

### **AMERICAN UNIVERSITY OF ARMENIA**

An Affiliate of the University of California
COLLEGE OF BUSINESS AND MANAGEMENT

# **PROJECT**

# Riskiness of Armenian Banks

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#### **INTRODUCTION**

Although the role of banking in the economy is declining in some industrial countries, in developing and transition countries such as Armenia, which has less developed financial market, banks are the only institutions that produce the necessary information for intermediation, facilitate payments flows, allocate credit, and maintain financial discipline among borrowers.

In their turn, Armenian banks are subject to market failures from asymmetries of information. On the asset side, they take on the risk of valuing projects and funding borrowers whose ability to repay is quite uncertain. On the liability side, the confidence of creditors and depositors, which deteriorated throughout the last decade, is essential to a banks ability to provide deposit and payments services. If depositors have imperfect information on the bank's actual position, if they cannot distinguish sound banks from unsound ones, then they may precipitate unjustified runs against sound banks.

Hence the purpose of our study is to analyze the Armenian banks' actual financial standing from the outside investor's or depositor's perspective, having under the consideration only publicly available data. Evaluation of these banks is done not relative to the banks worldwide, but relative to each other in the Armenian banking system. Also the scope of this study is limited to the influence of internal financial factors on the bank's riskiness.

Published banks' financial statements: Balance Sheets and Profit and Loss Accounts as of January 1, 1999 were taken as a source of data. However, data on three banks (HSBC, David Bank and Shirakinvestbank) are not complete.

Measures of bank's riskiness are derived using financial performance indicators and statistical analysis. Weighted mean values are calculated for each indicator, and banks are ranked on the basis of deviation from the mean.

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### Banking System in Armenia

The banking system in Armenia is comprised of The Central Bank, state-controlled Armsavingsbank and 31 private commercial banks

with more than 175 branches on the territory of Armenia. This sector is small although it is one of the most advanced and efficient sectors of the Armenian economy.

Banking system in Armenia is rather concentrated. Along with few highly capitalized banks (with more than \$2.5 mln of total capital) we can see many small banks (with less than \$900 thousands of total capital). As of 1 January 1999, about 47% of total capital was concentrated in six big banks: HSBC, ACBA, United Bank, Armagrobank, Armimpexbank and Ardshinbank (See Exhibit 1). Total assets also have marked a significant concentration: assets of six big banks were amounted about 99.24 bln drams or 63% of total assets of overall banking system in Armenia (See Exhibit 1).

The rate of investments in risk-weighted assets in average was not so high (42.4% in total assets), however, in several banks they were to high, which implies high riskiness of those banks. The huge part of loans (about 72%) were provided by six banks, among them Armimpexbank (24%) and United Bank (21%) (See Exhibit 2).

The Central Bank of Armenia encourages competition as well as participation of foreign banks. Increased requirements imposed by the Central bank, as well as competition, including from foreign banks, have forced the local banks to meet international standards, pushing the weak banks into closing or into mergers with stronger banks. The

number of private banks has slowly declined, consequently, remaining banks are considerably stronger now than in 1995. Also, new investments are helping to offset old uncollected loans remaining on the banks' books. Significant assistance to the development of the banking sector is being rendered through foreign unilateral aid and multilateral financing.

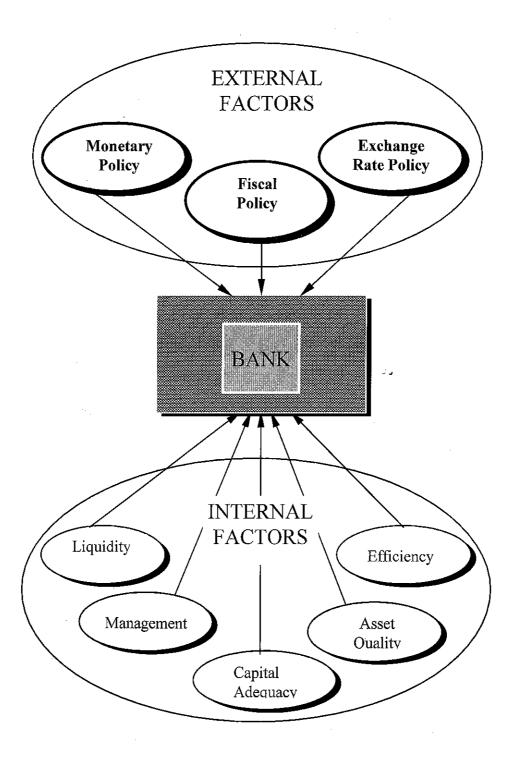
## Factors Affecting the Healthiness of the Bank

The healthiness of a bank is affected by both external and internal factors (See Exhibit 3). Economic conditions and policies are major determinants of banking system healthiness. Macroeconomic shocks can put pressures on bank balance sheets and banking system health.

Credit controls or interest rate controls can force the bank to hold required reserves, thus, constraining bank's liquidity management, and reducing bank's client base and profitability. Fiscal policy instruments also may affect bank's profitability. For example, if tax system defines earnings to include interest accrued on non-performing assets tax effective, it forces banks to decapitalization.

Exchange rate instability and high levels of uncertainty negatively affect banks operations. A significant change in exchange rate will worsen the financial condition of some borrowers and increase the number of non-performing loans.

Exhibit 3



#### 1. External Factors

During the past four years a series of steps were undertaken to improve the legal and regulatory frameworks of banking in Armenia, to develop the financial market infrastructure. From 1995 the Central Bank of Armenia has tightened normative requirements imposed to banks, trying to meet international standards, to reach the Basel standards adopted by Top Ten Banks of the world. The CBA has defined several prudential economic standards for Armenian banks such as:

- ♦ Minimum capital adequacy ratio:
  - Maintain total capital to at least 12% of their risk weighted assets.
  - Maintain fixed capital to at least 8% of their risk weighted assets.
- ♦ The normative for the **liquidity** of the bank:
  - the marginal ratio between high liquid assets and total assets to be 25%.
  - the marginal ratio between high liquid assets and demand liabilities to be 60%.
- ♦ The maximum exposure to a single borrower to be 20%;
- $\Diamond$  The maximum exposure to persons associated with the bank to be 60%;
- ♦ The minimum reserve requirement allocated with the Central Bank to be 8%;

All these requirements show that the Central Bank of Armenia is trying to make effective a well-balanced institutional and regulatory structures, that will force banks to maintain appropriate level of financial standing and prevent widespread bank failures.

We will not examine in detail external factors in Armenia that will affect Armenian bank's healthiness, since the scope of our study is to evaluate Armenian bank's soundness depending on internal factors, particularly those which can be evaluated just using publicly available data such as financial statements of banks.

## 2. Measures of Bank's Insolvency or Riskiness (Internal Factors)

Although there is no benchmark measure of bank's "soundness" or "unsoundness", solvency of the bank can be considered as proxy to soundness. Thus, a sound bank may be defined as one which is solvent and is likely to remain so. Solvency is reflected in the positive net worth of a bank, as measured by the difference between the assets and liabilities (excluding capital and reserves) in its balance sheet.

The likelihood of remaining solvent will depend on different factors, such as: bank's being profitable and efficient, well managed, and sufficiently well capitalized to withstand adverse events:

- Inefficient banks will make losses and eventually will become insolvent.
- Poor asset quality, failures of internal and external controls will hurt the health of bank.
- Undercapitalized banks with low net worth will be fragile in the sense of being more prone to collapse when faced with a destabilizing shock.

However, it is difficult to measure solvency (riskiness). Bank loans which represent the major part of bank assets are extremely difficult to value. Since the amount of provisions for bad and doubtful loans is determined by the authorities of the bank, and there is always judgment, so managers of unsound banks have incentives to accrue unearned income and show loans as performing in order not to lose their bank. Thus, balance sheet figures on asset value and on non-performing loans may not represent a bank's actual circumstances. Besides, not all banks provide enough information

concerning their profit and loss accounts. So, these weaknesses in information makes it hard to reveal banking problems in time.

A small number of variables (ratios) can accurately identify at an early stage those individual banks that may ultimately become insolvent. Cross-sectional approach is done in our study of Armenian banks, looking from different aspects of banks' performance, financial condition and prospects, relying on the publicly available data such as financial statements published in newspapers of The Republic of Armenia.

Our study have included traditional measures of asset quality, capital adequacy, management, and profitability of an individual bank, their deviations from the industry averages and weighted averages. Then these characteristics of an individual bank were fed into the (estimated) equation to evaluate the bank's soundness (riskiness), to try to predict whether a particular bank is likely to experience difficulties.

#### *METHODOLOGY*

#### Financial Performance Indicators of the Bank

As we already mentioned, undercapitalized banks will be more prone to collapse when standing against destabilizing shocks. So the *Capital-to-Asset ratio* will indicate the probability of failure. The lower the Capital-to-Asset ratio the greater the probability of failure of the bank.

Recognizing that a bank will not remain well capitalized unless it operates efficiently, we also have included measures of operating efficiency and profitability: asset turnover and return on assets.

- ◆ Asset Turnover indicates how productively management of the bank uses the assets on its disposal.
- ◆ Return on Assets considers return on total funds invested, it measures the profit that the bank makes on each dollar of investment.

The more efficient the bank is in its use of assets, the less funds will it have to raise and the greater its overall profitability will be.

Loan-to Asset ratio shows which part of funds are invested in risk-weighted assets.

The higher the rate the greater the riskiness of the bank.

*T-Bills-to-Assets* ratio gives the weight of risk-free interest bearing assets in total assets, also holdings of government securities are highly marketable and can be easily liquidated to meet future short-term financial obligations.

Loan loss Reserves-to-Loans ratio makes some inference on probably dangerous or nonperforming loans (possible losses).

Total Expenses-to-Total Revenue ratio gives the measure of management weaknesses.

### Industry and Weighted averages of Financial Performance Indicators

These ratios in isolation are typically of little value. So, they should be viewed relative to industry performance overall.

With these considerations in our study of Armenian banks, using banks' Balance Sheet and Profit and Loss Account items, we have calculated all these seven financial performance indicators (FPI) for each bank (See Exhibit 4), also industry average (IAV) and dispersion around industry average (standard deviation) for each indicator.

$$IAV = \left( \stackrel{30}{\hat{P}}_{1} FPI \right) / 30$$

	ing many may sida. Basi mga may sida	13	
Capital / Assets		0.3138	0.1979
Loans / Assets		0.3809	0.1595
Investments in T-bills / Assets		0.0916	0.0834
Return on Assets	as Estiliogipe opasanino kaj l La malinda estilio estiliona e	0.0338	0.0748
Loan loss reserves / Loans		0.1266	0.1422
Expense / Total revenue (Mana	gement)	0.8955	0.2932
Revenue /Asset (Asset Turnov	er)	0.2539	0.1158

Our study showed a significant dispersion of individual bank performance within industry. The standard deviations of industry averages were large in magnitude, which indicates that the data were spread out or highly variable. We were not comfortable with the measure of central tendency for the industry, because we felt that the average value was not a very useful measure because of wide dispersion of values. So it was preferable to compare bank's financial performance indicators also with the asset-weighted average (AWAV) of industry, by giving weight to each indicator of the individual bank according to its assets' weight (AW) in overall industry assets' volume. So we found the means and standard deviations of the weighted averages.

$$AWAV = \hat{A}_{1}^{30} FPI*AW$$
, where  $\hat{A}_{1}^{30} AW = 1$ 

	2022 000 000 000 000 000 000 000 000 00
Capital / Assets 0.1631 0.1	444
Loans / Assets 0.4235 0.1	610
Investments in T-bills / Assets 0.0940 0.0	714
Return on Assets 0.0280 0.0	593
Loan loss reserves / Loans 0.1140 0.1	298
Expense / Total revenue (Management) 0.8921 0.1	701
Revenue / Asset (Asset Tumover) 0,2332 0,0	944

Since the weighted averages gave more sensible picture, in our further studies we use these weighted averages of financial performance indicators.

### 2. Relative Risk Scores of the Banks

After all we were interested in determining the relative quantitative location of financial performance indicator for each individual bank within a set of the very indicators of all banks. These measure of relative standing in Statistics is called Z-score for a measurement. In our study it is defined as

$$Z$$
-SCORE<sub>AWAV</sub> = (FPI-AWAV) / STDEV<sub>AWAV</sub>

These Z-scores reflect the distance (expressed in standard deviation) between financial performance indicator and the asset-weighted average. Thus, we have found Z-Scores for all financial performance indicators under consideration (See Exhibit 5).

Then we have defined Relative-Risk Score (RRS) for a bank as a sum of Z-Scores for its all financial performance indicators:

$$RRS = \bigwedge_{1}^{7} (ZSCORE)_{FPI}$$

### Ranking of Armenian Banks

Ranking of banks were done according to their Relative-Risk Scores. Ranges were defined with respect to the average mean and standard deviation of Relative-Risk Scores.

Ranking	Ranges
Non-Risky	Banks, that have positive RRS greater than one and half
	standard deviation of the mean of RRS.
Little Risk	Banks, that have positive RRS greater than half, but less than
	one and half standard deviation of the mean of RRS.
Average	Banks, which RRS, positive or negative, stand away from the
Risk	mean up to half standard deviation.
Moderate	Banks, that have negative RRS greater than half, but less than
Risk	one and half standard deviation of the mean of RRS.
Highly-Risky	Banks, that have negative RRS greater than one and half
	standard deviation of the mean of RRS.

It should be mentioned again that all ranking is relative and nothing is absolute, that is, banks are ranked relative to each other and not to a some substance. And in our studies we came to the following results.

• Banks that can be considered as Non-Risky are as follows:

Non-Risky Banks	Relative Risk Score of the Bank	Ranking
AGRICULTURAL COOPERATIVE	18.96	1
BANK OF ARMENIA		
PROMETHEUS BANK	10.86	2
		Ī

• Banks that can be considered as with Little Risk are as follows:

Banks with Little Risk	Relative Risk Score of the Bank	Ranking
ADANA BANK	6.03	3
INEKOBANK	4.47	4
CONVERSE BANK	3.71	5

• Banks that can be considered as with Average Risk are as follows:

Banks with Average Risk	Relative Risk Score of the Bank	Ranking
ANELIK BANK	2.96	6
ECONOMINVESTBANK	2.80	7
ARMENIAN DEVELOPMENT BANK	2.58	8
ARMECONOMBANK	2.53	9
INTERNATIONAL INVESTMENT BANK	2.50	10
BANK MENATEP-YEREVAN	2.45	11
GLADZORBANK	2.38	12
RIA-BANK	1.57	13
CREDIT-SERVICE BANK	1.09	14
ARMAGROBANK	0.68	15
ARDSHINBANK	0.09	16

Banks that can be considered as Moderately-Risky are as follows:

Banks with Moderate Risk	Relative Risk Score of the Bank	Ranking
TRUSTBANK	-0.73	17
ARMINVESTBANK	-0.78	18
BANK MELLAT	-1.59	19
BANK CREDIT-YEREVAN	-1.83	20
ARMCOMMUNICATION BANK	-1.92	21
ARMIMPEXBANK	-2.20	22
ARMSAVINGSBANK	-2.58	23
LENDBANK	-2.87	24
AREXIMBANK	-2.96	25

• Banks that can be considered as **Highly-Risky** are as follows:

Highly Risky Banks	Relative Risk Score of the Bank	Ranking
UNITED BANK	-3.83	26
AKUNK BANK	-3.89	27

Here we have not included the HSBC, DAVID BANK and SHIRAKINVESTBANK in the final determination of the risk, because of insufficient information about their financial performance. Particularly HSBC lacked information in two ratios: Expense/Total Revenue and Revenue/Assets (Assets Turnover). For the other five ratios, the RRS was 4.48, which would place HSBC as the bank with little risk.

As a result of our analysis we have found that about 37% of banks are with Average risk, and 20% of banks are with little or no risk. Overall more than half of them have good financial standing and are far from being insolvent.

Among the Highly-Risky banks we can see the United Bank, and this is not surprising. Only United Bank's loan investments have constituted the 21% of all loan investments in banking sector of Armenia. Its loan investments were 65% of its Assets, while only 0.7% was invested in relatively non-risky Assets (in T-Bills). Besides about 84% of its revenues has gone to its expenses (which shows that management was weak), and consequently Return on Assets were only 1.3%.

Among Non-Risky banks we can see a medium bank Prometheus with 618mln AMD (1,184,409 USD) of total capital. Although about 46% of its assets were invested in risk-weighted assets, however, due to its strong and persistent management bank's Return on Assets was 17%.

#### **CONCLUSION**

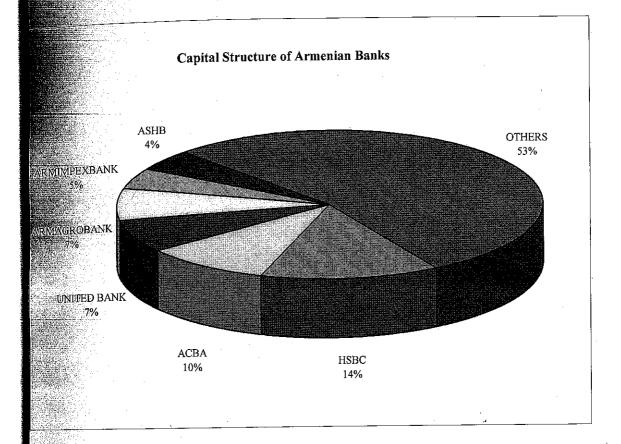
The main purpose of our study was to find some measure of banking riskiness for Armenian banks and rank them according to their relative riskiness just using the information available to outside interested parties: depositors and investors.

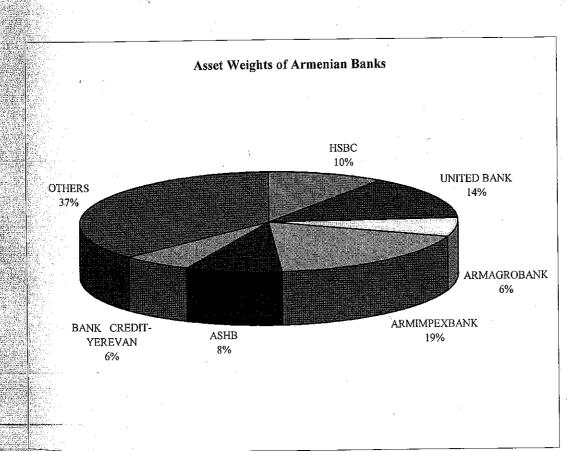
While we did have access to some of the data on capital and earnings, we did not normally have access to information on management and asset quality. However, just relying on the limited data and using statistical analysis we have derived the Relative Riskiness Score measurement for Armenian banks and ranked them with respect to their Scores. This ranking and scores are relative, not absolute. At the end we have concluded that more than half of the Armenian banks are in good financial position, among them

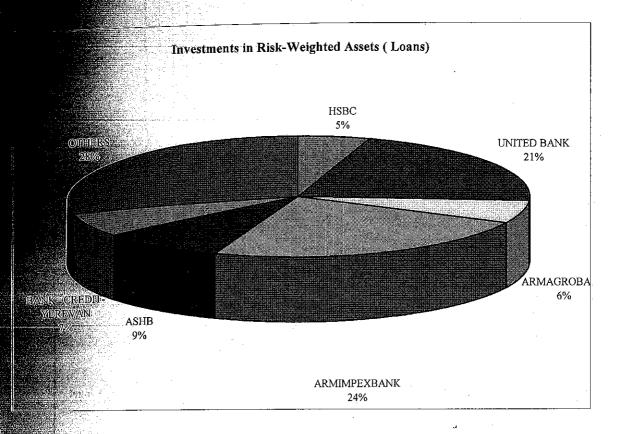
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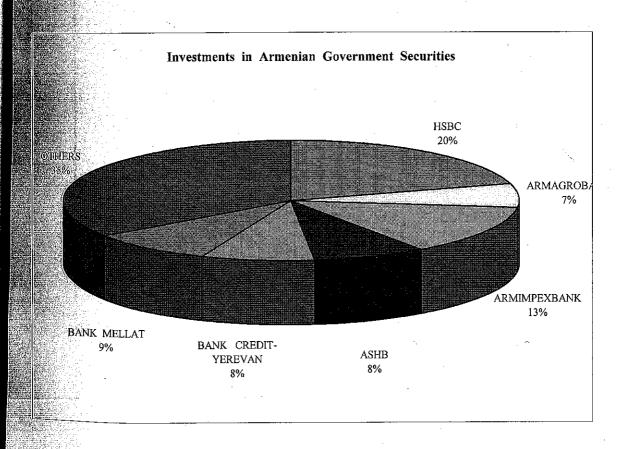
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# **APPENDICIES**









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Damity   D	(in Drams '000)													
(in USD)   1184 409   1097 644   1018 1799   544 6711   592 126   485 084   485 899   458 813   455 527   449 5555   449 5455   449 5555   449			LEMENVA		VEKIMBYNK	TENDBYNK			GI-ADZORBANIK	JNVGI VIU	ocarei seracc	Winter Charles	ZCOXOO164	i. turen
(in USD)														
(in USD)   1184 do   1054 do   1018 TO   954 071   995 071   995 071   1199 481   995 071   995	Canital	618 297	573 029	531 520	1 4	485 084	458 893	458 415	453 527	449 555	442.32 <i>4</i>	490万万里	1 245 37 2000	435 000
1170 ctst   1912	`	1 184 409	1 097 694	1 018 179		929 226	879 055	878 139	868 776	861 167	847.321	841 482	1005/1/58/1	838 235
March in T-bills   Sep 521   1310 284   1414 310   Sep 621   1310 284   Sep 622   1310 284   Sep 622   1310 284   Sep 622   Sep	1	1 179 481	1 915 454	6 187 701		2 669 104	1 493 962	688 302	802 215	1 064 380	1 420 093	1.004.702	E 168114491	11 095 678
216 318   260 662   193 800   198 826   3 828   29 433   7747   3 5817   48 214   713   259 96   2000   2	Loans	540 219	539 951	1 210 296		1414310	567 697	133 184	441 119	√490 578	950 524	185776	172 985	478 062
200 718   39 477   84 580   448 629   54 431   7747   35 477   36 817   48 214   713   226 916     200 0008   0,012   0,004   0,005   0,005   0,017   0,010   0,005   0,005   0,000   0,000     200 0008   0,012   0,004   0,004   0,005   0,017   0,010   0,005   0,000   0,000   0,000     200 0008   0,013   0,004   0,003   0,00	Investments in T-bills	216 318	269 662	193 500	198 826	3 828	29 483	i	1					126.845
1,000   1,00	Net profit	200 718	39 477	84 580	-48 629	-5 433	7 747	3,947	36 817	48 214	-713	26916	11 887	101-183
1														
1	Asset-Weights (All Banks)	800'0	0,012	0,040	0,005	0,017	0,010	0,004	0,005	0,007	600'0	90000	0,004	0,007
0,0009	Asset-Weights (w/o Two Banks)	0,008	0,013	0,041	0,005	0,017	0,010	0,005	0,005	0,007	60000		0,004	6000
0,502   0,30   0,003   0,002   0,003   0,000		60000	0,014	0,045	900'0	0,019	0,011	0,005	900,0	0,008	0,010		ട്ടുന്	ളവ് ന
0,522         0,390         0,091         0,622         0,18         0,31         0,671         0,671         0,671         0,671         0,671         0,671         0,671         0,672         0,672         0,673         0,644         0,0028         0,0008         0,0009         0,														
Colored   Colo	Canital / Assots	0.52				0,18		19'0	0,57	0,42	0,31	0,44	0,64	0,40
0,18         0,28         0,28         0,19         0,38         0,19         0,55         0,46         0,67         0,18           0,0035         0,0035         0,0077         0,0090         0,0036         0,0036         0,0009         0,0036         0,0009         0,0036         0,0009         0,0036         0,0009         0,0036         0,0009 </td <td>Asset-weighted ratio (All Banks)</td> <td>0,0040</td> <td>0</td> <td></td> <td></td> <td>0,0031</td> <td>0,0029</td> <td></td> <td>0,0029</td> <td>6700'0</td> <td></td> <td>0,0028</td> <td>0,0028</td> <td>0,0028</td>	Asset-weighted ratio (All Banks)	0,0040	0			0,0031	0,0029		0,0029	6700'0		0,0028	0,0028	0,0028
0,0035   0,0035   0,0037   0,0014   0,0090   0,0036   0,00090   0,00038   0,0031   0,0001   0,0001     0,0014   0,0017   0,0014   0,0014   0,0000   0,0000   0,0000   0,0000   0,0000   0,0000     0,0014   0,0017   0,0013   0,0003   0,0000   0,0000   0,0000   0,0000   0,0000     0,0013   0,0003   0,0003   0,0003   0,0003   0,0003   0,0000   0,0000   0,0000   0,0000     0,0013   0,0003   0,0004   0,0003   0,0003   0,0003   0,0004   0,0000   0,0000     0,0003   0,0003   0,0004   0,0003   0,0003   0,0004   0,0004   0,0000   0,0000     0,0003   0,0003   0,0004   0,0100   0,0003   0,0004   0,0004   0,0004   0,0004     0,0003   0,0003   0,0004   0,0100   0,0005   0,0004   0,0004   0,0004   0,0004     0,0003   0,0003   0,0004   0,0100   0,0004   0,0004   0,0004   0,0004   0,0004     0,0003   0,0003   0,0004   0,0003   0,0005   0,0004   0,0004   0,0004   0,0004     0,0003   0,0003   0,0004   0,0004   0,0005   0,0004   0,0004   0,0004   0,0004     0,0003   0,0003   0,0004   0,0004   0,0005   0,0004   0,0004   0,0004   0,0004   0,0004     0,0003   0,0003   0,0003   0,0004   0,0004   0,0004   0,0004   0,0004   0,0004   0,0004     0,0003   0,0003   0,0003   0,0004			ļ			63.0			35 ()	0.46	1290	0.18	0.25	0.44
0,0035   0,0035   0,0035   0,0037   0,0014   0,0090   0,0036   0,0009   0,0028   0,0021   0,0021   0,0001	Loans / Assets	0,46	.						0.00	25000	1,200	21000	٩	0.0021
0,183         0,141         0,031         0,245         0,001         0,020         - <td>Asset-weighted ratio (All Banks)</td> <td>0,0035</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0,0028</td> <td>0,0031</td> <td>0,0061</td> <td>0,0012</td> <td>i noori</td> <td>1 (500,0</td>	Asset-weighted ratio (All Banks)	0,0035							0,0028	0,0031	0,0061	0,0012	i noori	1 (500,0
Colored   Colo	Investments in T. hills / Assets	0.183		0.031	0	0,001			-	-	-		,	0,052
0,170         0,021         0,014         -0,060         -0,002         0,005         0,008         0,046         0,045         -0,001         0,027           0,0013         0,0013         0,0013         0,0003         0,0000         0,0000         0,0000         0,0003         0,0000	Asset-weighted ratio (All Banks)	0,0014						0,0000	0,0000	0,0000		0,0000	00000	0,0004
0,170         0,021         0,014         -U,060         -U,000         0,000         0,000         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,040         0,000         <					0,00	0000	5000	9000	0.046	0.045	0 00	0.027	0.017	0.097
0,0013   0,0003   0,0005   -0,0003   -0,0000   0,0000   0,0000   0,0002   0,0003   -0,0000   0,0002     Banks   0,0002   0,0004   0,0004   0,0005   0,0004   0,0005   0,0004   0,0006   0,0011   0,0000	Return on Assets	0,170				70000-		0,000	0,040	2,0,0	2,001	12050		70000
0,0305         0,0611         0,2359         0,0200         0,1297         0,3220         0,0357         0,0736         0,0736         0,0736         0,0170           0,0002         0,0008         0,0096         0,0001         0,0023         0,0032         0,0004         0,0004         0,0004         0,0004         0,0001           0,011         0,012         1,00         0,98         0,94         0,73         0,71         1,00           0,0035         0,0124         0,0120         0,0196         0,0107         0,0047         0,0043         0,0055         0,0104           0,0037         0,0028         0,0074         0,0004         0,0013         0,0014         0,0016         0,015	Asset-weighted ratio (All Banks)	0,0013				-0,0000		000000	0,0002	0,0003	0000°n-	0,0002	0,0001	l anno n
0,0002         0,0008         0,0009         0,0002         0,0002         0,0004         0,0004         0,0004         0,0001           0,41         0,88         0,89         2,02         1,00         0,98         0,94         0,73         0,71         1,00           0,0035         0,0124         0,0120         0,0196         0,0107         0,0047         0,0043         0,0055         0,0104           0,0032         0,0028         0,0074         0,0003         0,0004         0,0042         0,0013         0,0014         0,0015	I oon lose racardos / Loans	0 0305			0				0,0736	0,0829	0,1170		0,0548	0,2997
rue (Mngmnt)         0,41         0,88         0,88         2,02         1,00         0,98         0,94         0,73         0,71         1,00           (w / o Three Bank         0,0035         0,0124         0,0404         0,0120         0,0126         0,0136         0,0107         0,0047         0,0043         0,0043         0,0055         0,0104           st Turnover)         0,037         0,20         0,16         0,06         0,26         0,38         0,13         0,27         0,21         0,15           (w / o Three Bank         0,0032         0,0074         0,0003         0,0004         0,0064         0,0064         0,0004         0,0016         0,0016	Asset-weighted ratio (w / o Two Banks)	0,0002		į	0				0,0004	900000		00000	0,0002	0,0022
(w / o Three Bank         0,0032         0,0124         0,0464         0,0136         0,0136         0,0107         0,0047         0,0043         0,0055         0,0104           et Turnover)         o, 37         0,20         0,16         0,06         0,26         0,26         0,33         0,13         0,25         0,21         0,15           (w / o Three Bank         0,0032         0,0074         0,0003         0,0056         0,0042         0,0042         0,0016         0,0016         0,0015	Trees (Trees)	14.0			i.				0.73	0,71	1,00		0,87	0,75
(W/o Invee Bank 0,0033 0,0124 0,0003 0,0050 0,0042 0,0007 0,0014 0,0015 0,0015	Expense / Iolai reveilue (willgillin)	1+00			١				0 0043	0.0055		0,000	0,0043	09000
Bank         0,0032         0,0028         0,0074         0,0003         0,0056         0,0042         0,0042         0,0004         0,0004         0,0004         0,00014         0,0016         0,0015	Asset-weighted ratio (w/o inree bank	ccoo'o			>				2. 2.2.6			,		
Bank 0,0032 0,0028 0,0074 0,0003 0,0050 0,0042 0,0007 0,0014 0,0016 0,0015	Revenue / Asset (Asset Turnover)	0,37							0,25	0,21				0,52
	Asset-weighted ratio (w/o Three Bank	0,0032			0 .				0,0014	0,0016			600000	0,0042

(in Drams '600)				.		1			-	-   	IK		
Banks	HSBC	COOLERATIVE BANK	OF ARMENIA	VEWAGROBANK	V.	PEMIMBEXBYNK	VKDSHINBVNK	BPUK CKEDIL-	<b>РЕМЕСОИОМВРИК</b>	VENSAVINGSBANK	DEAETOBMEAL BY	CONAEBSE BYNK	VIETIK BYNK
				_						100,000	020 060	705 976	735 440
	7 475 576	CF8 721 C	1 818 133	1	775 704	1 188 339	1 074 399	976 732	955 408	958 081	720 002	27.2001	1 408 808
Capital	3 473 320	20 104 7	Ļ		3 401 536	2 276 381	2 058 117	1 871 027	1 830 178	1 798 136	1 764 015	1 224 073	1 400 000
Capital (in USD)	6 657 713	0/6/7/4	_[`	ļ	<del> </del>	29 079 033	12 763 501	9 869 727	4 852 913	5 639 629	3 404 752	5 228 276	2 210 200
Assets	15 651 397	3 451 255	4	1	1	076 037 31	5 706 769	4 395 363	1 842 571	1 326 947	1 313 834	1 032 285	796 8/8
Loans	3 326 201	1 711 562		4	4 160 974	1 062 838	1 159 683	1 193 560	502 686	730 163	520 601	794 397	128 957
Investments in T-bills	3 007 325	880 925	1		04 200	303 911	541 275	38 056	L	-385 829	130 978	241 532	47 415
Net profit	927 173	1 261 022	292 355		84 350	117 505	71.7		ļ				
					1			200	L	9500	0.022	0,033	0,014
A XXX : Line (All Donles)	0.10	0,022	0,141	41	0,063	0,186	0,082	0,00		0,033	2000	0.034	0.015
Asset-weights (All Danks)	0,10	0,022		0,145	0,064	0,191	0,084	0,065	0,032	0.037	0,025	0,038	0,016
	,	0,025	25 0,161	61	0,071	0,212	0,093	0,0,2		3.00			i
Troops to the second													
					0,	700	0.08	0.10	0,20	0,17	0,27		
Capital / Assets	0,22	0		s,	0,10	1000	0200	0	0 0061	0900 0	0,0059	0,0051	0,0047
Asset-weighted ratio (All Banks)	0,0222	0,0158	ó	0116	0,0114	0,0076	6000,0	_		5	•		
_		ļ			;	0.54	0.45	0.45	5 0.38	0,24	0,39		
1 Joans / Assets	0,21			0,63	0,43	10010	0.0371	C	O	5800'0	0,0084	9900'0	0,0056
(s) Asset-weighted ratio (All Banks)	0,0213	0,0109		1688	0,0256	0,1001		_	_		ļ		
_	.			200	0000	8900	0.091	0.121	0,104	0,129		ļ	
Investments in T-bills / Assets	0,192	ļ		0,007	0,000	0,000	0.0074				0,0033	3 0,0051	18000'0
Asset-weighted ratio (All Banks)	0,0192	_	0,00561	Loor	o,ooot	22.00							0.001
		,	0 22.0	0.013	0.077	0.010	0,042		4 0,058	-0,068			
	6500.0			610	0.0017	0,0019	0,0035	0,0002	2 0,0018	-0,0025	800000	9100'0 1	l cono o
ए [Asset-weighted ratio (All Banks)	60000		_	<b>-</b>						2000	0.0447	0 0644	0 0629
_	0000		0.0121	0.0532	0,1013	0,1290							
1g Loan loss reserves / Loans	0,0003	_		0,0077	0,0065	0,0246	0,0085	5 0,0012	0,0056	0,0084	0,00010		
ig [Asset-weighted fairs (w) of the Common				_					28.0	1 26	0.78	8 0,65	5 0,92
T (Total variante (Magmut)			0,23	0,84	68'0	96'0	,			5	C	0	Ô
24 Asset-weighted ratio (w/o Three Bank	0,0000		0,0057 0,	0,1350	0,0637	0,2044	0,0773	3 0,0688		s	5		
				15.0	0 27	0.29	0,25		0,08		-		
22 Revenue /Asset (Asset Turnover)				72.50	70100	0.0607	0.0231	0,0060	60 0,0137	0,0111	0,0044	0,0068	800000
	0,0000		0,0127	0,0176	0,0120	2000							
			1	_									

Banks	PRMINAESTBANK	ZHIFYKINAESTBANK	VDVNV BVNK	BYAK CKEDIL-ZEKAICE	BPAK METTYL
Capital	433 505	424 755	419 558	417 937	405 556
Capital (in USD)	830 422	813 660	803 705	800 600	776 883
Assets	1 485 067	2 834 932	709 697	1 433 009	4 881 653
Loans	688 698	1 772 734	94 911	535 558	258 914
Investments in T-bills	82 070	40 567	133 488	169 615	1 320 000
Net profit	8019	-39 483	19 572	13 595	-85 851
Asset-Weights (All Banks)	600'0	0,018	0,005	600'0	0,031
Asset-Weights (w/o Two Banks)	0,010		0,005	600'0	0,032
Asset-Weights (w/oThree Banks)	0,011		0,005	0,010	0,036

Capital / Assets	0,29	0,15	65'0	0,29	0,08
Asset-weighted ratio (All Banks)	0,0028	0,0027	0,0027	0,0027	0,0026
Loans / Assets	0,59	0,63	0,13	0,37	0,05
Asset-weighted ratio (All Banks)	9500'0	0,0113	90000	0,0034	0,0017
Investments in T-bills / Assets	0,055	0,014	0,188	0,118	0,270
Asset-weighted ratio (All Banks)	5000'0	0,0003	600000	0,0011	0,0084
Return on Assets	0,004	-0,014	0,028	60000	-0,018
Asset-weighted ratio (All Banks)	00000	-0,0003	0,0001	0,0001	-0,0005
Loan loss reserves / Loans	0,0801		0,1388	0,1304	0,7326
Asset-weighted ratio (w / o Two Banks)	800000	0,0000	900000	0,0012	0,0234
Expense / Total revenue (Mngmnt)	86'0		0,84	0,95	1,06
Asset-weighted ratio (w / o Three Bank	0,0107	0,0000	0,0043	0,0100	0,0378
Revenue / Asset (Asset Turnover)	0,29		0,22	0,27	0,30
Asset-weighted ratio (w / o Three Bank	0,0031	000000	0,0011	0,0028	0,0107

ED BYNK  TIVE BANK OF  HSBC	AGRI(		Relative Standing against Weighted average 0.41 3.85 0.5		Relative Standing against Weighted average 1,31 -0,47 -1.28		Relative Standing against Weighted average 1,37 2,28 -1.23		Relative Standing against Weighted average 0,53 5,72 -0.25		Kelative Standing against Weighted average (w/o 2 banks) 0,86 0,79 0,47	Expense / Lotal revenue (Adagmut)	Accidance Standing against Weighted average (w/o 3 banks) 3,90 0.33		Relative Standing against Weighted average (w/o 3 banks) 2.89 -131		18,96
KOBVIK			-	0,13	8	-	900	00.00	0.00	70,0	0,10		-	00.0	-	0,43	-3,83 0,68
INBVNK				-0,85 -0,55	-	-0,71 -0,19	+	-0,3/	+	-0,30 0,24	-0.12	$\frac{1}{2}$	-	-0,41 0,37	-	0,56 0,15	-2,20 0,09
IL-KEKEAVA	AK CEED	lV8		-0,44		-0,14		0,38		-0,41	7.0	0,74		-0,36		-1,59	-1,83
OMBANK	<b>EMECON</b>	₩		0,23		0,27		0,13		0,51		-0,49		0,25		1,61	2,53
	VEWEN	₩		0,02		1,17		0,50		-1,62		-0,88		-2,13		0,37	-2,58
AT BANK	NETOPME	DE/	-	0,74	_	0,23		0,83	_	0,18		0,53		19,0		-0,61	2.58
BVAK	ONAEBSE	О		-0,08		1,40		0,81		0,34		0,38		1.44		-0.59	 271

Indicator's Z-scores

Banks	VAETIK BVAK	PROMETHEUS BANK	KEBENAN	BVNK	VBEXIMBVAK	TENDBVNK	TRUSTBANK	INTERNATIONAL	CLADZ@RBANK	N. W. C.	VAKONIK-BYAK
Capital / Assets	: .										
Relative Standing against Weighted average	1,17	2,50	0,94	-0,53	3,16	0,13	1,00	3,48	2,78	1,79	1,03
Loans / Assets			_								
Relative Standing against Weighted average	0,17	-0,21	88'0	1,42	1,00	99'0-	0,27	1,43	-0,79	-0,23	-1,53
Investments in T bills (4 ssets				,			-				-
Relative Standing against Weighted average	-0,50	1,25	99,0	-0,88	2,11	-1,30	-1,04	-1,32	-1,32	-1,32	-1,32
Return on Assets											
Relative Standing against Weighted average	-0,11	2,40	-0,12	-0,24	-1,48	-0,51	-0,38	-0,33	0,31	0,29	-0,48
Loan toss reserves / Loans								-	-		
Relative Standing against Weighted average (w/o 2 banks)	0,39	0,64	0,41	-0,94	0,72	-0,12	-1,60	0,57	0,31	0,24	-0,02
Expense / Total revenue (Mingrant)											
Relative Standing against Weighted average (w/o 3 banks)	-0,14	2,85	0,05	00'0	-6,62	-0,65	-0,54	-0,28	0,94	1,07	-0,65
Revenue Asset (Asset Turnover)						1					
Relative Standing against Weighted average (w/o 3 banks)	1,98	1,43	-0,36	-0,74	-1,85	0,24	1,56	-1,05	0,14	-0,28	-0,91
								į			
Relative Risk-Scores	2,96	10,86	2,45	-1,92	-2,96	-2,87	-0,73	2,50	2,38	1,57	-3,89

(Continued)

•															ĒΛ	3,25
		:			•										STDEV	
		٠													MEAN	1,50
BYNK METTYL		-0.55		2.30		2.47		-0.77		-4.77		96.0-		0,71		-1,59
CKEDIL-ZEKAICE BVNK		68'0		0,31		0,34		-0,31		-0,13		-0.35		0,34		1,09
VDVNV BVNK		2,96		1,80		1,32		-0,01		-0,19		0,33		-0,18		6,03
:: SHIKYKINAESLBYNK		-0,09		-1,25		-1,12		-0,71								-3,17
YEWIIAEZLBYIK		68'0		-1,01		-0,54		-0,40		0,26		-0,54		0,56		-0,78
INEKOBYNK		1,62		-0,08		-0,59		1,09		-1,43		0,81		3,05		4,47
ECONOMINAEZLBYNK		3,31		1,05		-1,32		-0,18		0,46		0,12		-0,65		2,80
DVAID BVAK		1,90		1,48		-1,32	-	-0,02								2,04
										(w/o 2 banks)		(w/o 3 banks)		w/o 3 banks)		
Banks	Capital / Assets	Relative Standing against Weighted average	Loans / Assets	Relative Standing against Weighted average	Investments in T-bills//Assets	Relative Standing against <i>Weighted</i> average	Keturn on Assers	Relative Standing against Weighted average	oan loss reserves / Loans	Relative Standing against Weighted average (w/o 2 banks)	Expense / Total revenue (Mingmin)	Relative Standing against Weighted average (w/o 3 banks)	Revenue /Asset (Asset Turnover)	Relative Standing against Weighted average (w/o 3 banks)		Relative Risk-Scores