BANK RISK MANAGEMENT CASE STUDY: TRANSILVANIA BANK

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ABSTRACT

Throughout out this paper, I am trying to cover a meaningful topic in the banking system - the importance of risk management for every banking institution. There is a complex diversity of risk types each bank faces and a prudential approach can assure the sustainability of the banking system and the economy itself. Furthermore, a practical approach will be presented by conducting a study case, focused on the activity of a bank operating in Romania. The results of the research are based on data provided by the bank, taking in consideration as a time frame the period 2008 to 2020 in order to analyze the effects the crises can have. In this way, we will be able to understand that risk management is a vital process, helping banking institutions protect themselves from unexpected events that could strongly affect their activity.

KEY WORDS: banking risk, banking institutions, risk management.

1. GENERAL CONCEPTS OF BANKING RISK

In banking industry, risk is seen as *a phenomenon that arises during the course of banking operations, influencing the way the banking institution operates as it causes a number of negative effects, i.e. affecting the functionality of the institution, reducing profits or recording negative results.* (Dobre E., 2009)

Banks need to place a particular emphasis on the level of the risk they accept in their strategies. They also need to acknowledge the necessity of risk mitigation given that their main objective is the profit maximisation.

Risk exposure is an important concept in banking risk management. *A bank's risk exposure should be addressed from two points of view, that the bank is both a borrower and a lender at the same time* (Anghelache C., Sfetcu M., Bodo G., Avram D , 2017). A bank carries out two main activities: it gathers resources in the form of deposits (passive operations) and distributes the resources to customers in the form of loans (active operations). These activities increase bank's exposure to risk. Even if both operations carry a certain level of risk, passive operations are recognized as being less risky than the active operations.

The solution to controlling and/or mitigating banking risk is the implementation of an effective banking strategy that includes management procedures and programs aiming to minimize the likelihood of risk occurrence and the potential risk exposure. (Nedelescu M.,

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Bunescu P, 2017). Among all of these actions, it is necessary to apply some essential and generally accepted steps such as: identifying the potential risks, assessing, monitoring, controlling and eliminating them.

The bank's strategy must comply with a set of rules imposed by domestic and international legislation that aiming to establish a prudent banking framework. At an international scale, banking risks are regulated throughout **the Basel Agreement**, that lays down a set of provisions aiming to mitigate the risks in the banking system. This agreement strongly emphasis with an appropriate sizing of bank's own funds. In Romania, banking risks are legislatively regulated by **the National Bank of Romania** (NBR). This supreme authority recognizes the significance of an adequate capital and liquidity level for controlling the risks faced in the Romanian banking industry.

The main categories of managerial risks in banking are:

- *Financial risks - are assumed by the bank throughout the balance sheet management and are considered as being the most important ones because their inadequate management causes most of the bank failures.* (Badea L., 2010). This category includes credit risk, liquidity risk, market risk and insolvency risk.
- *Banking services risks* - operational risk, technological risk, product risk, strategic risk.
- *Environmental risks* - are driven by external factors that can have a strong impact on bank performance. These include economic risk, fraud risk, competitive risk, legal risk.

Among all of these, financial risks are the only risks that can be quantified using a system of indicators. The other categories of risks are generated by exogenous factors on which management has limited control. (Badea L., 2010).

2. THE RISK MANAGEMENT PERFORMED BY TRANSILVANIA BANK

Transilvania Bank (TB) is an universal bank providing products and banking services to individuals and companies. Its main income derives from interest and fees, and its cost structure mainly includes technology and digitization, branch modernization and taxes.

Risk management is part of all decision-making and business processes within bank's activity. The main categories of risks to which the BT Group is exposed are **credit risk, reputational risk, market risk, liquidity risk, compliance risk, risk associated with excessive leverage, operational risk and systemic risk.**

The purpose of this research is to analyze the activity of this institution by using a set of banking risk indicators. According to the results reported for 2020, Transilvania Bank is the most profitable banking institution in the Romanian banking system, with a net profit of

RON 1,197,305 million. Given the estimated profit and the share of ~ 70% domestic capital the bank holds, TB is a representative banking institution within the Romanian banking system.

The data processed for this research comes from the annual reports published by Transilvania Bank which mainly include annual financial statements, reports of the Board of Directors, risk management reports, as well as publications related to risk management analysis. Thus, the information processed in this paper is based on data collected from the bank's internal outlook.

This research uses data and information from 2008-2020 in terms of data selection. The main argument for choosing this time frame is the fact that it encompasses two landmark events for the Romanian banking system, namely: The Great Economic Recession and the crisis caused by the COVID-19 pandemic in early 2020. The results may reflect bank's resilience to shocks and the development throughout Romanian banking sector.

The method used to measure the adequacy of bank risk management includes the analysis of the main indicators: *solvency ratio, non-performing loan ratio, provision coverage ratio, liquidity ratio, current liquidity ratio, loan-to-deposit ratio, GAP sensitivity analysis for liquidity and interest rate risk.*

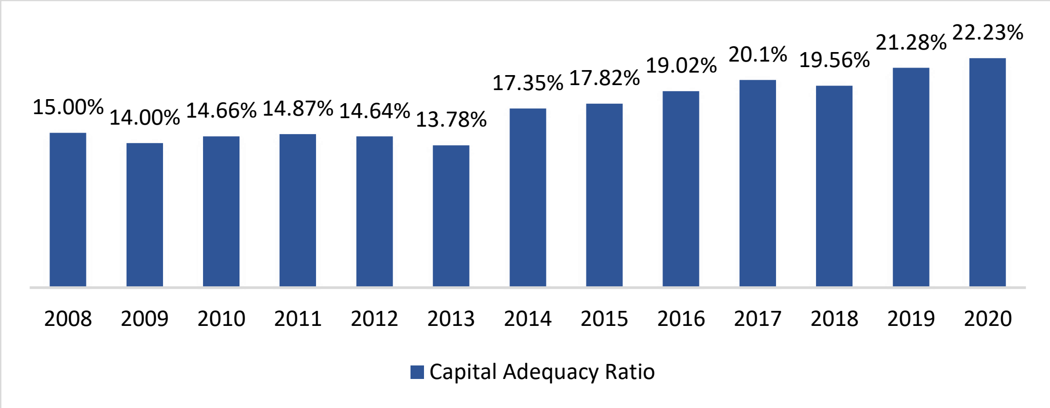
2.1. SOLVENCY RATIO (CAPITAL ADEQUACY RATIO)

It represents the ratio of the bank's own funds to total risk-weighted assets. As a solvency indicator, it reflects a bank's ultimate ability to pay its debts, measuring its resilience and ability to absorb the risk. This indicator is monitored by the NBR through a prudential supervision system and the value of this indicator cannot be less than 8% according to the regulations in force. According to the bank, the capital adequacy ratio is considered one of the most important indicators that can characterize the bank's evolution. The main components of the share capital held by bank are:

- shares,
- bond-to-equity conversion premiums,
- legal reserve,
- reserves for general banking risks,
- reserves from the revaluation of non-current assets.

As seen in **Figure 1**, the evolution of the indicator is fluctuating, but with a positive trend, maintaining an adequate level of capital in line with prudential banking practices. In 2020, the solvency ratio is at a satisfactory level of 22.23%, well above the minimum level recommended by regulators. Thus, the higher the indicator, the greater the ability to bear default risk and BT shows resilience in this regard.

Figure 1: The Solvency Ratio throughout 2008 to 2020



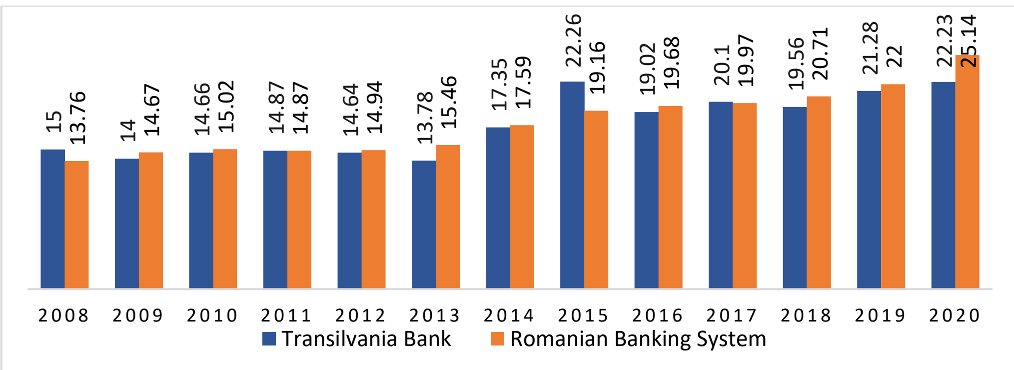
Source: own processing based on data published by www.bancatransilvania.ro

The decrease in the ratio from 2008 to 2009 is explained by a higher increase in risk-weighted assets (mainly loans to customers) than bank's own funds. **The increase from 2013 to 2014** is explained by the increase of the share capital of approximately 20% in 2014 compared to 2013 (from RON 3,082 million to RON 3,702 million).

The high weight of the solvency ratio from 2020 is justified by the increase in equity capital by more than 500,000 thousand lei compared to the previous year, i.e. retained earnings, revaluation reserves or equity attributable to bank shareholders.

Moreover, the solvency ratio remained at a close level in relation to capital requirements, slightly below the average ratio calculated for the Romanian banking system.. The high level of the solvency ratio supports the resilience of the banking sector in the event of adverse events with a negative impact on banking institutions.

Figure 2: Trend of the solvency ratio compared to the Romanian banking system



Source: own processing based on data published by the National Bank of Romania [19]

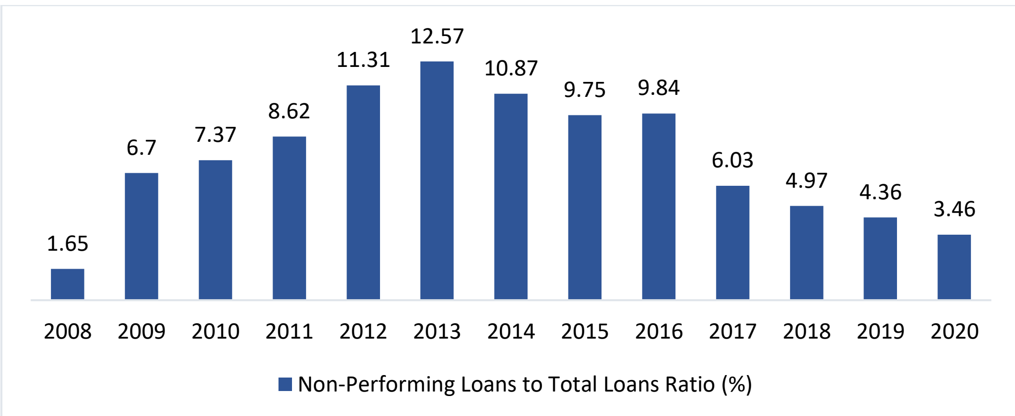
The advantageous evolution of the indicator is mainly due to the evolution of shareholders' capital contributions and the assurance of a considerable level of Tier 1 capital in total equity (subscribed and paid-up share capital, capital premiums, legal and statutory reserves, retained earnings from previous financial years remaining after distribution of profit). All this ensures a high possibility of loss absorption both at bank and system level given the increased capital base compared to 2008.

2.2. NON-PERFORMING LOANS TO TOTAL LOANS RATIO (NPL)

Because one of BT's main activities is lending, the bank is exposed to the risk of default. A loan is considered to be non-performing if the likelihood of repayment by the borrower becomes uncertain or if the period of default has exceeded 90 days.

Figure 3 shows the evolution of the non-performing loan ratio over the period 2008-2020. The NPL showed a fluctuating trend throughout the entire period. In 2008-2013, NPLs showed a steady upward trend, peaking at 12.57% in 2013. Starting with 2014, the overall trend was was declining, with slight fluctuations until 2020. The increase in the NPL ratio reflects a deterioration in the quality of bank's loan portfolio.

Figure 3: The Evolution of Non-Performing Loans to Total Loans Ratio



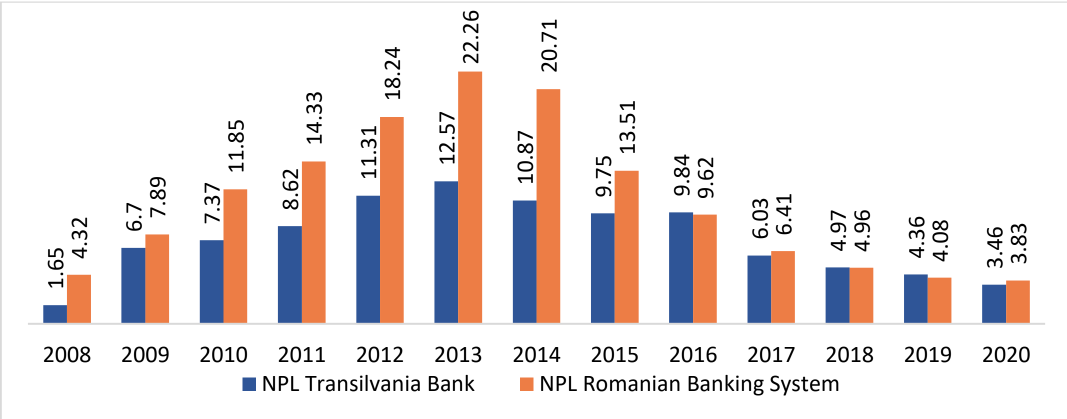
Source: own processing based on data published by www.bancatransilvania.ro

The impact of the 2008 crisis led to an increase in non-performing loans, which remained high up to and including 2016. **The decrease in the share of non-performing loans in 2017** is due to the fact that the bank sold a portfolio of non-performing loans amounting to

[19] https://www.bnr.ro/StatisticsReportHTML.aspx?icid=800&table=1027&column=

approximately EUR 110 million. The improvement in this ratio in the second half of the period under review is supported by the removal of non-performing loans from the balance sheet.

Figure 4: Trend of the NPL compared to Romanian Banking System



Source: own processing based on data published by the National Bank of Romania

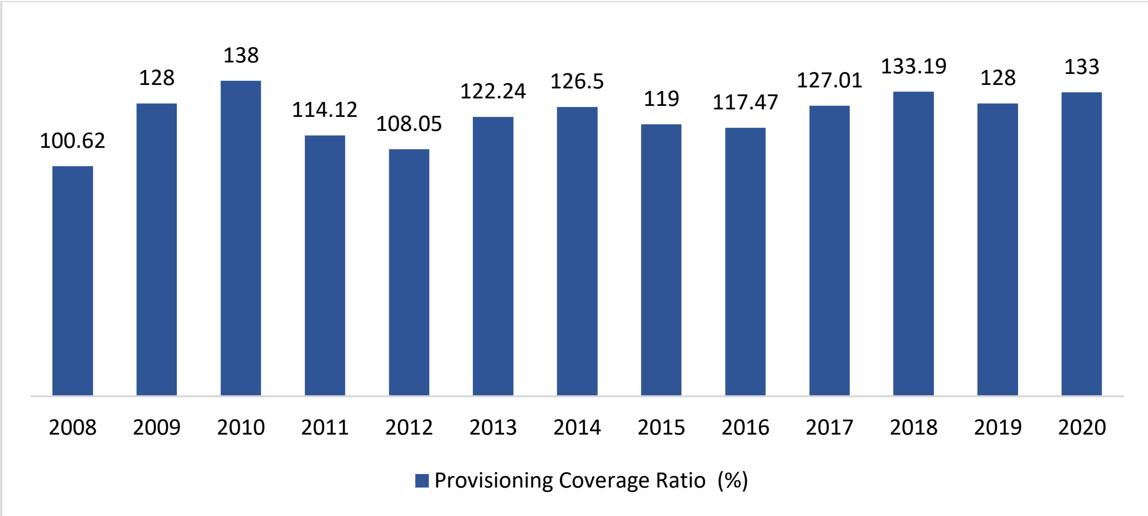
The non-performing loan ratio in the Romanian banking system is determined on the basis of reports made by all banks. Comparing the bank's NPL ratio to the NPL ratio of the banking system, it appears that the NPL ratio is generally below the banking system level and this is a favorable position for Transilvania Bank considering that a lower NPL ratio implies a higher quality of its loan portfolio.

According to data published by the NBR for 2020, the downward trend in the NPL ratio is driven by factors such as the easing of economic policies or a favorable domestic demand environment due to an increase in the creditworthiness of borrowers and thus the quality of the loan portfolio. This indicator stood at 3.83% in December, the lowest level ever.

2.3. PROVISIONING COVERAGE RATIO

Non-performing loans can have a significant impact on the bank as they can negatively affect profitability. These generate losses that can reduce the income obtained from lending. The bank needs to set up provisions to overcome the possible losses arousing from the loans granted in order to combat this credit risk. Provisions are a reserve of funds that remain unavailable for new lending or for absorbing other losses.

Figure 5: The Provisioning Coverage Ratio (2008-2020)



Source: own processing based on data published by www.bancatransilvania.ro

The trend in provisioning from 2008 to 2020 is characterized by minor fluctuations, thus the bank has a consolidated level of provisions to cover loan losses. The maximum provision coverage is 138% in 2010 and the minimum is 108.05% in 2012. The provisions recorded throughout the reporting period are in conformity with bank's prudent approach to credit risk management.

The coverage of non-performing loans with specific provisions and mortgage guarantees remains at a favorable level of over 100%, in line with the bank's risk appetite. According to TB, "provisions for other risks and charges mainly comprise provisions for litigation and other risks taken over through the merger with Volksbank Romania and Bancpost"[20].

2.4. LIQUIDITY RATIO

This indicator is calculated as the ratio of actual liquidity to required liquidity in each maturity band, according to the NBR. Under the NBR regulations, this indicator must exceed the minimum value of 1. The bank recorded satisfactory levels of the liquidity ratio for all maturity bands, being above the minimum level required by NBR regulations throughout the reporting period. As a result, the bank benefits from a solid position and a favorable liquidity thanks to substantial sources of funding.

Table 1: LIQUIDITY RATIO (2008-2020)

[20] https://beta.bancatransilvania.ro/files/app/media/relatii_investitori/rezultate_financiare/2019/Rezultate%20financiare/5.situatiile_financiare_individuale_si_consolidate_la_31_decembrie_2019.pdf

Anul	Indicatorul de lichiditate (%)
2008	3,83
2009	3,13
2010	2,43
2011	2,32
2012	2,11-19,28
2013	2,12-23,59
2014	2,77-22,57
2015	2,26-21,08
2016	1,89-17,54
2017	2,50-25,23
2018	2,00-18,11
2019	1,90-22,35
2020	1,89-29,40

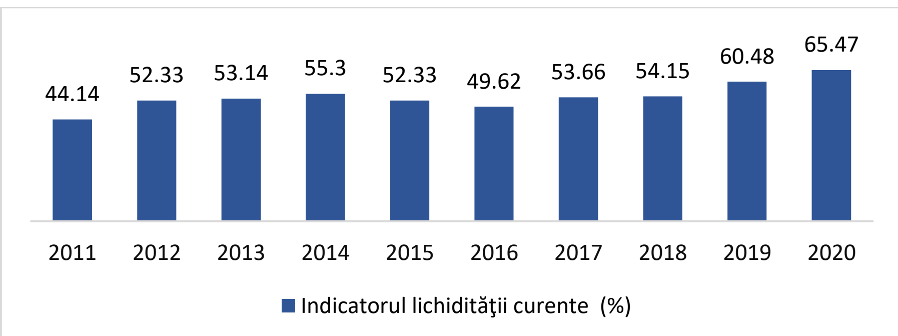
Source: own processing based on data published by www.bancatransilvania.ro

The bank resorts to a series of measures to ensure sound liquidity risk management, such as: raising liquidity through treasury operations (short-term loans, cash on hand, cash on account with other banks, debt securities), capital market operations or external financing from the NBR or institutions on the interbank market. Transilvania Bank is consolidating a liquidity reserve so that it can cover its additional liquidity needs for a limited time and under stress conditions by using alternative scenarios.

2.5. CURRENT LIQUIDITY RATIO

The current liquidity ratio is calculated as the relationship between current assets and current liabilities. Current liquidity mainly comprises cash, cash at central banks and cash at credit institutions. Among all these, the largest share is represented by holdings at the central bank through the Minimum Required Reserve (MRO) held on account with the NBR and it is accounting for about 67% of total current liquidity in 2020.

Figure 6.



Source: own processing based on data published by www.bancatransilvania.ro

The level of the current liquidity indicator showed a fluctuating but increasing trend. Overall, current liquidity increased each year during the reporting period, the indicator being above the minimum level considered acceptable by the bank in the context of prudent liquidity risk management. However, given the high level of current liquidity, the bank has to be cautious, exposing itself to the risk of mismatching assets with liabilities in the higher maturity bands.

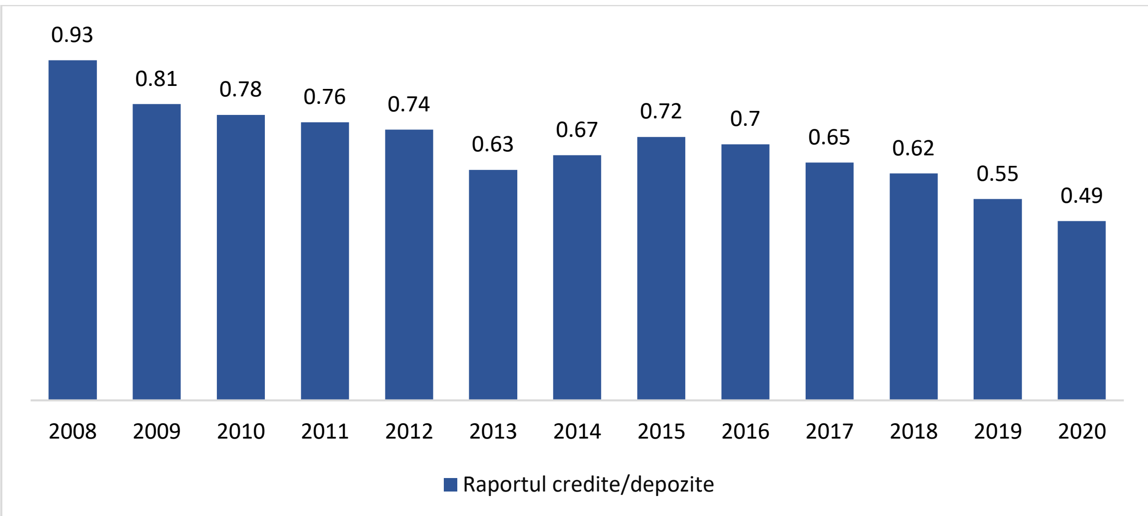
2.6. LOAN-TO-DEPOSIT RATIO

The loan-to-deposit ratio is an indicator used to quantify liquidity risk because it reflects the liquidity of the bank's assets and liabilities. A higher level of the ratio indicates a poor liquidity, and a lower level reflects the bank's ability to use its deposits to fund future loans. The lower the ratio result, the stronger the bank's liquidity and the lower the liquidity risk. Transilvania Bank is aiming to keep this ratio below the 1.

Over the period under review, the loan-to-deposit ratio fluctuated but maintained a downward trend, reaching 0.49 in 2020, almost half of the 0.93 recorded at the beginning of the period in 2008.

The downward trend in the ratio is influenced by the growth of non-government deposits at a faster pace than non-government credits. This phenomenon was particularly pronounced in 2020 due to uncertainty and risk aversion in the context of the pandemic.

Figure 7: LOAN-TO-DEPOSIT RATIO (2008-2020)



Source: own processing based on data published by www.bancatransilvania.ro

The upward trend for the balance of non-government deposits continued up to and including 2020, driven by the increase in the savings rate and the appreciation of the EUR-LEI. In this respect, the loan-to-deposit ratio maintained a downward trend, with deposits growing at a faster pace than loans. This is a normal trend given the uncertain economic and social conditions caused by the pandemic.

2.7. LIQUIDITY GAP ANALYSIS

The cause of liquidity risk is the mismatch between supply and demand for liquidity. According to the specialists, *a dynamic prediction of potential future supply and demand of funds over a period of time is needed in order to obtain a more realistic quantification of liquidity risk* (Aliu M., Sahiti A, 2019).

The GAP represents the difference between assets and liabilities sensitive to the liquidity risk. If sensitive assets exceed sensitive liabilities, this results in a positive GAP and the bank has an excess of cash flow in the future and it can meet its liquidity needs. Otherwise, there is a negative GAP reflecting a liquidity shortfall and exposing the bank to the risk of not being able to meet its liquidity needs.

Table 3 summarizes the evolution of bank's liquidity surplus over the period 2008-2020. Throughout the period studied, the bank recorded a continuously increasing positive GAP, which means that the volume of sensitive assets is higher than the volume of liquidity risk-sensitive liabilities.

This liquidity surplus reflects the fact that the bank has the capacity to meet future liquidity demands and that it holds a solid reserve of assets that are easily convertible into cash.

Table 2: Evolution of the bank's net liquidity risk position in the period 2008-2020 (thousands of lei)

Year	Gross value (inflows/outflows)	< 3 months	3-6 months	6-12 months	1-3 years	3–5 years	> 5 years	No maturity
2020	**30,875,286**	9,393,468	-520,559	909,629	-4,543,846	6,194,518	18,928,062	514,014
2019	**22,035,181**	6,202,407	-1,770,778	-615,694	6,339,897	5,880,828	18,269,748	408,567
2018	**22,093,256**	2,045,451	-1,873,603	320,015	-2,820,651	5,539,906	18,571,357	310,781
2017	**15,759,235**	-812,054	-2,028,335	434,537	-912,859	3,818,452	15,018,770	286,975
2016	**15,052,940**	-1,190,940	-2,100,807	493,943	413,327	4,068,467	13,181,764	187,186
2015	**20,947,224**	1,876,612	-1,096,941	1,269,855	1,270,579	4,044,344	13,418,867	163,908
2014	**12,272,307**	-919,513	-1,736,962	1,396,861	4,461,822	2,057,078	6,831,569	211,452
2013	**12,457,689**	-1,467,418	-1,171,806	4,479,114	3,472,234	1,100,231	1 5.905.942	139,392
2012	**2,353,069**	-2,597,134	-1,423,813	1,076,667	1,149,943	307,491	3,683,229	156,686
2011	**1,995,242**	-3,378,568	-1,011,692	1,796,282	598,149	99,926	3,738,491	152,654
2010	**1,714,696**	-3,258,410	-482,690	1,558,601	755,377	599,784	3,605,549	136,053
2009	**1,495,557**	-4,452,076	702,074	2,064,171	801,854	-1,423,919	3,684,997	118,456
2008	**1,226,868**	-3,185,469	92,714	983,648	688,023	-1,169,696	3,757,371	60,277

Source: own processing based on data published by www.bancatransilvania.ro

The main components of liquidity risk-sensitive assets in bank's balance sheet are: investments granted to customers, financial assets at fair value through other comprehensive income and financial assets at fair value through profit and loss. The major part of financial liabilities is represented by: resources drawn from customers, subordinated debt and bonds issued or borrowed from banks on the interbank market or other financial institutions.

2.8. INTEREST RATE RISK GAP ANALYSIS

The acceptable value of GAP should be as close as possible to 0 in order to mitigate interest rate risk. If sensitive assets exceed sensitive liabilities, the bank has a **positive GAP**, in which case the increase in interest rates leads to an increase in net interest income. If sensitive liabilities exceed sensitive assets, this results in a **negative GAP**, in which case the increase in the interest rate decreases net interest income.

Bank's interest rate sensitive assets include credit instruments with variable interest rates, such as: loans and advances to borrowers, cash and cash equivalents, placements with banks. In 2020, the share of loans and advances to customers in total sensitive assets was 58.99%, cash represented 25.62% and placements with banks 13.22%.

Liabilities sensitive to interest rate risk include deposits attracted from banks and customers; loans drawn from other banks and financial institutions, subordinated debt and bonds issued; liabilities arising from leasing contracts; other financial liabilities with variable interest rates.

Deposits from customers are the largest liability sensitive to interest rate fluctuations, their share of total sensitive liabilities in 2020 being 95.60%. They are followed by loans contracted on the interbank market and from the Central Bank, with a share of 3.98%.

Table 3: Evolution of the bank's net position in 2008-2020 for interest rate risk in the banking book (thousands of lei)

Year	TOTAL	< 6 months	6-12 months	1-3 years	3–5 years	> 5 years	Unaffected
2020	**-19,078,986**	-16,275,945	-7,340,289	2,962,119	1,766,906	295,723	-487,500
2019	**-12,780,441**	-10,321,347	-6,174,061	1,694,598	1,854,790	572,668	407,089
2018	**-18,471,350**	-13,688,409	-5,215,727	-178,612	1,204,555	274,529	-867,686
2017	**-12,147,277**	-6,194,161	-5,649,503	-317,885	629,272	372,915	-987,915
2016	**-11,643,524**	-6,796,091	-6,174,160	396,316	718,912	476,376	-264,877
2015	**-4,224,868**	-2,889,095	-3,928,218	868,754	839,356	1,023,985	-139,650
2014	**3,504,679**	3,175,603	-2,376,501	926,358	923,869	261,970	593,380
2013	**2,973,809**	391,786	967,054	768,930	575,195	336,455	717,961
2012	**2,448,778**	4,502,897	-3,158,208	93,897	206,461	40,644	763,087
2011	**2,110,862**	3,706,799	2,320,584	410,997	-61,259	-18,032	392,941
2010	**1,808,309**	2,836,726	-1,966,499	727,401	18,819	-7,299	199,161
2009	**1,442,304**	-913,695	1,508,270	659,846	161,764	22,927	3,192
2008	**1,300,958**	-630,057	1,351,461	488,301	81,138	3,469	6,646

Source: own processing based on data published by www.bancatransilvania.ro

Table 4 shows the fluctuating evolution of the GAP, which recorded a positive value from 2008 to 2014 and then consistently recorded negative values until the end of the period analyzed. This gap is justified by the increase in customer deposits, exceeding by more than 50% the value of loans granted to customers.

The significant gap of -19 billion lei in 2020 reflects the bank's exposure to the risk of interest rate changes on liabilities and its need to reduce the amount of sensitive liabilities so as to ensure the reduction of the gap. It also needs to allocate most care to sensitive assets and liabilities with maturities up to 6 months and between 6 and 12 months, as these are the time bands with a high gap. For example, if the NBR were to increase interest rates during periods of negative GAP, the bank would be exposed to high interest rate risk.

3. CONCLUSIONS

In the light of the above, it follows that banking supervision is an essential part of the proper conduct of banking business in optimal conditions. Through the activities it entails, banking supervision is able to provide reliable information on the soundness of banks and the banking system as a whole, on the basis of which it assesses and plans measures to combat any risks. In this respect, it is essential to respect capitalization and liquidity requirements which, once followed, have the capacity to protect the bank's position in crisis conditions or unforeseen events with a major impact.

Transilvania Bank proves a solid management of the risks underlying its activity, including insolvency risk, credit risk, interest rate risk and liquidity risk. Among these, the risks with a possible major impact on bank's activity are credit and liquidity risk. On the other hand, interest rate risk may have a medium impact on the bank's activity due to the volume of assets and liabilities sensitive to interest rate fluctuations.

The evolution of the risk indicators analysis reflects the prudence of the bank's activity and operations. The high level of the capital adequacy ratio, the satisfactory level of own funds tier 1, the liquidity ratio, the quality of the loan portfolio through the relatively low amount of non-performing loans, the degree of provisioning for losses on non-performing loans, are elements that strengthen the Bank's ability to manage the impact of the risks encountered in its activity.

The study conducted shows that banking risk management is an integrated process in the general management of Transilvania Bank. The bank benefits from a sustainable resilience, that it carries throughout the entire banking system, taking into account its systemic importance.

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