Author's Copy

Fundamental Ratios and Stock Market Performance: Evidence from Turkey

Parlak, Deniz; Doğuş University, İstanbul

ABSTRACT

The fundamental analysis strives to determine the approximate future market value of a firm by examining related economic, financial and other qualitative and quantitative factors. An important step in a fundamental analysis is the computation of basic ratios which provide an indication of firms' financial performance in several key areas. The purpose of this study is to investigate the financial performance of Turkish manufacturing companies and the impact of this performance on common stock returns for the three years from 2009 to 2012.

The sample consisted of 20 chemical-sector firms quoted to the Istanbul Stock Exchange. The chemical sector was intentionally selected as it is a field that provides significant input to many branches of industry, such as automotive, leather products, glass, textile and paper products and it is considered one of the key sectors of the Turkish economy. For each company seven key financial ratios were calculated separately for three years in the analysis. The selected ratios are return on asset and return on equity which measure profitability, current ratio and quick ratio which measure liquidity, debt ratio which measures leverage, and accounts receivable turnover and asset turnover which measure efficiency.

Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) is a multi-criteria decision analysis that compares a set of alternatives by identifying weights for each criterion, and calculating the geometric distance between each alternative and the ideal alternative, which represents the best score in each criterion. In the context of this analysis the method is applied to rank the firms in the sample according to seven criteria, which are financial ratios in the context of this analysis. TOPSIS ranking was performed separately for the three years of this analysis.

Based upon the rankings two portfolios are constructed: the first is comprised of 10 best performers and the second is comprised of 10 worst performers. The stock market returns of both portfolios are calculated separately for three years in the analysis. The t-test which was conducted revealed that there was no significant difference between the yearly returns of the two portfolios for any of the three years of this analysis.

JEL CODE: G32

Key words: Ratio analysis, TOPSIS, portfolio return

1. Introduction

Performance evaluation is one of the most critical challenges facing the organizations. The financial performance measurement system plays a key role for managers in developing strategic plans, evaluating the achievement of firms' objectives and implementing corrective actions when required. But the most important role of performance evaluation however, lies in the determination of the present and future value of a firm.

The fundamental analysis which is a widely used technique in performance measurement, strives to determine the approximate future market value of a firm by examining related economic, financial and other qualitative and quantitative factors. An important step in a fundamental analysis is the computation of basic ratios which provides an indication of firms' financial performance in several key areas. Of critical concern in this process is the determination of which ratios and which weights will be used to measure the performance. Multi-criteria decision-making techniques offer various methods of dealing with the above-mentioned problem (Brealey et all., 2012).

One of the more widely used multi-criteria decision-making methods is "The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS)". This is a multi-criteria decision analysis technique, that was originally developed by Hwang and Yoon in 1981 with further developments by Yoon in 1987, and Hwang, Lai and Liu in 1993. TOPSIS is a method of compensatory aggregation which compares a set of alternatives by identifying weights for each criterion, normalizing scores for each criterion and calculating the geometric distance between each alternative and the ideal alternative, which represents the best score in each criterion (Demireli, 2010).

An important output of the TOPSIS technique is the ranking of alternatives which in the context of firms' performance evaluation provides an important input to portfolio managers. In order to increase the performance of their portfolios portfolio managers strive to select the best performing stocks, for which an important determinant is the performance of the companies underlying the shares.

The purpose of this study is to investigate the persistence in the financial performance of Turkish chemical sector manufacturing companies and the impact of this performance on common stock returns for the three years from 2009 to 2012. The TOPSIS method is used to evaluate and to compare the performance of 20 firms in the analysis.

Although a vast amount of literature on firms' financial performance already exists, the multi-criteria decision-making methods are rarely used in the evaluation process of such companies. This is the main contribution of this paper to existing literature. Emerging markets on the other hand, have their own dynamics which makes them unique and different than developed markets. Considering this phenomenon from an emerging market perspective represents another important contribution of this research.

The reminder of the paper is organized as follows. Data and methodology are presented in Part 2; Part 3 presents the analysis and the results. Part 4 concludes the discussion.

2. Data and Methodology

As stated in the introduction, the purpose of this study is to search for persistence in the financial performance of industrial companies in the chemical sector and the impact of this performance on common stock returns. Hence the hypothesis of the study is:

H_1: The stock returns of a portfolio composed of the shares of the firms with higher financial performance are greater than those of a portfolio composed of the shares of the firms with lower financial performance.

The analysis was conducted on a sample of 20 Turkish chemical-sector firms quoted to the Istanbul stock exchange. The chemical sector was intentionally selected as it is a field that provides significant amounts of input to many branches of industry, such as automotive, leather products, glass, textile and paper products and is considered one of the key sectors of Turkish economy. The industry employs more than 81,500 people in approximately 4,000 companies. It has developed significantly and is expected to develop further in terms of quality, productivity, and environmental awareness as part of Turkey's adaptation to EU standards. As one of the main producers of soda ash, chrome and boron in the world Turkey has competitive advantage in this sector. The primary products exported by the Turkish chemical industry include petrochemicals, fertilizers, pharmaceuticals, synthetic fiber and strings, soap and detergent, as well as paints. There are about 314 companies with foreign investment in the Turkish chemical industry, an industry which has captured 13 percent share of total foreign capital in Turkey. The export volume of the Turkish chemical industry is increasing steadily. Today, the chemical industry was one of the most important exporting sectors among total industrial exports. In recent history, exports of chemicals constituted approximately 6.2 percent of all Turkish exports, making it the 4th largest sector by value of exports after the automotive, steel and textile industries (Deloitte, 2010; Erk ,2010).

Due to data restrictions only 20 firms which were quoted to the stock exchange were included in the sample. Of those 20 firms, 13 were local firms and the remaining 7 had foreign ownership greater than 40 percent. Five firms had a sales volume greater than $1 billion; 5 had sales volumes between $500 million and $1 billion, the remaining 10 firms were small companies with sales volume less than $500 million.

Financial ratios provide insights about the company in an organized way and allow for the comparison of different firms. The ratios are classified according to the information they provide. The main areas of measurement are liquidity, profitability, efficiency and leverage of a company. Liquidity ratios measure the extent to which assets can be turned into cash quickly whereas profitability ratios measure how much profit a business has made. Leverage ratios reveal the financing and risk structure of a company and finally efficiency ratios measure how effectively a company utilizes its assets and manages its liabilities (Weygandt et all., 2012)

In the existing literature many metrics have been developed to measure these dimensions. In the context of this analysis seven measures are used of which two are for liquidity, two for profitability, two for efficiency and one for leverage. The two metrics that measure liquidity are current ratio (CR) and quick (QR) ratio. Both show the short-term debt-paying ability of a company. CR is defined as current assets divided by current liabilities whereas QR is defined as quick assets -which are cash, marketable securities and receivables- divided by current liabilities. Profitability is measured according to return on assets (ROA) and return on equity (ROE). ROE is calculated as net income divided by average equity whereas ROA is calculated by dividing net income less financial expenses to average assets. Efficiency measures used in this study is account receivable efficiency (ARE) and asset efficiency (AE).ARE is calculated by dividing net sales to average accounts receivables and AE is calculated by dividing net sales to average assets. Finally leverage is measured by debt equity ratio (DE) which is calculated by dividing total liabilities to total equity (Brealey et all., 2012; Weygandt et all. 2012).

The balance sheets and income statements of 20 firms in the sample were obtained from the website of public disclosure platform (www.kap.gov.tr) and the ratios were calculated thereupon.

To rank the 20 companies in the sample The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) method was used. In this method two artificial alternatives are hypothesized. The first is the ideal alternative which represents the alternative that has the best level for all attributes considered and the second is the negative ideal alternative which represents the alternative that has the worst attribute values. TOPSIS selects the alternative that is the closest to the ideal solution and farthest from negative ideal alternative (Uygurtürk and Korkmaz, 2012).

To apply TOPSIS m alternatives (options) and n attributes/criteria should be selected and the score of each option with respect to each criterion should be calculated. After the identification of alternatives and options TOPSIS is applied at five stages:

1. Construction of the normalized decision matrix: This step transforms various attribute dimensions into non-dimensional attributes, which allows for comparisons across criteria. Scores or data are normalized scores or data as follows:

   $r_{ij} = x_{ij} / (\Sigma x2_{ij})$ for i = 1, …, m; j = 1, …, n

2. Construction of the weighted normalized decision matrix. A set of weights is determined for each criteria w_j for j = 1,…n. Each column of the normalized decision matrix is multiplied by its associated weight.
3. Determination of the ideal and negative ideal solutions.
   Ideal solution is:
   $A^* = \{ v_1^* , …, vn^* \}$, where
    $v_j^* = \{ \max (v_{ij})$ if j € J ; $\min (v_{ij})$ if j € J' $\}$
   Negative ideal solution.
   $A' = \{ v_1' , …, vn' \}$, where
   $v' = \{ \min (v_{ij})$ if j € J ; $\max (v_{ij})$ if j € J' $\}$
4. Calculation of the separation measure for each alternative.
   The separation from the ideal alternative is:
   $S_i^* = [\Sigma (v_j^* - v_{ij})^2]^{\frac{1}{2}}$ i = 1, …, m
   Similarly, the separation from the negative ideal alternative is:
    $S'_i = [\Sigma (v_j' - v_{ij})^2]^{\frac{1}{2}}$ i = 1, …, m
5. Calculation of the relative closeness to the ideal solution C_i^*
   $C_i^* = S'_i / (S_i^* + S'_i)$, $0 < C_i^* < 1$
   The option with Ci* closest to 1 is selected.

In the context of this analysis in the calculation of "C" score, equal weights are given to each criterion and the firms are ranked according to their "C" values for each year in the analysis separately.

To test the single hypothesis of this study two different portfolios were formed. The first consisted of 10 best performers and the second consisted of 10 worst performers. The stock market returns of both portfolios were calculated separately for three years in the analysis. The data for stock prices was obtained from the website of Istanbul Stock Exchange (www.imkb.gov.tr) and yearly stock returns were calculated thereupon.

3. Analysis and Findings

The calculated ratios are presented at Attachment 1 and the mean ratios at Table 1.

Table1. Financial Ratios

	ROA	ROE	CR	QR	DE	ARE	AS
2010	0,07	0,11	1,94	1,52	1,10	7,48	1,07
2011	0,08	0,05	2,03	1,56	1,51	6,83	1,22
2012	0,07	0,13	1,84	1,30	1,35	7,26	1,25
MEAN	**0,07**	**0,10**	**1,94**	**1,46**	**1,32**	**7,19**	**1,18**

As Table 1 shows, in terms of net income, highest profitability was obtained at year 2011 whereas in terms of net income less financial expenses at year 2012. Firms in the sample had both highest liquidity and largest debt at year 2011. The most efficient year in terms of accounts receivables was 2010 whereas in terms of assets the year 2012.

At the next step, consistent with TOPSİS approach, the ratios were normalized. Mean normalized ratios are presented at Table 2.

Table2. Normalized Financial Ratios

	ROA	ROE	CR	QR	DE	ARE	AS
2010	0,017	0,030	0,512	0,438	0,342	2,033	0,267
2011	0,021	0,071	0,640	0,584	0,586	1,885	0,316
2012	0,019	0,040	0,494	0,381	0,476	2,042	0,318
MEAN	**0,019**	**0,047**	**0,548**	**0,467**	**0,468**	**1,987**	**0,300**

To construct weighted normalized matrix, equal weights were given to all ratios. Based on normalized weighted matrix ideal positive and negative solutions were calculated. The computed ideal positive and negative solutions are presented at Table 3.

Table 3. Ideal positive and negative ratios

	ROA		ROE		CR		QR		DE		ARE		AS	
	ideal +	ideal -	ideal +	ideal -	ideal +	ideal -	ideal +	ideal -	ideal +	ideal -	ideal +	ideal -	ideal +	ideal -
2010	0,012	0,000	0,021	0,000	0,534	0,004	0,624	0,001	0,000	0,494	1,268	0,010	0,160	0,000
2011	0,010	0,000	0,145	0,000	1,236	0,002	1,354	0,000	0,001	1,338	1,368	0,011	0,197	0,000
2012	0,017	0,000	0,047	0,000	0,451	0,002	0,585	0,000	0,001	0,932	1,305	0,009	0,188	0,000
MEAN	**0,013**	**0,000**	**0,071**	**0,000**	**0,740**	**0,003**	**0,855**	**0,000**	**0,001**	**0,921**	**1,314**	**0,010**	**0,182**	**0,000**

"C" values were then computed for each observation based on the distance between the observation and positive and negative ideal solution. The observations were ranked according to "C" values for all 3 years from 2009 to 2012. Based upon these rankings two portfolios were formed. The first portfolio is comprised of 10 best performers and the second portfolio is comprised of 10 worst 10 performers. The "C" values, rankings and portfolio attributions are presented at Table 4.

Table 4. "C" Values, Rankings and Portfolio Attributions

	C (2010)	Rank(2010)	C (2011)	Rank(2011)	C (2012)	Rank(2012)	portfolio
firm 1	0.526	6	0.585	10	0.579	2	1
firm 2	0.509	13	0.582	16	0.552	16	2
firm 3	0.521	8	0.594	3	0.579	3	1
firm 4	0.428	19	0.575	19	0.529	18	2
firm 5	0.522	7	0.586	8	0.563	9	1
firm 6	0.531	5	0.588	5	0.565	7	1
firm 7	0.512	11	0.533	20	0.492	20	2
firm 8	0.512	10	0.597	2	0.572	5	1
firm 9	0.534	1	0.588	6	0.568	6	1
firm 10	0.449	17	0.583	13	0.558	11	2
firm 11	0.517	9	0.586	7	0.560	10	1
firm 12	0.533	3	0.585	9	0.577	4	1
firm 13	0.509	12	0.583	15	0.555	14	2
firm 14	0.502	14	0.582	17	0.541	17	2
firm 15	0.533	2	0.588	4	0.565	8	1
firm 16	0.428	20	0.584	11	0.523	19	2
firm 17	0.498	15	0.584	12	0.556	13	2
firm 18	0.452	16	0.583	14	0.554	15	2
firm 19	0.532	4	0.615	1	0.585	1	1
firm 20	0.438	18	0.581	18	0.557	12	2

As table 4 shows, portfolio attributions were the same for all years and for all observations meaning that the companies in the sample were either in the first or second portfolio for all three years of the analysis which showed performance persistence. Still the same persistence was not found to be valid when within-portfolio rankings were considered. The 2011 and 2012 rankings were very similar to each other but differed from those of 2010. The best and worst performers of 2011 maintained their position also in 2012.

At the last step of the analysis portfolio returns were calculated based on individual stock returns. The weights of the stocks in the portfolio were assumed to be equal. As a result portfolio returns were calculated as simple averages of individual stock returns. The results are presented at Table 5.

Table 5. Portfolio Returns

portfolio 1		return			portfolio 2		return		
	2010	2011	2012	mean		2010	2011	2012	mean
firm 1	48%	28%	23%	33%	firm 2	21%	11%	56%	29%
firm 3	47%	16%	15%	26%	firm 4	64%	-1%	16%	26%
firm 5	93%	21%	128%	81%	firm 7	35%	-52%	54%	12%
firm 6	10%	-33%	8%	-5%	firm 10	75%	14%	55%	48%
firm 8	60%	-48%	42%	18%	firm 13	92%	2%	45%	47%
firm 9	65%	-34%	9%	14%	firm 14	56%	-16%	41%	27%
firm 11	88%	-36%	25%	26%	firm 16	33%	-48%	22%	2%
firm 12	66%	-10%	54%	37%	firm 17	87%	3%	-4%	29%
firm 15	7%	18%	8%	11%	firm 18	46%	4%	-27%	8%
firm 19	35%	-46%	43%	11%	firm 20	39%	17%	37%	31%
portfolio return	52%	-12%	35%	25%	portfolio return	55%	-7%	29%	26%

As Table 5 indicates, surprisingly the return of the portfolio two was greater than that of portfolio 1 for the years 2010 and 2011. When the mean of the three years are considered, the return of the first portfolio was one point lower than that of portfolio two, demonstrating that there was no

relationship between financial performance indicators and stock returns hence the present firm value.

The analysis of variance test demonstrated that mean of the two portfolios was not significantly different for all three years in the analysis. The results are presented at Table 6.

Table 6. Analysis of Variance Test Results

		Sum of Squares	df	Mean Square	F	Sig.
Y2010	Between Groups	,004	1	,004	,059	,810
	Within Groups	1,278	18	,071		
	Total	1,282	19			
Y2011	Between Groups	,017	1	,017	,220	,645
	Within Groups	1,379	18	,077		
	Total	1,396	19			
Y2012	Between Groups	,018	1	,018	,172	,683
	Within Groups	1,883	18	,105		
	Total	1,901	19			

As the Table 6 indicates the hypothesis stating that the stock returns of a portfolio composed of the shares of firms with higher financial performance are greater than those of a portfolio composed of the shares of the firms with lower financial performance was rejected.

4. **Conclusion**

The purpose of this analysis was to examine the relationship between financial performance indicators and stock returns. It was hypothesized that the stock returns of a portfolio composed of the shares of firms with higher financial performance are greater than those of a portfolio composed of the shares of the firms with lower financial performance Seven key financial indicators were calculated from a sample of 20 Turkish chemical industry manufacturing firms for three years from 2009 to 2012. The TOPSIS method was applied to rank the firms according to equally weighted financial indicators and based upon these rankings two portfolios were constructed. The first was comprised of the best performers and the second was comprised of the worst performers. An important finding was that all firms in the sample fell in the same portfolio for all three years in the analysis demonstrating persistence in terms of financial performances.

The computed portfolio returns revealed that the return of the second portfolio which was comprised of firms with lower financial performance indicators was higher than that of the first portfolio for two years of the analysis. Similar results were obtained when overall returns were considered. The three-year return of the second portfolio was 26 percent whereas that of the first was 25 percent. The analysis of variance test which was performed demonstrated that the mean of the two portfolios was not significantly different for any year in the analysis. Hence the single hypothesis of this study was rejected.

The results revealed that although the financial performance of the companies was persistent through the years, there wasn't any link between financial results and firm value. It is important to

note that due to data restrictions the analysis was limited to 20 observations and only seven ratios which represents the main limitation of this study.

References

1. BIST; Borsa İstanbul; www. Imkb.gov.tr
2. Brealey, R.A.; Myers, S.C.; Allen, F.(2011). *Principles of Corporate Finance.* McGraw- Hill Irwin, New York.
3. Deloitte, (2010). Turkish Chemical Industry Report. www.invest.gov.tr
4. Demireli, E.(2010). "TOPSIS Multicriteria Decision Making Method: An Examination on State Owned Commercial Banks in Turkey". *Girişimcilik ve Kalkınma Dergisi,5:* 101-112
5. Erk, T. (2010). Turkish Chemical Industry. *www.tobb.org.tr*
6. Hwang, C.L.; Yoon, K. (1981). *Multiple Attribute Decision Making: Methods and Applications*. New York: Springer-Verlag.
7. Hwang, C.L.; Lai, Y.J.; Liu, T.Y. (1993). "A new approach for multiple objective decision making". *Computers and Operational Research* 20: 889–899
8. KAP; Public Disclosure Platform; www.kap.gov.tr
9. Uygurtürk, H.; Korkmaz,T. (2012). "The determination of Financial Performance with TOPSIS Multiple Criteria Decision Making Method: An application on Basic Metal Industry Enterprises. *Eskişehir Osmangazi Üniversitesi IIBF Dergisi, 7*. 95-115
10. Weygandt J.J.; Kimmel, P.D.; Kieso D.E. (2012). *Accounting Principles*. John Wiley & Sons.
11. Yoon, K. (1987). "A reconciliation among discrete compromise situations". *Journal of Operational Research Society* 38. pp. 277–286.

Appendix 1: Ratios

RATIOS	ROA			ROE			CR			QR			DE			ARE			AE		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	**2012**	2010	2011	**2012**
1	0,05	0,07	0,11	0,08	0,12	0,17	1,67	1,77	1,61	1,27	1,33	1,23	0,75	0,94	0,60	3,92	4,16	5,03	0,96	1,01	1,04
2	0,06	0,08	0,06	0,09	0,13	0,09	2,72	2,47	2,32	1,91	1,69	1,47	0,36	0,53	0,49	6,59	4,89	4,98	0,76	0,75	0,79
3	0,07	0,12	0,05	0,12	0,18	0,13	1,90	1,78	1,56	1,63	1,37	1,08	0,39	0,26	0,24	17,50	18,11	18,10	1,66	2,01	1,89
4	0,17	0,15	0,07	0,25	0,31	0,10	2,68	2,63	2,72	2,35	1,82	1,26	0,35	0,47	0,42	14,73	9,27	11,35	1,12	0,93	1,11
5	0,07	0,08	0,09	0,13	0,15	0,19	1,63	1,42	1,01	0,96	0,78	0,66	0,76	1,25	1,54	4,46	4,04	3,17	1,24	1,27	1,14
6	0,01	0,04	0,08	-0,00	-0,05	0,09	1,42	1,37	1,30	0,86	0,90	0,87	0,83	0,93	0,91	2,56	2,42	2,18	0,62	0,61	0,58
7	0,04	-0,00	0,07	0,02	-1,20	0,24	0,87	0,95	0,87	0,71	0,79	0,72	4,86	10,48	7,88	1,73	1,77	2,03	0,73	0,77	0,87
8	0,10	0,12	0,05	0,16	-0,00	0,10	0,55	0,39	0,39	0,23	0,11	0,12	1,29	1,23	0,79	19,00	19,00	19,00	0,74	0,83	0,91
9	0,08	0,06	0,08	0,14	0,09	0,13	1,54	1,57	1,67	1,38	1,33	1,52	1,21	1,26	1,12	1,83	1,67	1,63	0,90	0,91	0,89
10	0,03	0,09	0,10	0,05	0,19	0,13	1,74	1,69	2,23	1,23	1,12	1,56	0,87	0,96	0,57	4,80	6,14	5,67	1,58	1,89	1,95
11	0,14	0,17	0,21	0,30	0,31	0,52	0,93	1,12	1,08	0,60	0,77	0,82	1,66	1,47	1,59	4,96	3,96	5,84	0,64	0,77	1,03
12	0,09	0,09	0,14	0,15	0,14	0,19	3,44	2,38	4,70	2,51	1,54	2,58	0,35	0,59	0,26	3,92	3,70	3,19	0,67	0,68	0,91
13	0,08	0,01	0,01	0,11	-0,02	-0,03	2,87	1,84	1,61	2,37	1,23	1,13	0,42	0,62	0,70	6,79	6,00	5,49	1,35	1,66	1,47
14	0,05	0,06	-0,01	0,08	0,06	0,01	1,62	1,59	1,41	1,01	1,04	0,96	0,48	0,57	0,68	7,01	6,66	7,99	1,22	1,46	1,55
15	0,03	0,01	0,03	0,04	-0,17	0,08	1,53	1,17	1,27	1,15	0,87	0,92	1,22	1,85	1,57	1,83	2,19	2,31	0,82	0,94	0,98
16	0,04	0,05	0,05	-0,02	-0,10	0,01	1,25	1,67	1,54	0,83	1,02	0,93	2,02	2,35	2,50	14,98	13,93	12,11	2,44	2,95	2,89
17	0,09	0,08	-0,01	0,13	0,15	-0,13	1,18	1,22	1,03	0,71	0,63	0,52	1,10	1,26	1,81	7,25	5,14	4,92	1,32	1,46	1,46
18	0,07	0,11	0,09	0,11	0,23	0,13	2,09	1,96	1,70	1,69	1,61	1,33	0,54	0,53	0,43	5,96	5,14	5,69	0,70	0,71	0,83
19	0,01	0,10	0,00	0,10	0,16	0,10	6,19	10,52	5,58	6,19	10,52	5,58	0,02	0,37	0,48	7,68	6,82	5,18	0,09	0,01	0,02
20	0,06	0,11	0,07	0,19	0,28	0,30	1,05	1,08	1,14	0,83	0,64	0,74	2,57	2,35	2,50	12,00	11,47	19,31	1,88	2,76	2,75
	0,07	0,08	0,07	0,11	0,05	0,13	1,94	2,03	1,84	1,52	1,56	1,30	1,10	1,51	1,35	7,48	6,83	7,26	1,07	1,22	1,25

NORMALIZED RATIOS	ROA			ROE			CR			QR			DE			ARE			AE		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
1	0,01	0,01	0,03	0,01	0,01	0,04	0,27	0,25	0,26	0,18	0,15	0,20	0,08	0,08	0,04	0,38	0,46	0,62	0,17	0,16	0,17
2	0,01	0,01	0,01	0,01	0,01	0,01	0,73	0,48	0,55	0,42	0,25	0,29	0,02	0,02	0,02	1,07	0,63	0,61	0,11	0,09	0,10
3	0,01	0,04	0,01	0,02	0,02	0,02	0,35	0,25	0,25	0,30	0,16	0,15	0,02	0,01	0,01	7,53	8,70	8,02	0,52	0,64	0,56
4	0,08	0,06	0,01	0,11	0,07	0,01	0,70	0,54	0,75	0,63	0,28	0,21	0,02	0,02	0,02	5,34	2,28	3,15	0,23	0,14	0,19
5	0,01	0,01	0,02	0,03	0,02	0,04	0,26	0,16	0,10	0,10	0,05	0,06	0,08	0,13	0,25	0,49	0,43	0,25	0,29	0,25	0,21
6	0,00	0,00	0,02	0,00	0,00	0,01	0,20	0,15	0,17	0,08	0,07	0,10	0,10	0,07	0,09	0,16	0,16	0,12	0,07	0,06	0,05
7	0,00	0,00	0,01	0,00	1,02	0,07	0,07	0,07	0,08	0,06	0,05	0,07	3,46	9,37	6,52	0,07	0,08	0,10	0,10	0,09	0,12
8	0,03	0,03	0,01	0,04	0,00	0,01	0,03	0,01	0,02	0,01	0,00	0,00	0,24	0,13	0,07	8,88	9,57	8,84	0,10	0,11	0,13
9	0,02	0,01	0,02	0,03	0,01	0,02	0,23	0,19	0,28	0,22	0,15	0,30	0,22	0,14	0,13	0,08	0,07	0,06	0,15	0,13	0,12
10	0,00	0,02	0,02	0,00	0,02	0,02	0,30	0,22	0,50	0,17	0,11	0,32	0,11	0,08	0,03	0,57	1,00	0,79	0,47	0,57	0,60
11	0,06	0,07	0,12	0,15	0,07	0,33	0,08	0,10	0,12	0,04	0,05	0,09	0,40	0,18	0,26	0,61	0,42	0,84	0,08	0,09	0,17
12	0,02	0,02	0,05	0,04	0,01	0,05	1,16	0,44	2,24	0,72	0,20	0,88	0,02	0,03	0,01	0,38	0,36	0,25	0,08	0,07	0,13
13	0,02	0,00	0,00	0,02	0,00	0,00	0,80	0,27	0,26	0,64	0,13	0,17	0,03	0,03	0,05	1,13	0,96	0,74	0,34	0,44	0,34
14	0,01	0,01	0,00	0,01	0,00	0,00	0,26	0,20	0,20	0,12	0,09	0,12	0,03	0,03	0,05	1,21	1,18	1,56	0,28	0,34	0,38
15	0,00	0,00	0,00	0,00	0,02	0,01	0,23	0,11	0,16	0,15	0,07	0,11	0,22	0,29	0,26	0,08	0,13	0,13	0,13	0,14	0,15
16	0,00	0,01	0,01	0,00	0,01	0,00	0,15	0,22	0,24	0,08	0,09	0,11	0,60	0,47	0,66	5,52	5,14	3,59	1,12	1,38	1,32
17	0,03	0,02	0,00	0,03	0,02	0,02	0,14	0,12	0,11	0,06	0,03	0,04	0,18	0,14	0,34	1,29	0,70	0,59	0,33	0,34	0,34
18	0,01	0,03	0,02	0,02	0,04	0,02	0,43	0,30	0,29	0,33	0,22	0,23	0,04	0,02	0,02	0,87	0,70	0,79	0,09	0,08	0,11
19	0,00	0,02	0,00	0,02	0,02	0,01	3,74	8,65	3,16	4,37	9,48	4,10	0,00	0,01	0,02	1,45	1,23	0,66	0,00	0,00	0,00
20	0,01	0,03	0,01	0,06	0,06	0,11	0,11	0,09	0,13	0,08	0,04	0,07	0,96	0,47	0,66	3,54	3,49	9,13	0,66	1,21	1,19
	0,02	0,02	0,02	0,03	0,07	0,04	0,51	0,64	0,49	0,44	0,58	0,38	0,34	0,59	0,48	2,03	1,89	2,04	0,27	0,32	0,32

WEIGHTED RATIOS	ROA			ROE			CR			QR			DE			ARE			AE		
	2010	2011	**2012**	2010	2011	**2012**	2010	2011	**2012**	2010	2011	**2012**	2010	2011	**2012**	2010	2011	**2012**	2010	2011	**2012**
1	0,00	0,00	0,00	0,00	0,00	0,01	0,04	0,04	0,04	0,03	0,02	0,03	0,01	0,01	0,01	0,05	0,07	0,09	0,02	0,02	0,02
2	0,00	0,00	0,00	0,00	0,00	0,00	0,10	0,07	0,08	0,06	0,04	0,04	0,00	0,00	0,00	0,15	0,09	0,09	0,02	0,01	0,01
3	0,00	0,01	0,00	0,00	0,00	0,00	0,05	0,04	0,04	0,04	0,02	0,02	0,00	0,00	0,00	1,08	1,24	1,15	0,07	0,09	0,08
4	0,01	0,01	0,00	0,02	0,01	0,00	0,10	0,08	0,11	0,09	0,04	0,03	0,00	0,00	0,00	0,76	0,33	0,45	0,03	0,02	0,03
5	0,00	0,00	0,00	0,00	0,00	0,01	0,04	0,02	0,01	0,01	0,01	0,01	0,01	0,02	0,04	0,07	0,06	0,04	0,04	0,04	0,03
6	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,02	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,02	0,02	0,01	0,01	0,01
7	0,00	0,00	0,00	0,00	0,15	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,49	1,34	0,93	0,01	0,01	0,01	0,01	0,01	0,02
8	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,02	0,01	1,27	1,37	1,26	0,01	0,02	0,02
9	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,03	0,04	0,03	0,02	0,04	0,03	0,02	0,02	0,01	0,01	0,01	0,02	0,02	0,02
10	0,00	0,00	0,00	0,00	0,00	0,00	0,04	0,03	0,07	0,02	0,02	0,05	0,02	0,01	0,00	0,08	0,14	0,11	0,07	0,08	0,09
11	0,01	0,01	0,02	0,02	0,01	0,05	0,01	0,01	0,02	0,01	0,01	0,01	0,06	0,03	0,04	0,09	0,06	0,12	0,01	0,01	0,02
12	0,00	0,00	0,01	0,01	0,00	0,01	0,17	0,06	0,32	0,10	0,03	0,13	0,00	0,00	0,00	0,05	0,05	0,04	0,01	0,01	0,02
13	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,04	0,09	0,02	0,02	0,00	0,00	0,01	0,16	0,14	0,11	0,05	0,06	0,05
14	0,00	0,00	0,00	0,00	0,00	0,00	0,04	0,03	0,03	0,02	0,01	0,02	0,00	0,00	0,01	0,17	0,17	0,22	0,04	0,05	0,05
15	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,02	0,02	0,02	0,01	0,02	0,03	0,04	0,04	0,01	0,02	0,02	0,02	0,02	0,02
16	0,00	0,00	0,00	0,00	0,00	0,00	0,02	0,03	0,03	0,01	0,01	0,02	0,09	0,07	0,09	0,79	0,73	0,51	0,16	0,20	0,19
17	0,00	0,00	0,00	0,00	0,00	0,00	0,02	0,02	0,02	0,01	0,00	0,01	0,03	0,02	0,05	0,18	0,10	0,08	0,05	0,05	0,05
18	0,00	0,00	0,00	0,00	0,01	0,00	0,06	0,04	0,04	0,05	0,03	0,03	0,01	0,00	0,00	0,12	0,10	0,11	0,01	0,01	0,02
19	0,00	0,00	0,00	0,00	0,00	0,00	0,53	1,24	0,45	0,62	1,35	0,59	0,00	0,00	0,00	0,21	0,18	0,09	0,00	0,00	0,00
20	0,00	0,00	0,00	0,01	0,01	0,02	0,02	0,01	0,02	0,01	0,01	0,01	0,14	0,07	0,09	0,51	0,50	1,30	0,09	0,17	0,17
ideal +	0,01	0,01	0,02	0,02	0,15	0,05	0,53	1,24	0,45	0,62	1,35	0,59	0,00	0,00	0,00	1,27	1,37	1,30	0,16	0,20	0,19
ideal -	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,49	1,34	0,93	0,01	0,01	0,01	0,00	0,00	0,00