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Highlights

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Discovering Thoughts, Inventing Future

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Publisher's Headquarters office

Global Journals Headquarters
301st Edgewater Place Suite, 100 Edgewater Dr.-Pl,
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USA Toll Free Fax: +001-888-839-7392

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Investors' Investment Decisions in Capital Market: Key Factors

By Md. Ariful Islam , Md. Imtiaj Rahman & Salahuddin Yousuf
Khulna University, Bangladesh

Abstract- This primary data based study attempts to explore the factors the investors of capital market critically consider while making their investment decisions. Study took place in Bangladesh, an economically potential developing country. A total of 125 investors were surveyed conveniently with a structured questionnaire containing 25 variables. Broad category of factors are 'Internal & Economic', 'Internal & Supporting', 'Internal & Regulatory', 'Company Image', 'Market Info', 'External' and 'Market Situation'. Specific variables like dividend, EPS, company goodwill, industry growth, SEC regulation, and change in Govt. policy are found to be positively influential. The least influential factors are P/E ratio, price hike of necessary goods, market rumor etc.

Keywords: investor, investment decision, capital market.

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Md. Ariful Islam [α], Md. Imtiaj Rahman [σ] & Salahuddin Yousuf [ρ]

Abstract- This primary data based study attempts to explore the factors the investors of capital market critically consider while making their investment decisions. Study took place in Bangladesh, an economically potential developing country. A total of 125 investors were surveyed conveniently with a structured questionnaire containing 25 variables. Broad category of factors are 'Internal & Economic', 'Internal & Supporting', 'Internal & Regulatory', 'Company Image', 'Market Info', 'External' and 'Market Situation'. Specific variables like dividend, EPS, company goodwill, industry growth, SEC regulation, and change in Govt. policy are found to be positively influential. The least influential factors are P/E ratio, price hike of necessary goods, market rumor etc.

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I. Introduction

Capital market is one of the critical components of any economy. Therefore, investment decision of the investors in the capital market is very sensitive. Different measures of stock market activities are positively correlated with measures of real economic growth across countries (Levine and Zervos, 1998). This association is particularly strong for developing countries. As an economically potential developing country, capital market is certainly a key factor for Bangladesh. Recent instability in the overall capital market of this country highly enticed the policymakers. The situation demands to analyze the decision making process of the actors in the capital market. Thus, this study attempts to explore the key factors those the investors consider while making their investment regulatory authority and the policy makers might find the results helpful in avoiding any unexpected catastrophe, decisions in the capital market. The stock market improving the stock market industry and assessing to which degree the stock market is needed to be reformed.

II. Methodology

This is a survey based descriptive research. 25 key variables were considered initially. Malhotra (2008) defines that there should be at least 4 or 5 times as many observations (sample size) as there are variables. Hence, a total of 125 investors from different brokerage houses of Bangladesh had been surveyed. Investors were chosen conveniently (non-probability sampling technique). A structured questionnaire was used to collect investors' responses. The respondents were asked to respond against 25 close ended statements on a 5-point Likert Scale where '1' denotes 'Strongly Disagree' and '5' denotes 'Strongly Agree'. The key variables were Dividend, Earnings per Share (EPS), Retained earnings, Price Earning (P/E) Ratio, Returned on Investment (ROI), Company News, AGM, Company Goodwill, Industry Growth, Price Hike of Necessary Goods, Market Sentiment, Agents' Advice, Available Substitutes, Credit Rating Agency's Report, Market Rumor, Website/Social Blog, Inflation, Exchange Rate, Margin Loan, Interest Rate, International Situation, SEC Regulations, Change in Government Policies, Political Connectivity of Company Owner, Law Suit File.

The respondent with demographic profile is portrayed below:

Demographic group	Classes	Frequency	Total Sample	Class as Percentage (%)
Gender	Male	106	125	85%
	Female	19		15%
Age	18-25 Years	35	125	28%
	26-40 Years	61		49%
	41-60 Years	22		17%
	Above 60 Years	7		6%
Occupation	Service	31	125	25%
	Business	37		29%
	Professional	16		13%
	Others	41		33%

Author α: Deputy Manager, BASIC Bank Limited, Khulna Branch, 107 Sir Iqbal Road, Khulna, Bangladesh
e-mail: arifrussell@yahoo.com
Author σ: School of Accounting and Finance, Charles Sturt University, Melbourne, Australia.
e-mail: imtiaj.csu@gmail.com
Author ρ: School of Management and Business Administration, Khulna University, Bangladesh.

III. Literature Review

Investors' perception and market behavior are the key concern of the capital market analysts or researchers. Stock market's contribution on the overall economy of a country is well discussed by different scholars (Singh, 1997; Singh, 1971; Bhide, 1994). Empirical evidence linking stock market development to economic growth has been inconclusive. Though the balance of evidence is in favor of a positive relationship between stock markets and economic growth. Levine and Zervos (1998) found that various measures of stock market activities are positively correlated with measures of real economic growth in different countries and this relationship is particularly strong in the developing countries. On the contrary, Benson (2002) found this positive impact of capital market development largely dependent on the inclusion of higher income countries.

Movements of stock prices depend on number of factors. The decomposition of stock price movements is very sensitive to what assumption is made about the presence of permanent changes in either real dividend growth or excess stock return (Balke & Wohar, 2006). Cochrane (1992) and Timmerman (1995) have argued that fluctuation in stock prices can be explained by time-varying discount rates and future excess returns. Raihan & Ullah (2007), from their study on Chittagong Stock Exchange (Bangladesh), found that stock return series do not follow random walk model in Bangladeshi capital market. Similar findings of the work of Mobarek and Keasay (2000) on Dhaka Stock Exchange of Bangladesh support this argument.

Conducting research in Dhaka Stock Exchange (DSE), Rahman, et al (2006) found the negative correlation between the beta and stock return, which is reason for inefficiency of market where the assumptions behind the CAPM model is not supported. Wong, et al (2009) found that when limit hits are imminent stock prices approach limit bounds at faster rates and with increased volatility and higher trade efficiency.

The critical challenge in this field of research is to determine the factors influence the stock price in the capital market. A large number of empirical studies had been conducted about the determinants of stock prices. Several researchers examined the relationships between stock prices and selected factors. These factors could be either internal or external. The findings of their research illustrate different outcomes depending on the scope of research. Many of these factors could be valid for all stock markets. In this section some of these studies are reviewed.

It is generally assumed that the emerging markets are less efficient than the developed markets. Rahman, et al (2006) found the negative correlation between the beta and stock return. This is one of the reasons for inefficiency in the capital market. The movement of stock price is very sensitive to what assumption is made about the presence of permanent changes in either real dividend growth or excess stock return (Balke & Wohar, 2006). Dividend change announcements cause a greater change in stock price when the nature of the news (good or bad) goes against the grain of the recent market direction during volatile times (Docking and Koch, 2005). After using this macroeconomic variables like gross national product (GNP), interest rate and inflation, Al-Qenae (2002) found inflation and interest rate have negative and statistically significant coefficients in almost all cases on stock prices while GNP has positive effect. Maysami and Koh (2000) illustrated the connection of money supply growth, change in short and long term interest rates, inflation and variation in exchange rates with the changes in Singapore's stock market levels.

Udegbunam & Eriki (2001) revealed that stock prices and inflation provides a strong support for the proposition that inflation exerts a significant negative influence on the behavior of the prices of the stocks. They also exhibited that stock prices are also strongly driven by the level of economic activity measured by interest rate, GDP, financial deregulation and money stock. Joshep and Vezos (2006) proclaim that interest rate and foreign exchange rate risks are important financial and economic factors affecting the value of common stocks. The results indicate a significant and negative relation between stock prices and inflation. And the output growth negatively and significantly affect stock prices. Tsoukalas (2003) used industrial production, exchange rate, consumer prices and money supply as macroeconomic factors and revealed a strong relationship between stock prices with those factors. Ibrahim (2003) found that the Malaysian stock price index is positively related to consumer price index, money supply and industrial production. It is negatively related to the movement of exchange rates.

Since consumer price index and investors' perception are two critical issues for the movement of stock prices, this study aims to explore the factors those are valued by the capital market investors.

IV. Analysis & Discussion

25 initial variables werechosen to identify the factors affecting investment decisions in the stock market. A total of 125 investors were surveyed. Summary of their responses toward those factors are portrayed here.

Table 1 : Summary of their responses

	Dividend	Earnings Per Share (EPS)	Retained earnings	Price Earning (P/E) Ratio	(ROI)	Company News	AGM	Company Goodwill	Industry Growth	Price Hike of Necessary Goods	Market Sentiment	Agents' Advice	Available Substitutes
N	125	125	125	125	125	125	125	125	125	125	125	125	125
Mean	4.33	4.12	3.77	2.95	3.68	3.83	3.88	4.24	4.24	2.97	3.48	3.04	3.08
Std. Deviation	.990	.725	.805	1.453	1.082	.859	.972	.712	.837	1.062	.876	1.316	.894
Variance	.980	.526	.647	2.111	1.171	.738	.945	.506	.700	1.128	.768	1.732	.800
Minimum	1	3	2	1	1	2	2	2	2	1	1	1	1
Maximum	5	5	5	5	5	5	5	5	5	5	5	5	5

	Credit Rating Agency's Report	Market Rumor	Inflation	Exchange Rate	Margin Loan	Interest Rate	International Situation	Website, Social Blog	SEC Regulations	Change in Government Policies	Political Connectivity of Company Owner	Law Suit File
N	125	125	125	125	125	125	125	125	125	125	125	125
Mean	3.17	2.69	3.89	3.55	3.02	3.75	3.34	3.57	4.13	4.07	3.66	4.12
Std. Deviatic	.957	1.298	1.1	.987	1.376	1.141	1.136	1.272	.842	.805	1.092	1.005
Variance	.915	1.684	1.3	.975	1.895	1.301	1.289	1.618	.709	.648	1.193	1.010
Minimum	1	1	1	1	1	1	1	1	2	2	2	1
Maximum	5	5	5	5	5	5	5	5	5	5	5	5

Source: Field Survey, 2014

The above responses indicate that there are some factors to which investors are more responsive, like dividend, EPS, company goodwill, industry growth, SEC regulation, change in government policy etc. The respondents are found to be less responsive to the factors like P/E ratio; price hike of necessary goods, market rumor etc. But this is their average result. In contrast, some factors were found which has got two extreme end responses i.e. both strongly agree and strongly disagree. So it will not to be justified to leave any comment only based upon the mean result. Here the standard deviation of the response frequency is also depicted. It shows the dispersion of response from mean. The variance here is showing the responsiveness of mean in relation to standard deviation. The lesser variance is showing more representative result. Here the result of P/E ratio, ROI, price hike of necessary goods, agents' advice, market rumor, inflation, Interest rate, International situation etc. are possessing more reliable result according to variance. For a justified list of influential factors, factor analysis was performed later.

Here a mean comparison is done to get the idea about to what extent factors are affecting male and female investors in their investment decisions.

Table 2 : Gender-wise Mean Comparison

No	Variable	Gender	Mean	Mean Ranking	Gender	Mean	Mean Ranking
1	Dividend	Male	4.37	1	Female	4.11	6
2	Company Goodwill	Male	4.2	2	Female	4.47	2
3	Industry Growth	Male	4.19	3	Female	4.53	1
4	SEC Regulations	Male	4.15	4	Female	4	7
5	Law Suit File	Male	4.11	5	Female	4.16	5
6	(EPS)	Male	4.09	6	Female	4.26	3
7	Change in Government Policies	Male	4.05	7	Female	4.21	4
8	AGM	Male	3.92	8	Female	3.68	13
9	Inflation	Male	3.87	9	Female	4	8
10	Company News	Male	3.83	10	Female	3.84	11
11	Retained earnings	Male	3.8	11	Female	3.58	14
12	Interest Rate	Male	3.72	12	Female	3.95	10
13	Political Connectivity of Company Owner	Male	3.71	13	Female	3.42	19
14	(ROI)	Male	3.7	14	Female	3.58	15
15	Exchange Rate	Male	3.5	15	Female	3.84	12
16	Website, Social Blog	Male	3.49	16	Female	4	9
17	Market Sentiment	Male	3.48	17	Female	3.47	17
18	International Situation	Male	3.32	18	Female	3.42	20
19	Credit Rating Agency's Report	Male	3.1	19	Female	3.53	16
20	Available Substitutes	Male	3.08	20	Female	3.11	21
21	Margin Loan	Male	3.08	21	Female	2.74	24
22	Agents' Advice	Male	2.99	22	Female	3.47	18
23	Price Hike of Necessary Goods	Male	2.97	23	Female	2.95	23
24	P/E Ratio	Male	2.93	24	Female	3.05	22
25	Market Rumor	Male	2.72	25	Female	2.53	25

Source: Field Survey, July, 2014

In this study, 106 male and 19 female investors are surveyed. Among them all are not agreed with same factor as a determinant of their investment decision. Here, it is found that the most important factor to male is 'dividend' whereas it is the 6th important factor to female investors. Again, where 'industry growth' is the most important factor to female, it is the 3rd most important factor for the male investors. Some of the factors are commonly rated by both the male and female investors. Those are: company goodwill (2nd), law suit file (5th), market sentiment (17th), price hike of necessary goods (23rd) and market rumor (25th).

Top and least five determinants for investment for the male are given in the below table:

Table 3 : Male (Top & Least Mean ranking)

	Top Five			Least Five	
Mean Ranking	Variable	Mean	Mean Ranking	Variable	Mean
	Dividend	4.37	21	Margin Loan	3.08
2	Company Goodwill	4.2	22	Agents' Advice	2.99
	Industry Growth	4.19	23	Price Hike of Necessary Goods	2.97
4	SEC Regulations	4.15	24	Price Earning (P/E) Ratio	2.93
	Law Suit File	4.11	25	Market Rumor	2.72

Source: Field Survey, July, 2014

Below table demonstrates the top five and least five determinants for female investors.

Table 4 : Female (Top & Least Mean ranking)

	Top Five			Least Five	
Mean Ranking	Variable	Mean	Mean Ranking	Variable	Mean
1	Industry Growth	4.53	21	Available Substitutes	3.11
2	Company Goodwill	4.47	22	Price Earning (P/E) Ratio	3.05
3	Earnings Per Share (EPS)	4.26	23	Price Hike of Necessary Goods	2.95
4	Change in Government Policies	4.21	24	Margin Loan	2.74
5	Law Suit File	4.16	25	Market Rumor	2.53

Source: Field Survey, July, 2014

From the survey, it is noticeable that 'company goodwill' and 'law suit file' are the common determinants among the top five important factors for both male and female investors, whereas price hike of necessary goods and market rumor are the common determinants among the least five important factors for both type of investors.

This study further conducted 'factor analysis'for data reduction.Factor analysisallows to reduce a large number of correlated variables to a smaller number of 'super variables'. So, factor analysis was conducted in this study with the data collected from field survey. For testing appropriateness of the factor model, Bartlett's test is used. The summary of KMO and Bartlett's Test result is presented here:

Table 5 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.685
Bartlett's Test of Sphericity	Approx. Chi-Square	2067.491
	Df	300
	Sig.	.000

The Kaiser-Meyer-Olkin (KMO) is a measure of sampling adequacy. The approximate chi-square statistic is 2067.491 with degree of freedom of 300 at the 0.05 level of significance. The appropriateness of factor analysis requires the KMO statistic to be ranging from 0.5 to 1.0. Here the value of KMO statistic is 0.685. Hence this indicates the appropriateness of factor analysis and also suggest further investigation. Here Principle Component Analysis (PCA) method is used.

Table 6 : Communalities

	Initial	Extraction		Initial	Extraction
Dividend	1.000	.827	Credit Rating Agency's Report	1.000	.796
Earnings Per Share (EPS)	1.000	.819	Market Rumor	1.000	.828
Retained earnings	1.000	.633	Inflation	1.000	.715
Price Earning (P/E) Ratio	1.000	.801	Exchange Rate	1.000	.720
Returned on Investment (ROI)	1.000	.772	Margin Loan	1.000	.856
Company News	1.000	.547	Interest Rate	1.000	.765
AGM	1.000	.837	International Situation	1.000	.774
Company Goodwill	1.000	.509	Website, Social Blog	1.000	.670
Industry Growth	1.000	.593	SEC Regulations	1.000	.813
Price Hike of Necessary Goods	1.000	.763	Change in Government Policies	1.000	.684
Market Sentiment	1.000	.782	Political Connectivity of Company Owner	1.000	.819
Agents' Advice	1.000	.820	Law Suit File	1.000	.817
Available Substitutes	1.000	.710			

Extraction Method: Principal Component Analysis

The above summary of "Communalities" shows that the communality (in "Initial" column) for each variable is 1.000.

In order to summarize the information contained in the original variables, a smaller number of factors should be extracted. Eigenvalues approach had been used here for this purpose.

Table 7 : Total Variance Explained

Initial Eigenvalues							
Component	Total	% of Variance	Cumulative %	Component	Total	% of Variance	Cumulative %
1	5.686	22.745	22.745	14	.383	1.531	92.309
2	3.700	14.801	37.547	15	.358	1.433	93.741
3	2.990	11.959	49.506	16	.259	1.034	94.775
4	2.191	8.766	58.272	17	.217	.866	95.642
5	1.666	6.666	64.937	18	.203	.810	96.452
6	1.337	5.347	70.285	19	.180	.722	97.174
7	1.100	4.399	74.684	20	.160	.641	97.814
8	.873	3.493	78.177	21	.148	.591	98.405
9	.830	3.319	81.496	22	.123	.493	98.898
10	.777	3.108	84.604	23	.116	.465	99.362
11	.549	2.197	86.801	24	.092	.370	99.732
12	.504	2.016	88.817	25	.067	.268	100.000
13	.490	1.961	90.778				

Extraction Method: Principal Component Analysis

This table shows the eigenvalue for a factor which indicates the total variance explained by each factor. The total variance accounted for all 25 variables is 25.00 which is equal to the number of variable. Here, variable 1 has got a variance of 5.686, which is (5.686/25) or 22.745% of the total variance. Again like the variable 1, the second variable has got a variance of 3.700, which is (3.700/25) or 14.801% of the total variance and the first two factors has got a cumulative variance of 37.547%. Only factors with eigenvalue greater than 1.00 are retained and other factors are discarded. An eigenvalue represents the amount of variance associated with the factors.

The following table reveals that the eigenvalue greater than 1.0 (default option) results in seven factors being extracted.

Table 8 : List of factors with eigenvalue greater than 1.00

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	5.686	22.745	22.745
2	3.700	14.801	37.547
3	2.990	11.959	49.506
4	2.191	8.766	58.272
5	1.666	6.666	64.937
6	1.337	5.347	70.285
7	1.100	4.399	74.684

The cumulative percentage of variance testimony the first seven factors to be accounted for 78.684% of the variance.

In this approach, only factors with eigenvalues greater than 1.0 are retained. The other factors are not included in the model. It indicates the total variance attributed to that factor. Hence, only factors with a variance greater than 1 are included.

Table 9 : Components extracted.

Rotation Sums of Squared Loadings			
Components	Total	% of Variance	Cumulative %
1	4.519	18.075	18.075
2	3.125	12.501	30.576
3	2.462	9.849	40.425
4	2.373	9.491	49.916
5	2.086	8.345	58.261
6	2.084	8.336	66.597
7	2.022	8.087	74.684

Through the above table, the rotation of sums of squared loading is done. The following table (Table 10) shows the rotated factor matrix.

This matrix represents correlation between the factors and the variables. A coefficient with a large absolute value indicates that the factor and the variable are closely related.

Here, in this study, Varimax procedure had been used for rotation. Summary of rotated component matrix is presented here

Table 10 : Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
V1: Dividend	-.133	-.210	.855	.063	-.017	.158	.074
V2: Earnings Per Share (EPS)	-.080	.843	.059	.075	-.010	-.280	.121
V3: Retained earnings	-.037	-.194	-.179	.569	.210	-.030	-.440
V4: Price Earning (P/E) Ratio	-.821	-.161	-.164	.176	.087	.152	-.114
V5: Returned on Investment (ROI)	-.591	-.591	-.132	.198	-.012	-.036	.125
V6: Company News	.008	-.078	.286	.652	-.156	-.011	.096
V7: AGM	.095	.334	.786	-.177	.038	-.204	.157
V8: Company Goodwill	.038	-.014	-.113	.694	-.099	.044	.035
V9: Industry Growth	.032	.246	.238	.290	-.596	.113	.152
V10: Price Hike of Necessary Goods	-.329	.011	-.257	.000	.232	-.617	.392
V11: Market Sentiment	-.023	.105	.186	.122	-.080	-.096	.840
V12: Agents' Advice	.285	.533	-.437	-.239	.154	.341	-.258
V13: Available Substitutes	-.471	-.081	-.165	.353	.435	-.369	.068
V14: Credit Rating Agency's Report	-.013	.804	-.009	-.116	-.072	.362	-.030
V15: Market Rumor	.375	.197	.180	-.161	.752	-.098	.122
V16: Inflation	.696	.010	.033	.260	.258	.210	-.229
V17: Exchange Rate	.744	-.023	-.273	-.010	.074	.292	-.038
V18: Margin Loan	.018	-.623	.127	.181	.605	.223	.060
V19: Interest Rate	.683	-.064	-.055	-.282	.283	.363	-.013
V20: International Situation	.263	-.007	-.100	.087	-.008	.826	.071
V21: Website, Social Blog	.656	.266	-.003	.042	.102	.226	-.324
V22: SEC Regulations	-.019	-.027	.606	.578	.052	.013	.329
V23: Change in Government Policies	.698	-.173	-.177	.242	-.255	.032	.108
V24: Political Connectivity of Company Owner	-.214	-.450	.169	.001	.265	.096	.680
V25: Law Suit File	.608	-.312	-.024	.361	.365	.249	-.157

Extraction Method: Principal Component Analysis;
Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 10 iterations

In this table, factor 1 has highest coefficient for variables V4: Price Earning (P/E) Ratio, V5: Returned on Investment (ROI), V13: Available Substitutes, V16: Inflation, V17: Exchange Rate, V19: Interest Rate, V21: Website, Social Blog, V23: Change in Government Policies, V25: Law Suit File. Then this factor is labeled as Internal & Economic factor. Factor 2 is highly correlated with variables V2: Earnings per Share (EPS), V12: Agents' Advice, V14: Credit Rating Agency's Report, V18: Margin Loan. Thus factor 2 is labeled as Internal 7 Supporting factor. Factor 3 has got a high coefficient with variables V1: Dividend, V7: AGM, V22: SEC Regulations. This factor can be labeled as internal & regulatory factor. Again factor 4 has high coefficient for variables V3: Retained earnings, V6: Company News, V8: Company Goodwill. This factor may be labeled as company image factor. The next factor i.e. factor 5 has got some highly correlated variable as well. Those are V9: Industry Growth, V15: Market Rumor. Now this factor is labeled as market info factor. Again the 6th factor has also got some highly correlated factor. Those are V10: Price Hike of Necessary Goods, V20: International Situation. Here this factor is labeled as the external factor. And lastly the factor 7 has also got some highly correlated variables like V11: Market Sentiment, V24: Political Connectivity of Company Owner. And this factor is labeled as other factor. It can be summarized that investors are being affected in their investment decision in the major issues related to internal & economic, internal & supporting, internal & regulatory, company image, market info, external and others.

Table 11 : Identified factors with variables regarding investment decision

Factor	Variables	Surrogate Variables
Factor 1 (Internal & Economic)	V4: Price Earning (P/E) Ratio	V4: Price Earning (P/E) Ratio (-0.821)
	V5: Returned on Investment (ROI)	
	V13: Available Substitutes	
	V16: Inflation	
	V17: Exchange Rate	
	V19: Interest Rate	
	V21: Website, Social Blog	
	V23: Change in Government Policies	
	V25: Law Suit File	
Factor 2 (Internal & Supporting)	V2: Earnings Per Share (EPS)	V2: Earnings Per Share (EPS) (0.843)
	V12: Agents' Advice	
	V14: Credit Rating Agency's Report	
	V18: Margin Loan	
Factor 3 (Internal & Regulatory)	V1: Dividend	V1: Dividend (0.855)
	V7: AGM	
	V22: SEC Regulations	

Factor	Variables	Surrogate Variables
Factor 4 (Company Image)	V3: Retained earnings	V8: Company Goodwill (0.694)
	V6: Company News	

	V8: Company Goodwill	
Factor 5 (Market Info)	V9: Industry Growth	V15: Market Rumor (0.752)
	V15: Market Rumor	
Factor 6 (External)	V10: Price Hike of Necessary Goods	V20: International Situation (0.826)
	V20: International Situation	
Factor 7 (Market Situation)	V11: Market Sentiment	V11: Market Sentiment (0.84)
	V24: Political Connectivity of Company Owner	

Source: Field Survey, July, 2014

It is found that V4, V5, V13, V16, V17, V19, V21, V23, V25 have high loading on factor 1. But among these V4 has the highest loading. It indicates price earning (P/E) ratio affects investors mostly here. Therefore V4 would be selected as surrogate variable under factor 1 since it has the highest factor loading. V2, V12, V14, V18 have high loading on factor 2 and among the 4 variables V2 has the highest loading. So EPS (V2) can be selected as the surrogate variable for factor 2. Again among the high loading variables V1, V7, V22 the highest loading is by V1 (Dividend) which in turns becomes the surrogate variable for factor 3.

In this way the surrogate variable of factor 4, factor 5, factor 6 and factor 7 is respectively V8 (Company Goodwill), V15 (Market Rumor), V20 (International Situation) and V11 (Market Sentiment), as those are the highest loading among the high loadings (Khan, 2006).

V. Findings And Conclusion

Key factors like dividend, EPS, company goodwill, industry growth, SEC regulation and change in government policy are having higher mean score. At the same time,factors with lower mean score are P/E ratio, price hike of necessary goods, market rumor etc. The core factors identified through factor analysis through which investors' investment decision can be affected. Those are: Internal & Economic (f1), Internal & Supporting (f2), Internal & Regulatory (f3), Company Image (f4), Market Info (f5), External (f6) and Market Situation (f7).

This study was conducted based on a developing country's capital market. The research outcome would be more effective if the study was conducted in a comparative manner with three different types of economy, i.e. under developed economy, developing economy and developed economy. Yet, this study is expected to contribute to the researches on capital market behavior. The key investment factors identified by this research will help the policymakers to their endeavor to reform the capital market.

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An Empirical Investigation of Profitability of Islamic Banks in Bangladesh

By Abu Hanifa Md. Noman
University of Malaya, Malaysia

Abstract- The paper aims at investigating the effect of bank specific and macroeconomic determinants on profitability of seven Islamic banks in Bangladesh during 2003 to 2013. The study uses pool regression model and system GMM in the investigation process. The study considers ROAA, ROAE and NIM while ROAA is found more preferred profitability indicator for the Islamic banks in Bangladesh. The study reveals a robust negative effect of credit risk, loan ratio, cost efficiency and capitalization on profitability while robust positive effect bank size on profitability of the Islamic banks in Bangladesh. The study further finds that implementation of Basel II accord does not increase profitability of the Islamic bank in Bangladesh. The study suggests some significant policy recommendation in order to improve the profitability of the Islamic banks in Bangladesh.

Keywords: profit determinants, profitability, islamic banks, pool ols, generalized method of moments and bangladesh.

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Strictly as per the compliance and regulations of:

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Abstract- The paper aims at investigating the effect of bank specific and macroeconomic determinants on profitability of seven Islamic banks in Bangladesh during 2003 to 2013. The study uses pool regression model and system GMM in the investigation process. The study considers ROAA, ROAE and NIM while ROAA is found more preferred profitability indicator for the Islamic banks in Bangladesh. The study reveals a robust negative effect of credit risk, loan ratio, cost efficiency and capitalization on profitability while robust positive effect bank size on profitability of the Islamic banks in Bangladesh. The study further finds that implementation of Basel II accord does not increase profitability of the Islamic bank in Bangladesh. The study suggests some significant policy recommendation in order to improve the profitability of the Islamic banks in Bangladesh.

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I. Introduction

The role of Banks is pivotal for financial sector stability and economic growth (Chan & Koh, 2015). It is more important for the developing economies with under developed capital market (Felix Ayadi *et al.*, 2008; Zhang *et al.*, 2013). A sound and profitable banking system is better able to improve financial system stability and economic growth as it makes the economy more endurable to negative and external shocks (Athanasoglou *et al.*, 2008), conversely, mismanagement in the system creates severe damage in the whole economy which is evident from recent global financial crisis (Chan & Koh, 2015; Chaplinska, 2012; Fang *et al.*, 2014; Fu *et al.*, 2014). Moreover, profitability is considered as a precondition for an innovative, productive and efficient banking system(Chen & Liao, 2011). Therefore, investigation of the determinants of profitability has gained interest of researchers in both single country and cross country studies such as Hassan and Bashir (2003) for 21 countries where Islamic banking is practiced, Samad (2004) for Bahrain, Kosmidou *et al.* (2005) for UK, Athanasoglou *et al.* (2008) for Greece, AL-Omar and AL-Mutairi (2008) for Kuwait, Heffernan and Fu (2008) for China, Wasiuzzaman and Tarmizi (2010) for Malaysia, Qin and Dickson (2012) for Tanzania, Wasiuzzaman and Gunasegavan (2013) for Malaysia, Francis (2013) for Sub Sahara Africa, Masood and Ashraf (2012) for twelve Muslim countries, Perera *et al.* (2013) for four South Asian courtiers. The studies reveal that both bank level and macro level factors are importantly determine the profitability of the banking system of a country.

Sub-prime crisis started in United States during 2008 and became a global financial crisis by infecting quickly outside United States. The crisis affected banking sector most severely where 80 percent of the banks were struggling and most of the financial institutions badly affected (Choon *et al.*, 2012; Wasiuzzaman & Gunasegavan, 2013). Conversely, research found that Islamic banks successfully survived in the crisis (Khediri *et al.*, 2015) due to their Shariah compliance and risk sharing principles (Hasan & Dridi, 2011). Moreover, Cihak and Hesse (2008) found that Islamic banks were found more stable than conventional banks. However, Hassain et al. (2009) found that there no difference between Islamic and conventional banks in term of profit efficiency and asset quality. But, in most recently, Wasiuzzaman and Gunasegavan (2013) found operational efficiency, liquidity, capital adequacy, assets quality and board independence of Islamic banks are better. As a result, Islamic banking has gained attention of academicians, investors and policy makers in recent years.

More than 300 financial institutions including Banks, insurance and non bank financial institutions are operating under Shariah' based Islamic financial system in the world (Khediri *et al.*, 2015). Besides, many international banks among the others Standard Chartered Bank, Citi Bank NA, HSBC have started Islamic wings in order to meet the extended demand of Shariah complient products. Theoritically Islamic banks are different from conventional banks such as interest based contract of conventional banks is replaced with return in islamic banks where both risk and profit or loss are shared between banks and clients. In addition, they use investment deposit and demand deposit in order to collect fund from depositors which are free from interest and based on risk and profit sharing and mark up principles (Ho *et al.*, 2014). However, as both conventional and Islamic banks are regulated in same way and operated in same competitive environment, it is possible for islamic banks to adopt similar startegies as conventional banks adopt.

Author : Department of Finance and Banking, Faculty of Business and Accountancy, University of Malaya, Malaysia, Department of Business Administration, Faculty of business administration, International Islamic University Chittagong, Bangladesh.
e-mail (Corresponding author): kosiralam@yahoo.com

Bangladesh is one of several least affected countries from the recent global financial crisis. One of the reasons could be the development of Islamic banking system in Bangladesh (Khediri *et al.*, 2015; Wasiuzzaman & Gunasegavan, 2013). Bangladesh is the first country in Southeast Asia where Islamic banking has been introduced with the establishment of Islami Bank Bangladesh Limited in March 30, 1983 (Kabir *et al.*, 2012). The country has been experienced a rapid growth in Islamic banking since it's inception which is attributed to increased market share and assets growth. Now, out of 56 banks in Bangladesh, 8 local private commercial banks are providing full-fledged Islamic banking and 16 conventional commercial banks including 3 foreign banks also involve in Islamic banking with Islamic banking branches. Financial stability report (2014) published by Bangladesh Bank[1] reports that Islamic banking industry gains market share of 18.8 percent in total deposit and 21.6 percent in total credit in 2013. In an investigation, Ahmad and Hassan (2007) find the capitalization of Islamic banks is much better than conventional banks. As Bangladesh Bank gives more priority for the growth and development of Islamic banking in Bangladesh, it is warranted to investigate the profitability of Islamic banks and it's determinants.

Most of the studies that focus Islamic banking are theoretical in nature (Chong & Liu, 2009; Farook *et al.*, 2012; Hossain, 2014; Khan, 2010; Said *et al.*, 2013). Other extent of study focus on the comparison of Islamic banks with conventional banks in term of regulatory aspects, challenges faced, efficiency, business models, competition and stability(Ariss, 2010; Beck *et al.*, 2013; Elnahass *et al.*, 2014; Johnes *et al.*, 2014; Khediri *et al.*, 2015; Olson & Zoubi, 2008; Saeed & Izzeldin). Moreover, globally there are some significant studies on performance of Islamic banking; the study on profitability is very limited in compare to conventional banks. The existing studies on Islamic banks profitability such as Hassan and Bashir (2003) for 21 countries, Wasiuzzaman and Gunasegavan (2013) and Choon *et al.*,(2012) for Malaysia apply linear model.

Though the studies explain meaningful analysis at certain level; a few issues are not handled sufficiently. Say for example, firstly, the literatures pay more focus on internal determinants of the banking profitability with a limited attention on the effect of macroeconomic factors on the profitability. Secondly, most of the study do not adequately explain econometric methodology and do not consider some features of the banking profit such as endogeneity and heteroscadesticity which may make the results inconstant, bias and less meaningful. Thirdly, with the recommendation of Basel Committee for Banking Supervision, many countries including Bangladesh, have implemented Basel II accord in order to control credit risk, market risk and operational risk, to the best of my knowledge, no earlier study shows the effect of Basel II implementation on profitability of Islamic banks. Fourthly, the previous studies consider short panel data consisting 5 to 6 years which provides less strong results. Finally, though Bangladesh started Islamic banking in 1983, surprisingly no earlier study, to the best of my knowledge, gives attention on the profitability of Islamic banking in Bangladesh. In order to fulfill the above literature gap the study warrants to investigate the determinants of the profitability considering more macroeconomic variable along with influential bank specific variables, applying both pool OLS and system GMM.

The study is decomposed in the following way. Section II details review of past studies regarding the determinants of profitability and different of profit proxies. Sector II explains methodology of the study in a systematic way. Section III reports and analyzes the results of the study and finally conclusion and recommendation of the study explained in the sector IV.

II. Literature Review

Numerous studies have been undertaken focusing on banking performance specially internal and external determinants considering both cross country and single country. The first group includes Athanasoglou *et al.* (2008); Francis (2013); Masood and Ashraf (2012); Perera *et al.* (2013). The second group includes AL-Omar and AL-Mutairi (2008); Athanasoglou *et al.* (2008); Heffernan and Fu (2008). The second group mainly conducts their research based on developing economies. Where, different studies uses different measures as profit proxy such as Athanasoglou *et al.* (2008); Francis (2013); Heffernan and Fu (2008); Perera *et al.* (2013) considered Return on Average Assets, henceforth, ROAA which is the ratio of net profit to average assets. It is also a good indicator of a bank's financial performance and managerial efficiency. The ratio is expressed as a percentage of total average assets. This ratio displays how efficiently a company is utilizing its assets and is also useful to aide comparison among peers in the same industry. Moreover, Masood and Ashraf (2012) considers Return on Average Equity, hence forth, ROAE which is the ratio of net profit to share holders average equity. This is also a good indicator of a bank's financial performance and managerial efficiency. It shows how competent the management is in using shareholders' equity for generating net profit. In addition, Chortareas *et al.* (2012); Heffernan and Fu (2008); Lee *et al.* (2014); Nguyen (2012) consider Net Interest Margin (NIM) as the indicator of profitability of the bank which is the ratio of the net interest to the amount of the earning assets. Higher the ratio is the indication of the better assets management quality for using the assets in profitable way.

[1] Central Bank of Bangladesh

Bank profitability is the function of both internal and external determinants. Internal determinants are the bank specific factors that are mainly affected by bank management decisions such as bank size, capital adequacy, risk management, liquidity management, operating efficiency. External determinants are both industry specific and macro-economic factors that reflect the economic and legal environment. Industry specific determinants describe industry structure variables that influence on bank profitability which is not directly affected by managerial decision. Industry specific variables include industry concentration and ownership structure of the bank. Macro-economic variables include economic growth and inflation.

Bank size provides the evidence of economies or diseconomies of scale in banking. Athanasoglou *et al.* (2008); Masood and Ashraf (2012); Perera *et al.* (2013) found that the effect of bank size on profitability is positive and significant statistically, while the relationship is linear. Moreover, AL-Omar and AL-Mutairi (2008) argues that positive effect of bank size on profitability reflects scale efficiency. On the other hand, Athanasoglou *et al.* (2008) considers relationship between size and profitability as non-linear arguing that the effect of size could be negative due to bureaucratic and other reason. He found that the estimated effect of bank size does not provide evidence of economies of scale in banking.

Bank capital adequacy is another important bank specific determinant of profitability. Athanasoglou *et al.* (2008); Masood and Ashraf (2012); Wasiuzzaman and Gunasegavan (2013) and Perera *et al.* (2013) find that bank capital adequacy associates with bank profitability significantly and positively. These results authenticate the fact that well-capitalized banks can source deposits and other funding at low cost and pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thereby increase profitability. However, Masood and Ashraf (2012) finds the capital adequacy highly significant and negatively relates with return on equity (ROE). Moreover, Qin and Dickson (2012) finds that capital structure has a negative determinant on profitability. High capital adequacy may lead of low profitability if investors are rigid to make great investment to avoid the losses in future where as it leads to high profitability if banks can avoid the payment of fixed interest expenses but dividends payments is optional can be paid or not paid.

Risk management is another important determinant of bank profitability. Risk is involved in every banking operation due to its nature. A bank may be failed due to low liquidity and poor assets quality. Therefore, bank risk may be grouped in to liquidity risk and credit risk. Among others, Athanasoglou *et al.* (2008) and Masood and Ashraf (2012) find that credit risk affects profitability negatively and significantly. This may imply that the tendency of commercial bank to exposure high risk loan generates more unpaid loan resulting these loan loss produces low profit to the commercial banks. Moreover, Francis (2013) finds liquidity is significantly and negatively related to profitability as higher liquid assets reduce the ability of banks to generate income. On the other hand Masood and Ashraf (2012) shows that liquidity has no effect or less effect on profitability.

Bank expenses management is also considered as another important determinant of bank profitability as it relates to managerial efficiency. Athanasoglou *et al.* (2008) and Heffernan and Fu (2008) establishes operating expenses are negatively and strongly relate to the bank profitability. More recently, Masood and Ashraf (2012) also finds that operational expense ratio is negatively associated to bank profitability. It implies that cost decisions of a bank management are instrumental in influencing its performance.

Now, spinning to the external determinants of bank profitability. It is noted that control variables can be classified to the factors that represent market characteristics such as concentration, ownership and industry size and the factors that represent the macro economy such as inflation, GDP per capita. Ownership status is mainly concerned to determine whether the bank is publicly or privately owned. Perera *et al.* (2013) argues public banks may have other than simply profit consideration which is consistent with the finding of Kosmidou *et al.* (2005). Athanasoglou et al. (2008), among others, found that the relationship between ownership and profitability is not significant.

Market structure also influences on profitability. Higher concentration ratio leads to higher profitability of the bank which is termed as Structure Performance Hypothesis. The firms with large market shares and well-differentiated products are able to exercise market power and earn noncompetitive profits, Samad (2008) reports that the profitability of the bank is dependent upon the market structure and the level of competition. Lower the level of competition in the market, higher the economic rent for a firm. Perera et al. (2013) finds that concentration affect bank profitability positively, whereas, Athanasogluou et al. (2008) initiates that the concentration affects the bank profitability negatively but the effect is insignificant. Moreover, Kosmidou (2008) finds that concentration affects the bank profitability also negatively but effect is significant.

Macro-economic control variables are the last group of bank profitability determinants. Macro-economic factors are real GDP growth rate, Inflation rate, Long term interest rate, Business Cycle. Athanasoglou et al. (2008) found that inflation and business cycle have positive effect on the profitability. However, Heffernan & Fu (2008), and Masood and Ashraf (2012) observe that inflation is not significant to bank profit. Moreover, Francis (2013) reports that GDP growth rate and inflation rate affect bank profit negatively. Nevertheless, Masood & Muhammed (2012) finds that GDP growth effect bank profit if ROE is considered as profit proxy. Recently, Perera et al. (2013) has made an attempt to identify the effect of control of corruption and rule of law on the profitability for South Asian Countries. As law and order not only affects foreign investment of those countries but also domestic businesses suffers as well if government fails to enforce the contracts due to corruption. They found that slack legal systems in those countries positively affect profitability as banks probably require high risk premiums on their loan contracts.

III. Methodology of the Study

a) *Variable section*

This study uses financial ratios for evaluating the performance of the banking sectors of Bangladesh. The use of ratio in measuring performance is common in the literatures of finance and accounting practices which is evident from the previous studies such as among the others Athanasoglou *et al.* (2008); Francis (2013); Heffernan and Fu (2008); Perera *et al.* (2013). The greatest advantage of using ratio for measuring banks' performance is that it compensates bank disparities created by bank size (Samad, 2004). The study has considered all together twelve financial ratios of which three measure profitability, five measure bank characteristics and four measure macroeconomic condition of the country which are explained below:

The study considers three measures of profitability as dependent variables which are Return of Average Assets (ROAA) as ratio of net income to average assets, Return of Average Equity (ROAE) as ratio of net income to average equity and Net Interest Margin (NIM) as the indicator of profitability of the bank which is the ratio of the net interest to the amount of the earning assets.

The explanatory variables of the study include both bank level variables and macro economic variables. Bank level variables are credit risk, liquidity, capital adequacy, bank size and cost efficiency; and macro economic variables are real GDP growth rate, inflation rate, real interest rate and stock market turnover.

We measure credit risk as a ratio of nonperforming loan to gross loan (NPLGL). Theory implies that firm profitability is negatively associated with the high exposure to the credit risk. Therefore, we expect a negative relationship between profitability and credit risk; and banks need to improve the profitability by prudent credit risk management such as enhancing screening and monitoring the risk. Moreover, the central bank determines the policy for the banking industry regarding the level of loan loss reserve based on nonperforming loan and total loan. Considering the bank policy, nonperforming loan and total loan, bank management determines the reserve level for loan loss at the beginning of the period.

In addition we consider the ratio of equity to total assets (ETA) as capitalization ratio or leverage ratio. It measures the bank's ability to absorb loss and exhibits how equity influences on banks profitability. The ratio not only represents banks higher capital adequacy of the bank but also reduce risk and regulatory cost. Higher the ratio is the indication of the bank is running with profitable investment opportunity and lower the ratio indicates that bank is suffering from capital adequacy problem. The expected effect of ETA may be positive or negative.

Moreover, we consider the ratio of net loan to total assets as a proxy of bank's liquidity. Loan constitutes the largest interest earning assets of the bank and expects to effects profitability positively. If major segment of the deposit is used for loan creation, it is expected that the ratio increases interest income and effects profitability positively. However, high ratio may reduce liquidity level of the banks which may increase funding cost and also increase the credit risk of the bank. In that case, the effect of liquidity ratio may be negative. Therefore, the expected relationship between liquidity and profitability is unclear.

Cost to income (CI) ratio indicates the operational efficiency of the bank indicating the cost of running the bank in compare to it's income. Higher the ratio means that bank is operating at low efficiency and at high competition which negatively affects the profitability of the bank. Therefore, we expect a negative relationship between the CI ratio and profitability.

The size of the bank effects the bank profitability but it remains unclear the optimum level of bank size. Because, it is proven that the effect of growing size is positive but the sign may change due to rise of inefficiency and bureaucracy with the increase of bank size. Therefore, the effect of bank size also remains unclear. We consider bank size as the natural logarithm of total assets.

Now we are turning to the control variable. We consider some macroeconomic factors as control variable to control for external factors that determine profitability which is warranted in order to isolate the effect of bank characteristics on profitability. We consider here four macroeconomic variable which are considered as external to the banks such as real GDP per capita, inflation rate, real interest rate and stock market turnover.

The first macroeconomic variable real GDP per capita is expected to affect the banking profitability positively by influencing the factors which indirectly affect the demand and supply of loan and deposit conditions. Such as during the recession when GDP growth rate slowdown, the deposit mobilization, loan creation and credit quality decline which downsize the profitability of the banks.

The inflation rate is considered as the proxy of how macroeconomic risk affects the profitability of the bank. Here we use annual inflation rate based on consumer price index which estimates increase in consumer price index for all goods and services in percentage.

Turnover ratio is the total value of shares traded during the period divided by the average market capitalization for the period. Average market capitalization is calculated as the average of the end-of-period values for the current period and the previous period. High inflation rate is related to both high income and high cost(Wasiuzzaman & Tarmizi, 2010). If rise in income exceeds cost, inflation is expected to affect the profitability positively.

High real interest rate increases the loan interest rate which leads to affect the profitability positively (Hassan & Bashir, 2003). Moreover, high real interest rate may also increase Islamic banks' profitability if large portion of the income comes from direct investment (Wasiuzzaman & Tarmizi, 2010). However, high real interest rate influences profitability negatively too if higher loan interest rate reduces the demand of the banking loan. Moreover, market turnover is the indicator of business cycle movement of the country which may also influence on the profitability of the banks. It may affect the profitability positively.

There are three types of local banks in Bangladesh such as public commercial banks, development and private commercial banks with distinct objectives. The divergent objectives of the banks may influence on profitability. To capture this aspect we consider two dummy variables for development banks and private commercial banks. We compare both type of banks with public commercial banks. Hence, DB_i indicates dummy for type of banks where *i* is the type of bank which takes the value one and two for development bank and private commercial bank. These dummy variables show the relative performance of development banks and private commercial banks to public commercial banks in term of profitability.

b) Model Specification

In order to investigate the effect of bank level and macro level determinants on profitability of Islamic banks in Bangladesh we use the following basic linear regression model:

$$Y_{it} = c + \sum \beta_{it} X_{it} + \sum \gamma_{it} Z_{it} + \alpha_i \mathrm{Dummy}_i + \varepsilon_{it} \text{---------------------------(1)}$$

Where subscript i indicates individual bank and t indicates time period. The dependent variable Y_{it} indicates profitability, the regressors X_{it} is the vector of bank specific variables, Z_{it} is the vector of macroeconomic variables and DB_i indicates dummy for Basel II implementation and ε_{it} is the disturbance or error term, which expresses the effect of all other variables except for the independent variables on the dependent variable that we use in the function. We consider three profit proxies based on the aforementioned literature review which are Return on Average Assets (ROAA), Return on Average Equity (ROAE) and Net Interest Margin (NIM). Moreover, the explanatory variable X is used for indicating bank specific variables which are expected to affect profitability of Islamic banks. Here, the investigation process considers five bank specific factors based on extensive literature review which are the ratio of Nonperforming Loan to Gross loan (NPLGL) as credit risk indicator, Equity to Total Assets ratio (ETA) as capital adequacy or leverage ratio, Cost to Income ratio (CI) as cost efficiency, Loan to TOTAL assets (LTA) as liquidity ratio and natural logarithm of Total Assets (lnTA) as size of the bank. We include some macroeconomic variables which are real GDP growth rate (GDP), inflation rate (INF), real interest rate (RIR) and stock market turnover (STV). In order to identify the effect of the implementation of Basel II on profitability we use a dummy variable which takes value 1, if the year falls under the coverage of the implementation of Basel II accord, otherwise, 0.

The ordinary least square (OLS) is primarily used in the study for identifying the linear relationship due to the advantage of yielding the best fit of coefficient for the future prediction provided that all the assumptions are met (Molyneux *et al.*, 2013). There are three competing formulations of the panel model which are pooled model, fixed effect model and random effect model with respect to handing error terms in the regression model. Pool model ignores the panel nature of data and considers error term as identically and independently distributed and uncorrelated with regressors where as, fixed effect model considers unobserved firm specific effects which are not included in the regression is correlated with the regressors while random effect model considers as this intercept effect is uncorrelated with regressors. In order to decide the right model there are two basic tests where first one is Breuch-Pagan test which is used to discriminate between Pooled model and Random effect model. Second test is Hausman test to decide between fixed effect and random effect model to be used. However, most important econometric concerns in analyzing banking data are dynamic nature of bank variables, autocorrelation, heteroscadasticity and endogeneity of some exogenous variables (Liu *et al.*, 2014; Schaeck & Cihák, 2014). Therefore, in order to handle the potential dynamic nature of explanatory variables we have also used GMM (Generalized Methods of Moments) as alternative model as it considers econometric concerns for unobserved bank level heterogeneity, potential endogeneity and autoregressiveness in the data on the behavior of dependent variables (Cubillas & Suárez, 2013). We particularly use system GMM system and specify the robust estimator of the variance–covariance matrix which is an alternative of GMM proposed by Arellano and Bond (1991) and developed by Arellano and Bond (1991) and modified by Blundell and Bond (2000).

c) Data

In order to investigate the determinants profitability of Islamic banks of Bangladesh we have used both bank specific data and macroeconomic data where, the bank specific data have been collected from Bankscope database and macroeconomic data have been collected from the world bank database from the period of 2003 to 2013. There are eight Islamic banks in Bangaldesh which are Islami Bank Bangladesh limited, Al-Arafah Islami Bank Limited, Export Import Bank of Bangladesh Limited, Social Islami Bank Limited, Shahjalal Islami Bank Limited, First Security Islami Bank Limited, Union Bank Limited and ICB Islamic Bank Limited. The study considers all Islamic banks in Bangladesh except Union bank limited as it comes in operation in 2013. The econometric software package stata has been used for processing our results.

IV. Analysis of Empirical Results

The table 1 presents the mean, standard deviation, maximum and minimum value of the performance measures of the Islamic banks of Bangladesh during 2003 to 2013. Here, the means of the profitability indicators NIM, ROAA and ROAE are 3.05, -0.01 and 16.14 respectively. High standard deviations and the gap between minimum value and maximum value of the profitability indicators imply high deviations in profitability among the Islamic banks in Bangladesh. The banks level variables show that Islamic banks are suffering from high credit risk, low capital adequacy and low cost efficiency which make them less profitable. Higher standard deviation of bank characteristics evident that Islamic banks are divergent in risk management and cost management capabilities. The mean of macroeconomic variables real GDP growth rate, inflation rate, real interesest rate and stock market turnover are 6.09, 7.64, 6.12 and 91.58 respectively. Among the macroeconomic variables stock market has highest standard deviation which indicates high volatility and uncertainty of stock market in Bangladesh. Volatile stock market may be a reason for low profitability of Islamic banks in Bangladesh.

Table 1 : Descriptive statistics of the variables

Variable	Mean	Std. Dev.	Min	Max
NIM	3.05	1.92	-6.4	5.42
ROAA	-.01	4.36	-21.97	3.57
ROAE	16.14	30.01	-176.08	92.39
NPLGL	10.27	20.88	.2	80.99
ETA	2.30	23.52	-92.1	66.51
LTA	65.49	15.88	34.11	91.13
CI	51.02	30.25	15.24	180.25
lnTA	13.72	1.03	11.78	15.75
GDP	6.09	.59	5	7.1
INF	7.64	1.58	5.4	10.7
RIR	6.12	3.75	-5.5	11
STV	91.58	55.87	23.2	212.6
Dummy for Basel II implementation, 1 for the year when it is implemented, 0 otherwise)	.47	.50	0	1

Where, NIM stands for net interest margin, ROAA stands for Return of Average Assets, ROAE stands for Return of Average Equity, NPLGL stands for the ratio of Nonperforming loan to gross loan, ETA stands for the ratio of equity to total assets, LTA stands for loan to total assets, CI stands for cost to income ratio, lnTA stands for natural logarithm of total assets, GDP stands for gross domestic production, INF stands for inflation rate, RIR stands for real interest rate, STV stands for stock market turnover.

The study aims at investigating the effect of bank specific and macroeconomic factors on profitability of Islamic banks. Before going for the investigation we run Pearson's correlation test in order to check multicolin earity among the explanatory variables in order to check whether any explanatory variable in the investigation influences other explanatory variable. Table 2 reports the Pearson's correlation coefficient matrix.

Table 2 : Correlation matrix of the explanatory variable

	NPLGL	ETA	LTA	C/I	lnTA	GDP	INF	RIR	STV	Dummy
NPLGL	1.00									
ETA	-0.63*	1.00								
LTA	-0.00	-0.26	1.00							
C/I	0.66*	-0.69*	-0.39*	1.00						
lnTA	-0.55*	0.49*	-0.29*	-0.19	1.00					
GDP	-0.18	-0.06	0.05	-0.12	0.00	1.00				
INF	-0.00	0.04	-0.02	-0.05	0.01	0.54*	1.00			
RIR	0.06	0.05	-0.16	0.06	-0.06	-0.24	0.05	1.00		
STV	0.15	0.06	0.10	0.01	0.07	-0.52*	-0.02	0.21	1.00	
Dummy	-0.02	0.11	0.1191	-0.07	0.41*	0.07	0.26*	-0.23	-0.13	1.00

**Correlation coefficient value is significant at 5%.*

Where, NIM stands for net interest margin, ROAA stands for Return of Average Assets, ROAE stands for Return of Average Equity, NPLGL stands for the ratio of NPL to gross loan, ETA stands for the ratio of equity to total assets, LTA stands for loan to total assets, CI stands for cost to income ratio, lnTA stands for natural logarithm of total assets, GDP stands for gross domestic production, INF stands for inflation rate, RIR stands for real interest rate, STV stands for stock market turnover.

The table 2 shows that the correlation values are less than 0.7 indicating that they are not highly correlated with others and free from the multi-colinearity problem. Hence, it is expected that non of the explanatory variable influence other explanatory variable and estimation is unbiased from the data analysis.

We also have conducted pre diagnostic test Breusch and Pagan lagrangian multiplier test in order to decide between pool model and panel model for the analysis with null hypothesis variance across the entities is zero or no panel effect.

We failed to reject Breusch and Pagan Lagrangian multiplier test statistics with low chi square value (0.0) and 1.0 probability value indicating that pool model is more efficient and appropriate than panel model. That is there is no evidence of significance difference across the bank, therefore, we need to run a simple ordinary least square or pool model instead of random effect model or panel model. As an alternative model we also have used system GMM concerning econometric issues such as heteoscadesticity, autocorrelation and endogeneity; and also ensuring the robustness of our results.

Table 3 : Regression output of OLS random effect model and System GMM model

Model	Simple OLS			System GMM		
Dep. Variables	ROAA	ROAE	NIM	ROAA	ROAE	NIM
Constant	-.67(8.73)	54.08 (47.15)	.48 (3.28)	3.58 (3.87)	54.08 (36.26)	.482 (2.01)
NPLGL	-.10 (.02)***	.06 (.15)**	.01 (.01)	-.11 (.01)***	.05 (.12)	.01 (.01)
ETA	-.01 (.03)	-.54 (.20)	-.06 (.01)***	-.01 (.02)	-.54 (.15)***	-.06 (.01)***
LTA	-.01 (.03)	-.25 (.20)	-.06 (.01)***	-.01 (.02)	-.25 (.16)	-.06 (.01)***
CI	-.04 (.02)*	-.40 (.15)**	-.06 (.01)***	-.03 (.01)***	-.40 (.11)***	-.06 (.01)***
InTA	.71 (.62)	1.15 (2.71)	.54 (.19)***	.36 (.22)	1.15 (2.08)	.54 (.12)***
Dummy (Basel II)	-.78 (.60)	-2.73 (4.70)	.87 (.33)***	-.75 (.39)*	-2.72 (3.61)	.87 (.20)***
GDP	-.70 (.66)	-2.52 5.17	.35 (.36)	-.69 (.42)	-2.52 (3.98)	.35 (.22)
INF	.06 (.20)	-.16 (1.54)	-.08 (.11)	.06 (.13)	-.161 (1.18)	-.08 (.07)
RIR	.04 (.07)	-.19 (.55)	.01 (.04)	.04 (.05)	-.193 (.42)	.01 (.02)
STV	-.01 (.01)	.06 (.05)	.01 (.00)	-.01 (.00)*	.062 (.04)*	.01 (.00)**
R^2	0.8534	0.32	0.5959			
Adjusted R^2	0.8114	0.13	0.4867			
Wald chi2(5)	209.51***	16.77**	54.56***	509.83***	28.35***	145.83***
F	21.22***	1.68	5.46***			
Observations				48	48	48
Instrument				48	48	48
Hasen chi2				0.00	0.00	0.00
AR(1)				-2.08**	-1.53	-0.06
AR(2)				3.14**		-0.90
Sargan test				88.90***	62.56***	98.90***

*The values in the table indicate the coefficient of the variables and the values within parenthesis indicate standard error of the estimates. Moreover, *, ** and *** indicate significant of the coefficient value at 10%,5% and 1% respectively. We consider NIM for net interest margin, ROAA for Return of Average Assets, ROAE for Return of Average Equity, NPLGL for the ratio of Nonperforming loan to gross loan, ETA for the ratio of equity to total assets, LTA for loan to total assets, CI for cost to income ratio, lnTA for natural logarithm of total assets, GDP for gross domestic production, INF for inflation rate, RIR for real interest rate, STV for stock market turnover.*

Table 3 exhibits empirical results based on both simple OLS or pool model and system GMM for an unbalanced panel data of 7 Islamic banks in Bangladesh.

We have used three models under pool model of which first one is based on ROAA, second one is based on ROAE and third one is based on NIM. F statistic of the models based on ROAA and NIM is significant at 1 percent but the model based on ROAE is insignificant which suggest that the models based on only ROAA and NIM are correctly specified and satisfy the condition of goodness of fit. Moreover, Standard errors of the variables based on ROAA and NIM are low which are less than 0.66 but, standard errors of the variables based on ROAE are higher which indicates that the model based on ROAE is not stable (Y. Chan, 2004). Moreover, it can also be inferred based on low R square and low significant coefficient value that ROAE is not a good indicator of profitability of Islamic banks of Bangladesh. Therefore, we have decided to conduct our analysis based on the models ROAA and NIM. In addition, it is conformed that the models are free from endogeneity problem which is evident from insignificant value of the constant.

Moreover, In case of GMM, insignificant value of Hansen test and significant value of Sargan test base of probability value imply that the models not suffering from the over identification problem while the significant value of Wald test and more number of observation than that of number of instruments conform the true value of the parameters, goodness of fit and correct specification of the GMM model. In addition, significant value of AR(1) and insignificant value AR(2) imply that null of no first order auto correlation is rejected and null of second order auto correlation can not be rejected for the model ROAA and NIM which are expected from the GMM model for ensuring that the original disturbance terms are not serially correlated and unbiased results. As we discussed earlier our analysis is based on pool regression model and we use system GMM for ensuring robustness of the results.

The NPLGL ratio is negatively and significantly related with ROAA in both OLS model and GMM model which is expected as credit is negatively related to the profitability of the banks. Our findings is consistent with the findings of Choon *et al.* (2012); Kolapo *et al.* (2012); Sufian (2009); Wasiuzzaman and Tarmizi (2010). The results suggest that non performing loan is a significant determinant of profitability of Islamic banks but reduces the profitability of them. The beta coefficient of the estimate shows that every one unit increases in nonperforming loan decreases ROAA by 0.10 units. One explanation could be that risk appetites among the banks divergent and banks taking more risk may reap immediate high profit margin but at the same time have to keep provision as buffer against large default. Some banks may find a few loan turns to bad which reduces profit margin. Therefore, prudential credit risk management is necessary for Islamic banks in order to improve their profitability.

Capitalization ratio measures the capital stability of the bank. Across all OLS and GMM models capitalization ratio is negatively related to the profitability of the Islamic banks in Bangladesh which is consistent with Choon *et al.* (2012). The results suggest that Islamic banks of Bangladesh should not increase more attention on equity capitalization for improving the profitability. Though a bulk of literatures such as Athanasoglou *et al.* (2008); Berger (1995); Kosmidou *et al.* (2005) argue higher capitalization is a good indicator of banking profitability; it is not applicable for the case of Islamic banks in Bangladesh. Moreover, according to the agency theory of Berger (1995), lower equity capitalization reduces the agency cost and improves firm's profitability. Further more, Wasiuzzaman and Tarmizi (2010) argues efficient banks choose to reduce capitalization ratio in order to reduce cost of bankruptcy and financial distress. Under such circumstance, Islamic banks of Bangladesh can compensate low capitalization with high leverage as optimal capital structure strikes a balance between capitalization and leverage. Therefore, it can be suggested to Islamic banks in Bangladesh to give more reliance on leverage and reduce dependency on equity in order to increase their profitability.

The loan ratio is negatively related with all profitability measures of the Islamic banks in Bangladesh while the effect is significant only in case of NIM. The results show a negative correlation of the loan and bank performance and imply that higher deposit transmission in to loan do not generate profit for the Islamic banks in Bangladesh. Our findings is consistent with Kosmidou *et al.* (2005), Fu and Heffernan (2009) and Choon *et al.* (2012).The beta coefficient of LTA indicates that one unit increase in LTA decreases ROAA by 0.01 unit and NIM by 0.06 units. The finding is robust in GMM specification. This may be due to high competition in the credit market and divergent ability of the Islamic banks for generating profit from the credit operations in Bangladesh. The findings suggest that Islamic banks in Bangladesh should keep less liquidity and make more careful investment in profitable projects. Islamic Banks can use their excess liquidity in newly introduced Mudaraba inter bank market in Bangladesh.

Cost to income ratio indicates the cost efficiency of the banks. The results shows that CI ratio is negative and significant with all performance measures implying that more efficient bank in cost management makes more profit. The results is consistent Heffernan and Fu (2008) and Kosmidou *et al.* (2005). The findings reveal that one unit rise in cost to income ratio reduces ROAA by 0.04 units and NIM by 0.06 unit. The result is found robust in alternative specification. The results suggest Islamic banks in Bangladesh to focus on improving the cost efficiency in order to increase profitability.

Next we find natural log of total assets affects all profitability positively and significantly only in model NIM which implies that bank size also plays a significant role on the bank performance in Bangladesh. The positive effect of bank size suggests that large banks earn higher margin and profit due to benefit of economic of scale on the operations. The results shows that one unit increase in lnTA increases ROAA by 0.71 units and NIM by 0.54 units which suggests that larger the size of the Islamic bank more profitable it will be in Bangladesh. The result is found robust in alternative specification.

Now, we turn to investigate the effect of the implementation of Basel II accord on profitability of the Islamic banks in Bangladesh. We use a dummy variable in order to show the Basel II implementation effect. The findings show that Basel II effect profitability negatively in all models except NIM. The result is also found consistent in GMM specifications. The findings suggest that implementation of Basel II does not bring positive effect on profitability. This may be happed due to lack of corporate governance, efficient portfolio management and risk management quality of Islamic banks in Bangladesh.

Now, we are discussing the effect of macroeconomic factors such as GPD growth, inflation, real interest rate and stock market turnover on profitability of Islamic Banks. The effect of real GDP growth rate on ROAA is negative while it's effect on NIM is positive and but unexpectedly insignificant. The effect of inflation on ROAA is positive same as Choon *et al.* (2012) for Malaysia while it is negative for NIM. The effect of real interest rate on both ROAA and NIM is positive but insignificant. The effect of stock market turnover on ROAA is negative but it is positive for NIM. The results are found robust in GMM specification. The results suggest that macroeconomic determinants do not affect much on the profitability of the Islamic banks in Bangladesh. It can be interpreted that volatile economic condition does not make much sense in explaining the profitability of Islamic banks in Bangladesh and our result is consistent with Wasiuzzaman and Tarmizi (2010) for Malaysia.

It is evident from the R square value of Pool models that ROAA is much preferred measure of profitability in compare to ROAE and NIM. The results show that bank level and macroeconomic determinants explain 85.34 percent variability of ROAA, while the influence is 59.59 percent in case of NIM and only 32.0 percent in case of ROAE.

V. Conclusion

The paper aims at determining the factors that explains the profitability of Islamic banks in Bangladesh. The study considers seven full-fledged Islamic banks during 2003 to 2013. The study uses pool model based on Breusch and Pagan lagrangian multiplier test. The study also consider system GMM as an additional analysis for ensuring the robustness pool model results. The study considers three measures of profitability such as ROAA, ROAE and NIM. The novelty of our study includes the use of both pool model and system GMM model considering some econometric issues, inclusion of the effect of Basel II implementation and give more focus on macroeconomic determinants besides bank specific determinants on profitability. The results show that ROAA is more preferred measure of profitability based on R square value. The outputs show that all bank specific factors such as credit risk, equity capitalization, investment, cost efficiency and bank size influence on the profitability of Islamic banks in Bangladesh.

The results indicate that size of the Islamic bank effects positively while credit risk, loan ratio, cost efficiency, equity capitalization effect negatively on the profitability in Bangladesh. The result implies that Islamic banks in Bangladesh need to improve credit risk management, portfolio management, cost efficiency and reduce the reliance of equity capitalization in order to improve their profitability. The study further shows that Islamic banks do not get much better results from the implementation of Basel II accord in Bangladesh due to lack of corporate governance. In analyzing macroeconomic determinants, the result shows that GDP growth and stock market turnover effect profitability negatively while inflation and real interest rate influence profitability positively. But, the effect of macroeconomic factor on profitability found unexpectedly insignificant which suggests that Islamic banks do not require to give much importance on give much importance on economic policies.

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A Cross Sector Comparison of Financial Trends in Textile, Food and Chemical Sectors: An Empirical Analysis of Profitability, Leverage, Liquidity and Activity

By Hirra Ghafoor & Ramiz Ur Rehman
University of Lahore, Pakistan

Abstract- The aim of the study is to use ratio analysis to observe significant financial trends within three major sectors of the non financial industry for the 2005-2010 period….namely textile, food and chemical sectors. Consequences shows that at least for the test period, 11 out of 14 financial ratios are statistically different across the three non financial sectors. By itself, economic trends and cross sectional abnormalities with in observed non financial industry segments are better embedded.

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Hirra Ghafoor [α] & Ramiz Ur Rehman [σ]

Abstract- The aim of the study is to use ratio analysis to observe significant financial trends within three major sectors of the non financial industry for the 2005-2010 period….namely textile, food and chemical sectors. Consequences shows that at least for the test period, 11 out of 14 financial ratios are statistically different across the three non financial sectors. By itself, economic trends and cross sectional abnormalities with in observed non financial industry segments are better embedded.

Study solely depend on the published financial data, so it is subject to all limitations that are inherent in the condensed published financial statements. Inflation couldn't be taken into contemplation in the present study. It was not possible to convert the relevant financial data inti their present values because of non availability of sufficient information required for the purpose. The study is of crucial importance to measure the firm liquidity, leverage, activity and profitability and other indicators that the business is conducted in a rational and normal way. Multiple analysis of variance with independent sample characteristics were analysed through Statistical Package for the Social Sciences (SPSS). The analysis of variance do not control for several factors that may systematically affect profitability, leverage, liquidity and activity. They are Total Sales and Total Assets. We control for the factors mentioned above in a multiple regression framework.

I. Introduction

The model of this research is extracted from private and government companies included in non financial industry. The focal point of this investigation is on investment management because of its significance in commerce and industry the specific focus is on financial ratio analysis. Financial ratios give the advantage when they are matched up with other matching ratios. When we are using ratios in order to check the performance of a company two different approaches are attained they judge due course and they provide the comparison between two companies or more than two. Eventually, evaluating a ratio of one company in comparison to another company is a factual way to recognize a company's movement if firm ratios are gradually improving it implies a positive effect on company's financial situation. On the other hand if certain ratios appear to be getting poorer position it indicates that firm is in declining position. It is important to judge a company's ratios in comparison to other industries. If we are performing comparison of different firms and it shows that one firm's ratio is increasing eventually, we must find out whether it is increasing in comparison to its competitor. If it isn't as flushed as its opponents. This indicates that company isn't is in sound situation or handled well as its other industry rivals are.(Kousar and Saba, 2012) did a wise compariso of banks (Salman and Qamar, 2011) used two pharmaceuticals and compared them by using appropriate financial ratios. We here compare the operational and financial position of the entire sectors (textile, food and chemical) which one's performance is superlative as compared to others. We check the impact of TA and TS on dependant variables i.e. profitability, liquidity, activity and leverage.

Author α σ: Lahore Business School, The University Of Lahore.
e-mails : hirraghafoor@gmail.com, ramiz_rehman@hotmail.com

II. Literature Review

(Justin, 1924) The period 1920's was the time which shows great interest of analysts about the use of financial ratios for measuring future financial failures and the effect of financial statements (Gilman, 1925) thought current ratio was the only ratio for the analysis of financial staement (Wall and Dunning, 1928) were the first who gave the idea of using many ratios rather than only current ratio (Bliss, 1923) merge financial ratios with business returns (Smith and Winakor, 1935) proceed the work of Wall and propose that CA to TA and Net Worth to TA give more accurate result than CR (Holdren, 1964) establish that financial ratios also examine the effect of Lifo and Fifo methods of inventory assessment on financial ratios (Beaver, 1966) use financial ratios to predict future failure in profile analysis (Altman, 1968) prompted by giving position to these ratios accordind to their weights (Horrigon, 1968) predicted these ratios will be very helpful for conducting research when the income is limited (Dakin, 1972) continue the work of Beaver by adding cash to sale ratio (O Connor, 1973) prefer weighted index instead of using singly used ratios to predict financial failures but still there is a sign of instability to forecast ROR (Abdul Khaliq, 1974) criticize by providing evidence about the lack of usefulness of ratios (O Connor, 1974) replied ratios are the first step in predicting ROR. After this era research continues using financial ratios in foretelling different aspects as Long term and Short term financial decision making (Backer and Gosman, 1980) profitability (Dholakia, 1978) level of risk (Choi, Hino, Min, Nam, Ujiie, Stonehill, 1983) determine particular ratio is not adequate to measure performance rather than using a group of ratios (Soenon and Bulke, 1988) desribe a ratio defines a relationship between two facts numerator and denominator (MC leary, 1992) bankruptcy (Rujoub, Cook, Hay, 1995) financial failure (Bar and Siems, 1996) distiguish falied banks from non failed (Yeh, 1996) whether private companies are working more or less as to publically traded companies (Deventer and Malatesta, 2001) effect of inflation on financial results (Tatoglu, 2003) liquidity (S.k. Acarvci, 2007) operational nad financial performance of public and private sector (Aftab, Nasr, 2008) liquidity and profitability for financial situation and profit/loss (Karacaer, Kapusuzoglu, 2008) financial analysis (Mukhuti, Bhunia and Roy, 2011) the alliance between liquidity and profitability (Bhunia and Brahama, 2011) financial and operational position of insurance companies (H. Malik, 2011) association between profitability and liquidity ratios (Bhunia, Khan and Mukhuti, 2011) manufacturing sector of india 3years before Merger and Acquisition and 3 years after (Leepsa and Mishra, 2012) relationship between profitability and liquidity ratios (Khan, Sajjad, 2012)

III. Cross-Sectional Comparison of Textile Food and Chemical Sectors

a) Data

Our cross-sectional comparison use data accessed through websites of Karachi Stock Exchange, State Bank of Pakistan and Annual reports of incorporated firms. This study integrates secondary data for six years period. The information reported for most of the companies include its Assets, Debt, Equity, Capital employed, Dividend covered, and Inventory, Interest covered Cash flows and Sales. The study is based on all companies included in KSE. We use data published for 2005, 2006, 2007, 2008, 2009, and 2010 from annual reports of related firms. It includes both private limited and publically traded companies. It embrace non-financial sector which further include Textile, Food, Chemical and Pharmaceutical sectors. Textile sector consist of 164 observations, food 56, Chemical and Pharmaceutical contain 43 observations. We exclude financial firms from the analysis reported here. We take all companies of the three mentioned sectors because if we make a sample with criteria as a company attaining share value of above 90 percent will be included in our sample, the study will furnish biased results. The motive is to integrate those companies whose total assets and total sales should not be zero. For this the number of companies taken in our sample is 263. It excludes the defaulter companies which were black listed by Karachi Stock Exchange on 31st December 2012. The total number of defaulter companies for these sectors is 114.

Summary figures computing size indicate that they are precisely huge firms. The average of the annual sale of chemical sector is greater than that of the food and textile sector. If we measure these companies in term of size than it is found that government firms employ more people than private firm so the size of government firms is always greater than the private firms.

IV. Methods and Results

(Beaver, 1966) and (Altman, 1968) were the first who used these yard sticks called financial ratios. The objective of our study is the comparison of profitability, leverage, liquidity, activity for the model companies present in textile, food and chemical sector. It determines which sector is working more efficiently as compared to other sectors of Pakistan. Efficiency in our study measures operational cycle efficiency of an industry which includes how asset is managed sufficiently to get profit of an industry. The operating cycle is cash-RM-WIP-FG-A/R-cash. R.M includes labor FOH and A/R. it shows if operational cycle is working efficiently than the overall profitability of an industry is high. The ratios that measure the efficiency are Inventory Turnover, Total Asset Turnover.

Altman, Beaver judge against two sectors. They used models to compare these two groups. The model used by them is ratio analysis and bankruptcy. They used average mean value of two groups to have economic comparison. We focus on the leverage, liquidity, profitability, and activity comparison of these sectors of KSE. Profitability is proxied by ROA, ROE, ROCE and Net Profit Margin. Two ratios are Current and quick ratios which are accepted measures of the liquidity of a firm. Another variable leverage is measured through interest cover, dividend cover, debt equity and cash flow to debt ratio. Another aspect of the firm includes activity proxied by asset turnover and inventory turnover.

In order to determine the difference between sectors (textile, food and chemical) i.e. means of theses independent variables the Wilk's Lamda is used. The omnibus MANOVA test indicates that Wilk's Lamda. In this test Wilk's Lamda p = 0.000 which the three groups are significant different in term of the forteen financial ratios.

The examination of multi variate test table indicates that the means of textile, food and chemical are significantly different in term of eleven ratios i.e. Quick ratio, Trade debt, Asset turnover, Current ratio, Debt equity ratio, ROA, ROE, ROCE, Inventory turnover, Net Profit Margin, EPS. However, Dividend cover (f = 0.131, p = .878), Interest cover (f = 1.130, p = 0.349), Operating cash flow to debt ratio (f = 0.547, p = 0.590) are not significantly different among textile, food and chemical sector. In order to find where the differences are present in these ratios we use post – hoc (LSD) strategy. The mean difference is significant at 0.05 levels. In case of quick ratio chemical vs food (MD = 0.5917, p = 0.00), chemical vs textile (MD = 0.4100, p = 0.000) which are significantly different whereas food vs textile (MD = -0.1817, p= 0.017) which is not significantly different. Asset turnover ratio for chemical vs food (MD = -0.4483, p = 0.000), food vs textile (MD= 0.6633, p= 0.000), and for chemical vs textile it is (MD= 0.2150, p= 0.018) which is not significantly different. current ratio for chemical vs food (MD= 0.5217, p= 0.000), chemical vs textile (MD= 0.3083, p=0.001) which are significantly different where as current ratio food vs textile (MD= -0.2133, p=0.015) which is not significantly different. ROE for chemical vs food (MD= 1.8433, p= 0.629) which is not significantly different where as chemical vs textile and food vs textile are significantly different. ROCE food and chemical industry are higher than textile whereas chemical vs food (MD= 7.5567, p= 0.044) are not significantly different whereas chemical vs textile and food vs textile are significantly different. Inventory turnover is higher for chemical than for food and textile and is significantly different for all the three sectors i.e. p=0.000. Dividend cover ratio is higher for chemical sector than for textile and food sector. DCR for chemical vs food (MD= 0.3917, p=0.822), chemical vs textile (MD= 0.8750, p= 0.617), food vs textile (MD= 0.4833, p=0.782). Interest cover ratio is higher for chemical than for food. ICR for chemical vs food (MD = 0.83, p=0.418), chemical vs textile (MD= 1.50, p=0.154), food vs textile (MD= 0.67, p=0.515). NPM is statistically significantly different for all the sectors but it is highest for chemical sector than food and textile. Operating cash flow to debt ratio is not significantly different which is chemical vs food (p = 0.887), chemical vs textile (p= 0.3460), food vs textile (p = 0.425).

V. Time Series Analysis of Textile, Food and Chemical Sectors

a) Data

The initial sample comes from three sectors of KSE. We here check the dependency of profitability, liquidity, activity and leverage on Total Assets and Total Sales. So it overall gives the impact of Total Assets and Total Sales on dependant variables i.e. profitability, liquidity, activity and leverage. We use financial ratios to evaluate the movements among those ratios here by use the time series data. We use six year data for a single ratio of a single sector and represent it graphically. There are also various factors that logically affect the profitability, leverage, liquidity and activity. Two most noticeable factors are total assets and total sales. We can control the exceeding issues of profitability, leverage, liquidity and activity in a multi variant regression model. Evaluation of these are reverted on these two factors i.e. assets and sales. Our time series analysis use accounting data which consists of only those firms for which income statement and balance sheet are available for six years period. The blacklisted and defaulters are excluded from the data.

VI. Changes in Profitability, Leverage, Liquidity and Activity for Textile, Food and Chemical Sectors

In our cross-sectional comparisons we measure profitability, liquidity, leverage and activity. Our extensive approach is to compute the intensity of these measures over different time periods and to illustrate interventions from changes in the intensity of these measures. Our accounting data will give more accurate results than the results present in annual reports of these firms. So here we discuss those measures that are not discussed in last section (cross-sectional comparisons). For profitability measure we use ROA, ROE, ROCE, NPM paralleling the liquidity of a company we use current ratio and quick ratio. Another variable leverage is proxied by interest cover ratio, dividend cover, debt-equity ratio and cash flow to debt ratio and the last we examine activity in relation to asset turnover and interest turnover.

Table 1 : Regression Results

	Explanatory variables				
Dependant variable	NCA	CA	Sales	R	R2
QR	3.081	2.535	-1.802	.357	.127
CR	-5.573	2.707	-9.538	.441	.194

Note: This table reports results of regressions of liquidity, activity, profitability and leverage measures on variables noncurrent assets, current assets and sales.

Sales and Assets are measured in million of rupees. Figures for sales and assets are from annual reports of textile, food and chemical sectors for 2005, Table 1 shows the strength of association between dependant variables quick and current ratios and all the independent variable joined together i.e. total assets and total sales and the influence of independent variable on the liquidity of food, textile and chemical sectors. It was observed that noncurrent asset increased by one unit quick ratio increased by 3.081 units whereas current ratio decreased by 5.573 units which is statistically significant at 1 percent level whereas current asset increased by one unit quick ratio increased by 2.535 units and current ratio decreased by 9.538 that is statistically significant at 1 percent level. However, sales increased by one unit quick ratio decreased by 1.802 2006, 2007,2008,2009,2010. MANOVA calculated with Wilk's Lamda are significant at the 1 percent level. units whereas current ratio decreased by 9.538 units which is statistically significant at 1 percent level. The multiple correlated coefficients between the dependant variables quick ratio and current ratio and the independent variables noncurrent asset, current asset, sales are 0.357 and 0.441. It indicates that quick ratio and current ratio are affected by noncurrent asset, current asset and sales at some level. It is obvious from the value of R2 that 12.7 percent of variations in quick ratio and 19.4 percent of variations in current ratio were accounted by the joint deviation in current asset, noncurrent asset and sales.

Table 2 : Regression Results

	Explanatory variables				
Dependant variable	NCA	CA	Sales	R	R2
AT	-3.510	-4.661	4.177	.973	.946
IT	5.960	.3.226	2.644	.591	.349

Note: This table reports results of regressions of liquidity, activity, profitability and leverage measures on variables noncurrent assets, current assets and sales. Sales and Assets are measured in million of rupees. Figures for sales and assets are from annual reports of textile, food and chemical sectors for 2005, 2006, 2007,2008,2009,2010. MANOVA calculated with Wilk's Lamda are significant at the 1 percent level.

Table 3 : Regression Results

	Explanatory variables				
Dependant variable	NCA	CA	Sales	R	R2
ROA	-3.476	-3.932	2.458	.561	.314
ROE	-6.480	-1.804	6.574	.820	.673
ROCE	-7.198	-7.774	4.051	.742	.551
NPM	-1.568	-1.642	-7.344	.314	.099

Note: This table reports results of regressions of liquidity, activity, profitability and leverage measures on variables noncurrent assets, current assets and sales. Sales and Assets are measured in million of rupees. Figures for sales and assets are from annual reports of textile, food and chemical sectors for 2005, 2006, 2007,2008,2009,2010. MANOVA calculated with Wilk's Lamda are significant at the 1 percent level.

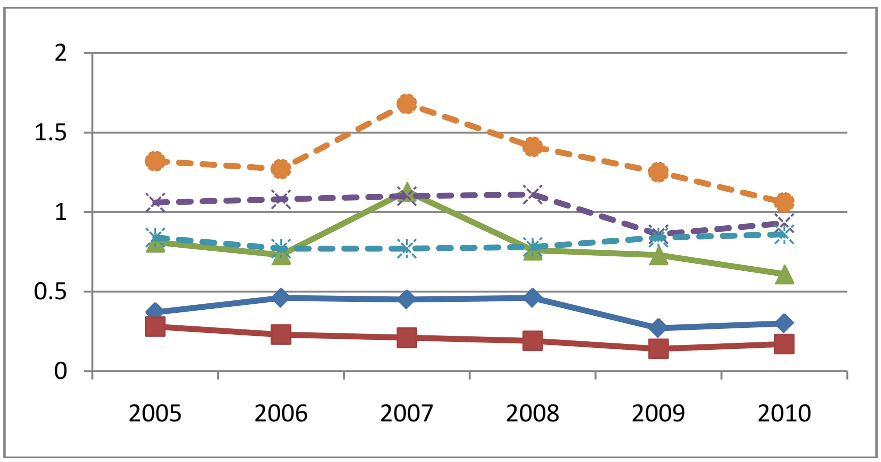
Table 4 : Regression Results

	Explanatory variables				
Dependant variable	NCA	CA	Sales	R	R2
IC	4.299	-9.11	8.560	.848	.719
DC	5.237	-7.961	-5.414	.243	.059
DE	1.290	-4.132	-7.008	.393	.154
OCD	6.810	-1.470	4.505	.771	.595

Note: This table reports results of regressions of liquidity, activity, profitability and leverage measures on variables noncurrent assets, current assets and sales. Sales and Assets are measured in million of rupees. Figures for sales and assets are from annual reports of textile, food and chemical sectors for 2005, 2006, 2007,2008,2009,2010. MANOVA calculated with Wilk's Lamda are significant at the 1 percent level.

Table 2 shows the strength of association between dependant asset turnover and inventory turnover ratios and all the independent variable taken together i.e. total assets and total sales and the influence of independent variable on the liquidity of food, textile and chemical sectors. It was observed that noncurrent asset increased by one unit asset turnover decreased by 3.51 units whereas inventory turnover increased by 5.960 units which is statistically significant at 1 percent level whereas current asset increased by one asset turnover ratio decreased by 4.661 units and inventory turnover ratio decreased by 3.226 which is statistically significant at 1 percent level. However, sales increased by one unit asset turnover increased by 4.177 units whereas inventory turnover ratio increased by 2.644 units which is statistically significant at 1 percent level. The multiple correlated coefficients between the dependant variables asset turnover and inventory turnover and the independent variables noncurrent asset, current asset, sales are 0.973 and 0.591. It indicates that asset turnover and inventory turnover are affected by noncurrent asset, current asset and sales at some level. It is obvious from the value of R2 that 94.6 percent of variations in asset turnover and 34.9 percent of variations in inventory turnover are accounted by the joint deviation in current asset, noncurrent asset and sales. Table 3 and table 4 represent the results of changes in trends of profitability and leverage. Table 3 describes illustrative results of changes in trends of ROCE, NPM, ROA and ROE throughout six years and table 4 depicts descriptive results of values for interest cover, dividend cover, debt equity and operating cash flow to debt ratio from 2005 to 2010.

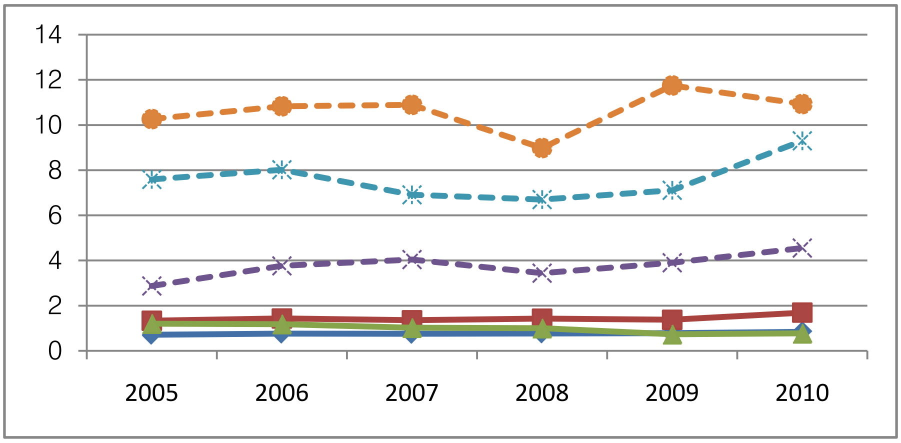
QR___ CR…..



Note: Figure 1 depicts graphs of cross-sectional average liquidity ratios for textile, food and chemical sectors over result years-05 through 10. QR denotes Quick ratio and CR denotes Current ratio.

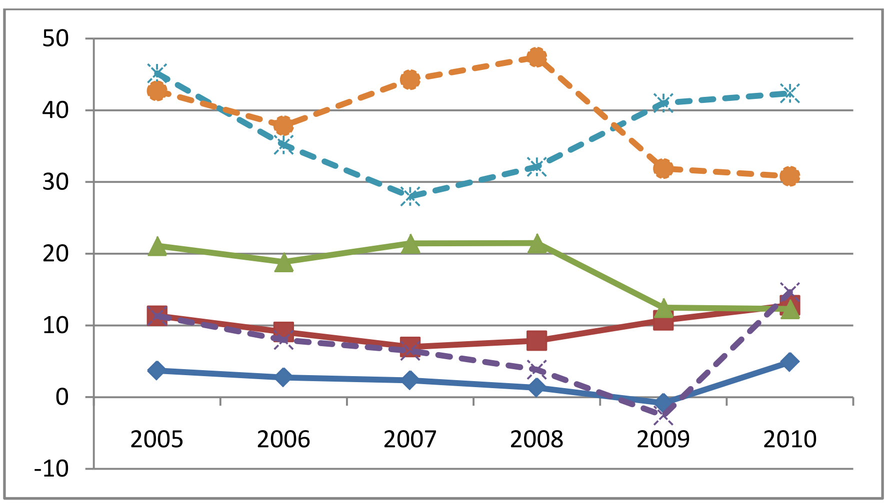
Figure 1 represents illustrative graph of the sample taken from annual reports of textile, food and chemical sectors for liquidity measures for a period of six years. The graph shows that average quick ratio during the years for textile sector is essentially flat till 2008 and then decrease with slight intensity. In the same pattern quick ratio for food sector will remain unchanged throughout the six years that's why it is less noticeable whereas chemical sector peaks in 2007 and then declines sharply till 2010. The same model appears for average current ratio during the years the textile sector is flat till 2008 and then starts declining whereas the food sector remains constant throughout the six years period. The chemical sector peaks sharply in 2007 and then starts declining with high tendency. Figure 2, 3 and 4 give the graphs of the measure of average, activity, profitability and leverage ratios and changes in trends of above mentioned sectors by using these ratios.

AT___ IT.....

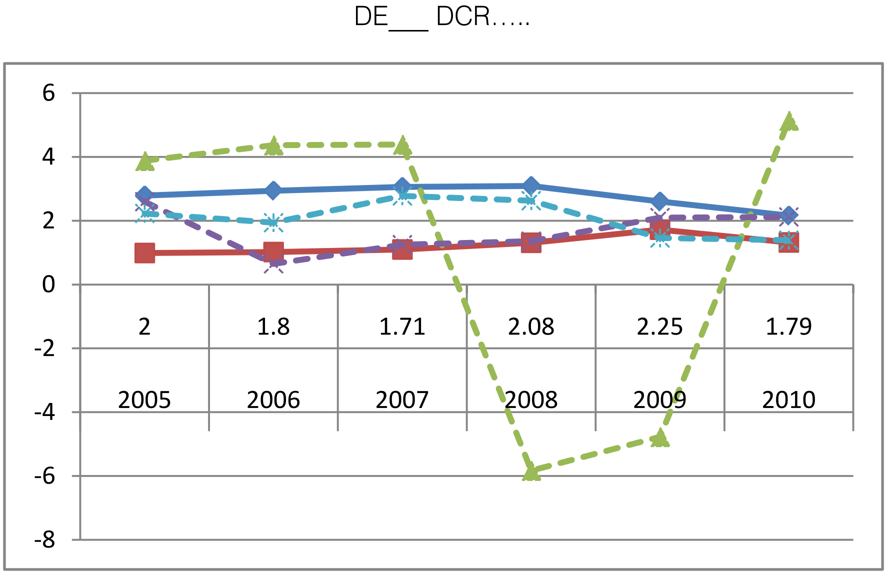


Note: Figure 2 depicts graphs of cross-sectional average avtivity ratios for textile, food and chemical sectors over result years- 05 through 10. AT denotes Asset Turnover ratio and IT denotes Inventory Turnover ratio.

ROA___ ROE.....



Note: Figure 3 depicts graphs of cross-sectional average profitability ratios for textile, food and chemical sectors over result years- 05 through 10. ROA denotes Return on Assets and ROE denotes Return on Equity.



Note: Figure 4 depicts graphs of cross-sectional average leverage ratios for textile, food and chemical sectors over result years-05 through 10. DE denotes Debt Equity ratio and DCR denotes Dividend cover ratio.

Figure 2 shows a graph of the measure of average activity ratio for the six years peiod. The asset turnover ratio for textile,food and chemical remains unchanged throughout the six years period. There is only a slight difference between these years. Whereas, the inventory turnover ratio for textile increase gradually till 2007 then decrease for one year and then starts increase for 2009 and 2010. At the same pattern food sector increase sharply in 2007 than remains unchanged and increase at high intensity in 2010. Chemical sector falls in 2008 then peaks in 2009 then declines slightly in 2010. Figure 3 and 4 give the graphs of the measure of average, activity, profitability and leverage ratios and changes in trends of above mentioned sectors by using these ratios.

VII. Conclusion

The examination of multi variate test table indicates that the means of textile, food and chemical are significantly different in term of eleven ratios i.e. Quick ratio, Trade debt, Asset turnover, Current ratio, Debt equity ratio, ROA, ROE, ROCE, Inventory turnover, Net Profit Margin, EPS. However, Dividend cover ($f = 0.131$, $p = .878$), Interest cover ($f = 1.130$, $p = 0.349$), Operating cash flow to debt ratio ($f = 0.547$, $p = 0.590$) are not significantly different among textile, food and chemical sector. In order to find where the differences are present in these ratios we use post – hoc (LSD) strategy. The mean difference is significant at 0.05 levels. Chemical sector's ability to meet current liabilities is higher than textile nad food sector so it has higher liquidity. AT is high for food industry than chemical and textile industry. Current ratio for chemical sector is higher than the two. Food industry indicate high risk as it is able to meet its long term and other obligations than other two sectors. Chemical industry earn more return on its assets than food and chemical. Same as, due to high ROE it indicates more income is generated by given level of assets. ROCE is same for food chemical as well as textile sector. Chemical sector represents efficient inventory management as the industry is efficient in managing and selling inventory. DCR and ICR for chemical sector is higher because it can meet interest obligations. NPM is used to measure the amount of income that a company is able to generate for its revenue. Higher its value higher will be the profitability. So the chemical sector has high profitability than food and textile. Operational cash flow to debt ratio is not significantly different for all the three sectors. Cash flow is an actual amount that a company is engendering to run its future business. Higher the cash flow the more leverage the company is considered. Leverage and financial risk of a company. For textile and food it is .3460 and .425. The minimum level given to this ratio is 0.2. By using which is obvious in multi variant comparison and multi variant regression. The difference in profitability of chemical sector is not only statistically significant but also huge. So it various measures we came to know that textile and food firms are significantly less profitable than chemical firms. The result is rather tough provides support to the above point that chemical sector performance is superlative as compared to food and textile.

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Entrepreneurs' Characteristics as a Determinant of MSE Growth

By Kokobe Seyoum Alemu
Ambo University, Ethiopia

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Keywords: MSES, small firms, micro enterprises, entrepreneurship, ethiopia.

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ENTREPRENEURSCHARACTERISTICSASADETERMINANTOFMSEGROWTH

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I. Introduction

Micro and small enterprise (MSE) sector is highly diversified sector and plays a predominant role in the economy of developing countries. The MSE enterprises are being considered as engines of economic growth worldwide. One of the most important roles of MSEs in this context includes poverty alleviation through job creation. The developed as well as developing countries are taking extreme benefits from MSEs and that are capable to accelerate the economy of any country (Jasra, 2011). It plays considerable responsibility in providing further employment and conversion of economy.

Given the importance of the micro and small enterprise sectors to GDP and to national employment in most developing countries like us, it is important to consider what sorts of policies might be undertaken to foster expansion of this sector. In order to address this issue it is helpful to better understand the factors involved in the growth of MSEs. Some businesses grow more than the others. Again, some business grows while others perish within a short period of time. So this gives us the implication of the fact that there is something that those businesses have and others don't. Even if some of the researchers on the area see growth as a natural phenomenon in the evolution of the firm, most of the peoples on the area see growth as a consequence of some embedded characteristics (Mervi and Jyrki, 2007; Qureshi et al, 2012; Hansen and Hamilton 2011; Federico et al, 2008; Serazul, 2012; woldie et al., 2008; Rahel, 2010; brown et al. 2004). But, all of those researchers will agree on the contribution of owner/ manager to business growth. In MSE most of the time the owner of the business will became the manager of the business. The rationale to include the entrepreneurs' profile perspective is that MSEs, compared with large companies, are characterized by a strong emotional connection between the owner and the firm (Chan and Foster, 2001). Thus, certain characteristics of the entrepreneur will strongly influence not only the type of firm that will be created but also the way it will be managed (Qureshi et al., 2012). So, the attitudes and abilities of the business owner have an important impact on small firm growth and will be reflected in strategic choices and the ways in which he or she operates the business for future success (Papadaki and Chami, 2002).

Many of those empirical studies have tended to focus on the relationship between the characteristics of the owner/manager and firm growth. Within the broad category of owner-manager characteristics, Woldie et al.,(2008) suggests five elements which are likely to influence growth, these are: Age, Gender, Education, Previous work experience and family back ground of the owner managers. According to Lucas' theory, the variation in levels of business acumen is the major determinant of business growth which does mean that difference in education level and experience about the business under consideration will have a direct impact in business decision and MSE growth. Alternatively, as proposed by Ishengoma and Kappel (2008), the major determinant of business growth is the differing taste for risk among individuals in which females are risk averse than males in making business decision.

The purpose of this paper is to explore how owner manager characteristics may affect MSE growth in Ethiopia[1]. An improved knowledge of this linkage may be of considerable utility of policy-makers and any business stake holders. Again this paper adds to the existing literature in several ways in that it is only recently

Author : Lecturer and Researcher, Ambo University, Ethiopia.
e-mail: kokseyoum@yahoo.com

[1] According to the Ethiopian MSE development Strategy, Micro enterprises are business with less than 5 employees and capital of less than 100,000 birr. Again Small enterprises are business with employees of 6- 30 and capital of less than 1.5 million birr.

that attention paid to owner manager characteristics as a role it play in MSE growth. Moreover, it is believed that, in effort to help mushrooming of MSEs, especially by establishing business incubators, academicians can provide consultancy service to MSEs through such researches. Last but not least, the knowledge of the effect of owner manager characteristics on MSE growth will allow proprietors not only to learn their true efficiency level but also to increase their firms' efficiency by means of investing in their own human capital or cut their level of investment if it has no effect.

II. Literature

Even if there is a disagreement on level of digits between the government and some international institution like World Bank and International Monetary Fund, everybody agrees that there is a fast growth in Ethiopia for the last nine years. As the country lacks large industries, the contribution of MSE to this growth is undeniable. That is why the government of Ethiopia gave greater attention to the promotion and development of MSEs, especially for women as a strategy for poverty alleviation and increasing for employment creation. But those policies of the government failed to address those factors responsible for the graduation of MSE. Despite the countries heterogeneity with regard to MSEs composition and level of growth, the centrality of MSE in the process of economic development is by now widely recognized and essentially beyond debate. In addition, the MSE sector may serve as an entrepreneurial training ground in which tomorrow's business leaders can find success and gain valuable experience (A. McPherson and Rous, 2010).

In the world, there is no commonly accepted definition of micro and small enterprises. Depending on the prevailing realties and objectives, each country has its own definitions. Based on the purpose for which the identification is required different definitions have been instituted by researchers in the same country at different point of time. Thus, the definition of MSEs may be based on persons employed, annual growth of sales, fixed capital invested, or a combination of the above criteria. In Ethiopia the demarcation between micro and small enterprise was made based on the capital employed and number of employees. Again the demarcation depends on the sector of the business whether it is industry or service.

There are dozen researches on the area in developed countries and only a little is known in developing countries like Ethiopia. Present descriptive evidence from several countries suggests that small-firm growth differs according to a number of proprietor characteristics (Rahel, 2010; woldie et al., 2008; Hansen and Hamiltan, 2011; Serazul, 2012; Qureshi et al., 2012). The vast majority of those researchers conclude that owner/ manager profile like education level, age, family back ground, gender and previous work experience will have much impact on MSE growth. The conclusions of those variables are summarized as follows

III. Age of Owner/Manager and its Influence on Growth

Available theoretical discussion explaining the influence of the age of the owner/manager advocates for the younger owner/manager; the argument here rests on the fact that the younger owner/manager has the necessary motivation, energy and commitment to work and is more inclined to take risks (Doern, 2009; Jasra et al, 2008). The logic is that the older owner/manager is likely to have reached his/her initial aspiration. It is also suggested in the literature that younger individuals may be more willing to assume risks and grow their business. Following Federico et.al argument, a younger individual may have a higher need for additional income. The burden of supporting a family and meeting mortgage payments generally declines with age (woldie et al., 2008). An older individual who continues to be the owner-manager of a small firm is more likely to have reached his/her initial aspirations. However, while younger individuals have more motivation to expand their business they also may have fewer financial resources and fewer networks. The limited empirical evidence suggests that the owner-manager's age tends to be negatively related to growth (A. McPherson et al., 2010).

Hypothesis 1: There is significant relationship between the age of the owner/manager and the level of growth attained; consequently, firms run by younger owner/managers tend to have a higher growth probability than those run by their older counterparts

IV. Gender of the Owner/Manager and its Influence on Growth

The previous analysis suggested that male-headed MSEs are likely to expand more rapidly than ones operated by females(Qureshi et al.,2012; Coad et al.,2008). The survey results indicated that female-headed MSEs generally grew at an average rate of only about 7% per year, while those headed by males grew at approximately 11% per year (Woldie et.al.,2008). One of the explanations for this difference is that enterprises owned by women are often concentrated in more slowly growing sectors. Even when controlling for other variables such as sector and location, however, enterprises owned by women grew at a significantly slower rate. Possible explanations for these gender differences include such factors as the dual domestic and productive responsibilities of women, or possible differences in the business objectives of females and males.

Females may also be more risk-averse than their male counterparts, reflecting their responsibilities for maintaining the welfare and perhaps even the survival of the household. This may lead them to use any available funds for diversification into new activities rather than for an expansion of existing ones (mead et al.,1998; Brown et al., 2004; Akoten et al., 2006).

Akoten et al, (2006) provide an insightful analysis of many of the challenges constraining women's opportunities for MSE growth. All too often, women face asymmetrical rights and obligations limiting their labor mobility and burdening them with disproportionate household responsibilities. Due to gender-specific roles and time constraints, even university-trained women may choose to weave tapestries within the household. Temporal discontinuities in women's ability to work frequently leads to a loss of economic skills, and at times even lowers career and educational aspirations. Women in some countries face greater problems with in numeracy, illiteracy, and a lack of business skills. In addition, women commonly have unequal access to markets. Studies have shown that men travel farther geographically than women to buy inputs, enabling them to enjoy lower prices and higher quality (Bwisa et al., 2011). Men also sell in multiple markets more frequently than women, allowing them additional growth opportunities. As a result of such factors, women frequently focus their MSEs on a relatively narrow range of industries. It has been proposed in the literature that women may have fewer opportunities to develop relevant experiences may have fewer networks to get assistance and may have greater difficulty in assembling resources (Serazul, 2012). There is some evidence that banks may impose more stringent requirements on women business owners in regard to collateral for loans, and therefore limit their ability to grow (Brown et al., 2004). Women may also be more family oriented and be less keen in pursuing economic goals related to expansion of the firm (Serazul, 2012). Hansen and Hamilton,(2011) found that being female had a negative impact on the growth of small ventures but had no impact on the survival of the firm.

Hypothesis 2: There is significant relationship between the gender of the owner/manager and firm growth; male-owned/managed firms exhibit higher growth than female-owned/managed firms.

V. Formal Education of Owner/Manager and its Influence on Growth

In the past it was generally been believed that small business owners would be less likely to have pursued a formal education than those holding managerial positions in larger organizations, as individuals "followed in their father's footsteps. There is no question as to the fact that basic education enhances the overall quality of the owner/manager by providing him/her with basic numeric and literacy skills, thus increasing the chance of survival (Tiruneh,2011; Jasra et al.,2011; woldie et al.,2008). Literature's discuss on the educational level of the owner/manager tends to be split into two schools of thought. Some studies state that the fact that a manager has a higher education degree or even a postgraduate degree seems to stimulate the growth of the firm, thus having an impact on both survival and growth. The converse argument is that owner/managers of MSEs who had degrees generally achieved lower rates of growth than those less well educated (Reid and Xu, 2009). The link between owner-managers' education and firms' performance as well as growth is addressed in the economic literature. One among the categories of human capital effects on firms' competitiveness is allocative effect. This effect is related to owner-managers' education, in that those with a relatively higher level of education have a greater ability to efficiently allocate resources to more productive lines of business and to select profit maximizing inputs/combinations (Federico et al.,2008). Qureshi et al., (2012), emphasize the role of entrepreneurial/business education in the growth/performance of the firm. They argue that a firm whose management has business/entrepreneurial education is likely to perform better than those without managers with these types of education. Loan providers use owner-managers' education levels as an indication of the latter's ability to utilize resources to generate profit and be able to meet their obligations. Thus, firms with relatively more educated owners are likely to have more access to external finance.

Hypothesis 3: There is significant relationship between the educational qualification of the owner/manager and the level of growth attained; growth is higher in firms where the owner/manager has a college or university degree and above.

VI. Previous Experience and its Influence on Growth

Any development practitioner or businessperson can attest that MSE owner/managers acquire a substantial amount of skills and knowledge while operating their firms. Such work experience proves to be highly important for developing capabilities within MSEs, as entrepreneurs with more years of work experience typically have faster-growing MSE. For example, one empirical study found that Kenyan entrepreneurs with at least seven years of work experience expanded their firms more rapidly than those without such experience (Doern, 2009). While the benefits of on-the-job experience are frequently mentioned, the importance of prior work experience may be even more helpful, especially if that experience came within the same sector or in micro to small-sized enterprises. An empirically rigorous study of high-growth entrepreneurs provides telling insights about the importance of skills and business contacts gained during past employment (Tiruneh, 2011). Among Latin American and East Asian entrepreneurs, contacts were found to be a key benefit of work experience, helpful in identifying business opportunities, obtaining financing and other resources, and alleviating management challenges (Brown et al., 2004). Other developing regions, such as Africa, are characterized by a systematic lack of opportunities to gain relevant work experience.

A study carried out by Serazul, (2012) found that MSE owner/managers with little experience at the start-up phase could have problems remaining solvent with an increase in expenditure in relation to their earnings. Nichter and gold mark, (2005) in their study found no relationship between prior MSE experience and firm growth. Coad, (2008) found reasonable evidence indicating a negative relationship between being unemployed before starting a business and subsequent business growth. Knowledge gained from industry experience provides the entrepreneur with certain key competencies and inside information needed to recognize and exploit opportunities. Through work experience, people develop information and skills that facilitate the formulation of entrepreneurial strategy, the acquisition of resources, and the process of organizing. Industry experience is also important in reducing risks and uncertainty. Thus, industry experience is expected to be associated with entrepreneurial orientation (woldie et al., 2008).

Hypothesis 4: There is significant relationship between the previous experience of the owner/manager and firm growth; growth is positively influenced by previous experience of the owner/managers, especially those who have prior MSE experience.

VII. Family Back Ground / Family who Owned a Business/

Coad, (2008) discusses the importance of the entrepreneur's family background in instilling the need for achievement, the need for independence and control of an unstructured environment, and patterning later modes of behaviour. One important dimension of family background, which seems to affect entrepreneurial outcomes, is business history. Entrepreneurs born into business families are more likely to have positive attitudes toward risks, be prepared in part by the family's accumulated business experience and have links with the family's age-old ties and business networks. A family's business background is also a source of previous work experience, another influential personal life experience. This characteristic is probably more critical in developing countries like Ethiopia, given the relative strength and cohesiveness of the family unit in such countries. Therefore, family business history is expected to be related to higher levels of entrepreneurial orientation. Approximately three-quarters of MSE owners have some family connection with business ownership, with men being much more likely to 'inherit' a business than women. Individuals who have business owning parents are much more likely to pursue their own business ventures than those who do not (Davidsson et al., 2002). In addition, he further says, spouses of micro or small business owner are more likely to be business owners themselves than those who have employed spouses.

A number of studies have shown that entrepreneurs are more likely to be from families in which the parents owned a business. It is assumed that young individuals develop knowledge of what is involved in running a business (Krasniqi, 2012), and that they are more likely to perceive entrepreneurship as a viable career choice. There is indeed some empirical evidence to suggest that coming from an entrepreneurial family background increases the likelihood of survival (woldie et al., 2008). However, there is little evidence on the impact of family background on the growth prospects of an entrepreneurial venture. One study has found no relationship between entrepreneurial background and growth of a small venture (Hansen and Hamilton, 2011).

Hypothesis 5: Growth is higher for businesses whose owners during childhood had close family members – parents or siblings – that were entrepreneurs.

VIII. Methodology

The aim of this research is to explore the influence of the owner/manager characteristics on the growth of the firm. Utilizing a self administered questionnaire, data were collected from two sub-cities of Addis Ababa, where a large number of MSEs are located, namely: Addis ketema sub-city and Arada sub-city. The sample for this survey consisted of 99 MSE owner/managers. Questionnaires are good research methods as they yield information about the past and present and offer the best means of obtaining standardized stimuli (Woldie et al., 2008).

The data collected from the self administered questionnaire were analyzed by using descriptive statistics based mainly on frequency distribution and percentage value. In addition, ANOVA test and t-test were used to check the relation between dependent and independent variables. The ANOVA test is used when there are more than two alternatives. The t-test is used for variables having two alternatives to check whether their difference brings difference in the dependent variables.

Many different variables have been used to measure the firm's growth. Employment, sales, and total asset are mostly used as growth measurement in literature. This shows that, there is little agreement in the existing literature on how to measure growth, and scholars have used a variety of different measures. In measuring growth, although theoretically alternative measurement tools such as growth rate of sales or profits could give more precise results, in practice they are not as credible as the employment and asset growth measure because of entrepreneurs' hesitation to report the true values of their sales and profits. This hesitation, which leads to measurement errors, makes the employment and asset-based measure preferable in studies considering enterprise growth. Again, employment growth is relatively easy for respondents to remember and that is uncontaminated by price changes. Moreover, job creation may be an important social goal, and policies to support MSE's are frequently justified on their supposed employment effects. But the use of employment or asset criteria could also depend on the sector under study. For highly capitalized firms, such as those belonging to certain manufacturing sub-sectors, variation in assets would be a more accurate measure of growth than variation in the workforce. But, this criterion cannot be used in the service sector, which is more labor-intensive. Therefore, this paper used both employment[2] and asset growth as a growth measure. Employment Growth is the difference between average employment at inception and current average employment; whereas total asset growth is the difference between the total asset at the current and total asset at the beginning plus unpaid amount of debt.

IX. Findings from the Research

The study sample consisted of 99 MSEs in which large number of them is owned by females. This is because of the fact that; in our country; as the number of females in formal education is less in number, most of them are participating in the business. The numbers of females joining government offices are very much less due to their less participation in formal education and business is their best area of selection. That means women in developing countries like us have a strong tendency to enter the MSE sector, in part because of ease of entry and their limited access to alternate opportunities. Again females are good from marketing point of view than males as they have a natural ability to attract and negotiate customer. Therefore, it is perhaps not surprising to see more number of females in business area than males in this country.

[2] Workers here includes even working owners (entrepreneurs), since job creation for owners may be equally as valuable, from a social point of view, as jobs created for others. On the other hand, unpaid family helpers are excluded, both because their relationship is more frequently part-time and casual (as well as unpaid), and because they cannot be reliably measured. Employment is defined as the sum of regular workers, contract workers, and working entrepreneurs.

Table 1 : Employment /Asset growth with respect to gender of the owner manager

	gender of the owner/manager	N	Mean	Std. Deviation	Std. Error Mean
Employment growth	Male	38	4.74	7.232	1.173
	Female	61	2.84	7.090	.908
asset growth	Male	38	2.55E5	312419.567	50681.146
	Female	61	1.14E5	217739.999	27878.750

source: field survey

As it is indicated in the above t- test table result, 38 MSEs in this study are owned/ managed by male owners. In terms of growth performance, enterprises run by male individuals' shows an average asset growth of $2.55*10^5$ and employment growth of 4.74 during their operation time. The remaining 61, MSEs involved in this study are owned/ managed by female individuals. In terms of performance MSEs in this category shows on average asset growth of $1.14*10^5$ and employment growth of 2.84. Concerning both, asset and employment growth, the mean growth is larger for the male category. These suggest, therefore, that enterprises with a male owner/ manager exhibit greater likelihood of having higher growth than enterprises whose owner/ manager is females. Possible explanations for these gender differences include such factors as the dual domestic and productive responsibilities of women, or possible differences in the business objectives of females and males, or education difference between females and males in which most of the time in our country females do not go to school for cultural reason. Again, females may also be more risk-averse than their male counterparts, reflecting their responsibilities for maintaining the welfare and perhaps even the survival of the household.

Table 2 : Employment/ asset growth with respect to education status of owner/manager

Education status of owner/manager		Asset growth	Employment growth
no schooling	Mean	263950.00	5.00
	N	13	13
elementary	Mean	180471.05	1.58
	N	19	19
high-school	Mean	116745.71	3.24
	N	42	42
collage/university	Mean	195676.16	4.88
	N	25	25
Total	Mean	168237.62	3.57
	N	99	99

Source: field survey

The table above shows 13 enterprise owner/ managers of this study have an education status of no schooling which means that they did not join formal education in their life time. Enterprises owned/managed by individuals with no education level have an average asset growth of 2.64*105 and employment growth of 5 in their whole life till now.

The other 19 enterprise owner/ managers of this study have an education status of elementary school which means that they have been in a formal education for some years with a maximum of grade 8. Enterprises owned/ managed by peoples with this level of education have an asset growth of $1.80*10^5$ and employment growth of 1.58 in their life time

Again the other 42 enterprise owner/manager of this study have an education status of high- school which means that their maximum level of education is to grade 12 starting from grade 9. Enterprises owned/ managed with peoples of this level of education have a total asset growth of $1.17*10^5$ and employment growth of 3.24 during their operation

The remaining 25 MSEs involved in this study are owned/ managed by individuals having an education level of collage/ university status. This educational status category of the owners/manager includes those who join college or university to have further education. This category includes those owners/managers having diploma or first degree and above. Regarding performance of the enterprises in this category of the educational level of the owners/manager of the enterprises; on average they showed an asset growth of $1.96*10^5$ and employment growth of 4.88 since their establishment.

Over all, the result shows that education does not have such implication on asset and employment growth as expected. It is not surprising to see such things in our country in which most of the educated peoples are not involved much in business. In our country the more peoples are educated, the more they are far from business and they consider it as a minor activity left for jobless people which most of the time is the uneducated part of the society. The no schooling part develops those businesses from scratch and knows everything about the business environment due to enough experience for the industry. Again even if they are not educated they have passed whole of their life in business and they know what to do than many of the educated person who is new in the area. So this knowledge of the area may make them develop more when compared with more educated parties. Again the education level attained by the educated parties may not be related with the activity they are undertaking. Even if lacks of education have negative implication on business growth, the result of this study shows that mean asset and employment growth is higher for no schooling.

Concerning the employment growth the possible reason that no schooling category has high growth is due to the fact that they are uneducated, they should have to work through others that they should hire many employees which are appropriate for the position and this may increase the number of employees at their organization.

Table 3 : Employment/ asset growth with respect to age of the owner /manager

Age of the owner /manager		Asset growth	Employment growth
less than 25	Mean	95,700.00	5.00
	N	10	10
greater than or equal to 25 and less than35	Mean	271,305.07	4.54
	N	54	54
greater than or equal to 35 and less than 45	Mean	19,940.00	2.20
	N	25	25
greater than or equal to 45	Mean	54,955.00	.30
	N	10	10
Total	Mean	168,237.62	3.57
	N	99	99

Source: field survey

The third variable considered in this study as the success factor for growth of MSEs is the age of the owner/ manager of the enterprises. To examine the variation in the growth of the enterprises in different age categories, the sample is grouped into four age groups as depicted in the table above. In many studies it is stated that, the young have high probability of business development and as peoples become older their energetic effort to develop their business will decrease. In this study what is needed to be known is which category of this young age particularly have a high probability of business growth and which older part have a least growth. From where this least growth starts will be answered after business owners are categorized in to four age groups.

As it is indicated in the table, from the total sample taken 10 enterprises are possessed by owners/manager with the age of less than or equal to 25. This category is the youngest of all the listed categories. When we look at the growth of those MSEs in this age category on average they show an asset growth of 95,700 and employment growth of 5 from the time of establishment to to-date.

The other 54 MSEs in this study are owned by individuals with the age range of 25 to 35 years which roughly shows the adult age group of the country. The growth performance of MSEs under this age category in terms of average asset growth is about 271,305 and employment growth is 4.54 from the year they have been established to date.

The additional 25 MSEs selected for this study are owned/ managed by individuals with the age range of 35-45. The average asset growth of this MSE group is 19,940 and employment growth is 2.2 during their operation years

The remaining 10 enterprises have owners/managers with age above 45 years. In terms of the asset growth of the enterprises possessed by individuals in this age category, on average they grow by 54,955 and in terms of employment growth they show 0.30 since establishment to this date.

Over all the statistical result shows that large percentage of business growth is within the age range of 25-35 with the least within the age range of 35-45. This shows that the groups of young age that have a high business growth are between the ages ranges of 25-35. Concerning the employment level the growth is high for businesses owned/ managed by individuals less than 25 years age. This may be because they are new to business and should work through others until they are familiar with the environment

Table 4 : Employment /asset growth with respect to work experience of owner/manager

Report

Work experience of owner/manager		Asset growth	Employment growth
less than 5	Mean	17817.50	-.15
	N	20	20
greater than or equal to 5 and less than 10	Mean	29493.57	1.29
	N	28	28
greater than or equal to 10 and less than 15	Mean	249726.59	5.91
	N	34	34
greater than or equal to 15	Mean	410744.12	7.00
	N	17	17
Total	Mean	168237.62	3.57
	N	99	99

Source: field survey

The other variable in this study is the owner/manager experience[3] in the business industry which is expected to create variations on the growth of MSEs operating in Addis Ababa.

From the above, 20 owner/ managers of MSEs in this study have less than 5 years work experience in any other field either being employed in other organizations or working in their own independent enterprises before the current one. In terms of growth those 20 enterprises owned/ managed by individuals with less than 5 years work experience demonstrates an average asset growth of 17,817 and employment growth of -15.

Again the same table shows that, 28 MSEs are owned/ managed by owners which have a prior management experience of between 5 to 10 years. With respect to the growth of those enterprises in this category on average they show an asset growth of 29,493 and employment growth of 1.29 during their operation

The third category of MSEs in this table shows that 34 enterprises are included under this category and owned/ managed by individuals with a work experience of 10 to 15 years. Concerning growth those business with in this category have an average asset growth of 249,726 and employment growth of 5.91.

The remaining 17 MSEs in this study are owned/ managed by individuals who have a prior work experience of more than 15 years. The growth of the enterprises in this category shows that they have an asset growth of 410,744 and employment growth of 7 starting from the beginning to to-date.

This shows that the increase in the owner/manager experience will increase the average growth of those enterprises. This is because of the fact that owner managers having an experience before, knows different tactics of solving problems. Again the liability of newness does not affect experienced individuals. As they know what is happening in the area, they may have special techniques in using an opportunity and decreasing a threat. The negative value of employment growth of those businesses within the age range of less than 5 years shows that, there is high probability that those businesses are unstable and go out of business at that stage. But small businesses passing this stage have high probability of growth. Inexperienced people have low growth rate when compared with experienced people.

[3] Experience here includes the work done by the owner/manager other than this position held. It is the total number of years the person spent on work.

Table 5 : Employment/ asset growth with respect to family back ground of the owner manager

Group Statistics

	Family ownership of business	N	Mean	Std. Deviation	Std. Error mean
Employment growth	Yes	53	4.72	6.640	.912
	No	46	2.24	7.590	1.119
asset growth	Yes	53	2.58E5	302604.984	41565.991
	No	46	6.53E4	166525.236	24552.807

Source: field survey

The fifth variable of this study is the family back ground of the owner/ manager. This deals with whether the owner/ manager have a family who participate in business before. Having being born from business families would have relation to the performance of MSEs and determine their success in the business environment they are working in. As shown on the above table, 53 MSEs are owned/ managed by individuals whose families are in the business before. When we look at the growth of MSEs in this category, it shows an average asset growth of $2.58*10^5$ and employment growth of 4.72 during their life time.

On the other hand, from the same table you can see that, 46 sample enterprises in this study are owned/ managed by individuals whose families didn't participate in businesses. That is their families have been participating in another activity which is different from business. Looking to the performance of the enterprises in terms of the asset growth, on average they show a $6.53*10^4$ and in terms of employment it shows 2.24 during their operation.

Generally from this statistical data, those enterprises owned/managed by individuals whose owners is from business family perform better in terms of growth compared to those possessed by individuals whose owners are from non business family. The possible reason is that, being coming from families that have exposure for business will decrease the liability of newness as he/she grows with families always talking about business. Again, those individuals may have learned to expect difficulties and be less disheartened in the face of unfavourable events.

X. Hypotheses Testing

The following ANOVA and t-test result is used to identify whether those variables are determinates or not.

Table 6 : SME growth with respect to gender of the owner / manager

		T-test for Equality of Means						
							95% Confidence Interval of the Difference	
		t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
asset growth	Equal variances assumed	2.638	97	.010	140663.735	53316.168	34845.901	246481.569
Employment growth	Equal variances assumed	1.287	97	.201	1.901	1.477	-1.030	4.831

Source: field survey

The above table shows that, the Asset growth is significantly different with the gender of the owner/ managers (t=2.638, df=97, p=0.010). So, with respect to the asset growth the hypothesis which states that, there is significant difference on the MSE growth operated by owners with different gender can be accepted. The result indicates there is a significant difference on the asset growth of MSE run by male and female.

Again with respect to employee growth, the above analysis suggested that there is no statistically different employment growth between male-headed and female headed SMEs (t=1.287, df=97, p=.201). Even if the average employment growth for male headed (4.74) enterprises are larger when compared with female headed (2.84) enterprises there is no significant difference in employment growth for both of them. The survey results indicated that male and female- headed MSEs generally grew at insignificant difference. With respect to the employment growth the hypothesis which states that, there is a significant difference on the MSE growth operated by owners with different gender is rejected

To sum up about the gender variable as one factor that contribute to the growth of MSEs, the t-test provide table with different results. In terms of asset growth gender is statistically different for male and females. But, for employee growth it is statistically insignificant for the difference in the gender of owner/ manager. Based on this it can be concluded that, gender is not the determinants for growth, if growth is measured by employee growth and is the determinants of growth if growth is measured by using asset growth.

Table 7 : SME growth with respect to education level of the owner/manager

ANOVA Table

			Sum of Squares	Df	Mean Square	F	Sig.
employment growth * education status of owner/manager	Between Groups	(Combined)	149.433	3	49.811	.968	.411
	Within Groups		4886.891	95	51.441		
	Total		5036.323	98			
asset growth * education status of owner/manager	Between Groups	(Combined)	2.521E11	3	8.404E10	1.197	.315
	Within Groups		6.667E12	95	7.018E10		
	Total		6.919E12	98			

Source: field survey

The above table shows that, the asset growth among different educational levels is not statistically different (F=1.97, df=3, 95, p=0.315) and at the same time employment growth is not statistically different for the difference in education level (F=0.968. df=3, 95, p=0.411). The ANOVA result suggests that there is a weak relationship between the owner/ manager educational level and the asset and employment growth. The result suggested that educational attainment of the owner /manager has no effect on MSE growth. Such findings may suggest that enrolment in formal schooling is a poor measure of skill creation, or that creating skills without opportunities to use them does not foster economic growth.

As a result the_hypothesis of the study which states that, there is a significant difference on the asset/employment growth of MSE in relation to the difference on the education level of the owner/manager is rejected. Even so the ANOVA result shows that there no significant relation between the educational level of the owner/ manager and the MSE growth, the mean asset/employment growth is high for no schooling part of the educational level which includes those individual who didn't join formal education

Table 8 : SMEgrowth with respect to owner/ manager age

ANOVA Table

			Sum of Squares	Df	Mean Square	F	Sig.
Employment growth * age of the owner /manager	Between Groups	(Combined)	224.797	3	74.932	1.479	.225
	Within Groups		4811.526	95	50.648		
	Total		5036.323	98			
asset growth * age of the owner /manager	Between Groups	(Combined)	1.304E12	3	4.348E11	7.356	.000
	Within Groups		5.615E12	95	5.910E10		
	Total		6.919E12	98			

Source: field survey

The above ANOVA results indicated that there is no significant difference in employment growth of different MSEs owned/managed by peoples in different age level (F=7.356, df=3, 95, P=0.225). That is, the relation between owner /manager age and employee growth is not statically different. Holding other business and owner characteristics constant, being young, does not seem to affect employee growth performance.

Hence, the hypothesis of this study which states, there is significant difference on the performance of enterprises in relation to the owner/ manager age will be rejected. That means age of the owner manager does not affect business growth

But, the result of asset growth shows that there is a significant difference between asset growth and age of owner/ manager (F=1.479, df=3, 95, P=0.000). This shows that having young owner/ manager do have a significant effect on asset growth. Those businesses whose the owner/ manager is young grow more than the others.

Hence, the hypothesis of this study which states, there is significant difference on the performance of enterprises in relation to the owner/ manager age will be accepted. That means being young have an effect on asset growth.

To conclude, the age of the owner/ manager is the determinants of growth if growth is measured by asset growth but is not the determinants of growth if the growth is measured by using employment growth. This is to mean that those businesses owned/ managed by young individual have a large asset growth but have no effect on employee growth. Irrespective of the age of owner/ manager, the employment growth is almost similar.

Table 9 : SME growth with respect to owner/ manager experience

ANOVA Table

			Sum of Squares	Df	Mean Square	F	Sig.
Employment growth * work experience of owner/manager	Between Groups	(Combined)	809.324	3	269.775	6.063	.001
	Within Groups		4227.000	95	44.495		
	Total		5036.323	98			
asset growth * work experience of owner/manager	Between Groups	(Combined)	2.217E12	3	7.390E11	14.930	.000
	Within Groups		4.702E12	95	4.950E10		
	Total		6.919E12	98			

Source: field survey

The above ANOVA table shows that the owner manager experience have a direct relation to both asset and employment growth (F=6.063 and 14.930, df=3,95, P=0.001 and 0.000). That means statistically there is a significant relation between the owner/manager experiences and business growth. This is to mean that businesses owned/managed by experienced people will grow more than those businesses owned/ managed by less experienced individuals.

As a result, the hypothesis of this study which states, there is a significant difference on MSE growth with the difference in experience is accepted for both asset and employment growth. To conclude the ANOVA result, the table shows us that owner/ manager experience is the determinants of MSE growth.

Table 10 : SME growth with respect to owner/ manager family back ground

		T-test for Equality of Means						
		t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Employment growth	Equal variances assumed	1.733	97	.086	2.478	1.430	-.360	5.316
	Equal variances not assumed	1.716	90.199	.090	2.478	1.444	-.390	5.346
asset growth	Equal variances assumed	3.832	97	.000	192212.696	50157.321	92664.299	291761.094
	Equal variances not assumed	3.982	82.949	.000	192212.696	48275.997	96192.805	288232.588

Source: field survey

The above t-test result shows that businesses owned/managed by individuals who is from a family member that owned a business at childhood has a positive effect and statistically significant for asset growth (t=3.832, df=97, P=.000). But the t- test for employee growth shows that the result is statistically insignificant. That means coming from families within business industry have no effect on employment growth. Some reason set for this is that being from business family may contribute to the successful start-up of MSEs, but not necessarily to its growth, when more specific skills necessary to managing growth may be required.

Now, based on the above t-test result the hypothesis of this study that states, there is a significant difference on the growth of enterprises with respect to the difference in the family back ground of the owner is accepted if growth is measured by using asset or rejected if growth is measured by employee growth. To conclude the result of the above t-test table MSEs owned/ managed by individuals who came from business family is the determinants of business growth if growth is measured by using asset growth and not a determinant if growth is measured by using employee growth.

XI. Conclusion

Numerous studies have tried to identify the determinants of firms' growth, mainly in order to isolate those factors which would allow us to distinguish the successful businesses of tomorrow from those which will fail to grow. Ideally, this would allow the implementation of better-targeted economic policies, since growing firms greatly contribute to the creation of jobs and wealth. Nevertheless, the bulk of such research tends to concentrate on MSEs in developed countries; very limited studies have provided such research on MSEs in Africa. To the best of my knowledge, this paper is the first to quantitatively investigate the relationship between MSE growth and owner/ mangers characteristics in our country; Ethiopia and it will fill this gap of knowledge.

In this study, while some of the findings support commonly held beliefs, others suggest that some popular concepts regarding small business growth may need to be re-examined. The study supports the idea that, there is a significant variation in the growth of MSEs operating in this town with respect to the gender, experience and family back ground differences if asset is used as a growth measurement. That means the variation in those variables will result in the variation of growth if the measurement of growth is asset growth.

But the study shows there is no significant difference between MSE growth with respect to the variation in the level of education of the owner/ managers whether the growth is measured by using asset growth or employment growth. The study found no evidence to support a common perception linking formal higher education with higher incidence of business success and growth.

The statistical result for the second dependent variable that is employment shows, there is a significant variation in the growth of MSE with respect to experience and family back ground, if growth is measured using employment growth. With respect to this variable, the statistical result shows there is no difference in growth between MSE with respect to the difference in gender and age of the owner / manager.

Based on the finding, as enterprises owned/ managed by individuals with high previous experience shows better growth; stakeholders of the sector should work on preparing training programs so that they can share experience with one another especially to those entering into the sector without any previous business background. Again education level which is expected to have an effect on MSE growth doesn't affect growth here. This is because of the fact that the education system of the country is more of theory based than practical. So it is good if the education system of the country is practical rather than a theory based and other subjects about business should be given at lower grades that everybody who joins school can get it.

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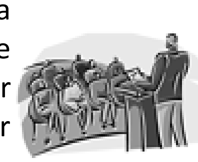

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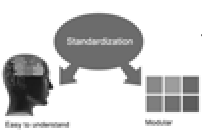

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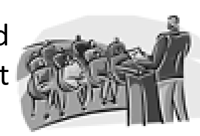

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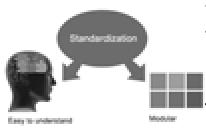

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- Font type of all text should be Swis 721 Lt BT.
- Paper Title should be of Font Size 24 with one Column section.
- Author Name in Font Size of 11 with one column as of Title.
- Abstract Font size of 9 Bold, “Abstract” word in Italic Bold.
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- Two Column with Equal Column with of 3.38 and Gaping of .2
- First Character must be three lines Drop capped.
- Paragraph before Spacing of 1 pt and After of 0 pt.
- Line Spacing of 1 pt
- Large Images must be in One Column
- Numbering of First Main Headings (Heading 1) must be in Roman Letters, Capital Letter, and Font Size of 10.
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You can use your own standard format also.
Author Guidelines:

1. General,

2. Ethical Guidelines,

3. Submission of Manuscripts,

4. Manuscript’s Category,

5. Structure and Format of Manuscript,

6. After Acceptance.

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Research articles: These are handled with small investigation and applications

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(b) A brief Summary, "Abstract" (less than 150 words) containing the major results and conclusions.

(c) Up to ten keywords, that precisely identifies the paper's subject, purpose, and focus.

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(h) Brief Acknowledgements.

(i) References in the proper form.

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References

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20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

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27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

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33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

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Key points to remember:

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A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

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· Present your points in sound order

· Use present tense to report well accepted

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- Significant conclusions or questions that track from the research(es)

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- What you account in an conceptual must be regular with what you reported in the manuscript
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- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
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- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
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- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

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The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
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- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
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Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
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- All figure and table must be adequately complete that it could situate on its own, divide from text

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The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
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Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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