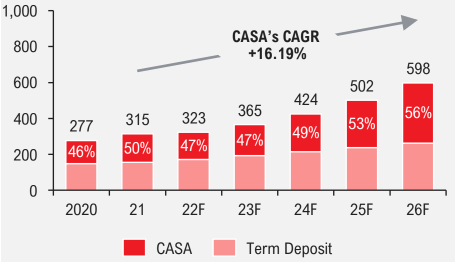
Source: TCB, Team analysis

Fig.35: Credit Mix (2020-26F) [VND Billion]



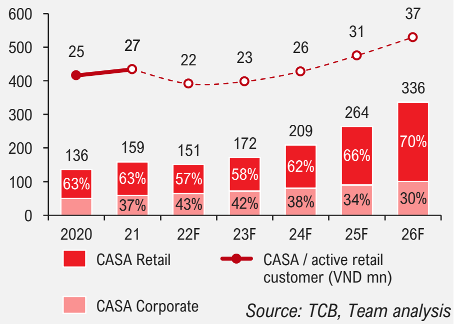
Source: TCB, Team analysis

Fig.36: Term Deposit Mix [VND Billion]



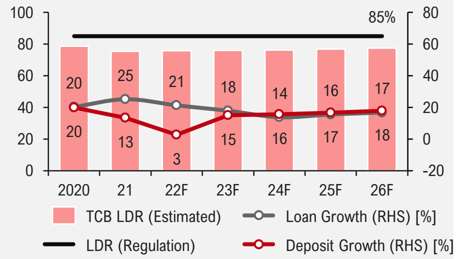
Source: TCB, Team analysis

Fig.37: CASA growth [VND Billion]



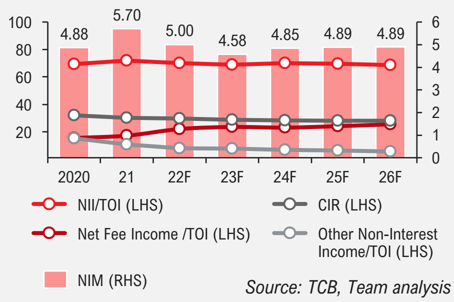
Source: TCB, Team analysis

Fig.38: LDR, Loan and Deposit Growth [%]



Source: TCB, Team analysis

Fig.39: Profitability [%]



Source: TCB, Team analysis

FINANCIAL ANALYSIS

ASSETS & LIABILITIES MANAGEMENT

TCB will see credit growth of 13.05% CAGR thanks to loan book flexibility and proactive management of asset quality: With an all-time high CAR at 15%, well-maintained SFLR, LDR, LLR ratios, and pristine asset quality thanks to its ecosystem, TCB has expanded its credit portfolio with CAGR of 23.44% (2017-2021). Back to the present, hawkish monetary policies to stabilize inflation and tightened credit to the real estate sector will render TCB's growth trajectory slower compared to the past. Nonetheless, with proactive actions to limit credit risks by shifting its loan book to "affluent" retail customers, TCB will be able to grow its loan book while ensuring asset quality. In conclusion, we expect TCB can defuse regulatory pressure on capital adequacy ratios and will be able to maintain future credit growth at CAGR 13.05% (2021-2026F).

TCB's CASA ratio will reach 56.24% in 2026F based on favorable demographic trends and the bank's well-positioned business model: In the context of constrained liquidity and limited lending, businesses are forced to withdraw their CASA to finance their operations, leading to an industry-wide downward trend in CASA ratio. This is exacerbated when massive increase in term deposit over CASA diluting the ratio even more since interest rates are so high. However, TCB's CASA lock-in effect of its ecosystem has helped it to maintain its leading CASA ratio at 46.5% (-3.84% compared to 9-month ytd). In addition, we expect term deposit to grow at a CAGR of 10.92% (2021-2026F) in the context of a rising interest rate environment. In the longer term of 2021 – 2026F, we estimate TCB's retail active customer to grow by CAGR 11.27% as well as CASA value per customer by CAGR 6.67% from higher economic and income growth as interest rates re-stabilize. This allows CASA to growth with CAGR of 16.19% (2021-2026F) and reach 56.24% in 2026F.

LDR will be maintained under the 85% Regulatory Cap required by SBV:

LDR of Techcombank has always been less than 80%, aligned with regulatory cap. Facing the recent liquidity strain, TCB has borrowed a syndicate loan from the interbank market worth USD 1 Billion to both invest in technology and manage its LDR. Together with the growth in loans and deposits, LDR is expected to increase and be sustained at 75.45% (Fig.38). The syndicate loan long-term funding nature will also improve TCB's short-term funding for medium- and long-term ratio (SFMLL) were there be more restrictions on this ratio.

EARNINGS PERFORMANCE

Net Interest Income will grow at CAGR 12.92% (2021 - 2026F) with NIM being compressed to 4.58% in 2022 and then rebound to 4.89% in 2026F due to 2 forces in play:

[1] Heating up in the competition for CASA to cool down the rising funding costs: In the environment of rising interest rates and constrained liquidity, local banks have been facing difficulties controlling their funding costs which is escalating from both higher interest rates from both the deposit and the interbank market. However, TCB's large low-cost CASA buffer with industry-leading CASA ratio at 46.5% (3Q22) and its recent syndicated loans have significantly diluted the pressure on its Cost of Fund. As a result, we expect TCB's Cost of Fund to still increase to 3.69% (2023F) but will eventually improve to 3.26% (2026F).

[2] Sustainable asset yield supported by flexible loan book allocation: Similar to Cost of Fund, Asset Yield will also increase in a rising interest rate environment. However, with the government requiring banks to keep lending interest rates stable, it will increase slower and increases will take longer to materialize compared to deposit interest rates. Additionally, with TCB flexibly shifting its loan book to focus more on the retail side, we expect Asset Yield to increase modestly to 7.98% (2024F) and slightly decrease to 7.68% (2026F) when the interest rate have cooled down in the long term.

Strong Net Fee Income growth at CAGR 23.3% and accounts for 25.52% of TOI in 2026F from:

[1] IB fee temporary slow down at CAGR -11.4% (2021-2023F) will rebound CAGR 15.6% (2023F-2026F): The recent regulations putting stricter requirements on the corporate bond market have created a short-lived liquidity problem in the market. **[a]** However, we believe that with the government's goal to grow the bond market sustainably and reach corporate bond value/GDP ratio of 20% in 2025F and 25% in 2030F (currently 14.84%), the growth prospect is well-supported by both market demand and the government's will. **[b]** Besides, although the confidence of investors in the stock market fell sharply after negative impacts from the macro context, causing the stock market to continuously decline and reduce trading liquidity, the percentage of Vietnamese population that owns a securities account is only 6% and the number of new account openings is still high. Therefore, we expect that the stock market will continue to grow after macroeconomic stability and confidence are re-established.

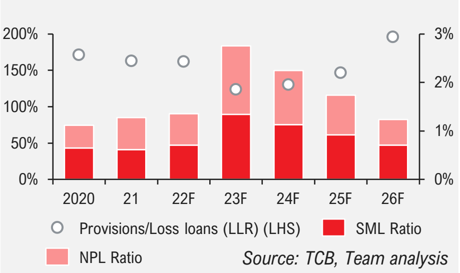
[2] Bancassurance will grow CAGR 14% (2021-2026F) thanks to underpenetrated market: From the problem that many customers were incorrectly advised, or reluctant to buy, they canceled the contract after a while, along with the government's prohibition on the act of "forcing" customers to buy insurance, which led to the cooling trend of the insurance market. However, the low insurance penetration rate of 2% compared to the regional average of 8.28% and the growing middle class will be the driving force for the insurance market to grow. With TCB currently being the top 2 bancassurance seller by APE, we expect the bank can leverage this market potential well.

[3] Settlement services growth strongly at CAGR 39.8% (2021-2026F): TCB has started to apply the credit card approval policy entirely online from 3Q21, which, thanks to upgrade in its back-end data analytics, has brought a huge growth to its payment fee income. In the future, the banks' pioneering WINLife project integrating the bank's transaction offices into supermarkets and convenience stores, will expand its customer base and achieve strong payment income growth with CAGR 39.8% (2021-2026F).

Sustaining low CIR of 28.09% through investments in Human Capital and Digital Transformation:

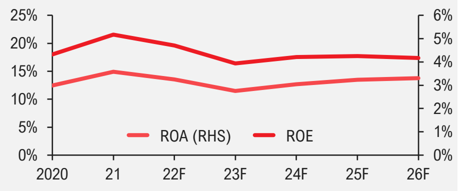
In-depth data analytic investment and technology-savvy workforce have led to the bank's well-managed operating costs at 31.47% (average 2017–2021). However, TCB's upcoming efforts to increase its retail and SME clientele can lead to higher distribution and marketing expenses. But this fact is offset by its strong technology foundations, which will allow Techcombank to expand its customer base at a rate considerably more cost-effective than the average bank. In addition, through its ecosystem of businesses, the bank can reach clients more efficiently as well. Together, these factors are strong proxies helping us to conclude that the bank will be able to manage its CIR at a constant 28.09% in 2026F.

Fig.40: NPL ratio & Provisions / Loss loans Coverage (LLR) [%]



Source: TCB, Team analysis

Fig.41: Asset and Equity Return



Source: TCB, Team analysis

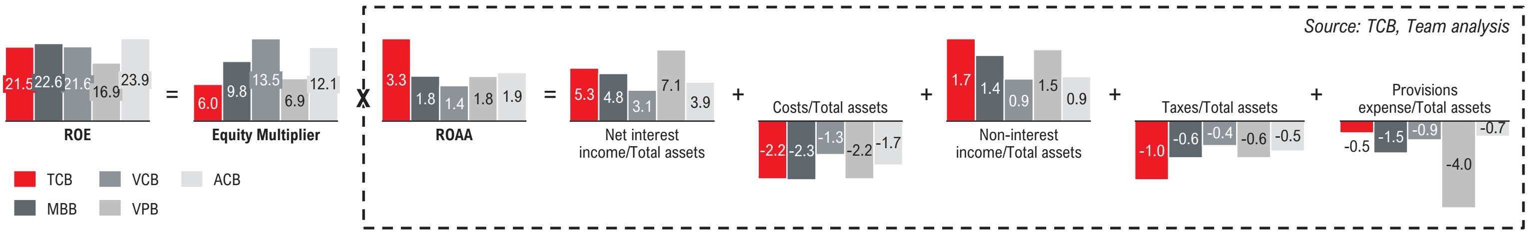
ASSET QUALITY

Techcombank to proactively increase provision expense by 111.3% (yoy) and push Provision Expense/TOI ratio to 11.8% in 2023F but will decrease to 7.91% in 2026F as market stabilizes: Currently, TCB's asset quality is under many pressure points, most notable of which are the re-emerging restructured debt from Covid-19 and risks from real estate lending (including corporate bond investment) starting to manifest. We believe that Overdue Debt ratio will reach 2.76% in 2023F (+148 bps vs. 2021), and provision expense will increase at 44.0% CAGR (2021-2023F). However, thanks to TCB's inherently solid asset quality and ability to enforce bad debt write-offs, when the economic environment rebounds, we believe that the Overdue Debt Ratio will gradually decrease to 1.23% in 2026F and the ratio of provision expense/TOI will also increase slightly at CAGR 3.3% (2023F-2026F) reach 7.91%.

ROE DECOMPOSITION

Techcombank will continue to maintain ROAA at 3.3% and ROE at 17.4% in 2026F: Techcombank is the bank with the highest ROAA in Vietnam at over 3.5% (Fig.41). It is worth noting that the bank's ROAE is still among the highest in the industry when its Equity Multiplier only 6.01 times (Fig.42). The bank has demonstrated an unmatched ability to generate higher returns on the same amount of assets while maintaining a relatively low industry operating cost compared to the average (Fig.43). In addition, excellent bad debt management has helped TCB to keep Provision Expense/TOI much lower than its competitors while still sufficiently cover its loss loans. In short, we consider TCB to be a strong bank in terms of profitable and asset management with its ability to utilize a low-risk, high-return strategy.

Fig.42: TCB's ROE and ROAA Decomposition versus Vietnamese peers, 2021



Source: TCB, Team analysis

Fig.43: Valuation Summary

Income Approach		
Method	**Weight**	**Target**
RIM (Base Case)	50%	31,200
Market Approach		
Method	**Weight**	**Target**
P/B Multiples	50%	42,800
Current Price (11 Nov, 22)		VND 22,800
Target Price		VND 37,000
P/E 12M fwd		*6.53x*
P/B 12M fwd		*1.01x*
	Upside	**62%**

Source: TCB, Team analysis

Fig.44: Valuation Assumption

Assumptions	
Cost of Equity	**16.31%**
Risk-free Rate (VN10Y)	5.00%
Equity Risk Premium	10.06%
Beta	1.126
Terminal Growth Rate	**3.00%**

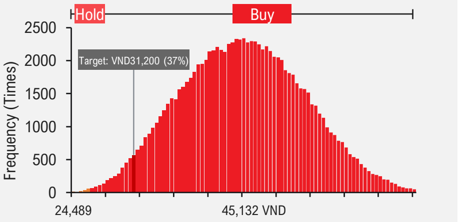
Source: TCB, Team analysis

Fig.45 Sensitivity analysis

Terminal Cost of Equity [%]	Terminal Growth Rate [%] 2.0%	2.5%	3.0%	3.5%	4.0%
13.3%	39%	39%	40%	41%	42%
14.3%	37%	38%	39%	39%	40%
15.3%	36%	37%	38%	38%	39%
16.3%	36%	36%	37%	37%	38%
17.3%	35%	36%	36%	36%	37%
18.3%	35%	35%	35%	36%	36%
19.3%	34%	34%	35%	35%	35%

Source: TCB, Team analysis

Fig.46 Residual Income Model - Monte Carlo Simulations



Source: TCB, Team analysis

VALUATION

*We reinstate our **BUY** recommendation on Techcombank (HSX:TCB) with a 1-year target price of VND 37,000, representing an upside of 62% from its closing price of VND 22,800 on 11th Nov, 2022. Our valuation methodology employs a weighted average of the Residual Income Model **[50%]** and Price-to-Book Local Banks Comparable **[50%]**: Aside from our RIM Base case, we also perform scenario analysis with 3 cases: Bull, Bear, and Grey Rhino to assess market uncertainties on TCB value. Also, compare it P/B multiples with Regional Bank, and timing Internal Rate of Return at 49% when exiting at 8x P/E 2026F. Finally, to verify the robustness of our valuation, we did a Monte Carlo simulation, Geometric Brownian Motion simulation.*

INCOME APPROACH – THE RESIDUAL INCOME MODEL

In the **Base** scenario, our two-stage Residual Income Model implies an average price of 31,200 VND/share (+37% upside). We used a forecast horizon of 5 years assuming after which TCB will transit to the maturity stage its enterprise life cycle while taking into account the cyclicality of the banking industry. Besides, we also perform scenario analysis with 3 other scenarios: **Bull, Bear, and Grey Rhino**, where if market conditions turn to Gray Rhino, our recommendation will switch to **SELL**.

BASE CASE: VND 33,700 (+47.8% UPSIDE), 6.06 P/E FWD, 0.93 P/B FWD

Net Income: In the Base case, we expect that TCB will maintain an average ROE of 17.46% (2022-2026F) and a Net Profit After Tax and Minority Interest (NPATMI) CAGR of 15.11 % (2022-2026F) through 5 assumptions: [1] We assume that market will again be stable at 2024 when the global exchange rate and interest rate stabilize. However, with the government's intention to limit credit in potentially speculative sectors such as Real Estate, we expect TCB to have slightly slower loan growth at CAGR 13.08% (2022-2026F). Combine with our forecast of slower asset yield growth compared to growth in cost of funds leading to a slight NIM compression to 4.85% (2022-2026F). The result NII will grow at CAGR 14.95% (2022-2026F); [2] In addition, thanks to extraordinary disposable income growth and expansion of the middle-class, NFI will grow at CAGR 19.84% (2022-2026F); [3] On the other hand, we highly appreciate the management's ability in achieving a CIR lower than the industry average, which from TCB's future technology initiatives CIR will be lowered even more and maintained at an average of 28.8% (2022-2026F); [4] We also expect provision expense/TOI will increase sharply at around 8.56% on average (2022-2026F); [5] Finally, the average effective tax rate is assumed to be 20% (2022-2026F).

Residual Income Model: [1] We use the Cost of Equity as the Discounted Rate (Appendix H), which comes in at 16.79% based on these assumptions [1] Macroeconomics volatility, resulting in a market risk premium of 10.48%; [2] The rising in Vietnam 10-year government bonds yield (VN10Y) pushing the risk-free rate to 5%; [3] However, with low leverage compared to the industry average, TCB is expected to have a low beta of 1.13 to dilute the rising interest rate pressure. TCB's Residual Income is then calculated by subtracting the cost of capital of each period from Net Income (Fig. 44); [4] We expect TCB's terminal growth rate to be 3% (Fig.44). The result is a valuation of 31,200 VND/share.

Simulation Analysis – Residual Income Valuation – Monte Carlo Simulation

Via Monte Carlo simulation of 100,000 iterations in our residual income model, we arrived at the price ranging from VND 23,058 to VND 75,455 (Fig. 46). By flexing on variables such as Vietnam GDP growth, average NIM, 5-year CAGR of Non-Interest Income, CIR, and provision expense/TOI from 2022-2026F, the simulation results more than 97.5% outputs at our **BUY** range with 0% outputs lie in the **SELL** region

Fig.47: Scenarios Analysis 2022-2026F, (Details in Appendix I)

	History (2017-21)	Bull	Base	Bear	Grey Rhino
Target Price [VND]		33,900	31,200	25,700	18,100
% Upside		48.7%	36.8%	12.7%	-20.6%
P/E fwd [x]		5.67x	5.50x	4.88x	5.71x
P/B fwd [X]		0.92x	0.85x	0.71x	0.53x
Loan, CAGR	*21.22%*	13.08%	13.08%	12.18%	11.27%
Deposit, CAGR	*16.48%*	18.18%	16.65%	14.80%	10.39%
NII, CAGR	*31.49%*	16.60%	14.98%	12.42%	9.40%
NIM, Average	*4.54%*	5.02%	4.84%	4.63%	4.54%
NFI, CAGR	*13,75%*	20.52%	19.84%	14.71%	10.05%
CIR, Average	*31.47%*	28.06%	28.60%	29.69%	31.03%
Provision Expense/TOI, Average	*10.67%*	8.08%	8.56%	8.92%	18.49%
ROE, Average	*21.30%*	18.36%	17.73%	16.60%	13.75%
Net Income, CAGR	*29.36%*	17.58%	15.65%	11.59%	4.51%

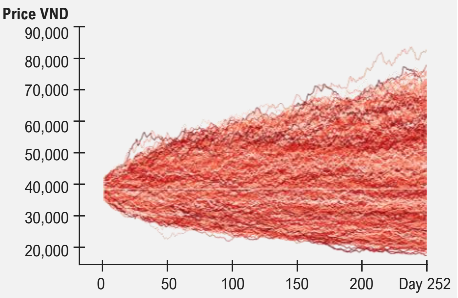
Source: TCB, Team analysis

Fig.48: TCB Comparables

Bank	P/B (100%)	P/E (0%)
TCB	**1.49x**	**8.89x**
VCB	3.57x	19.63x
ACB	1.73x	7.70x
MBB	1.34x	7.28x
VPB	1.47x	7.67x
BID	2.20x	21.33x
CTG	1.33x	11.18x
VIB	2.00x	8.00x
TPB	1.60x	7.89x
HDB	1.65x	8.91x
Industry Multiple		
Q1	1.35x	6.89x
Median	1.65x	8.00x
Q3	1.68x	9.78x
Implied Multiples	**1.35x**	**6.89x**
Price [VND]	42,772	39,055
Impied Price [VND]	42,800	

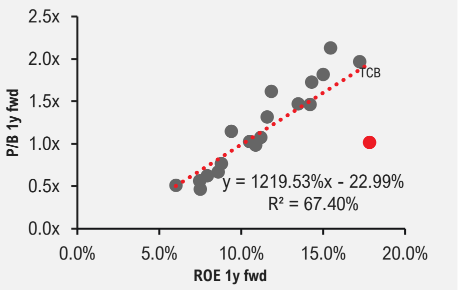
Source: TCB, Team analysis

Fig.49: Monte Carlo Simulations – Brownian Price Path



Source: TCB, Team analysis

Fig.50: TCB P/B versus RoE compared with SEA + India bank peers, Fwd22



Source: Refinitiv, Team analysis

Fig.51: IRR Sensitivity (P/B 2026 Exit [x] vs. 5y CAGR Book Value [%])

P/B 2026 Exit [x]

Book Value 5y-CAGR [%]

54%	0.4x	0.9x	1.4x	1.9x	2.4x
-11%	-27%	-11%	0%	7%	14%
-1%	-15%	5%	17%	26%	34%
9%	-1%	21%	35%	46%	54%
19%	13%	38%	54%	66%	76%
29%	27%	56%	74%	88%	99%
39%	42%	74%	94%	110%	122%
49%	58%	93%	116%	133%	147%

Source:Team analysis

SCENARIO ANALYSIS

We conduct other 3 forecasting scenarios of Bull Case, Bear Case, and Gray Rhino Case to identify potential risks and opportunities in different **[1]** Liquidity and **[2]** Credit of market conditions. The main indicators for variables in our result include **[1]** Credit Growth; **[2]** Deposit Growth; **[3]** Earning Performance; **[4]** Efficiency; **[5]** Asset Quality (Appendix I).

BULL CASE: VND 33,900 (+48.7% UPSIDE), 5.67x P/E 12M FWD, 0.92x P/B 12M FWD

In the Bull Case, we expect that TCB will maintain an average ROE of 18.33% and Net Profit After Tax and Minority Interest (NPATMI) growth of 17.58% (2022-2026F) thanks to: **[1]** Stabilizing economic context acts as momentum for TCB's credit growth of 13.08% (equal to Base Case); **[2]** Outperforming customer acquisition plan attracting massive deposits, and achieve a CASA ratio of 58.47% in 2026F, helping TCB to **[3]** reduce pressure on Cost of Fund and help maintain NIM at around 5.02% (2022-2026F) and create a base for fee income growth of 20.52% CAGR (2022-2026F), along with **[4]** more efficient operations resulting in average CIR ratio of 28.26% (2022-2026F). **[5]** Finally, TCB proactively responds to market changes will put average provision expense/TOI ratio at 8.08%.

BEAR CASE: VND 25,700 (+12.7% UPSIDE), 4.88x P/E 12M FWD, 0.71x P/B 12M FWD

In the Bear Case, we expect that average ROE will fall to 16.57% and NPATMI growth of 11.59% CAGR (2022-2026F) from the following key assumptions: **[1]** Market will gradually stabilize, but need more time and more stringent policies, which lead to TCB's credit growth slower than Base Case, at CAGR 12.18%; **[2]** Furthermore, in the face of fiercer competition in technology to attract customers, TCB will achieve suboptimal CASA Ratio of only 53.36% by 2026F, leading to **[3]** lower average NIM of 4.63% and fee income growth at CAGR 14.71% (2022-2026F) due to a smaller customer base **[4]** along with TCB struggling to keep up with operating cost, seeing higher average CIR at 29.91%. **[5]** Finally, TCB will also has to use more resources to deal with rising bad debts, from which we expect that the average provision expense/TOI ratio reaching 8.93%.

GRAY RHINO CASE: VND 18.100 (-20.6% DOWNSIDE), 5.71x P/E 12M FWD, 0.53x P/B 12M FWD

In the Gray Rhino Case, we expect the average ROE to decline to 14.59% and the NPATMI to grow by only 5.95% CAGR (2022-2026F), from the following key assumptions: **[1]** Prolonged recessions in the US and EU, stricter lockdowns in China, and Vietnam's struggling financial system will make liquidity more difficult. Thus, TCB's credit growth will be a low CAGR of 11.27%. **[2]** Not only with fierce competition in technology, but also under pressure of persistently high interest rates, TCB can only maintain CASA at 48.79% in 2026F, leading to **[3]** massive pressure on the average NIM, decreasing to 4.44% and sluggish fee income growth reaching only 10.50% CAGR (2022-2026F) along with **[4]** CIR increased to 31.32%. **[5]** Finally, TCB has to use more resources to deal with credit risk, from which they assume that the provision expense increase to an average of 13.72% of TOI.

MARKET APPROACH – PRICE TO BOOK RELATIVE VALUATION MODEL

For the Market Approach, we employ Price-to-Book value ratio to estimate Techcombank's market value at 42,800 VND/shares (+88% upside). The selected banks are listed commercial banks in Vietnam with fairly homogenous operating models and capital structures (Appendix K). Finally, we will compare the profitability of Techcombank to peers in SEA and India to see whether Techcombank is a promising investment choice in the region.

Relative valuation – P/B Multiples

Price-to-book value is an essential measurement that provides us with an overview of the company's value. Furthermore, within a volatile market, the price-to-book value becomes more reliable and can help to explain about the risks and growth prospects of the banking industry. TCB is one of the leading banks in terms of high profitability with low leverage with a strong capital buffer. We expect TCB will be traded at a P/B of 1.35x, equivalent to a target price of VND 42,800/share (+88% upside)

Simulation Analysis – Monte Carlo Simulation Geometric Brownian Motion Price Path

We integrate share price historical performance of Techcombank (since 2018) in our Geometric Brownian Motion simulations to model 252-trading day price paths starting at last close price (Fig.48). the simulation results more than 95% outputs at our BUY range, and under 0% outputs lie in the SELL region.

Techcombank's Valuations Compared to SEA and India Bank Peers

Being one of the biggest banks in Vietnam with a high growth rate and high profitability supported by a strong capital buffer. We benchmark the bank with a set of regional banks comparable in terms of: **[1]** %CASA, **[2]** Technology Investments Value, **[3]** ROE. The comparable results of P/E fwd with EPS Growth fwd (Fig.47) and P/B fwd with ROE fwd (Fig.50) between TCB and other banks in SEA – India have shown that Techcombank is relatively undervalued. This concretizes our theses that bank are significantly misprices and have been traded at a higher premium accordingly to our valuations (Appendix L)

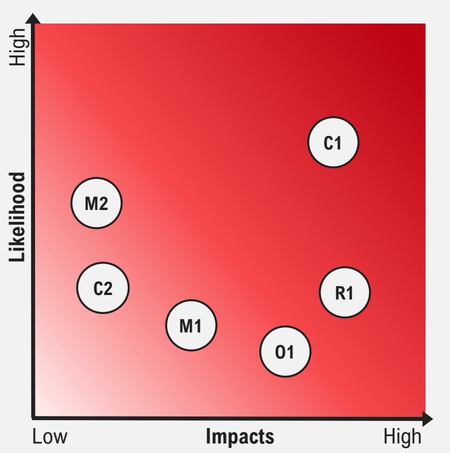
5-Year Price-to-Book Value Exit Internal Rate of Return (IRR) analysis

We also validated a 5-year Price-to-Book Value IRR analysis to boost our result. Using a fair P/B exit 2026F equals 1.4x and Book Value growth at CAGR 15% (2021-2026F), we arrived at a 54% IRR and a 38% IRR-Ke spread (Appendix I). We also do a sensitivity analysis of our IRR by a change in the multiple or net income CAGR. As a result, we reiterate a buy recommendation.

INVESTMENT RISKS

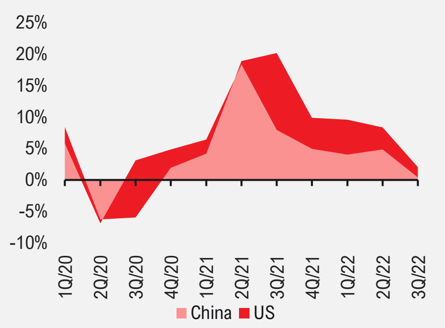
The biggest risk that may affect our recommendation is the credit risk from the homebuyers and real estate developers ***[C1]*** *where the liquidity crunch in the real estate industry will be intensified by struggling home lenders who cannot afford the higher interest payments and doubting home buyers who stop payments. These halts in payments will again, worsens the situation and eventually lead to the demise of the industry. However, we expect the government will not let this happen and even in such situation, Techcombank's high provisions, capital buffer, and strong asset quality will mitigate this risk.*

Fig.52: TCB Risk matrix



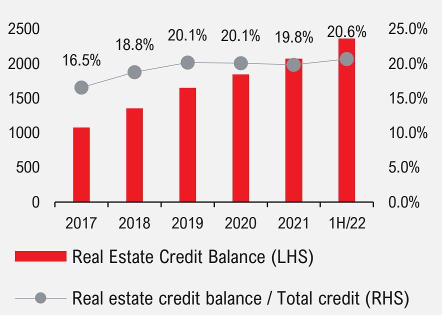
Source: TCB, Team analysis

Fig.53: China and US real GDP growth [%]



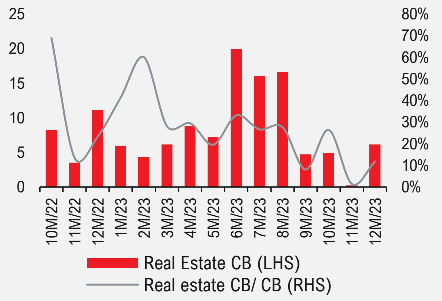
Source: CEICDATA

Fig.54: Real Estate Credit balance [VND Trillion]



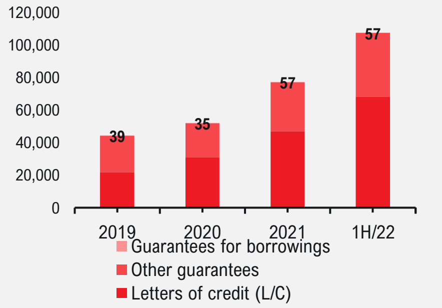
Source: Team analysis

Fig.55: Total value of real estate corporate bonds (CB) matured from 2022 – 2023 [VND Trillion]



Source: TCB, Team analysis

Fig.56: Contingent Liabilities [VND billion]



Source: TCB, Team analysis

[R1] REPUTATION RISK | BOND SCANDALS REDUCING INVESTOR CONFIDENCE, CAUSING BANK RUNS

Van Thinh Phat's bond fraud scandal has reduced investor's confidence and caused SCB, a bank closely related to the company, to face a bank run. Although the SBV always guarantee people's deposits and help banks with liquidity problems, SCB's reputation has been greatly affected and is difficult to restore. Consequently, banks with extensive holdings of corporate bonds, such as Techcombank (VND 49 trillion), have been affected since its strategic partner, Masterise, has been involved with Van Thinh Phat for a while through the Saigon Binh An project of the SDI group. As the main capital arranger for Masterise, Techcombank has supported 3 companies related to Van Thinh Phat to issue and distribute bonds with a totaling VND 15,500 Billion. In the event that TCB and the bond issuers are unwilling to perform bond buybacks, investors will immediately perceive this as a sign of the institution's financial distress. They will then immediately withdraw cash, causing a bank run and putting bank liquidity in jeopardy.

Valuation impact: A bank run will cause extreme liquidity and even bankruptcy difficulties in a short time and make it difficult for the bank's reputation to recover.

Mitigant: Bond issuance partners of Techcombank are reputable and industry-leading companies such as VinGroup (Appendix Q). With strong financial support as seen by good debt solvency, these businesses should be able to get over immediate challenges.

[C1] CREDIT RISK | HOMEBUYERS AND REAL ESTATE DEVELOPERS UNABLE TO REPAY

The SBV currently tightly controls cash flow into real estate, causing many businesses to face difficulties in raising capital. Additionally, higher interest rates may deter demand for home lending and increased credit risks from existing home buyers whose loans were made in times of low interest rates and are now floating on higher rates. This creates a feedback loop where struggling homebuyers will cause developer to have liquidity problems, which worries other homebuyers that the developers won't make it and eventually, even financially stable homebuyers may stop making payment, worsening the problem and actually bankrupt the developers. Although TCB's Q3 report shows that the current real estate bad debt ratio is still close to 0%, but the bank may face difficulties with a real estate loan balance of up to 29% and retail mortgage up to 42%. With Techcombank also playing the role of guarantor of the developers' financial obligations to the homebuyers when the houses are not handed over according to the committed schedule. If homebuyers and developers cannot both pay and activate this feedback loop, the bank will face lots of bad debts.

Valuation impact: Assuming 5% of the total 126,000 billion of real estate loans have difficulty repaying, the bank will face a bad debt of up to 66,000 billion which is 1.7 times the value of the provision. The increased bad debt will pressure provision expenses during the year, leading to a sharp profit decline.

Mitigant: (1) TCB has been maintaining a high NPL coverage ratio (165%), low NPL (0.7%), and building the most robust capital buffer in Vietnam with a CAR of 15.7%. (2) Most of TCB mortgage customer base is high-income segments with good debt repayment capacity and NPL of 0.9%; (3) The lending strategy along the value chain helps the bank to have a 360 view of the customer to help more accurately assess the credit rating of each business, giving its WB and SME NPL at just 1% and 0% respectively.

[C2] CREDIT RISK | POTENTIAL BAD DEBT FROM OFF-BALANCE SHEET ITEMS

Techcombank's potential off-balance sheet debt has increased to a record high of about VND 100,000 billion (Fig.55), which can be very risky if these obligations are unable to be made by the banks' clients.

Valuation impact: When partner businesses cannot meet their debt repayment obligations, the contingent liabilities will become bad debts on the bank's balance sheet, increasing the bank's provision costs.

Mitigant: (1) Techcombank's corporate clients are interconnected throughout the value chain, which enables the bank to thoroughly evaluate clients' financial situations and generate precise risk projections and treatment recommendations; (2) Bad debt recovery at TCB is highly efficient.

[M1] MARKET RISK | MACRO VOLATILITY TO SLOW DOWN ECONOMIC GROWTH RATE

The many complicated developments from the ongoing epidemics, inflation, and geopolitical tensions have negatively affected many trading partners of Vietnam (Fig.52). With such an integrated position in the global value chain, Vietnam may witness slower GDP growth of only 6% (in line with SBV's negative scenario). **Valuation impact:** We estimate a 3% decrease in GDP growth will negatively impact the market credit growth and average NPL, hence decreasing our target price by 1.9%.

Mitigant: (1) Strategic focus on fee income makes Techcombank more resilient to credit conditions; (2) Lower credit risk from high income customer base; (3) Operating a prudent credit growth strategy in which reducing the high-risk corporate bonds for lending more in retail segments.

[M2] MARKET RISK | SURGING COST OF FUNDING FROM RESTRICTIVE POLICIES

Deposit growth sluggishness combines with high credit demand have strained liquidity in the system. Similarly, in an effort to stabilize the economy, the SBV is restricting the money supply by issuing Treasury Bills, leading to higher interbank lending rates.

Valuation impact: Rising its cost of funding by 1% cutbacks the price by 2.7%.

Mitigant: (1) Maintaining Techcombank's existing customers provides opportunities to cross-sell; (2) new customer acquisition through partnerships with key WB clients like Masan and Vingroup; (3) closely monitoring customer satisfaction with the digital banking service and continually improving it.

[O1] OPERATIONAL RISK | UNSUCCESSFUL DIGITAL BANKING STRATEGY

Techcombank's digital banking strategy may underperform in terms of attracting CASA and acquiring new customers, leading to higher costs of funding and reduced fee income.

Valuation impact: 1% decrease in customer growth results in a 0.58% decline in stock price.

Mitigant: (1) Increasing deposit interest rate to attract more term deposits; (2) Shifting from mid-to-long term lending to short-term lending; (3) Most intensive investment in technology and most qualified executive line up in the industry.

APPENDIX NETWORK

A – Glossary
B – Balance Sheet
C – Income Statement
D – Key Financial Metrics
E – Key Assumptions
F – Regulation Ammendment
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W – Case Tan Hoang Minh bond fraud
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APPENDIX A – GLOSSARY

APE	Annual Premium Equivalent
BB	Business Banking
CAR	Capital Adequacy Ratio
CASA	Current Account Savings Account
CETx	Common Equity Tier x. x is either 1 or 2.
CIR	Cost-to-Income Ratio
COP-26	The 26th United Nations Climate Change conference in 2021
GHG	Greenhouse Gases
GICS	Global Industry Classification Standards
HDI	Human Development Index
HSX	Ho Chi Minh Stock Exchange
IB	Investment Banking
IFC	International Finance Corporation
JSCB	Joint-stock Commercial Bank
LDR	Loan-to-Deposit Ratio
LHS	Left Hand Side
LLR	Loan Loss Reserves ratio
Mn	Million
NII	Net Interest Income
NIM	Net Interest Margin ratio
Non-II	Non-Interest Income
NPL	Non-performing Loans ratio
PFS	Personal Financial Services. Or retail banking.
ReCoM	Real Estate, Construction, and Construction Materials.
RHS	Right Hand Side
ROAA	Return on Average Assets ratio
ROAE	Return on Average Equity ratio
RORWA	Return on Risk-weighted Assets ratio
SBV	State Bank of Vietnam
SFMLL	Short-term Funding for Medium- and Long-term Loans ratio
SML	Special Mention Loans ratio. Referring to loans that have overdue from 10 to 90 days or first-time restructured loans.
TCB	Techcombank
TCBS	Techcom Securities Joint-stock Company
Tn	Trillion
TOI	Total Operating Income
Trxn	Transaction
VND	Vietnam Dong. Vietnam's currency
VN-Index	An index tracking stock performance of companies on HSX.
WB	Wholesale Banking

APPENDIX B – BALANCE SHEET

Unit: VND Billion	2020	2021	2022F	2023F	2024F	2025F	2026F
Cash and gold	3,664	3,579	2,777	3,186	3,531	3,979	4,541
Deposit at central bank	10,253	4,909	10,241	11,270	13,307	15,526	18,346
Deposit and loans to other banks	28,995	70,515	60,641	147,610	169,405	203,068	243,422
Held-for-Trading Securities	8,348	5,071	1,128	1,354	2,289	3,444	4,992
Derivatives and other financial assets	-	294	244	244	244	244	244
Loans to customers	275,310	343,606	414,357	474,941	528,033	596,434	681,812
Invested Securities	84,447	97,586	103,500	63,665	81,620	100,413	119,477
Long-term investments and Capital Contribution	12	13	13	13	13	13	13
Fixed Assets	4,613	7,225	7,298	8,028	8,831	9,714	10,685
Invested Real Estate	1,125	1,089	1,053	1,021	990	960	932
Other assets	22,836	34,844	72,121	83,836	84,651	86,341	88,030
TOTAL ASSETS	**439,603**	**568,729**	**673,373**	**795,168**	**892,913**	**1,020,135**	**1,172,493**
Borrowings from Govt and central bank	-	1	-	-	-	-	-
Deposits and borrowings from other banks	47,485	112,459	192,545	220,918	225,311	231,800	239,354
Deposits from customers	277,459	314,753	304,412	365,135	424,051	502,127	598,208
Derivatives and other fin. liabilities	267	-	-	155	57	86	131
Other borrowed and entrusted funds	-	-	-	-	-	-	-
Valuable papers issued	27,900	33,680	40,503	53,009	58,761	66,206	75,554
Other liabilities	11,878	14,796	22,592	22,400	25,463	29,680	32,845
TOTAL LIABILITIES	**364,988**	**475,687**	**560,052**	**661,616**	**733,643**	**829,900**	**946,092**
Equities	35,526	35,586	35,649	35,649	35,649	35,649	35,649
Funds	6,790	9,156	9,151	10,919	12,789	14,439	17,012
Difference from asset revaluation	-	-	-	-	-	-	-
Adjustment for foreign currency translation	-	-	-	-	-	-	-
Undistributed profit	31,816	47,453	67,674	86,137	109,985	139,299	172,893
Interest Minorities	484	847	847	847	847	847	847
TOTAL SHAREHOLDER'S EQUITY	**74,615**	**93,042**	**113,321**	**133,552**	**159,270**	**190,235**	**226,401**

APPENDIX C – INCOME STATEMENT

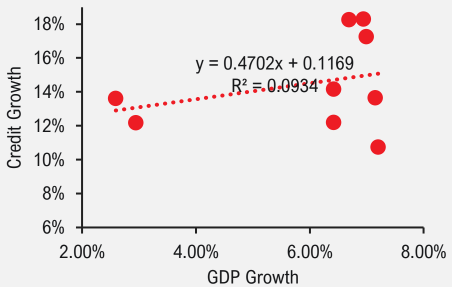
Unit: VND Billion, %	2020	2021	2022F	2023F	2024F	2025F	2026F
Net Interest Income	**18,751**	**26,699**	**28,073**	**29,829**	**36,679**	**42,339**	**49,068**
Non Interest Income	**8,291**	**10,378**	**11,978**	**13,504**	**15,686**	**18,553**	**22,277**
Total operating income	**27,043**	**37,076**	**40,051**	**43,333**	**52,365**	**60,892**	**71,345**
Operating Cost	- 8,631	- 11,173	- 11,905	- 12,473	- 14,787	- 17,143	- 20,041
Operating Profit Before Provision for Credit Losses	**18,411**	**25,903**	**28,146**	**30,860**	**37,578**	**43,749**	**51,304**
Provision for credit losses	- 2,611	- 2,665	- 2,422	- 5,118	- 4,975	- 4,590	- 5,642
Profit before tax	**15,800**	**23,238**	**25,724**	**25,742**	**32,602**	**39,159**	**45,662**
Tax expense	- 3,218	- 4,823	- 5,145	- 5,148	- 6,520	- 7,832	- 9,132
% tax rate	20%	21%	20%	20%	20%	20%	20%
Profit after tax	12,583	18,415	20,579	20,593	26,082	31,328	36,530
Minority interest	258	363	363	363	363	363	363
Attributable to parent company	**12,325**	**18,052**	**20,216**	**20,230**	**25,719**	**30,964**	**36,167**
EPS	3,472	5,077	5,676	5,675	7,214	8,686	10,145
% EPS growth	22%	46%	12%	0%	27%	20%	17%
BVPS	21,017	26,168	31,816	37,462	44,677	53,363	63,508
% BVPS growth	20%	25%	22%	18%	19%	19%	19%

APPENDIX D - KEY FINANCIAL METRICS

Unit: %	2020	2021	2022F	2023F	2024F	2025F	2026F
Profitability							
Yield on earning assets	7.55%	7.59%	7.88%	7.96%	7.98%	7.85%	7.68%
Cost of interest-bearing liabilities	3.09%	2.16%	3.17%	3.69%	3.51%	3.40%	3.26%
Net interest spread	4.46%	5.42%	4.71%	4.27%	4.47%	4.45%	4.42%
Return on free fund	0.42%	0.28%	0.30%	0.31%	0.38%	0.44%	0.47%
NIM	4.88%	5.70%	5.00%	4.58%	4.85%	4.89%	4.89%
Operating income/Total assets	6.57%	7.35%	6.45%	5.90%	6.20%	6.37%	6.51%
ROE	18.03%	21.53%	19.59%	16.39%	17.57%	17.72%	17.36%
ROA	2.99%	3.58%	3.26%	2.76%	3.05%	3.24%	3.30%
RORWA	3.32%	3.97%	3.36%	2.81%	3.21%	3.38%	3.42%
Efficiency							
CIR (Cost-to-Income) ratio	31.92%	30.14%	29.72%	28.78%	28.24%	28.15%	28.09%
Cost-to-Asset	2.10%	2.22%	1.92%	1.70%	1.75%	1.79%	1.83%
Asset Quality							
CASA Ratio	46.15%	50.47%	46.63%	47.10%	49.29%	52.61%	56.24%
Provisions/Loss loans (LLR)	170.96%	162.86%	161.84%	123.44%	129.96%	146.31%	195.64%
Provision expense/Operating profit	9.66%	7.19%	6.05%	11.81%	9.50%	7.54%	7.91%
Overdue debt ratio (G2-5)	1.12%	1.28%	1.35%	2.76%	2.25%	1.74%	1.23%
NPL ratio (G3-5)	0.47%	0.66%	0.65%	1.41%	1.12%	0.82%	0.53%
Write-off/Gross customer loan	1.21%	0.18%	0.40%	0.20%	1.00%	0.80%	0.80%
Capital adequacy							
Equity/Assets	18.67%	18.22%	16.38%	17.82%	18.68%	19.38%	19.94%
Liabilities-to-Equity	16.97%	16.36%	16.83%	16.80%	17.84%	18.65%	19.31%

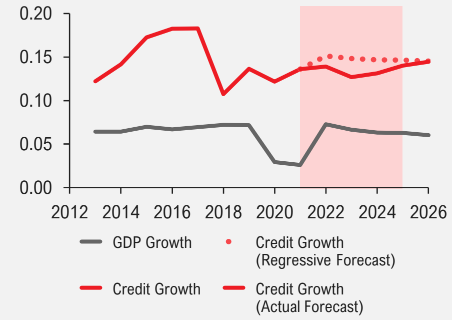
APPENDIX E – KEY ASUMPTIONS

Fig.E1: Linear Regression Analysis (Credit Growth and GDP Growth), 2013-21



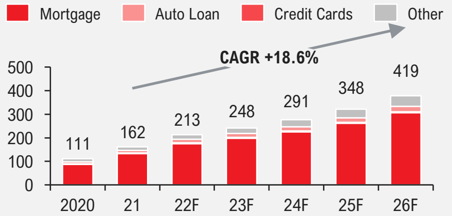
Source: GSO, World Bank, IMF, Team analysis

Fig.E2: Linear Regression Analysis (Credit Growth and GDP Growth), 2013-21



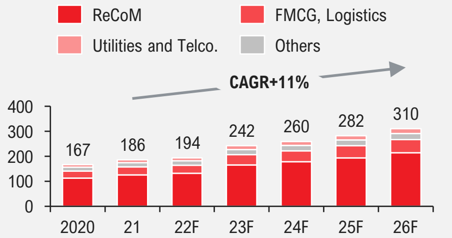
Source: GSO, World Bank, IMF, Team analysis

Fig.E3: Retail Loan Mix [VND Billion]



Source: TCB, Team analysis

Fig.E4: Corporate Loan Mix [VND Billion]



Source: TCB, Team analysis

E.1 – ASSETS GROWTH ASSUMPTIONS

a. Vietnam's Credit Growth

GDP is one of the best indicators to look into the health of an economy. Increasing GDP indicates that the economy is expanding, where businesses will demand more capital to expand their operations and consumers will borrow more to spend, fueling credit growth. Credit growth, conversely, acts as a key driver for economic growth. In recognition of the tie between GDP growth and credit growth in Vietnam, we decided to run a linear regression analysis for these 2 indicators based on historical data (2013-2021) to test the correlation. From this, we expect to use the linear model to anticipate country and Techcombank credit growth.

Under stable economic conditions, we expect national credit to grow with a CAGR of 14.68% supported by a consistent 6.5% GDP growth (similar to the forecast by World Bank, IMF, and Fitch Solution). In reality, the macro economy is highly volatile and the Vietnam government is enacting many stabilization policies and reducing credit granted for high-risk industries (such as real estate) to control inflation and money supply. For that, we will adjust the credit growth to be a little bit lower in 2022-2024.

b. Techcombank's Credit Growth: Being the strongest bank in terms of capital buffer, high provision coverage, and diversified loan book. TCB is often granted a higher credit quota than the country's average. As a result, based on the country's credit growth, we estimate TCB's to grow at a faster rate of CAGR 13.05% (2021-2026F).

c. Interest-earning asset growth: We estimated customer loans and corporate bond investments based on credit growth. The balance at SBV is estimated to be sustained 2.95%. The remaining asset accounts are forecasted to change based on change in customer loans.

Deviations to our forecast: (1) Economy grows less than expected; (2) Interest rate increases faster than expected leading to customers' hesitation in purchasing lending products and low credit growth ; (3) New regulations and specific industrial changes take down customer loans' growth.

E.2 – LIABILITIES GROWTH ASSUMPTIONS

a. Techcombank CASA growth

Similarly to deposit buildup, we conduct 2 regressions related to GDP per capita: (1) GDP per capita and the number of active retail customers, (2) GDP per capita and CASA per active customer of Techcombank; from which we see the relationship between GDP per capita and demand for banking services. As income increases, consumers have more money for saving and investment activities along with higher demand for more financial products. Moreover, the amount of deposit money at banks will increase - with positive economic growth expectation. This means that CASA will grow stronger to serve the higher daily payment needs of the economy. We assume the GDP per capita of Vietnam will rise by 9.5% CAGR (2021-2026F), increasing the number of Techcombank's active retail customers and CASA per retail customer by 11.27% and 6.67% CAGR respectively. We also expect Corporate CASA to grow with a 5-y CAGR of 16.19%, as a result of an attractive pricing scheme and a multi-solution system backed by digital strategy to acquire new and maintain current clients.

b. Interest-bearing liabilities assumption

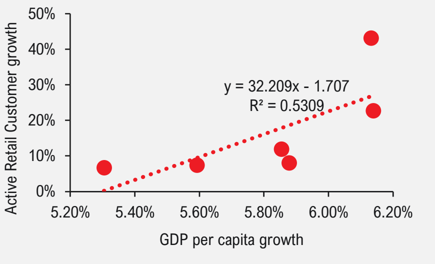
Except for separate estimations for customer deposits, other asset accounts are estimated to change as an independent variables based on % of customer loans.

Deviations to our forecast: (1) Inflation speeds up and forces businesses to withdraw CASA accounts to fund their operations and other investments; (2) Customers' income does not grow as expected; (3) Fierce technological competition from peers slow down the Techcombank's customer acquisition.

E.3 - NET INTEREST INCOME ASSUMPTIONS

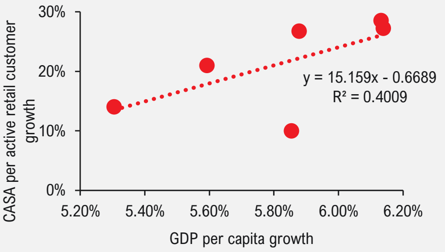
We estimate net interest income by calculating the spread between interest income from interest-earning assets and interest expense paid on interest-bearing liabilities.

Fig.E5: Number of retail active customers build-up regression



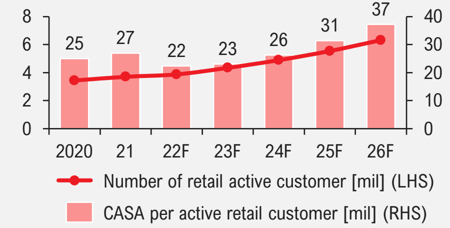
Source: TCB, GSO, Team analysis

Fig.E6: CASA per active retail customer build-up



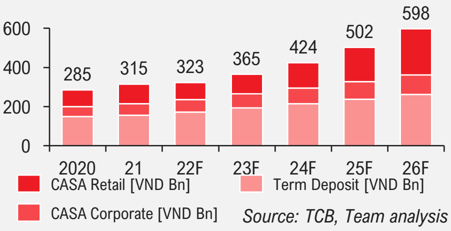
Source: TCB, GSO, Team analysis

Fig.E7: CASA per active retail customer build-up



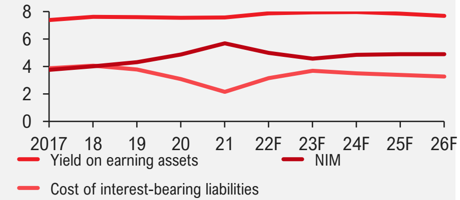
Source: TCB, Team analysis

Fig.E8: Term Deposit Breakdown



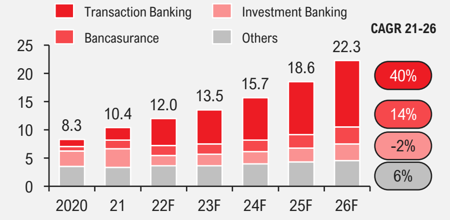
Source: TCB, Team analysis

Fig.E9: Net Interest Margin Build-up



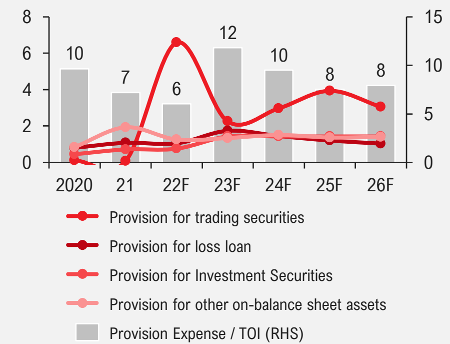
Source: TCB, Team analysis

Fig.E10: Non-Interest Income Build-up



Source: TCB, Team analysis

Fig.E11: Provision Expense Build-up



Source: TCB, Team analysis

Except for interest-earning assets and interest-bearing liabilities mentioned in (Fig. E1) and (Fig. E2), we still need to estimate asset yield and cost of funding.

a. Asset Yield: Despite the lending interest rate stabilization from the government to support economic recovery, we anticipate that Techcombank can maintain a stable asset yield at around 7.68% until 2026F thanks to its shift to retail segments and expansion in margin lending through TCBS with higher interest returns.

b. Cost of Fund: We expect Techcombank's cost of funding will increase along with the industry trendline as a result of global interest hikes. However, CASA will be an effective mitigant that helps Techcombank dilute the pressure on the cost of funding. We assume the cost of funding will be sustained at 3.26% until 2026F. Lastly, the net interest margin is estimated by dividing the net interest income by the average interest-earning assets.

Deviations to our forecast: (1) NIM can be compressed as a result of lower lending interest rate and higher deposit interest rate for competition; (2) Customers' lending demand fluctuates under volatile interest rates; (3) Surging cost of funding due to disappointing CASA.

E.4 – NET-FEE INCOME ASSUMPTIONS

Given the relatively low penetration of insurance, an underdeveloped bond market, and increasing demand for banking services, it is reasonable to expect that TCB's Non-II will continue to soar. In fact, by investment in technology, Techcombank has successfully capitalized on new growth opportunities in the market and boost its customer base. Therefore, we expect the three main non-interest income generating segments for Techcombank, namely securities brokerage (including bonds and stocks), insurance and payment services, to continue to grow with respectively CAGR of 3.7%, 14.0% and 32.5% for the period of 2021-2026F.

Deviations to our forecast: (1) The bond market needs more time to recover, causing IB earnings to be adversely affected; (2) The customer size increased slower than expected, causing the bank to lose cross-selling opportunities for products and services.

E.5 – OPERATING COSTS ASSUMPTIONS

The cost-to-income ratio (CIR) is an important metric used to evaluate a bank's efficiency. Techcombank has been able to maintain a CIR at 30% over the past few years thanks to its focus on technology and efficient staff. The bank has invested heavily in technology, which automates many processes and reduces costs. In addition, Techcombank was able to attract and retain talented employees who helped reduce operating costs. Going forward, we believe that Techcombank's CIR will remain at 28.09% in 2026F. This is because the bank is well-positioned to benefit from the continued growth of Vietnam's economy and the growing demand for banking services. In addition, Techcombank is likely to continue to invest in technology and human resources to help Techcombank maintain cost-effective operations.

Deviations to our forecast: (1) The bank must increase the remuneration to keep employees under the competitive pressure of human resources in the market; (2) Technological innovations of the bank require more high-quality human resources than expected, leading to a sharp increase in staff costs.

E.6 – PROVISION EXPENSES ASSUMPTIONS

We forecast the cost of provision for credit risk by summing up the general provision, the specific provision, and the provision for investment securities/loans to credit institutions. other during the year. In other words, Provision expense = Target Reserve – Year-beginning reserve – Write-offs for the year.

Thus, in the current context when the bad debt ratio increases, this may put pressure on the provisioning of the banking industry in general and techcombank in particular, and erode the bank's profit after tax. mother goods. Thanks to Techcombank's proactive provision of high provision over the years (Provision/Loss loan), and decisiveness in writing off bad debts, in the future the ratio of provision expenses to total income will not fluctuate too much. Therefore, we assume that the provision expense/TOI ratio will reach about 11.81% in 2022 and gradually decrease to 7.91% in 2026F.

Deviation to our forecast: (1) In an unstable economic situation, customers may be unable to pay their debt fiercely increases bad debt and provision expenses.; (2) Current financial difficulties of real estate partners can put tremendous pressure on the bank's credit provision costs

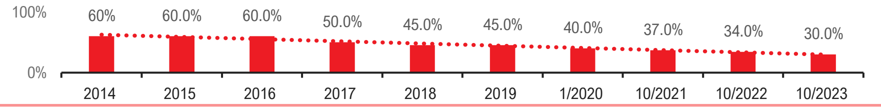
APPENDIX F – REGULATION AMENDING AND SUPPLEMENTING

Decree 65/2022/ND-CP :

Limiting bond proceeds use purpose	> Implementation of programs > Investment projects > Restructuring its principal indebtedness
Optional Early Redemption and Amendments to the T&Cs	The new Decree permits bondholders to request early redemption if 2 of these happen: 1) The issuer violates the laws on corporate bond offering and trading OR the terms of the private placement 2) The breach cannot be rectified or the reification is not approved by 65% of the bondholders
Scope of Eligible Investors	VND 100 million and a multiple of VND 100 million
Timeline for bond issuance	Within 30 days
Timeline for the offering	Within 6 months
Post-issuance disclosure	5 business days from completion
Cancellation of the registration	> Due to maturity; Convert, buy back before maturity > Withdrawal of business registration / establishment license > Detect fake profiles; Dissolution, bankruptcy, division/separation

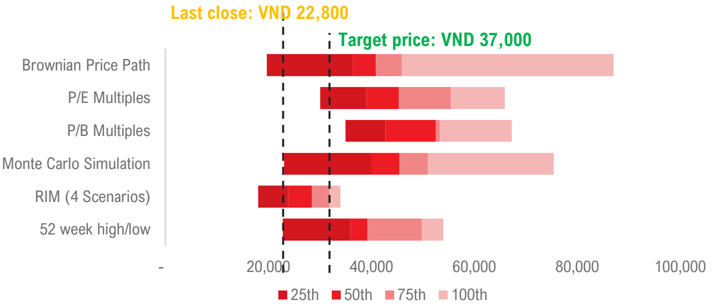
Circular 23/2020/TT-NHNN: Increase the risk factor for loans for real estate investments and developers from **150% to 200%.**

Circular 22/2019/TT-NHNN: The roadmap to reduce the ratio of short-term funds for medium and long-term loans:



APPENDIX G - VALUATION OVERVIEW

Football Field Summary



	Q1	Median	Q3
52 week high/low	36,000	39,250	49,813
RIM (4 Scenarios)	23,775	28,450	31,900
Monte Carlo Simulation	40,050	45,502	50,996
P/B Multiples	42,772	52,488	53,308
P/E Multiples	39,055	45,386	55,436
Brownian Price Path	36,417	40,893	45,932
Average	**36,345**	**41,995**	**47,897**

Valuation results show that Techcombank's stock price is likely to fluctuate in the price range of 36,300 - 47,900 in the next year, which is in line with our analysis.

APPENDIX H – RESIDUAL INCOME MODEL

Residual Income - Base Case	2021	2022F	2023F	2024F	2025F	2026F
Total stockholder's equity - BOP	74,615	93,042	113,321	133,552	159,270	190,235
Plus: Net income to common	18,052	20,216	20,230	25,719	30,964	36,167
Less: Dividends	64	-	-	-	-	-
Total stockholders' equity - EOP	**93,042**	**113,321**	**133,552**	**159,270**	**190,235**	**226,401**
Equity Charge		16,826	20,128	23,875	28,496	33,970
Net income to common		20,216	20,230	25,719	30,964	36,167
Residual income		**3,391**	**102**	**1,844**	**2,468**	**2,197**
Discount factor		0.98x	0.84x	0.72x	0.62x	0.54x
PV of RI		**3,321**	**86**	**1,335**	**1,537**	**1,176**

Residual Income Model - Base Case	
Book value of equity (last historical year)	93,042
PV of RI	7,454
PV of Terminal Value	9,102
Total Equity Value	**109,598**
Outstanding Shares	3,517
Target Price	**31,200**
Current Price	22,800
Upside to last close	**37%**

Projections are carried out over a 5-year range assuming that after which Techcombank will shift to the maturity stage of its enterprise life cycle and to take into account the cyclicality of the banking industry. This allows us to better manage the parameters and assumptions for each scenario to ensure accuracy in the context of volatile macro.

Cost of Equity - Base Case	2021	2022F	2023F	2024F	2025F	2026F
Rf	2.30%	5.00%	5.00%	5.00%	5.00%	5.00%
Beta	1.14x	1.12x	1.13x	1.08x	1.05x	1.03x
ERP	8.21%	10.06%	10.06%	10.06%	10.06%	10.06%
Cost of Equity	11.66%	16.31%	16.31%	16.31%	16.31%	16.31%

Terminal Growth Rate - Base case	Weighted	Value
Long-term GDP growth rate	33,33%	5.80%
Long-run inflation rate	33,33%	0.64%
Long-run population growth rate	33,33%	3.29%
Terminal Growth Rate		**3.00%**

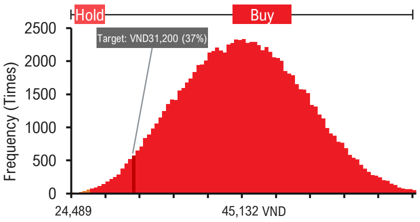
We estimate **the cost of equity** using the Capital Asset Pricing Model (CAPM) with 3 key assumptions: (1) Volatile macroeconomic conditions result in the heightened market risk premium, reaching 10.06%; (2) Hawkish interest rate environment pushing the risk-free rate (proxy by Vietnam Government Bond Yield 10Y) to 5.00%; (3) Underleveraged compared to industry peers, Techcombank is expected to have a lower beta at 1.12. As a result, its Cost of Equity will be 16.31% for the two-stage forecast.

The terminal growth rate is required to determine the terminal value of TCB's residual income during the terminus period. Based on our research, we estimate TCB's terminal growth rate at 3% under the following assumptions:

1. Long-term GDP Growth: According to the consensus expectations of World Bank, IMF, Fitch Solution and our econometric model results, we anticipate that long-term GDP will be approximately 5,8%
2. Long-run Inflation: According to Fitch Solution's analysis, inflation is expected to remain at 3.29% in the long run.
3. Vietnam's Population growth: Vietnam's population is forecast to grow at 0.64% according to Fitch Solution.

APPENDIX I – SENSITIVY ANALYSIS

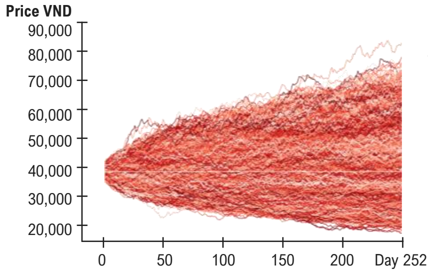
I.1 – Monte Carlo Forecast Simulation



We flex 5 key variables on the Residual Income Model's Share price of Techcombank, with a Monte Carlo simulation analysis. The result yields a 97.5% BUY probability, and 0% SELL probability

Variables	Distribution Type	Min	Likeliest	Max	Mean	SD
GDP Growth 2023	Triangular	-3.0%	6.0%	9.0%		
NIM, average 22-26F	Triangular	3.0%	5.0%	6.0%		
Non-II CAGR 22-26F	Normal				27.0%	2.7%
CIR, average 22-26F	Triangular	27.0%	30.0%	35.0%		
Credit Cost/TOI, average 22-26F	Triangular	4.0%	10.0%	20.0%		

I.2 – Brownian Geometric Motion Simulation



Via Python, we simulate Brownian Geometric Motion of TCB share price in the next 252 trading days (starting 05/09/2022). With the assumption of each day is a 100,000-time random walk based on the stock historical value since 05/2018 – 09/2022. The result holds a 95% BUY potential (based on our ratings).

I.3 – Terminal Cost of Equity and Terminal Growth rate

Terminal Growth Rate [%]

Terminal Cost of Equity [%]

	2.0%	2.5%	3.0%	3.5%	4.0%
13.3%	39%	39%	40%	41%	42%
14.3%	37%	38%	39%	39%	40%
15.3%	36%	37%	38%	38%	39%
16.3%	36%	36%	37%	37%	38%
17.3%	35%	36%	36%	36%	37%
18.3%	35%	35%	35%	36%	36%
19.3%	34%	34%	35%	35%	35%

Sensitivity analysis results for Termnal Value show that in the case of more positive growth rate, a 0.5% change in terminal growth rate will result in a 1% upside change, on the other hand if the interest rate environment continues to fluctuate. A change in risk appetite or behavior, leading to a 1% change in cost of equity will lead to a -1% change in upside.

I.4 – 5-Y IRR Price to Earning Exit

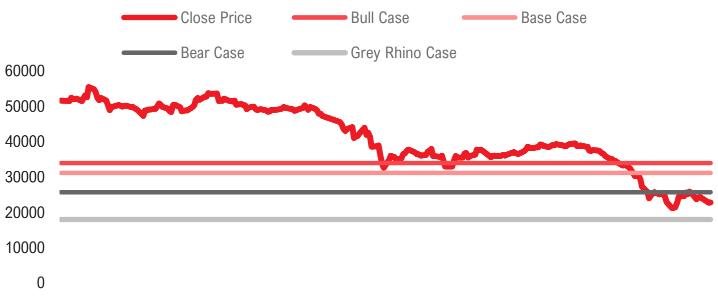
P/B 2026 Exit [x]

Book Value 5y-CAGR [%]

	0.4x	0.9x	1.4x	1.9x	2.4x
-11%	-27%	-11%	0%	7%	14%
-1%	-15%	5%	17%	26%	34%
9%	-1%	21%	35%	46%	54%
19%	13%	38%	54%	66%	76%
29%	27%	56%	74%	88%	99%
39%	42%	74%	94%	110%	122%
49%	58%	93%	116%	133%	147%

The results of IRR sensitivity analysis for P/B Exit Multiple show that in case the market reacts positively to TCB stock price, leading to a change in average P/B by 0.5 units, it will change IRR 19%, on the other hand, if the Book Value CAGR increases on average by 10%, it will change the IRR by 19%.

I.5 – Scenario share price level



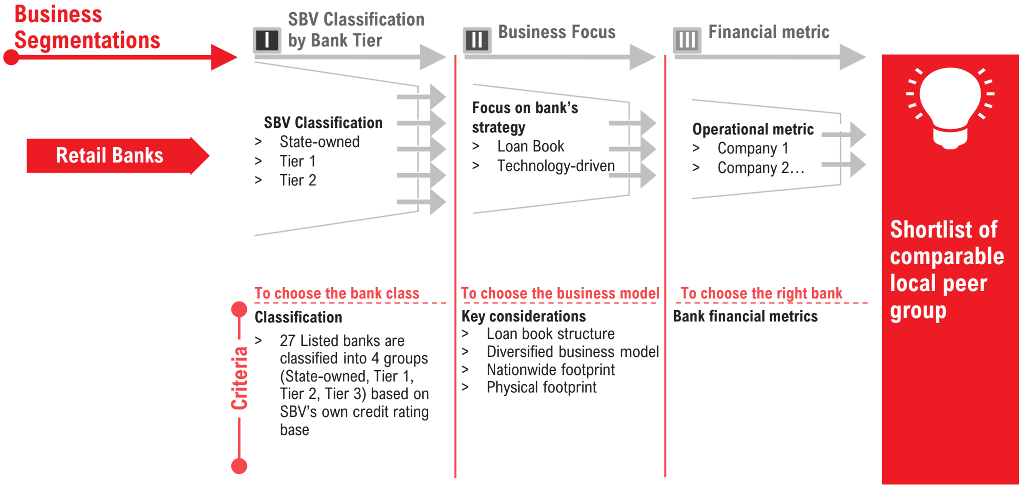
I.6 – Key Risk Analysis

If a bank run happens as a result of relating to violating bond issue partners, customer deposits will drop sharply by 15% to the prior quarter and remain until the end of the year. Under a severe liquidity crunch, the bank must go for a loan in the interbank market, leading to a higher cost of funding in the period. Besides, the bank's credit will not grow under a low level of customer deposits in the few following years.

Our stress test suggests the target price decline to VND25,700, a 21.4% downside from the model's base case. From that, we issued a hold recommendation for Techcombank with a target price of VND25,700, an 12.7% upside from the current level of VND22,500 on November 11, 2022.

APPENDIX J – RELATIVE VALUATION

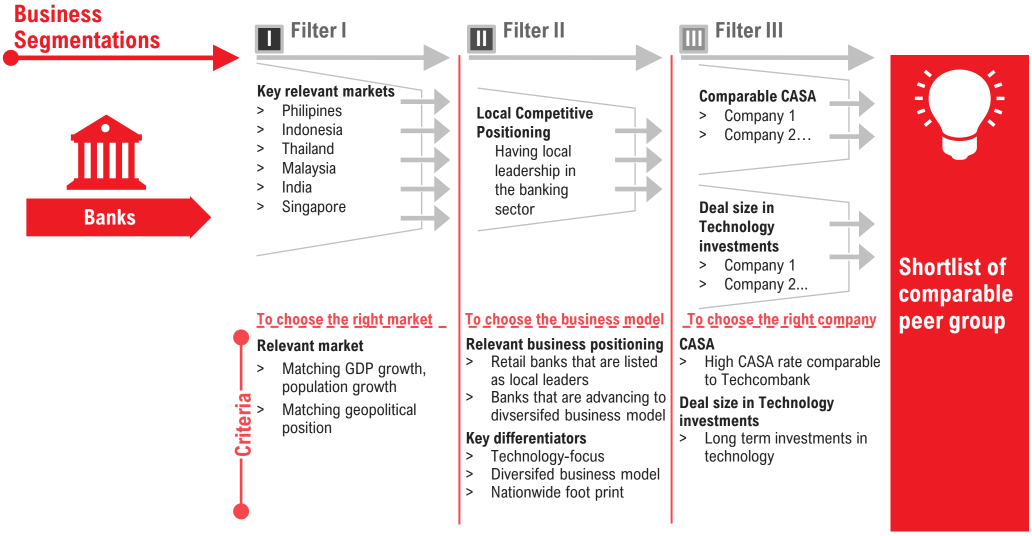
Bank	P/B (100%)	P/E (0%)
TCB	**1.49x**	**8.89x**
VCB	3.57x	19.63x
ACB	1.73x	7.70x
MBB	1.34x	7.28x
VPB	1.47x	7.67x
BID	2.20x	21.33x
CTG	1.33x	11.18x
VIB	2.00x	8.00x
TPB	1.60x	7.89x
HDB	1.65x	8.91x
Industry Multiple		
Q1	1.35x	6.89x
Median	1.65x	8.00x
Q3	1.68x	9.78x
Implied Multiples	**1.35x**	**6.89x**
Price [VND]	42,772	39,055
Impied Price [VND]	42,800	



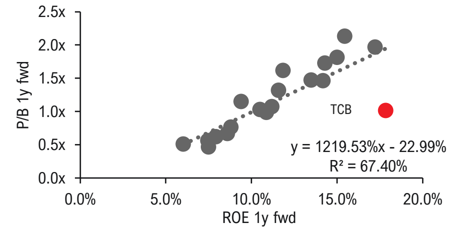
APPENDIX K – REGRESSION VALUATION MODEL

K.1 – Peer Selection Methodology

Comparable Bank	Country	ROE Fwd	P/B Fwd	EPS growth Fwd	P/E Fwd
TCB Target	**Vietnam**	**17.8%**	**1.1x**	**1.8%**	**6.5x**
SBIN	India	14.2%	1.5x	57.9%	10.6x
AXSB	India	15.0%	1.8x	90.3%	14.0x
IIB	India	14.3%	1.7x	55.1%	12.7x
BDMN	Indonesia	7.5%	0.6x	56.1%	8.3x
BMRI	Indonesia	17.2%	2.0x	66.9%	11.6x
BBRI	Indonesia	15.4%	2.1x	72.9%	14.2x
MAY	Malaysia	9.4%	1.1x	20.8%	12.1x
PBK	Malaysia	11.8%	1.6x	16.1%	14.0x
DBS	Singapore	13.5%	1.5x	43.1%	11.1x
OCBC	Singapore	10.9%	1.0x	33.8%	9.3x
UOB	Singapore	10.5%	1.0x	41.4%	10.1x
BBL	Thailand	6.0%	0.5x	54.3%	8.5x
BANK	Thailand	8.6%	0.7x	29.3%	8.0x
KTB	Thailand	7.9%	0.6x	28.3%	7.9x
SCB	Thailand	8.8%	0.8x	30.7%	8.9x
BDO	Philippines	11.2%	1.1x	52.0%	10.1x
BPI	Philippines	11.6%	1.3x	10.4%	12.2x
SECB	Philippines	7.5%	0.5x	-7.0%	6.3x



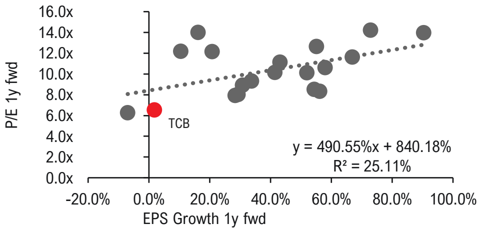
K.2 – P/B vervus ROE linear regression (TCB vs. Southeast Asia and India bank peers)



P/B fwd	Coef.	St.Err	t-value	p-value	[95% Conf Interval]		Sig
ROE fwd	12.195	2.057	5.930	0.000	7.855	16.536	***
Constant	-0.23	0.247	-0.930	0.366	-0.752	0.292	
Mean dependent var			1.177	SD dependent var			0.516
R-squared			67.4%	Number of obs			19
F-test			35.141	Prob > F			0.000
Akaike crit. (AIC)			10.421	Bayesian crit. (BIC)			12.310

**** p<.01, ** p<.05, * p<.1*

K.2 – P/E vervus EPS Growth linear regression (TCB vs. Southeast Asia and India bank peers)



P/E fwd	Coef.	St.Err	t-value	p-value	[95% Conf Interval]		Sig
EPS Growth fwd	4.905	2.055	2.39	0.029	0.57	9.241	**
Constant	8.402	0.958	8.770	0.000	6.664	10.423	***
Mean dependent var			10.349	SD dependent var			2.459
R-squared			25.1%	Number of obs			19
F-test			5.699	Prob > F			0.029
Akaike crit. (AIC)			85.588	Bayesian crit. (BIC)			87.477

**** p<.01, ** p<.05, * p<.1*

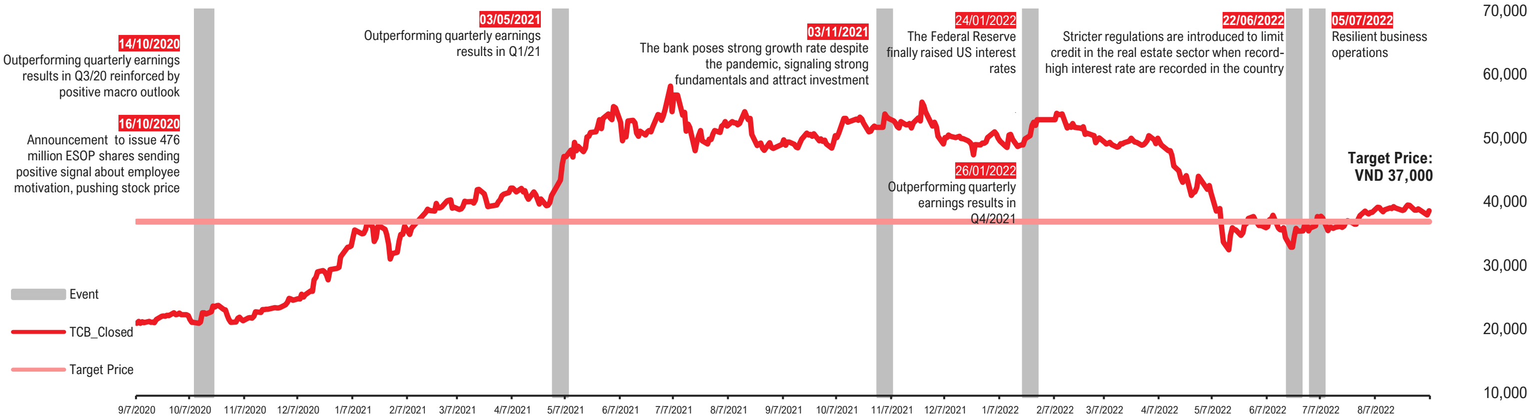
APPENDIX L – SCENARIO ANALYSIS

We conduct other 3 forecasting scenarios of Bull Case, Bear Case, and Grey Rhino Case to identify potential risks and opportunities in different [1] Liquidity [2] Credit and [3] Competition conditions. The main indicators for deviations in the result include:

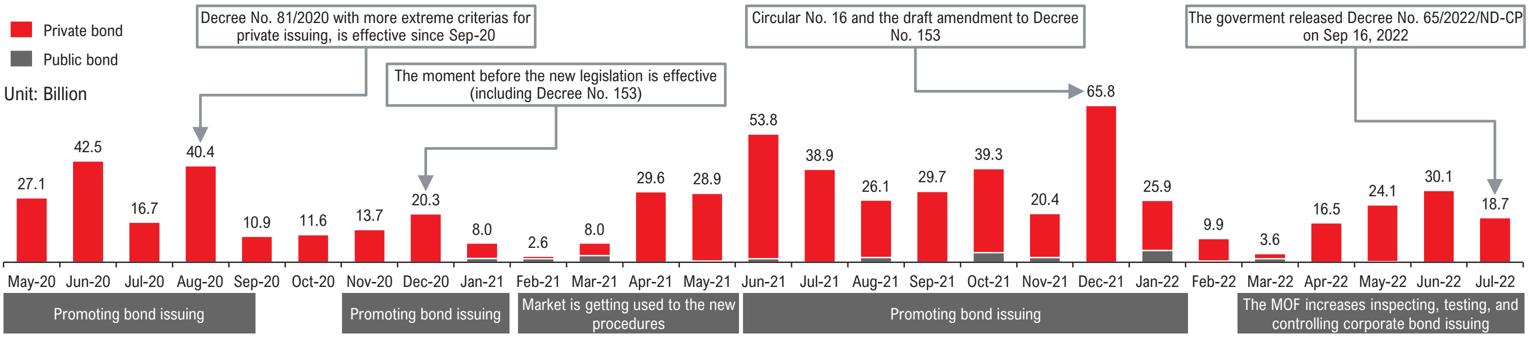
Credit Growth	2022F	2023F	2024F	2025F	2026F
Vietnam's Credit Growth					
Bull Case	13.89%	12.69%	13.11%	14.02%	14.47%
Base Case	13.89%	12.69%	13.11%	14.02%	14.47%
Bear Case	13.89%	11.76%	12.19%	13.10%	13.54%
Grey Rhino Case	13.89%	10.84%	11.27%	12.17%	12.62%
TCB's Credit Growth					
Bull Case	11.70%	11.11%	12.43%	14.30%	15.79%
Base Case	11.70%	11.11%	12.43%	14.30%	15.79%
Bear Case	11.70%	10.30%	11.55%	13.35%	14.78%
Grey Rhino Case	11.70%	9.49%	10.68%	12.41%	13.77%
Deposit Growth	**2022F**	**2023F**	**2024F**	**2025F**	**2026F**
CASA Ratio					
Bull Case	46.63%	47.10%	49.63%	53.68%	58.47%
Base Case	46.63%	47.10%	49.29%	52.61%	56.24%
Bear Case	46.63%	46.84%	48.49%	50.94%	53.36%
Grey Rhino Case	46.63%	44.80%	45.02%	46.58%	48.79%

Earning Performance	2022F	2023F	2024F	2025F	2026F
Net Interest Margin					
Bull Case	5.01%	4.85%	5.11%	5.11%	5.04%
Base Case	5.01%	4.58%	4.85%	4.89%	4.90%
Bear Case	5.01%	4.27%	4.56%	4.63%	4.68%
Grey Rhino Case	5.01%	3.97%	4.33%	4.43%	4.48%
Net Fee Income Growth					
Bull Case	40.55%	18.54%	20.79%	23.35%	25.51%
Base Case	40.55%	18.54%	20.30%	22.35%	23.98%
Bear Case	40.55%	13.92%	15.45%	17.07%	18.24%
Grey Rhino Case	40.55%	1.64%	14.25%	14.47%	14.53%
Efficiency	**2022F**	**2023F**	**2024F**	**2025F**	**2026F**
Cost to Income Ratio					
Bull Case	30.14%	29.16%	28.87%	28.85%	28.63%
Base Case	30.14%	29.87%	29.55%	29.55%	29.38%
Bear Case	30.14%	30.95%	30.82%	31.13%	31.30%
Grey Rhino Case	30.14%	32.61%	32.57%	33.21%	33.80%
Asset Quality	**2022F**	**2023F**	**2024F**	**2025F**	**2026F**
Provision expense/TOI					
Bull Case	6.03%	11.22%	8.70%	6.86%	7.12%
Base Case	6.03%	11.69%	9.37%	7.42%	7.78%
Bear Case	6.03%	12.23%	9.77%	7.78%	8.26%
Grey Rhino Case	6.03%	28.51%	11.98%	10.12%	11.44%

APPENDIX M – SHARE PRICE HISTORY

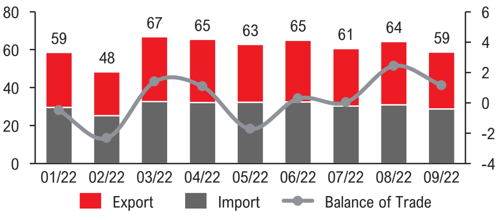


APPENDIX N – CORPORATE BOND ISSUING VALUE

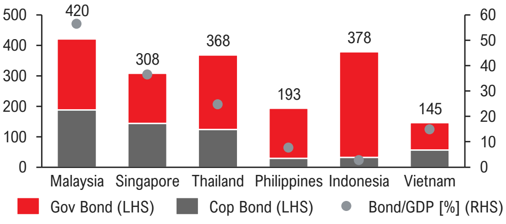


APPENDIX O – VIETNAM ECONOMY SNAPSHOT IN SIX CHARTS

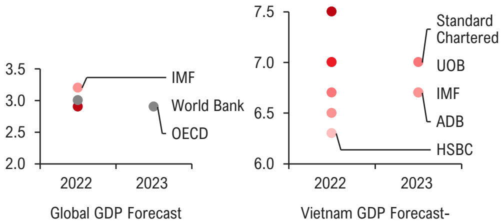
1 Export-Import and Balance of Trade [VND Billion]



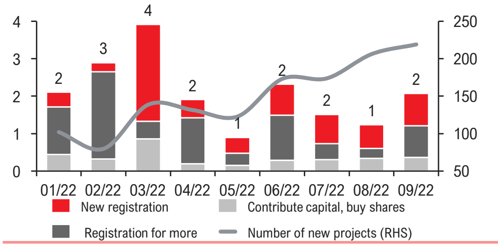
2 Bond's market by country, 2022 [LHS:$Bn, RHS:%]



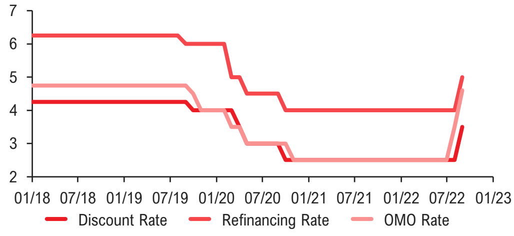
3 GDP growth yoy forecast by Institution [%]



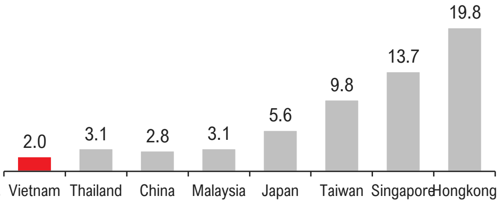
4 Vietnam FDI Status [LHS: VND Trillion, RHS:#]



5 Regulatory Interest Rate [%]



6 Market penetration of life insurance [%GDP]



APPENDIX P – EVALUATION OF TECHCOMBANK CORPORATE GOVERNANCE

Fig.P1: Illustration of Techcombank's Executive Background and key experience hightlights

Dr Jens Lottner
Chief Executive Officer

- Doctorate in Economics from Dresden University of Technology (**Germany**)
- Former CFO - Senior Executive Vice President of Siam Commercial Bank (**Thailand**)
- Former Senior Partner and Managing Director of the BCG and McKinsey's financial services practice (**SEA**)

Mr Phung Quang Hung
Deputy CEO, Chief Business Banking

- Master degree in Business from Washington State Univ, (**USA**), IT diploma from Hanoi Univ. of Science and Technology (**Vietnam**)
- Business Partner at National Australia Bank, London, (the **UK**)

Mr Siva R.Krishnanr
Deputy CEO, Chief Risk Officer

- Master's degree in Commerce from Univ. of Madras (**India**)
- Head Risk Mngt. & Digital Lending of Siam Commercial Bank (**Thailand**)
- Senior Partner and Managing Director of the BCG and McKinsey (**SEA**)

Mr Phan Thanh Son
Deputy CEO, Chief Global Transaction Services Officer

- Master's degree in Economics from the National Economics University, Hanoi (**Vietnam**)
- Former Deputy Chief Executive Officer at TienPhong Bank (**Vietnam**)

Mr Pham Quang Thang
Deputy CEO, Chief Corporate Affairs Officer

- Master's degree in International Accounting from Swinburne Univ. of Technology (**Australia**)
- 20 years of Experience in Techcombank

Mr Chu Hong Ngoc
Chief Operations Officer

- Bachelor of Telecommunication Engineering, Uni. of South Australia (**Australia**)
- Former COO and Project Manager at VP Bank (**Vietnam**)

Mr Nguyen Xuan Minh
Head of Investment Banking Division

- Master's degree in Applied Finance and Investment, FINSIA (**Australia**)
- CEO of Vietnam Asset Management (**Vietnam**)
- Senior Vice President of Franklin Templeton Investments (**Singapore**)

Mr Darren Buckley
Chief Retail Banking Group

- Bachelor of Business Finance and Economics, Dresden University of East Anglia (the **UK**)
- Senior leadership positions in Citi **New York, Singapore, Tokyo, Bangkok** and **Shanghai**

Ms Nikki Dang My Quyen
Chief Human Resources

- Bachelor of Business Administration, California State University, Fullerton (**US**)
- EVP-cum-CHOR and director at Hami Bank & Bank of California (**US**)
- Resolution & Receivership Specialist at FDIC (**US**)

Board of Executives with Experience in

17+

Markets

Board of Executives with STEM Background

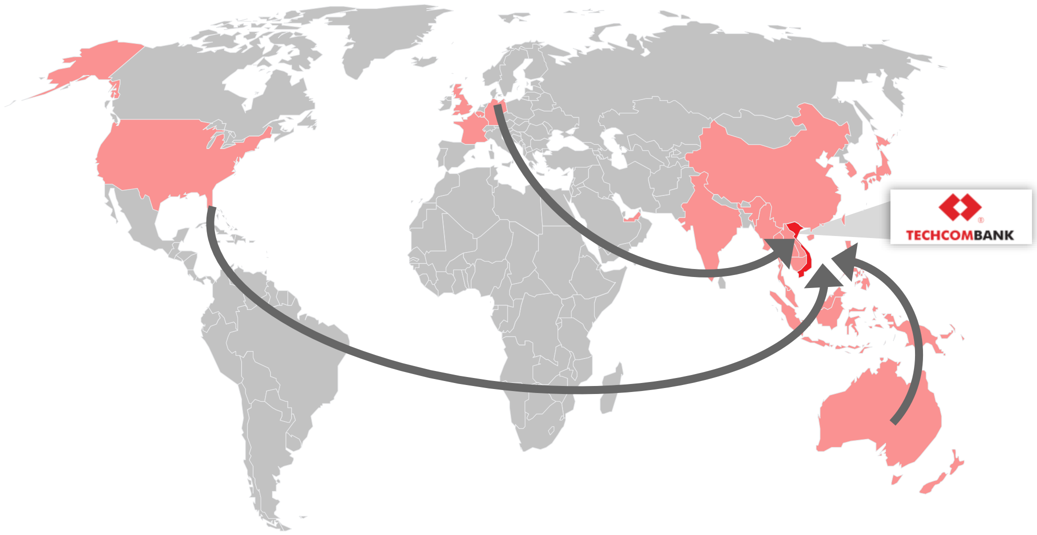
10

Members

Expatriate Executives

7

Members



Mr Alexandre Macaire
Chief Financial Officer

- Master in Actuarial Science, at ENSAE **Paris**
- Former Chief Financial Officer for HSBC's Wealth and Personal Banking **Asia Pacific** divivision

Ms Phan Thi Thanh Binh
Chief Wholesale Banking Officer

- Master's degree from University Libre de Bruxelle (**Belgium**)
- Business Partner at National Australia Bank, London, (the **UK**)

Ms Thai Minh Diem Tu
Chief Marketing Officer

- MBA from UCI (**US**), Business Management degree from HUFLIT (**Vietnam**)
- Vietnam and Global Specialized Nutrition Director, Business group management team of FrieslandCampina (**Vietnam**)
- Business Unit Director for Unilever (**Vietnam**)

Mr Nguyen Anh Tuan
Chief Information Officer

- Master's degree in Business & Computer Science from Virginia Commonwealth Uni. (**US**)
- Senior management positions at Citibank N.A
- Chief Technology Officer at Finastra (the **UK**), General Electric (**US**)

Mr Santhosh Mahendiran
Chief Data & Analytics Officer

- Master's degree in Computer Applications from Madurai Kamaraj Uni. (**India**), Software Engineering from the National Uni. of Singapore
- Director, Chanel Manager of Standard Chartered Bank (**Singapore**)
- Senior leadership roles at Citibank (**Singapore, Japan**)

Mr Kyle Timothy Justin
Chief Transformation Officer

- Master's degree in Operations from Cardiff Uni. Business Scholl (the **UK**)
- Senior positions at DSB Bank, Director at Standard Chartered Bank (**Singapore**)

Mr Pranav Seth
Chief Digital Officer

- Master in Business at UCLA Anderson (**US**), engineering degree at Delhi Uni. (**India**)
- Senior Vice President & Head of Digital and Inno. At OCBC Bank (**Singapore**)
- Engagement Manager at MCKinsey

Fig.P2: Executive Compensation 2017-2021 [VND Billion]

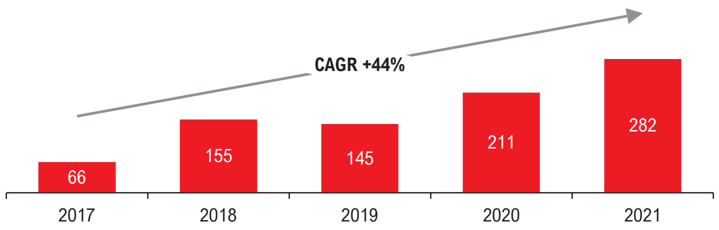
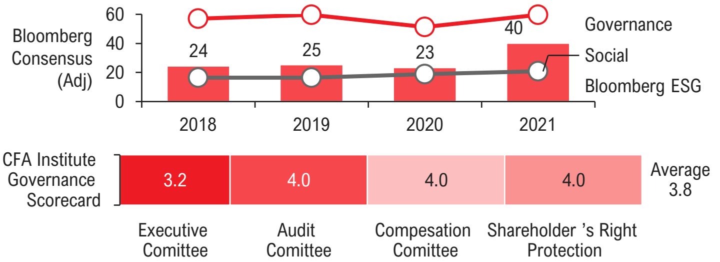


Fig.P3: ESG Assessment Snapshot



APPENDIX Q – ECOSYSTEM APPROACH

Fig.Q1: Techcombank's major customers' financial snapshot, TTM

Group	Masan Group			Vingroup			Others	
Company	Masan	Masan Resources	Masan Meatlife	Vingroup	Vinhomes	Vincom Retail	Novaland	Sacomreal
Ticker	MSN:HSX	MSR:UpCOM	MML:UpCOM	VIC:HSX	VHM:HSX	VRE:HSX	NVL:HSX	SCR:HSX
Techcombank's partner								
TCB Parent	🟥	🟥						
TCBS	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥
Cash and Equivalent Cash [VND Billion]	7,724	886	3,618	45,060	21,967	4,228	26,118	1,665
Profitability Ratios								
ROA	7.6%	1.8%	6.9%	0.2%	11.8%	5.4%	1.3%	1.5%
ROE	25.7%	5.0%	14.5%	0.6%	24.1%	6.6%	6.6%	2.8%
Gross Profit Margin	28.2%	19.4%	8.2%	10.0%	53.6%	48.2%	42.6%	27.4%
Net Profit Margin	12.0%	4.7%	13.3%	0.9%	57.9%	31.3%	22.8%	21.2%
Leverage Ratio								
Debt to assets ratio	0.47	0.37	0.39	0.31	0.12	0.08	0.28	0.19
Asset to equity ratio	3.61	2.65	2.19	4.05	2.44	1.23	5.81	1.90
Debt to equity ratio	1.71	0.98	0.86	1.26	0.29	0.10	1.61	0.36
Coverage Ratios								
Interest Coverage Ratio	2.71	1.53	2.53	0.06	16.31	7.27	3.59	0.82
Cash Coverage Ratio	3.69	4.43	3.45	2.11	16.78	11.28	2.67	1.01
Turnover Ratios								
Day of Inventorys	364	845	189	1,324	2,398	272	24,914	21,206
Day of Receivables	221	322	944	1,485	1,453	225	5,333	15,337
Day of Payables	133	204	153	295	233	100	608	1,033
Liquidity Ratio								
Current Ratio	0.58	0.81	1.73	0.94	1.00	1.82	2.70	1.90
Quick Ratio	0.35	0.34	1.51	0.64	0.70	1.60	0.99	1.04
Cash Ratio	0.12	0.06	1.29	0.16	0.12	1.07	0.34	0.50

Fig.Q2: Techcombank's major real estate customers' financial snapshot, with 3-line benchmark

	3Q21			4Q21			1Q22			2Q22			3Q22		
Ticker	**Liability to Asset**	**Net Debt to Equity**	**Cash coverage of Short-term debt**	**Liability to Asset**	**Net Debt to Equity**	**Cash coverage of Short-term debt**	**Liability to Asset**	**Net Debt to Equity**	**Cash coverage of Short-term debt**	**Liability to Asset**	**Net Debt to Equity**	**Cash coverage of Short-term debt**	**Liability to Asset**	**Net Debt to Equity**	**Cash coverage of Short-term debt**
Requirement	<70%	<1	>1	<70%	<1	>1	<70%	<1	>1	<70%	<1	>1	<70%	<1	>1
🟧 VIC	54%	0.61	1.63	56%	0.60	2.06	64%	0.90	1.09	62%	0.82	1.39	61%	1.05	0.72
🟩 VHM	38%	0.08	3.75	38%	0.08	53.93	39%	0.13	2.01	44%-	0.01	1.75	41%	0.17	1.02
🟥 NVL	74%	0.98	1.32	75%	1.03	1.28	76%	1.18	1.02	76%	1.14	0.95	77%	1.11	0.87
🟩 SCR	40%	0.38	2.14	34%	0.28	2.74	37%	0.28	2.50	38%	0.32	1.84	37%	0.33	1.77
Median Total	47%	0.49	1.88	47%	0.44	2.40	51%	0.59	1.55	53%	0.57	1.57	51%	0.69	0.94
Pass	**3**	**4**	**4**	**3**	**3**	**4**	**3**	**3**	**4**	**3**	**3**	**3**	**3**	**2**	**2**

Legend – Number of lines violated 🟩 0 🟨 1 🟧 2 🟥 3

Source: Bloomberg, Fiinratings, VCSC, Chinese government

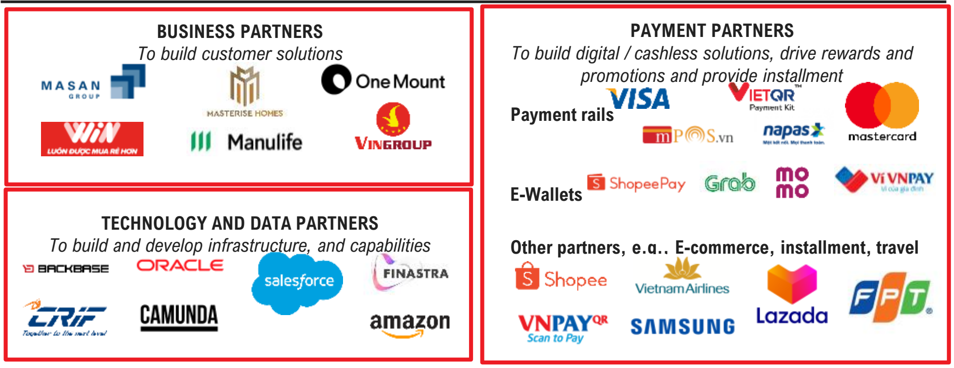
The "Three Red Lines" policy was introduced before the fall of China's top real estate developer – Evergrande in August 2020. The policy acts as a framework for the Chinese government to deleverage the real estate industry.

Its criteria are of the following:

1) A liability to asset ratio of less than 70%
2) A net debt ratio (debt – cash and cash equivalent – short term investment) divided by equity) less than 1
3) A cash to short-term borrowing ratio higher than 1

Comments: From our assessment on Techcombank's bond partners Vingroup, Vinhomes, Novagroup and Sacomreal. We are able to identify Novaland is a weak link and is in higher risk compared to others companies.

Fig.Q3: Techcombank's ecosytem partners



APPENDIX R – DIGITAL CAPABILITIES AND OFFERINGS TCB's WEALTH MANAGMENT SOLUTIONS VERSUS LOCAL BANKS

Digital capabilities	TECHCOMBANK	VPBank	MB bank	BIDV	Digital capabilities	TECHCOMBANK	VPBank	MB bank	BIDV
Portfolio statements view	🟥	🟥	🟥	🟥	Financial planning, analysis, goal and investment tracking	🟥	⬜	⬜	⬜
Portfolio management	🟥	⬜	🟥	🟥	Equity trading	🟥	⬜	⬜	🟥
Access to investment research and insights	🟥	⬜	🟥	⬜	Structured Products booking	🟥	⬜	🟥	🟥
Digital account opening	🟥	🟥	🟥	🟥	Robo-advisory	🟥	⬜	⬜	🟥
Fixed Income trading	🟥	⬜	⬜	⬜	Big Data analytics	🟥	⬜	⬜	⬜
Portfolio recommendation based on risk appetite	🟥	🟥	⬜	🟥	Digital offering to facilitate client interactions	🟥	🟥	🟥	⬜

⬜ Not offer 🟥 Offered

APPENDIX S – PHYSICAL FOOTPRINT AND GEOSPATIAL ANALYSIS

Fig.S1: Location Overview

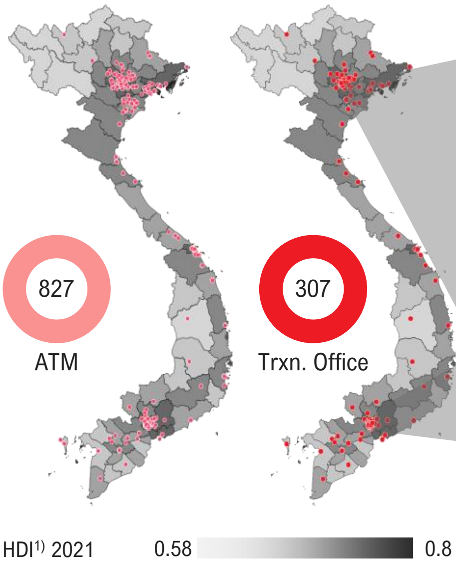
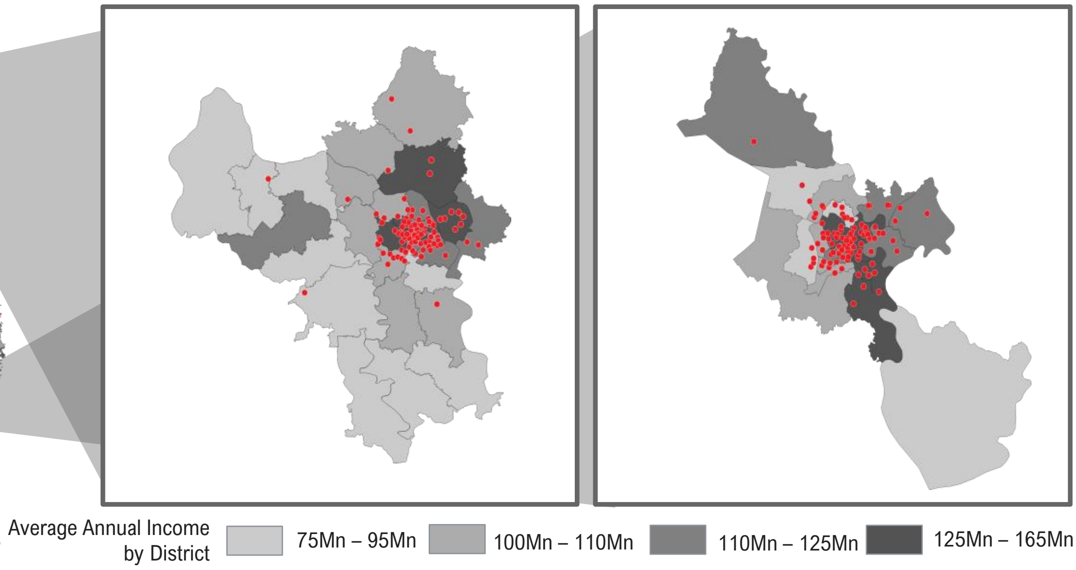


Fig.S2: Physical footprint in Hanoi and Ho Chi Minh city



APPENDIX T – TECHCOMBANK MOBILE BANKING APPLICATION CUSTOMER EXCELLENCE DELIVERY

Fig.T1: Weekly reviews and version updates of Techcombank Mobile Banking application

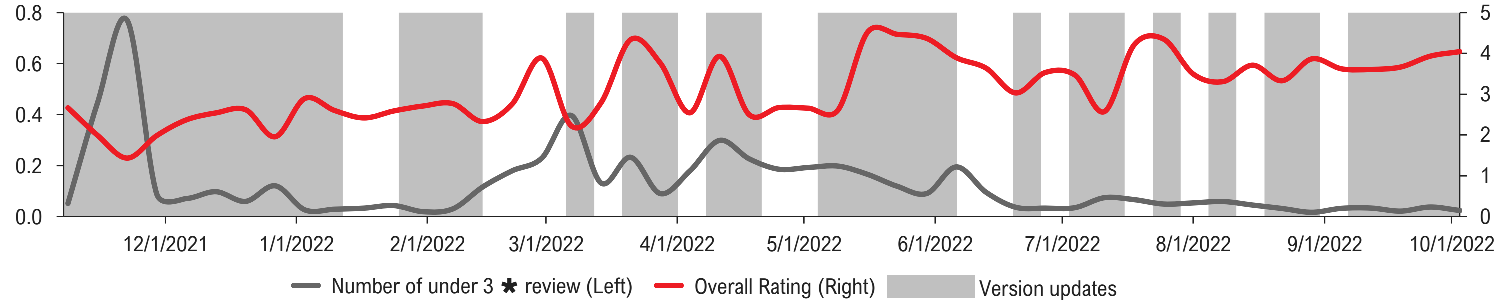


Fig.T2: Techcombank mobile is the most minimalistic platform…

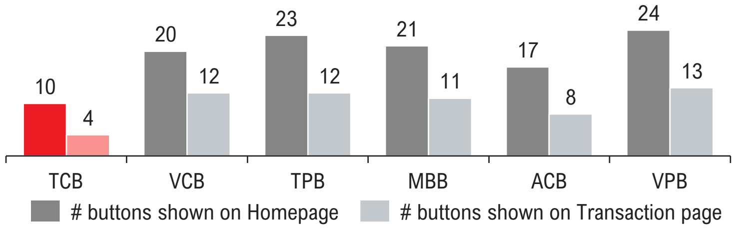


Fig.T3: …that makes banking process markedly convenient

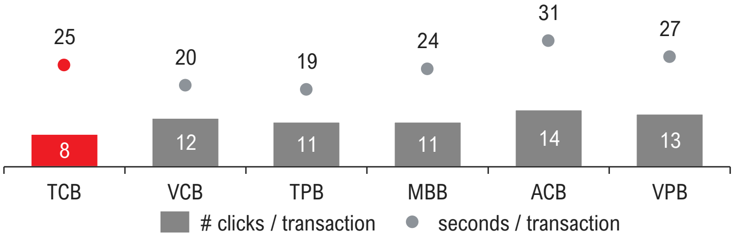
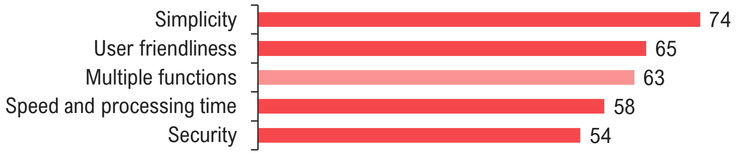
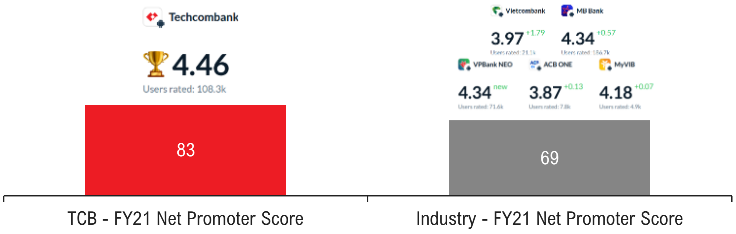


Fig.T4: All that meet customers' needs and painpoints…



Top 5 most important E-Banking features (Industry survey)

Fig.T5: … which brings Techcombank leadership positions in the country



APPENDIX U – SWOT ANALYSIS

Strengths

>Experienced Board of Management and Competitive Work Force, Strong Branding; >Prudent Capital Buffer and Healthy Financial Ratios, Comprehensive Investment in Technological Advancement, High market share in its target customer base; >Customer-centric digital banking app fitting demographic needs; >Diversified and high-margin income to fuel future investments

Weaknesses

>Loan book has high total exposure into the Real Estate industry
>Limited experience and data in lower-income segments
>Limited physical footprint
>Excessive off-balance sheet obligations

+ **SWOT** –

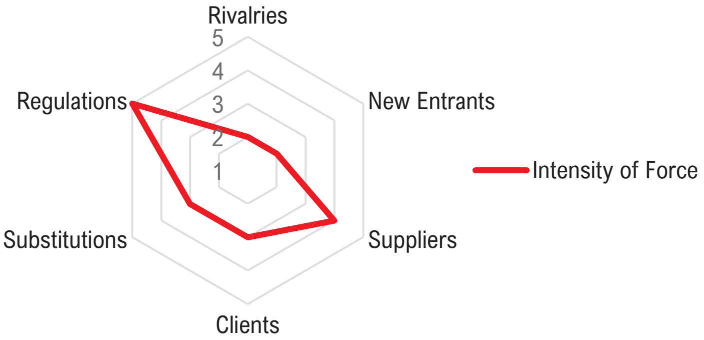
Opportunities

>Strong partnerships with Vietnamese blue-chip companies
>Expanding mass affluent and affluent segments - TCB's target segments
>Rising adoption rate for digital banking
>Low insurance penetration and humble capital markets to fuel growth

Threats

>Counterparty risk from the ecosystem's partners; >Liquidity crunch in the real estate industry; >Increasing digital banking and competition for CASA; >More stringent regulations in the real estate bond space; >Increased interest rates leading to surging funding cost >Unstable macro conditions; >Limiting credit quota;

APPENDIX V – PORTER'S "6" FORCES



THREAT OF REGULATIONS - 5

REAL ESTATE REGULATIONS & HAWKISH POLICIES

Little bargaining power against policymakers make this threat high.

Most salient: Restrictions in credit for real estate companies that increases systemic risks, provision expenses, and reputation risks.

Others: Hawkish interest environment and stricter liquidity ratios

THREAT OF NEW ENTRANTS - 2

LESS BANKS, MORE FINTECHS

Very high capital requirement and stringent regulatory compliance deter entrances. **Key Trends**: **[1]** The need for tech investments will also deter entrants from small banks. **[2]** However, digitalization encourages entrants from FinTechs and Neo-banks.

BARGAINING POWER OF CLIENTS - 3

MANY BUYERS

High number of clients (retail &SMEs) with low bargaining. This advantage however is offset by undifferentiated product nature and digitalization making switching cost low.

THREAT OF SUBSTITUTIONS - 3

DIGITAL OFFERINGS TO THRIVE

There are no substitutions for banking products. But substitutions for banks are emerging: FinTechs and Neo-banks. However, banks are actively investing in tech and have stronger presence overall.

THREAT OF RIVALRIES - 2

A PROFITABLE INDUSTRY COMPETING ON DIGITALIZATION

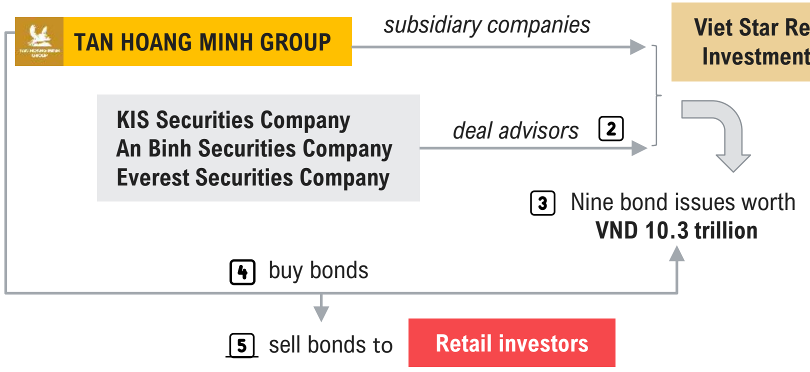
Moderately consolidated market with 5 biggest players account for 50% of the industry's market share on any unit of measurements. With the industry's strong growth, competition is lessened.

BARGAINING POWER OF SUPPLIERS - 4

INTENSYING CASA COMPETITION

“Capital” is a life-line of a bank and “capital suppliers” are its suppliers. This includes depositors, other banks, and whoever buys banks’ bonds. Large number of depositors mean lower threats. But recent regulations have strained liquidity, pushing interest rates up and result in a race for funding cost.

APPENDIX W – CASE STUDY: TAN HOANG MINH BOND FRAUD



TAN HOANG MINH GROUP

subsidiary companies

Viet Star Real Estate Investment Co. Ltd

Soleil Hotel Investment and Hotel Services JSC

Winter Palace JSC

KIS Securities Company
An Binh Securities Company
Everest Securities Company

deal advisors 2

3 Nine bond issues worth **VND 10.3 trillion**

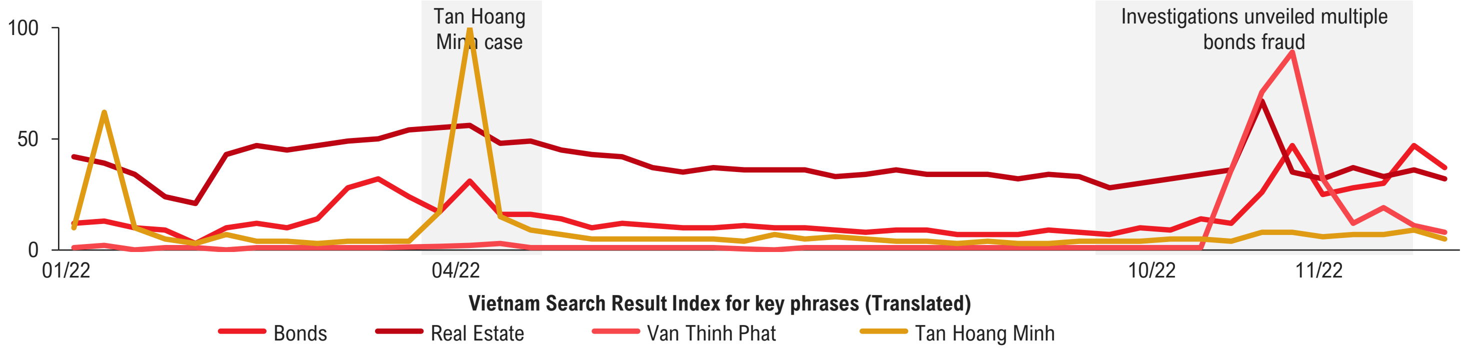
4 buy bonds

5 sell bonds to **Retail investors**

- ✗ Fraudulent accounting by 3 subsidiaries
- ✗ Mobilize money from investors but without using it for the business activities disclosed in bond issuance documents.
- ✗ Documents on collateral of bonds have been appraised, but the valuation does not reflect true market value

Issuing company	Time	Value [million VND]	Purpose
Viet Star Real Estate Investment Co. Ltd.	5/7/2021	800	Buying 306 million shares from Viet Tien (subsidiary of Tan Hoang Minh)
	20/9/2021	1900	Investing in Southern of Dai Co Viet project
Soleil Hotel Investment and Hotel Services JSC	6/7/2021	800	Investing in Hoang Hai Phu Quoc
	20/8/2021	450	
	01/11/2021	500	
Winter Palace JSC	22/11/2021	254	Investing in Hoang Hai Phu Quoc
	22/11/2021	196	
	16/12/2021	3230	Unavailable (not submitted to HNX)
Unavailable	Unavailable	1900	Unavailable

APPENDIX X – GOOGLE TREND ANALYSIS



Vietnam Search Result Index for key phrases (Translated)