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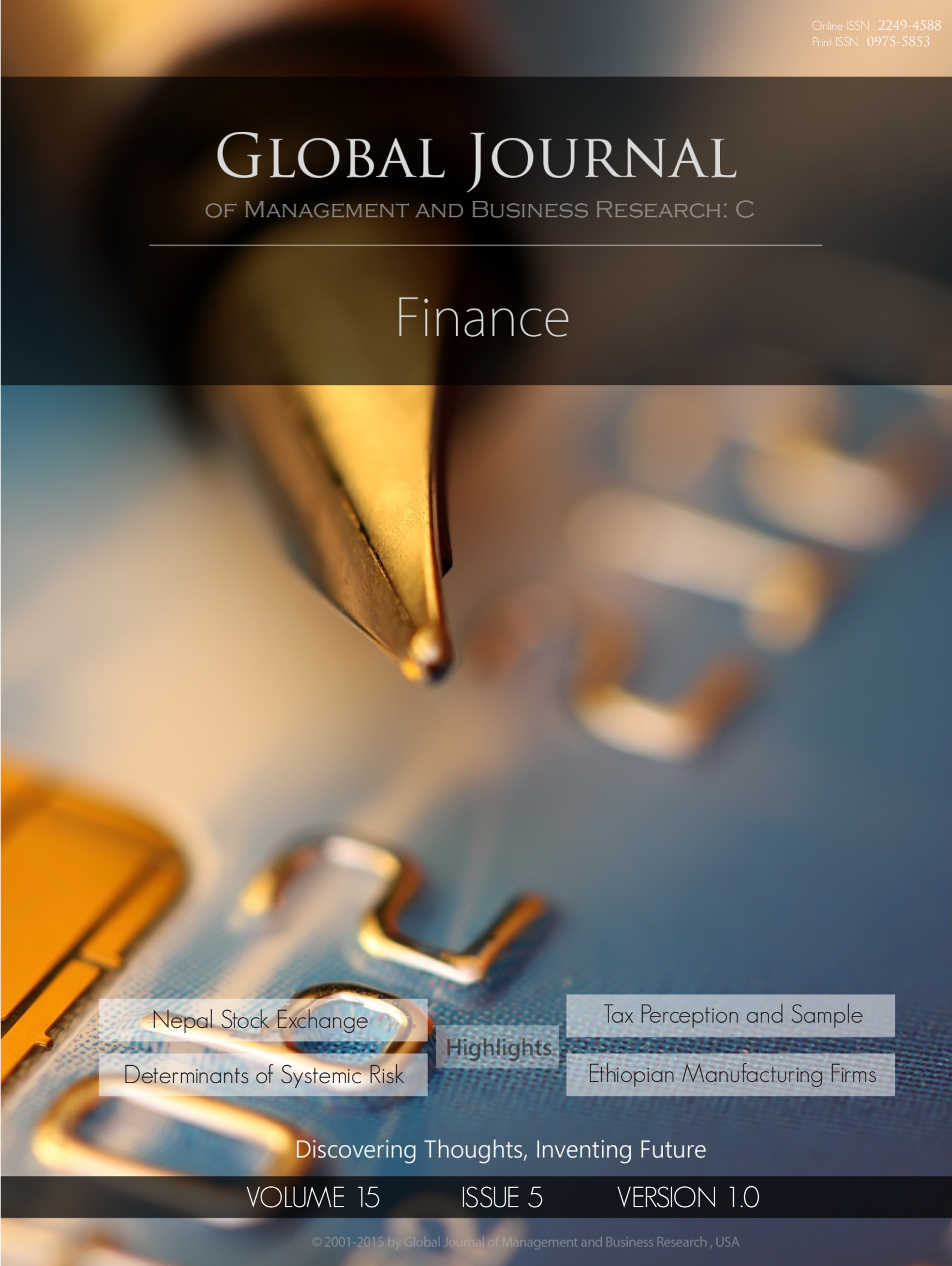

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Tax Perception and Sample Selection Bias: Microeconometrics

By Amaresh Das & Adnan Omar

Southern University, United States

Abstract- This paper econometrically compares the perceived marginal tax rates and the actually computed marginal tax rates and tries to find out if consumers could accurately perceive the marginal tax rates. Econometrically, the paper highlights that sample selectivity operates through unobservable elements and their correlation with unobservables influencing the variable of primary interest. Sample selection bias will not arise purely because of difference in observable characteristics. Although our paper is illustrative, it highlights the generality of the issue and its relevance to many economic examples.

Keywords: *fiscal illusion, probit model, sample selection bias, censored model, mills ratio.*

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Tax Perception and Sample Selection Bias: Microeconometrics

Amaresh Das [α] & Adnan Omar [σ]

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Keywords: fiscal illusion, probit model, sample selection bias, censored model, mills ratio.

I. Introduction

The question is: Do the majority of individuals make rational tax decisions based on the actual tax burden, but rather use simple decision heuristics? This leads to the importance of the tax rate being significantly overestimated and the importance of the tax base being significantly underestimated. There is a standing literature on the perception (bias) of individuals with respect to their own tax burden and its effect on economic decisions. The strands of literature being currently discussed are: perception of marginal tax rates, influence of tax complexity on tax perception, taxation and incentives to work, tax salience, tax morale and fairness and money illusion, perceived inflation and fiscal drag.

There is more evidence for than against a perception bias in the literature. .We will compare in our work the perceived marginal tax rates and the actually computed marginal tax rates and try to find if, consistent with prior studies, consumers accurately perceive the marginal tax rates they face. Statistical analyses based on non-randomly selected samples can lead to erroneous conclusions and, also, poor policy prescriptions. Heckman who in 2000 received the Economics Nobel Prize for this achievement while working at the University of Chicago, proposed a two-stage estimation procedure using the inverse Mills ratio to take into account of the selection bias. In the first step, a regression for observing a positive outcome of the dependent variable is modeled with a Probit model. If the inverse Mills ratio is generated from the estimation of a Probit model, a logit can not be used. The Probit model assumes that the error term follows a standard normal distribution. The estimated parameters will be used to calculate the inverse Mills ratio, which will then be included as an additional explanatory variable in the OLS estimation.

Our direct evidence on perceived and computed marginal federal income tax rates from our sample of Louisiana households may provide support for what in macroeconomics literature is called a' fiscal illusion' as a determinant of market behavior. This is a concept that governments find it easy to raise revenues because of consumer ignorance about the way the tax system operates[1]. The point is: if government revenues or taxes are not fully perceived by taxpayers, then the cost of government is seen to be less expensive than it actually is and in that case, the public appetite for government expenditures will increase providing politicians' incentive to expand the size of the government. Fiscal illusionists encourages tax increases (especially during times of budget deficit) because they force the public to meet excessive spending without making them feel the cost. This study will not incorporate the notion of fiscal illusion to include imperfect information where voters are unsure about how much they must pay for additional services or where they are unsure about the services received in return for higher taxes. This paper does not also incorporate other forms in which fiscal illusion may appear, for example, complexity of tax structure, recent illusion with respect to property taxation[2], income elasticity of the tax structure, debt illusion, and what is known as the 'fly paper effect'. For evaluation of the work on each of them, see Payne [12], Romer [13] and Turnbull [15] specifically for flypaper effects[3].

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[1]Anthony Downs [1] as far back in 1970 argued convincingly that the representative voter is likely to have highly imperfect information on which to base his decisions on public sector activities. Imperfect information is not however, synonymous with fiscal illusion for its existence. Fiscal illusion refers to a systematic misperceptions of fiscal parameters – a recurring propensity, for example, to underestimate one's tax liability associated with certain public programs. Imperfect information alone might give rise to a random pattern of over-and underestimation of such tax liabilities. As such, it will give rise to recurring and presumably predictable, biases to budgetary decisions.

[2] Buchanan and Wagner [2], suggest that the complicated nature of the U.S. tax system causes fiscal illusion and results in greater public expenditure than would be the case in an idealized system in which everyone is aware in detail of what their share of the costs of government is. See, also, Breden and William [1],

[3] Chetty et al [3] demonstrate that tax salience has economically significant behavioral implications, which indicates that tax visibility matters both for consumer choice and for public policy.

II. Methodology and Data

In investigating a bias that arises from using an incomplete sample to estimate β_1, we must know why the data are missing. All of the models in the literature developed for limited dependent variables and sample selection bias may be interpreted within a missing data framework. Suppose that we seek to estimate a regression equation but for some observations from a large random sample data are missing on Y_1 in $Y_{1i} = X_{1i}\beta_i + U_{1i}$ In the case of a censored sample, we have access to the larger random sample but we do not know Y_1 for censored observation. In a truncated sample, we do not have access to any observations from the larger random sample except those for which data on Y_1 is available. In both cases, there is a sample of I_1 complete observations.

The population regression function for equation may be written as:

$$E(Y_{1i} \mid X_{1i}) = X_{1i}\beta_1 \quad i = 1, 2, \quad N_{Ii}$$

which would be estimable from a random sample. The regression function for an incomplete sample may be written as

$$E(Y \mid \mathrm{X_{1i}}, \text{sample selection rule})\ X_{1i}\ \beta_I + E(U_{Ii} \mid \text{sample selection rule}) \quad (1)$$
$$i = 1, \qquad N_{Ii}$$

where without loss of generality the first *N* observations are assumed to continue data on Y_1. If the conditional expectation of U_{1i} is zero, regressions fit on the subsample yield unbiased estimator of β_1.

In general it is not the case that selection into the subsample is random. For example, in Tobin's celebrated paper (Tobin [14]. Heckman [8]) on limited dependent variables, we observe Y_1 if and only if

$$Y_{1i} \geq C$$

Where *C* is constant.

Y_{1i} may be interpreted as an index of a tax payer's intensity of desire. If the intensity is sufficiently great ($Y_{1i} > C$) the tax payer expresses his desire and Y_{1i} is observed. Otherwise we cannot observe intensity and observed payment of taxes are zero. In Tobin's model the sample selection rule is given by

$$E(Y_I \mid X_{1i}, Y_{Ii} \geq 0) = X_{1i}\beta_1 + E(U_I \mid Y_{1i} \geq 0)$$

We consider *a la* Tobin the following decision rule: we obtain data on Y_{1i}, if another random variable creates a threshold, i. e., if

$$Y_{2i} \geq 0$$

while if the opposite inequality holds we do not obtain data on Y_{1i}. The choice of zero as a threshold is an inessential normalization. Also, note that we could define a dummy variable $d_i = 1$ with the properties

$$d_i = 1 \text{ if } Y_{2i} \geq 0 \quad d_i = 0 \text{ otherwise.}$$

proceed to analyze the joint distribution of Y_{1i} and d_i dispensing with Y_{2i} altogether. The advantage of using selection rule representation is that it permits a unified summary of the existing literature[4].

Using this representation we may write equation (1) as[5]

$$E(Y_{Ii} \mid X_{1i}\ Y_2 i \geq 0) = X_{1i}\beta_i + E(U_{2i} \mid U_{2i} = X_2\beta_2) \quad (2)$$

If U_{1i} is independent of U_{2i} the conditional mean of U_{1i} is zero. and the sample selection process into the incomplete sample is random. In the general case, the conditional mean of the disturbance in the incomplete sample is a function of X_{2i}. Moreover, the effect of such sample selection is that X_2 variables that do not belong in the population regression function appear to be statistically significant in equations fit on selected samples. To exploit the information that we observe Y_{2i} up to a positive factor of proportionality if Y_{2i} is positive.[6]

[4] A good example of this phenomenon is found in Lewis [10]. In his analysis, Y_{1i} is the wage rate which is only observable for working women, had Y_{2i} is an index of labor force attachment (which in the absence of fixed costs of work may be interpreted as the difference between market wages and reservation wages). If the presence of children affects the work decision but does not affect market wages, regression evidence from selected sample of working women that women with children earn lower wages is not necessarily evidence that there is market discrimination against such women or that women with lower market experience – as by children – earn lower wages. Moreover, regression evidence that such extraneous variables 'explain' wage rates may be interpreted as evidence that selection bias is present.

[5] If U_{1i} is independent of U_{2i} the conditional mean of $U_1 i$ is zero and the sample selection process into the incomplete sample is random. In the general case, the conditional mean of the disturbance in the incomplete sample is a function of X_{2i}. Moreover the effect of such sample selection is that X_2 variables that do not belong in the population regression function appear to be statistically significant in equations fit on selected samples.

[6] A crucial distinction between a truncated sample and a censored sample. In a truncated sample one cannot use the available data to define the probability that an observation has complete data. In a censored sample, one can.

$$E(h_i \mid X_{2i}, Y_{2i} \geq 0) = E\left[\frac{Y_{2i}}{\gamma} \mid X_2\right], \; Y_{2i} \geq 0 \tag{3}$$

Suppose that $h(U_{1i}, U_{2i})$, the joint density of U_{1i} and U_{2i} is bivariate normal. Using well results of the literature (Jonson and Kotz[9]).

$$E(U_{1i} \mid Y_{2i} \geq 0) = E(U_{1i} \mid U_{2i} > -X_{2i}\beta_2) = \frac{\sigma_{12}}{(\sigma_{22})^{1/2}} \lambda_i$$

$$E(U_{2i} \mid Y_{2i} > 0) = E(U_{2i} \mid U_{2i} > -X_{2i}\beta_2) = \frac{\sigma_{22}}{(\sigma_{22})^{1/2}} \lambda_i$$

where

$$\lambda_i = \frac{f(\phi_i)}{1 - F(\phi_i)}$$

$$\frac{X_2 \beta_2}{(\sigma_{22})^{1/2}} = \phi_i$$

And *f* and *F* are respectively, are the density and distribution function of the standard normal distribution. The Tobin model is special case with $h(U_{1i}, U_{2i})$ a singular density sine $U_{1i} = U_{2i}$ λ_i is the inverse of Mill's ratio [7] and is known as the hazard rate in reliability theory. There are several interesting properties of λ_i.

- Its denominator is the probability that observation *i* has data for Y_i
- The lower the probability that an observation has data on Y, the greater the value of λ for that observation.

Moreover, using a result in Feller [6]

$$\frac{\delta \lambda_i}{\delta \phi_i} > 0$$

$$E[x > \alpha] \; \mu + o \frac{\Phi(\frac{\alpha - \mu}{o})}{1 - \phi(\frac{\alpha - \mu}{o})}$$

$$E[x < \alpha] = \mu + o \frac{-\Phi(\frac{\alpha - \mu}{o})}{\phi(\frac{\alpha - \mu}{o})}$$

Where α is a constant, ϕ denotes the standard normal density function, and Φ is the standard normal cumulative distribution function. The two fractions are the inverse Mills ratios.

[7] Very simplistically Mills ratio (see Maddala [11]) can be represented as follows. Use of the inverse Mills ratio is often motivated by the following property of the truncated normal distribution If *X* is a random variable having a normal distribution with mean μ and variance σ^2, then

$$lim\, \lambda_i = \infty \; lim\, \lambda_i = 0$$

$$\phi_i \to \infty \; \phi_i \to \infty$$

Thus in samples the selectivity problem is unimportant, λ_i becomes negligibly small so that least squares estimates of the coefficients have optimal properties.

a) Data

The data are survey data and are drawn from200 households from the State of Louisiana. Tax considerations are often important in making investments. The survey began asking the question - In your family if you were to earn an extra dollar of income, about what percent of that would have to be paid in federal income taxes?

Own Home Yes/ No

Age of Respondent

The Respondent and/or Spouse are 65 or not?

Sex of Respondent Male/Female

Marital Status

Education of Respondent

Number of Household

We compare *PERCEPT* with *TAXCOMP*, the actual marginal federal income tax rates that household face. Since we have access to federal income tax returns for our sample, actual rates were estimated by assuming that each household took the standard deduction. Exemptions were estimated using sample information on the number of children, marital status and whether the respondent and/or spouse were age sixty five or older. Table 1 demonstrates, 60 % of the people surveyed (150) were able to provide an estimate of their household's marginal federal income tax rate. However, among those who did, the mean perceived marginal rate (*PERCEPT*) was 17.34%, while the mean computed marginal rate (*TAXCOMP*) was higher at 20.54%. The difference of the two rates (*DIFF*) has a mean of - 3.201% indicating that computed rates were higher than perceived rates, with a standard deviation of 14.882%. A simple paired sample test, however, shows

DIFF to be significantly different from zero. The appropriate test statistic is

t= - 3.201 / (14.881 / (sq*r*(150)))) = - 2.63

Table 1 : Variables Means and Standard Deviation

	KNOWTAX		*DIFFERENCE*	
	Mean	SD	Mean	SD
KNOWTAX = 1 if yes = 0 otherwise	0.877	0.54	-	-
(*PERCEPT*) Perceived Marginal Tax Rate	-	-	31.154	9.212
Computed Marginal Tax Rat (*TAXCOMP*)	25,111	9.231	38.112	18.434
DIFF = PERCEPT – TAXCOMF			-6.963	11.312
OWN HOME [=1 if yes, 0 otherwise]	.917	0.563	0.783	0.512
Age of Respondent	49.322	15.341	44.212	18.542
Sex of Respondent [=1 if male, = 0 otherwise]	0.543	0.511	0.589	0.508
Education of the Respondent	14.566	1.342	14.321	3.454
Number in Household	3.231	1.434	3.254	1.412
Number of Observations	200		171	

One reason that TAXCOMP may have succeeded PERCEPT is the possibility that the household may have itemized deductions. To account for this possibility, we have included a dummy variable for homeownership (OWNHOME) in the specification. Other explanatory variables include age, Sex, and year of education of the respondent and the number of households. This last variable was entered for additional information costs relating to the magnitude of deductions encountered as household size increases and tax returns become more complex.

Table 2

Probit Criterion Function and the Determinants of the Difference between Perceived and Computed Marginal Federal Income Tax Rate with or Without Correction for Selectivity Bias.

Dependent Variable	*KNOWTAX*	*DIFF*	*DIFF*
CONSTANT	-0.542	17.333	31.421
	(-1.31)	(2.43)	(2.32)
OENHOME	-0.045	-2.345	-3.671
	(-0.56)	(3.87)	(-1.77))
Age of Respondent	-0.057	-0.333	-0. 243
	(-3.68)	(-7.65)	(-8.45)
Sex of Respondent	0.712	-7.543	-9.133
	(4.31)	(-7.43)	(-2.35)
Education of Respondent	0.054	-0.577	-3.231
	(7.07)	(-3-23)	(-1.76)
Number of Household	-0.052	-0.670	-7.751
	(-0.45)	(-2.12)	(-2.23)
LAMBDA	–		-26.76
			(-0.67)
Likelihood Ratio Test	577.357		94.23
R^2		0.05431	0.0131

To find the factors responsible for the *DIFF,* we first checked for selectivity bias following Heckman's methodology illustrated above. We present the results establishing a probit criterion equation (*KNOWTAX*), reflecting the probability of sample inclusion. The results were then used to construct a regressor, the inverse of the Mills ratio (*LAMPDA*) that is decreasing monotonic function of the probability that an observation is selected as the sample. The selectivity bias as stated above in the methodology means that if it is not corrected then regressors that do not belong to the structural equations appear to be statistically significant.

b) Estimates

The estimates are presented in Table 2.

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We find the determinants of *KNOWTAX* and then compute the coefficients of regressors in *DIFF* with and without *LAMBDA*. The computation was performed in LIMDEP (Green[7]). The coefficients generally differ only modestly as *LAMBDA* is not statistically significant from zero. The level of education of the respondent while significant in specifications excluding *LAMBDA* are not statistically significant when adjusted for selectivity bias. The lack of significance of *LAMBDA* can be explained by the fact that overall those more likely to be included in the sample do not systematically overestimate or underestimate their marginal tax rates. In Table 3a and 3b younger and more educated respondents (more than 12 years) are more likely to report an estimate of their marginal tax rate. However young, male and more educated respondents make larger errors. The probability of reporting may not seem to be independent of home ownership. Owners make larger errors which are statistically significant.

Table 3a

Mean Value of Responses by Respondents

	n	Full Sample *KNOWTAX*
OWN HOME	98	.732
		(.521)
Age of Respondents		
Less than 25	42	.324
		(.114)
Above 50	33	234
		(.201)
Sex of Respondents		
Male	108	.789
		(.643)
Female	72	.542
		(.478)

Education (more than 12 years)	76	.753 (.345)
Number of Households 3 or more	106	.678 (.367)
Overall	130	.579 (.723)

Table 3 b

Mean Value of Responses by Respondents

		Censored Sample		
	n	*PERCEPT*	*TAXCOMP*	*DIFF*
OWN HOME	70	32.12 (11.45)	36.41 (14.71)	-14.29 (17.23)
Age of Respondents				
Less than 25	34	21.47 (17.11)	17.74 (7.84)	13.73 (17.33)
Above 50	43	13.56 (11.45)	17.46 (9.45)	-3.10 (7.43)
Sex of Respondents				
Male	91	19.43 (8.56)	23.56 (14.57)	-13.13 (13.44)
Female	59	23.77 (17.59)	28.53 (23.79)	-3.76 (14.78)
Education (more than 12 years)	60	17.41 (13.77)	19.56 (11,81)	-23.15 (19.76)
Number of Households 3 or more	91	31.79 (17.59)	37.55 (21.54)	-5.76 (12.87)
Overall	99	29.46 (19.58)	34.67 (21.61)	-5.21 (19.32)

Overall, respondents underestimate federal income tax liability by about 5 percentage points. Sex does not seem to have a significant impact on *DIFF.*

III. Conclusion

Although tax payers in general underestimate their marginal tax rates, the difference is not big and this can be explained by taxpayers' use of the standard deduction in computing marginal tax rates. Our results, consistent with the previous established result, provide evidence to the fact that tax payers accurately perceive the marginal tax rates. Consequently, there is little support for existence of fiscal illusion as a determinant of market behavior. Actually, the fiscal illusion is a concept that the government finds it easy to raise tax revenues because of the consumer's ignorance about the way the tax system works. More needs to be done to limit the government ability to collect higher tax revenues otherwise government spending has a tendency to rise 'crowding out' the more efficient private sector.

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The Role of Internal Control to Deal with Corporate Governance in Information Technology Environment in Commercial Banks

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Strictly as per the compliance and regulations of:

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The most important results of this study: that the regulations and the company adapted to the social conditions to ensure good implementation by her staff, and assess the degree to submit to the rules and regulations and amendments thereto staff and especially the financial and accounting by the internal auditor, and help offices internal audit of the external auditor to give professional opinion more clearly and independently.

The most important recommendations of the study: the application of international standards on ethics functional audit such as: integration, objectivity, and independence, and mutual trust, and the holding of specialized conferences to sensitize stakeholders to promote the concept of corporate governance and their impact on the vision and mission of the banks.

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I. Introduction

Information technology governance has become one of the biggest concerns of business. in most projects, it has become an integral part in the work of the organizations to support and sustain business growth, and the successful understanding of risk management of information technology tools have a direct impact on the success and sustainability of organizations.

The expansion of ICT applications and techniques, and accounting within the services sector covered by WTO agreements, made the profession of auditing and information technology to interact with these changes, particularly the companies most affected by and impacted by this technology, so it became necessary to examine the elements of the internal audit of the it environment in light of the corporate governance and development to suit the needs of the new environment.

The corporate governance system of the company management and control by the Board of Directors that defines its objectives and strategies and establish a leadership able to implement and follow up the management of the Organization and the contributors to the results and these practices are subject to laws and regulations, the role of the internal auditor that becomes clear if the basic relationships among key influencers in corporate governance and of the boards of Directors and audit committees and senior management.

The internal auditor shall give the strength and effectiveness of the internal control in a company which is reflected on the need to apply the regulations, instructions and work ethics which helps to achieve the company's objectives, vision and strategy, and the internal auditor's work in a changing work environment affected by and affect the it environment which leads to the need for rehabilitation of the internal auditor to keep pace with developments in information technology, so it has to be rehabilitation of the auditor through corporate governance factors keep environment New change and evolve depending on developments in the economic environment.

a) *Problem Study*

The problem with the study to answer the following question "how corporate governance should assist the work of the internal auditor in the environment of information technology.

In order to answer that question is the problem of the study the following.

- What is the role of the internal audit profession ethics in the information technology environment in enhancing the application of corporate governance in commercial banks in Jordan?
- What is the role of regulations in the information technology environment within the company to promote the application of corporate governance from the perspective of internal auditors at the Jordanian commercial banks?
- Is there an internal auditing offices assist internal auditors in the information technology environment

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to promote the application of corporate governance in commercial banks in Jordan?

b) The study hypotheses

From the elements of the problem of the study the study assumes the following.

- There is no role for the internal audit profession ethics in the information technology environment in enhancing the application of corporate governance in commercial banks in Jordan.
- There is no role for regulations in the information technology environment within the company to promote the application of corporate governance from the perspective of internal auditors at the Jordanian commercial banks.
- There is no role for internal audit offices assist internal auditors in the information technology environment to promote the application of corporate governance in commercial banks in Jordan.

c) Significance of the Study

Important research of the importance of corporate governance at present and the importance of internal audit is one of the foundations that underpin corporate governance in separation of ownership and management, the internal audit assists in examination and evaluation of operational activities and internal control systems and validate the strategic directions of the Department and the health application.

Internal audit is the most important sections that require the use of information technology because of its importance in providing management with the information they need to make decisions at the right time, which requires a technical development of a higher level of development in accounting and economic environment that internal audit information database for internal management in companies, especially management. The correlation between corporate governance structure and vulnerability of lower quality financial reporting and financial statement fraud and inflated revenue and financial control problems. In addition, good governance help achieve higher rates of economic growth, since the governance contribute to policy formulation and implementation, which in turn attracts more foreign investment.

So many developments on the roles of internal auditors in modern societies to become more responsibilities with regard to compliance with regulations and instructions issued by the Department to confirm the validity of accounting data confirm the reliability of the computer network to prevent break through data and information stored in computerized accounting software, this means the need to develop regulations and instructions within the company by the change in the it environment. The internal auditor is a database of most departments in any company which leads to the need for rehabilitation of the auditor to carry out the tasks and duties entrusted to him to achieve the company's vision and mission and general objectives that meet to continue in the market and achieve competitive advantage.

d) The Objectives of the Study

This study seeks to achieve the following goals:

- Identify the role of regulations and instructions to assist the internal auditor to adapt information technology environment.
- Find the role of ethics as an important factor in corporate governance in the internal auditor's assistance in adapting to the information technology environment.
- Identify the role of internal audit offices in the internal auditor's assistance to adapt to the requirements of the it environment.
- Identify the nature of the work of the internal auditor and the changes in his work to keep up with the demands of the information technology environment.

e) Methodology of the Study

Following the analytical inductive curriculum Finder by display of the importance and role of corporate governance, literature review study and the results of previous studies Arabic and foreign countries on the subject of study. The researcher will focus on analyzing legislative requirements and professional governance to conduct deeper analysis and provide better visualization of the beneficiaries of this study.

f) Society and the Study Sample

The study population consists of internal auditors working in Jordanian commercial banks listed in Amman security exchange after a phone or interviews with internal audit Department show that the number of Internal Auditors as follows:

Table 1 : Number of Internal Auditors and the Questionnaires Distributed and Recovered

number	Name of bank	The number of Internal Auditors	questionnaires distributed	questionnaires recovered
1	The Housing Bank for trade and finance	37	29	24
2	Arab Bank	48	31	19
3	The Arab Islamic Bank	15	12	10

4	Jordan Ahli Bank	27	22	18
5	Arab Jordan Investment Bank	21	14	11
6	Bank of Cairo Amman	17	13	7
7	Bank of Jordan	22	16	13
8	Jordan Gulf Bank	19	14	10
9	Jordan Islamic Bank	43	30	22
10	Jordan Kuwait Bank	19	14	9
11	United Bank	16	10	6
Total		284	200	149

Notes from Table I recovery rate is 74% (149/200) also notes that the distribution of study population is 70% (200/284) and all questionnaires were valid for the purposes of statistical analysis.

g) Previous Studies

i. *Study of Abu Khadra, Aldeep and Al-Ramahi (2008) "Measure the level of ICT governance in industrial using framework control objectives for information and related technology"[1]*

This study aimed to contribute to the implementation of the new measure of the level of information technology governance in industrial companies listed in stock exchange of Oman through a framework called the "control objectives for information and related technology (COBIT) in four dimensions (planning and organization, acquisition and implementation, support, communication, follow-up and evaluation), and measure the level of information technology governance, using this framework. In order to achieve the objectives of the study was designed to identify distributed to industrial companies listed their shares on the stock exchange of Amman. A basic premise of the study and four subsidiary hypotheses, measures the level of information technology governance, results reached a good level of governance. The researchers recommended that the application framework (COBIT) as a tool to measure the level of ICT governance for various companies in Jordan and to assist managers and Auditors in understanding information technology systems in their companies, leading to protect the assets of the companies, and the security level, and this in turn leads to the optimum benefit of information technology, which are reflected in improved business processes, which will reflect positively on client satisfaction and confidence in the services provided to them, which in turn enhances the capabilities of company competitiveness, and achieve the goals of including Increase profits.

ii. *Study of Gowell (2012) "Developing An Effective Internal Audit Technology Strategy"[2]*

A study aimed to analyze the appropriateness of the audit committees' responsibilities contained in Jordanian legislation to fulfill its role in the area of corporate governance, as well as the appropriateness of some of the other responsibilities of the proposed commissions of inquiry, and the main attributes required for audit committees. In order to study the researcher used questionnaire distributed among the auditors who work in the offices of Jordanian companies audit must have an Audit Committee. The results of the study showed that the Auditors felt that the responsibilities of audit committees in Jordanian legislation appropriate to their role in the corporate governance process. The researcher had made several recommendations which add other responsibilities of audit committees, the audit sample research tended to reject the interference of audit committees in matters of appointment and determine their fees and isolation, despite the expected benefits of this procedure.

iii. *Study of Alhosban 2014 Impact of conditional factors on internal control system in keeping with the requirements of information technology from the point of view of ICT auditors at commercial banks in Jordan [3]*

This study aims to identify the linking of police supervision of the internal control system and identify the impact of these links in promoting the concept of banking supervision, and highlight the concept of conditional and control areas of evolution and their use. This study depends up on deductive approach: through the questionnaire user-friendly design and characteristics of the study include the study variables and assumptions. The most finding of this study: An Auditors provide management about the reliability of it systems and how to control environmental factors both internal factors or external factors and internal oversight helps to identify opportunities and threats of the external environment and identify the strengths and weaknesses of the internal environment factors, An Auditor shall determine the conditions of uncertainty in the information technology environment which reduces risks of modern technology and investment opportunities by internal oversight, and Auditors should focus on expanding the information and try to adjust its deployment in large organizations because it will have a wide range of information about internal activities, and main recommendation are: The auditor training and education programmers on information security risks and their impact on the company's working environment. The role of internal audit and the internal control system in determining a company's information technology tools, audit, and determine the costs for those

programs, and conferences, seminars, known researcher conditional control factors on large business organizations particularly banks.

a. The current study differed from previous study

- These studies are focused on internal audit governance relationship without considering variables such as ethics or internal audit offices, or the nature of the regulations and instructions.
- These studies do not take into account the change in the nature of the work of the internal auditor and the it environment of the internal auditor of the tasks and responsibilities which means that developments in information technology and the impact of those developments on the nature of the work of the internal auditor.
- This study tries to suggest new additions links the foundations of corporate governance and their adaptation to the requirements of the it environment.
- They are trying to apply the proposed internal auditors in commercial banks by linking the work of the internal auditor with information technology tools to the requirements of change and development in the information technology environment.
- It is based on linking the internal auditor's work environment with the use of information technology tools in the light of the concept of corporate governance.

II. Literature Review

a) Features of Information Technology Governance

- It is the responsibility of the Board of Directors, supervisors and executives.
- The primary goal of harmonizing the information technology strategy and business strategy.
- It includes responsibilities and strategies and processes for the use of information technology.
- It is part of the Organization's overall governance.

The benchmark No. 2130 branching from the standard no. 2100 of second group regards corporate governance, and suggests that it should contribute to the activity of internal audit in corporate governance by its contribution to the reformation and improved governance through the following [4]:

Enter the values and goals and achieve them so that departments prepared and able to disclose that its activities and its actions and decisions conform to the objectives established and agreed upon.

Monitoring the achievement of the goals through: Evaluation of the quality of performance of the port on the level of the responsibilities assigned to employees do and make appropriate recommendations to improve the company's operations and develop and raise production efficiency through training proposal required of them.

The work of audit committees in effective supervision on the financial reporting process and show the quality and high efficiency, as well as to protect the rights of shareholders and other stakeholders, and it is clear that, to be effective audit committees in supervising the financial reporting process, they cannot operate in a vacuum, and since these committees rely on the information provided by the financial management and internal audit staff and external auditors. Therefore, it is important for this Committee to create an open dialogue and free and explicit and systematically with all of those involved with these committees in the work, in fact, financial accounting and the financial reporting process of high quality which is the ultimate objective of the process cannot produce only through effective communication between those involved [5].

b) The Theoretical Framework of the Study

With the magnitude of the project and its complexity, it became impossible for project owners and management to scrutiny as a result of the gap between the Administration and implementing processes, it became incumbent on managers to rely on data and statistics and summaries, and began using the internal control management to help it to carry out its functions and to ensure compliance with plans and policies, and from here emerged the need for internal audit to ensure the validity of financial statements and internal control systems and compliance [6] traditionally assumed that the external auditor commented on the work of internal audit and the level of quality, but the external auditor may not be familiar with, and most importantly the expertise required to undertake a comprehensive review of the quality of the internal audit and the external auditor does not need to review the work of the internal auditor, and the external auditor-trainer and has no experience in internal auditing. Hence, there are new trends in verification of the internal audit work through three options to check the quality of the internal audit, and these options: Internal audit review of the competent authority and agreement with other internal audit teams and establish a government agency to check performance at the country level.

Could be the role of the external audit offices on the profession of internal audit (internal audit offices) through the following: a continuing programmed for the education of Internal Auditors on the internal audit process and provide scientific background and process of the internal auditors and the volume and quality of supervision of the work of the internal auditors [7].

Hence the idea of internal auditing offices to check the work of internal auditors to enjoy many years of experience in internal auditing in different institutions,

they can conduct in-depth audits internal audit based on generally accepted new performance standards. This is some internal auditors concerned that these institutions may find their way into the company and affect the job stability and the company a contract to conduct the internal audit, external audit should conduct periodic audit internal audit which Checker helps you to deliver its services by professional. Influenced by the information technology policy of the company and policy learning, and help to reduce the costs of use of computer systems and networks, and the ethical issues in information technology systems place great sincerity and representation of information storage and processing, so the auditor comes to influence the policies of the Administration, by virtue of its association with the Board-with attention to ethics staff and training courses so as to find a staff capable of genuine use and maintenance of existing information and maintaining the security of information [8].

Owners should take into consideration the users moral matters, the Department must also confirm that the policies and directives of the company took into consideration the ethical approach information is unacceptable, and the dignity of the employee, an information security strengths and weaknesses of the company, allows vulnerabilities to be part of the infrastructure so as to make the company and information risk in the it environment. And so we can mitigate those risks (such as misuse of it systems, or vandalism in software and systems), we pay attention to staff and give them job stability rights with them, and to be honest with them management [9].

So that Must use technology and information security with other rights and interests are reserved, and must have the level of security commensurate with the information that they contain, together with the assets and how they occur in a democratic manner. There are some issues related to ethical issues in information technology and the environment, information security, the internal auditor must consider the Using the method of moral honesty, disclosure of information and data obtained by the company from others and honest and equitable representation on the data and information and show to others and destroy sensitive data and not required for a long time, and this means confirmation of honesty and security of sensitive information beyond their purpose.

Must be used, implemented and managed information technology and information security in social ethics and honesty factor takes, because information systems are implemented by staff and company culture, where the laws and regulations of companies providing the best ways to optimize the use of resources, which means that your company has adapted to the social conditions to ensure good implementation by staff [10].

The successful practice of the profession of auditing, leadership ability and negotiating new conditions such as information technology and other developments in the world of information systems and email, you need to have the auditor qualities related to ethics and accept criticism and have conscience and action and dealing with others honestly and daring social and pragmatic mood, thinking, self-reliance and civility, courteousness and social awareness and good communication and proper [11].

Rapid changes in information technology and managerial practices in many organizations were forcing efficient internal audit as a tool for the exact management of any business economic resources. Simultaneously, recently numerous mergers have been realized. However there is no such a research which describes the interaction between M&As and internal audit. For this reason the purpose of our study is to highlight via theoretical and empirical data the interaction between M&As and internal audit. The results point out that internal audit can contribute significantly to acquisitions activity .There are ethical rules the auditor accepting these rules used in the daily work of Auditors, should be a source of ethical rules and regulations. There are international standards relating to ethics audit functionality such as: integrity, objectivity, independence, mutual confidence, and to have a functional competencies and technical standards [12].

Audit planning and scheduling are basic processes that can be enhanced through the use of technology, especially with respect to larger internal audit departments. Key technology-related goals include increasing efficiency and enhancing operational effectiveness. These goals can be pursued through better, more transparent personnel scheduling systems and through enhanced audit planning systems. Transparency can be a significant benefit when staff and managers are informed about upcoming schedules and related staffing needs. In addition, it may be possible to establish a direct link between staffing needs and personal skills inventories to achieve better matches between project needs and resources. Another possibility: Linking work paper and scheduling systems so that the staff assigned to an audit according to the scheduling system can be directly listed on the work paper file for that audit engagement. The continuing technological changes are forcing change on his checker to work, they create new opportunities and new risks, changes in laws and regulations for information security, reliability, and extend the work and activities of the company, meaning that the management company to review regulations and laws passed by from one period to the next, knowing the suitability for work in the information technology environment, and the Administration on the updated accordingly [13].

So it should have regulations and instructions issued by the internal control system or the company management in an IT environment that: promotes good practices and provide legal proof of access to programs and data relating to the company in order to ensure information security policies and try to mitigate risks and provide the ability to update company information from one period to the next and by experts and consistent regulations and legislation with legal and legislative requirements of the State and increase the efficiency and effectiveness of the operations of the company and take the culture and systems Business and social situations and interests of staff members.

The internal auditor must perform the following actions with respect to regulations and instructions under information technology environment: assessment of degree of regulations and modifications of the staff and especially the financial, accounting and assessing the degree of generally accepted norms and standards here means the policies, procedures and laws, in addition to complying with the functional requirements, such as compliance with generally accepted accounting principles and evaluation of employment with the company and help to be harmonious with the help of information technology, especially in the accounting and financial staffing and career requirements, legal, Government and external legislation if necessary [14].

The technical change in the provision of information to create a new work force and new global market, thus the accounting profession in a big challenge in front of it, which means the need for qualified staff and instructor of several governmental and non-governmental actors are to develop regulations and legislation to regulate the profession of accounting and audit, because information and knowledge has increased the need for Auditors and accountants, and created new services provided to internal and external parties in the company, which implies the need to develop laws and regulations commensurate with the expansion of domestic needs Regional and international levels, if necessary [15].

The auditor faces rapid changes resulting from high-tech in the accounting and auditing profession, which requires changing some laws passed by the Government, and you should review those laws by the competent authorities within and outside the Government sector on a continuous basis to keep up with the laws of the high-tech information and suitability for new challenges, and the role of Government through the availability of qualified specialists in the process of issuing laws and intelligibly in conjunction with non-governmental actors and relevant accounting and auditing [16].

It is important to determine whether the changes in the accounting profession, the need for legislation, but also more important to determine where and how these changes will be watching when they occur. The governmental authorities when issuing laws that take the following into account: the impact of globalization on business organizations and the impact of information technology and the expansion of services offered in Exchange for testimony from an official or quasi-official powers and the influence of legal challenges concerning the legislative system and the effect of geographic changes on the job [17].

Legislation and amendment or change is the result of the movement of society in General, and reflects the development in various sectors who becomes the new legislation a requirement and modify or change old inevitable, I have introduced legislation in existence from the environment through experience and the accumulation and crystallization almost unanimously for stakeholders in addressing their issues. With regard to government legislation, government authorities should engage professional competent in the laws concerning the accounting and auditing profession, so that such legislation has several aspects and interests through discuss developments in the profession and keep abreast of developments on the environment of accounting and auditing, and can involve the Association of certified public accountants and accounting laws relating to the accounting profession [18].

Government authorities must also regulate the auditing profession to develop legislation and regulations that clarify the responsibilities and duties of Auditors, as well as to determine whether disciplinary sanctions or penal or civil, and to review those laws and regulations from one period to the next in order to ensure their relevance to corporate business and it activities and work through various developments internally and externally effects [19].

III. Statistical Analysis and Presentation of Results

After show audit of information technology and the role of internal auditor in the corporate governance environment, it will present and discuss the results of the study in this chapter, in particular: the stability and credibility of the results, and discuss the study hypotheses and testing hypotheses.

a) Validity and Reliability

When testing the credibility of Alpha to determine the degree of internal consistency (reliability) of respondents to the questionnaire, the alpha can be interpreted as the correlation coefficient between the answers so the alpha value can range between 0 and 1 and alpha value statistically accepted is 60% at least for dissemination of results [20].

b) The Decision to Accept the Study Hypotheses

The study on community banks have been relying on the use of descriptive statistics for data such as the arithmetic mean and standard deviation. I have been using the scale (likert) consisting of five degrees are arranged as follows: (5) strongly agree (4) OK, (3) neutral (2) disagree (1) disagree strongly.

In order to accept the premise was based on arithmetic mean of each paragraph, as well as the arithmetic mean of the paragraphs that represent each hypothesis in accepting or rejecting the hypothesis, has been relying on hypothetical 3 which in light of comparing computational environments for every hypothesis with this premise to accept or reject hypotheses of the study. In order to test the hypotheses are based on one sample T Test.

c) Description of the Sample

The following tables show the distribution of individual study sample variables (General information).

Table 2 : Years Experience

Description	Frequently	Percentage
Less than 5 years	39	26.5%
5- less than 10 years	27	18%
10- less than 15 years	63	42.5%
15 years and more	20	13%
Total	149	100%

Notes from Table II that the study sample the vast majority of them in terms of years of experience of class 10 to less than 15 years and this is a positive reflection on the sincerity and consistency of the study tool, as noted in the second category are less than five years.

Table 3 : Scientific Certificate

Description	Frequently	Percentage
College	0	0%
University	94	63%
Master	39	26%
PhD	16	11%
Total	149	100%

Notes from Table III that the sample for the study with University certificate by 63% and this is a positive sign that the study sample qualifying and this reflected the conclusions and recommendations of the study and the reason for this is that the minimum any internal auditor should at least Bachelor degree and it shows that the percentage of associate degree holders average is zero and a 26% who get master's degrees and 11% of those who get a PhD.

Table 4 : Specialization

Description	Frequently	Percentage
Accounting	85	57%
Financial	36	24%
Management	15	13%
Other	13	6%
Total	149	100%

Notes from Table IV sample members in terms of specialization accounting major who hold majority and this is a natural consequence of the study population are internal auditors, it is natural that this high percentage is 57%, and noted that finance them second place in the study sample members and by 24%.

d) Discussion of Statistical Results with Hypotheses of the Study Variables

First hypothesis: "There is no role for the internal audit profession ethics in the information technology environment in enhancing the application of corporate governance in commercial banks in Jordan".

Table 5 : Views The Sample Variable Ethics

Number	Description	Average	rank
1	The Auditors to influence management policies by virtue of its association with the Board-with attention to ethics staff	2.29	8
2	The Administration stresses that policies and company took into consideration the ethical approach in information in an acceptable way	3.79	4
3	Using technology and information security with other rights and interests are reserved	4.37	1
4	Using the method of moral honesty, disclosure of information and data obtained from other	3.09	6
5	Used, implemented and managed information technology and information security in social ethics and honesty takes factors	3.86	3
6	The successful practice of the profession of internal audit, leadership and negotiation depends on the use of information technology tools in audit	3.18	5
7	Instructions and regulations by the company adapted to the	4.26	2

	social conditions to ensure good implementation by staff		
8	Applying international standards on ethics, auditing functionality such	2.42	7
	as integration, objectivity, independence, mutual trust		
Total		3.41	

Notes from Table V that the study sample members confirm that the third paragraph with the most approval with an average 4.37 and this paragraph with the tools of information technology and information security are used to contribute to the preservation of the rights and interests of not entering the powers of each Checker which means a specific job description for each checker that shows the existence of a moral and unauthorized entry to each checker and this thanks to the use of computerized accounting software and computer networks, also notes that the seventh ranking second in degree of acceptance among members of the study sample average 4.26 and the paragraph with the regulations and instructions within the company with social conditions for employees which is reflected on having adhered to the lack of interest of the derogations and this leads to a reasonable assurance compliance auditors with the regulations as responsible for the implementation of those instructions in the Bank, As noted in the fifth paragraph of her third-degree average of 3.86 of the ICT tools used, implemented and managed in a social manner so that each of them a particular work domain checker takes into account the specialization and expertise of everyone in terms of ensuring the reliability of computer networks or make sure logging accounting data or verify migrated and even ratified the financial statements, also notes that the first paragraph represent the lowest acceptance of the study sample of influence by the internal auditor to the Bank in interest control of reliance on ethical matters when issuing regulations, instructions and this shows that the internal auditor as it relates to a specific role is to ensure the application of the internal control system of the Bank in the first place. Also note that the average premise is 3.41 is higher than the mean virtual 3 this means that the study sample members acknowledge the existence of ethics as variable factors in strengthening corporate governance work environment internal auditor in the it environment.

Second hypothesis: "There is no role for regulations in the information technology environment within the company to promote the application of corporate governance from the perspective of internal auditors at the Jordanian commercial banks".

Notes from the Table VI that the members of a sample study confirms that the eighth paragraph topping of the regulations and directives issued by the internal control system or the management of the company to keep pace with the it environment auditing and why might return to build banks of modern technology to achieve competitive advantage and maintain clients to ensure continuity in the market, Also note that the first paragraph is ranked second in the degree of acceptance by average 4.29 of the management company to review regulations and laws passed by from one period to the next, knowing the suitability for work in the information technology environment that is a continuation of the company's management to reconsider the extent to which information technology tools for customer requests to increase their numbers to reflect the profits and expenses of the investment in information technology tools, He also notes that the third paragraph a third application by members of the sample average of 4.17 of the regulations established by the culture and social conditions and interests of the staff and this means that the regulations on banks strengthen corporate governance concept that takes into account the interests of the Board and those of the staff regulations and with the values and habits of employees which means that their staff be easy and understandable through the use of information technology tools that facilitate the separation part and determine the powers and responsibilities of Internal Auditors and employees Associated with them, He also notes that paragraph 7 was the lowest acceptance in the study sample members with an average 3.49 to review the laws and regulations of one period to the next in order to ensure their relevance to corporate business and it activities and work through various technological developments and effects of externally and internally this indicates weakness in the presence of following the amendment of the regulations and their impact outside the Bank with these instructions from within the Bank also notes that the average premise is 3.51 and is higher than the mean value proposition 3, this indicates that the nature of the regulations for internal audit have an impact on strengthening corporate governance.

Table 6 : Views of the Study Sample, the Variable Regulations and Instructions

number	description	Average	rank
1	The management of the company review the laws and regulations of one period to the next, knowing the suitability for work in the information technology environment	4.29	2
2	Provide legal proof of access to programs and	3.64	5

	data relating to the company in order to ensure information security policies and try to mitigate risks		
3	Take the culture of established regulations and directives into account and social conditions and the interests of employees	4.17	3
4	Hiring help is evaluated by the company and are consistent with the help of information technology, especially in the accounting and financial staffing	3.16	6
5	Evaluation of the degree of regulations and modifications of the staff, especially the financial and accounting by the internal auditor	2.76	7
6	There is activation of the role of Government through the availability of qualified specialists in the process of issuing laws and intelligibly in conjunction with non-governmental actors and relevant accounting and auditing	3.68	4
7	Laws and regulations are reviewed from one period to the next in order to ensure their relevance to corporate business and it activities and work through various technological developments internally and externally effects	2.49	8
8	regulations issued by the internal control system or the management of the company to keep pace with IT environment auditing	4.43	1
Total		3.51	

Third hypothesis: "There is no role for internal audit offices assist internal auditors in the information technology environment to promote the application of corporate governance in commercial banks in Jordan".

Notes from Table VII that the members of the sixth paragraph stresses the study sample average 4.26 a idea offices internal audit helps to increase the efficiency of employees and give the independence and transparency of the accounting data accuracy as a checker checks all the Auditors which gives data for accounting honesty and reliability of the largest addition to the internal audit offices strengthen the role of the external audit offices, also notes that the third ranked the second in the degree of acceptance of the idea of having an internal auditing offices help provide some kind of control over the work of the internal auditors in banks in particular and this is reflected in the validity and fairness of the financial statements, also notes that paragraph to the first ranked third in degree of acceptance about the idea of internal audit offices that take legal framework along the lines of the external audit offices especially in commercial banks the largest installations connected to the citizens and the supervision of the Central Bank, as the study sample does not confirm the existence of an internal audit offices assist external audit offices to give impartial professional opinion. Also notes that the average premise is 3.33 which is higher than the Middle premise 3 and this indicates that the members of the study sample tend to accept the idea of an internal auditing offices to promote the concept and implementation of corporate governance.

Table 7 : Reviews the Sample Variable for Internal Audit Offices

number	description	Average	rank
1	Establish a government agency to check performance at the country level	3.26	3
2	Internal auditing offices will help strengthen the work of the external auditor	3.13	5
3	Internal audit offices provide the size and quality of supervision on the work of Internal Auditors	4.15	2
4	Provide internal audit offices will help strengthen the application of corporate governance	3.76	4
5	Get Auditors in charge of information technology in the offices of internal audit	3.06	6
6	Internal auditing offices will help increase the efficiency of employees and give independent and more transparency about the accuracy of the financial statements	4.26	1

7	Internal audit offices assist the internal auditor company to implement policies and help more accurately	2.73	7
8	Assist the internal audit offices of external auditor to give professional opinion clearer and more independence.	2.36	8
Total		3.33	

e) Testing hypotheses of the Study

Table 8 : The First Hypothesis Test Result

Average	As a result the hypothesis H0 nihilism	Significant T	Schedule T	The calculated T
3.41	reject	0	1.977	10.94

The first hypothesis test results of study "There is no role for internal audit offices assist internal auditors in the information technology environment to promote the application of corporate governance in commercial banks in Jordan" by using one way sample t test to the first hypothesis, the test results according to the Table VIII.

Notes from Table VIII so that the decision is to accept the hypothesis of nihilism (H0) if the value of the indexed value, and rejects the nihilistic hypothesis (H0) if the calculated value is greater than the value table. So we reject the hypothesis of nihilism and accept the alternative hypothesis that there is a role for ethics internal audit in the environment of information technology in the promotion of the application of corporate governance in commercial banks in Jordan.

Second hypothesis: "There is no role for regulations in the information technology environment within the company to promote the application of corporate governance from the perspective of internal auditors at the Jordanian commercial banks" by using one way sample t test to the first hypothesis, the test results according to the Table IX.

Table 9 : The Second Hypothesis Test Result

Average	As a result the hypothesis H0 nihilism	Significant T	Schedule T	The calculated T
3.33	reject	0	1.977	6.49

Notes from Table IX so that the decision is to accept the hypothesis of nihilism (H0) if the value of the indexed value, and rejects the nihilistic hypothesis (H0) if the calculated value is greater than the value table. So we reject the hypothesis of nihilism and accept the alternative hypothesis that there is a role for regulations in the information technology environment within the company to promote the application of corporate governance from the perspective of internal auditors at commercial banks in Jordan.

Third hypothesis: "There is no role for regulations in the information technology environment within the company to promote the application of corporate governance from the perspective of internal auditors at the Jordanian commercial banks" by using one way sample t test to the first hypothesis, the test results according to the Table X.

Table 10 : The Second Hypothesis Test Result

Average	As a result the hypothesis H0 nihilism	Significant T	Schedule T	The calculated T
3.51	reject	0	1.977	14.28

Notes from Table VIII so that the decision is to accept the hypothesis of nihilism (H0) if the value of the indexed value, and rejects the nihilistic hypothesis (H0) if the calculated value is greater than the value table. So we reject the hypothesis of nihilism and accept the alternative hypothesis that there is a role for internal audit offices assist internal auditors in the information technology environment to promote the application of corporate governance in commercial banks in Jordan.

IV. The Findings and Recommendations

a) First Study Results

- Using technology and information security with other rights and interests are reserved
- The instructions and regulations by the company adapted to the social conditions to ensure good implementation by staff.
- Used, implemented and managed information technology and information security in social ethics and honesty takes factors.
- Confirm that the policies and directives of the company took into consideration the ethical approach in information in an acceptable way.
- Regulations issued by the internal control system or the management of the company to keep pace with the IT environment auditing.
- The management of the company review the laws and regulations of one period to the next, knowing the suitability for work in the information technology environment.
- Take the culture of established regulations and directives into account and social conditions and the interests of employees.
- There is activation of the role of Government through the availability of qualified specialists in the process of issuing laws and intelligibly in

conjunction with non-governmental actors and relevant accounting and auditing.

- Internal auditing offices will help increase the efficiency of employees and give independent and more transparency about the accuracy of the financial statements.
- Provide offices internal audit increases the volume and the quality of supervision of the work of Internal Auditors.
- Provide internal audit offices will help strengthen the application of corporate governance.

b) Recommendation

- Important to care that Auditors to influence management policies by virtue of its association with the Board-with attention to ethics staff.
- Application of international standards relating to ethics audit functionality such as integration, objectivity, independence, mutual trust.
- Using the method of moral honesty, disclosure of information and data obtained from other.
- Evaluation of the degree of regulations and modifications of the staff, especially the financial and accounting by the internal auditor.
- Provide legal proof of access to programs and data relating to the company in order to ensure information security policies and try to mitigate risks.
- A review of the laws and regulations of the other in order to ensure their relevance to corporate business and it activities and work through various technological developments internally and externally effects.
- Assist the internal audit offices of external auditor to give professional opinion clearer and independence.
- Assist the internal audit offices of the internal auditor to the company to implement policies and help more accurately.
- Specialized conferences held to sensitize stakeholders on strengthening corporate governance and its impact on the vision and mission of special banks.

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Financing Policy of Ethiopian Manufacturing Firms

By Hamdu Kedir Mohammed, Sabir Fayso Abdullahi & Yonas Mekonnen Wetere

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Abstract- The aim of this study is to explore factors that affect the capital structure of manufacturing firms with the absence of secondary market and to investigate whether the capital structure models derived from Western settings provide some convincing explanation for capital structure decisions of Ethiopian firms. Theories of capital structure are reviewed in order to formulate testable factors concerning the determinants of capital structure of the manufacturing firms. The investigation is performed using panel data procedures for a sample of 32 firms during 2006-2010 G.C. Profitability as measured by return on asset, tangibility and the business risk level of firm are found to be significant determinant factors of capital structure.

Keywords: *capital structure, pecking order, agency cost theories, business risk.*

GJMBR - C Classification : *JELCode : G32*

Strictly as per the compliance and regulations of:

Financing Policy of Ethiopian Manufacturing Firms

Hamdu Kedir Mohammed [α], Sabir Fayso Abdullahi [σ] & Yonas Mekonnen Wetere [ρ]

Abstract- The aim of this study is to explore factors that affect the capital structure of manufacturing firms with the absence of secondary market and to investigate whether the capital structure models derived from Western settings provide some convincing explanation for capital structure decisions of Ethiopian firms. Theories of capital structure are reviewed in order to formulate testable factors concerning the determinants of capital structure of the manufacturing firms. The investigation is performed using panel data procedures for a sample of 32 firms during 2006-2010 G.C. Profitability as measured by return on asset, tangibility and the business risk level of firm are found to be significant determinant factors of capital structure. The findings of this study are consistent with the predictions of the pecking-order followed by agency theory which shows that capital structure models derived from Western settings does provide some help in understanding the financing behavior of firms in Ethiopia.

Keywords: capital structure, pecking order, agency cost theories, business risk.

I. Introduction

Any organization needs a capital for its establishment and expansion, and that capital can come from debt or equity. Debt has an advantage that interest paid is tax deductible, which lowers debt's effective cost and debt holders get a fixed return, so stockholders do not have to share their profits if the business is highly successful. However, debt has its own disadvantage that the higher the debt, the higher its cost of debt and equity; and if the company fall on hard time and fall to pay its interest, its shareholders will have to make up the shortfall, and if not bankruptcy will result. Too much debt can keep the company from getting success and wipe out the stockholders (Booth et al., 2001).

A firm's mix of financing method is called its capital structure. In other way, it is the proportion of firm value financed with debt, the leverage ratio. The term capital structure refers to the mix of different types of securities (Long-term debt, common stock, preferred stock) issued by a company to finance its assets.

A company is said to be unlevered as long as it has no debt, while a firm with debt in its capital structure is said to be leveraged. Note that there exist two major leverage terms: operational leverage and financial leverage. While operational leverage is related to a company's fixed operating costs, financial leverage is related to fixed debt costs. Loosely speaking, operating leverage increases the business (or the operating) risk, while financial leverage increases the financial risk. Total leverage is then given by a firm's use of both fixed operating costs and debt costs, implying that a firm's total risk equals business risk plus financial risk. In this study of capital structure and its determinants, with leverage, it means financial leverage, or its synonym gearing (Chandra Sekhar Mishra, 2011).

Capital structure decision is strongly correlated with the debt to equity mix of the firm. An alert in the capital structure mix has strong effect on the debt to equity structure of the firm, which ultimately affects the value of the firm. It can be understood that capital structure decision put footprint on cost of capital (cost of debt and Equity), Net profit margin (profitability), earning per share, and dividend payout ratio and liquidity statues of the firm. Jointly these variables and other variables determine the value of the firm (ibid).

II. Review of Literature

A question whether capital structure affects the value of a firm or not has been confusing the mind of both finance managers and academicians for so many years, especially after the publication of findings by Franco Modigliani and Merton Miller in 1958. Their capital structure irrelevance theory is perfectly valid only in a perfect capital market, which is not existed yet. There is no commonly accepted model as to what combination of debt and equity maximize the value of the firm till now. Modigliani and Miller proved that the choice between debt and equity financing has no material effects on the firm value, therefore, management of a firm should stop worrying about the proportion of debt and equity securities because in perfect capital markets any combination of debt and equity securities is as good as another. However, Modigliani and Miller's debt irrelevance theorem is based on restrictive assumptions which do not hold in reality, when these assumptions are removed then choice of capital structure becomes an important value-determining factor (Chandra Sekhar Mishra, 2011). For instance, considering taxes in their analysis Modigliani and Miller (1963) proposed that firms should use as much debt as possible due to tax-deductible interest payments. Moreover, the value of a levered firm exceeds that of an unlevered firm by an amount equal to the present value of the tax savings that arise from the use

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of debt. Following on from the pioneering work of Modigliani and Miller (1958) on capital structure, three conflicting theories of capital structure have been developed. They are namely: static trade-off, pecking order, and agency cost theories.

Decisions concerning capital structure are vital for every business organization. In the corporate form of business, generally it is the job of the management to make capital structure decisions in a way that the firm value is maximized. However, maximization of firm value is not an easy job because it involves the selection of debt and equity securities in a balanced proportion keeping in view of different costs and benefits coupled with these securities. A wrong decision in the selection process of securities may lead the firm to financial distress and eventually to bankruptcy. The relationship between capital structure decisions and firm value has been extensively investigated in the past few decades. Over the years, alternative capital structure theories have been developed in order to determine the optimal capital structure. Despite the theoretical appeal of capital structure, a specific methodology has not been realized yet, which managers can use in order to determine an optimal debt level. This may be due to the fact that theories concerning capital structure differ in their relative emphasis; for instance, the trade-off theory emphasizes taxes, the pecking order theory emphasizes differences in information, and the free cash flow theory emphasizes agency costs. However, these theories provide some help in understanding the financing behavior of firms as well as in identifying the potential factors that affect the capital structure.

The empirical literature on capital structure choice is vast, mainly referring to industrialized countries (Myers, 1977; Titman and Wessels, 1988; Rajan and Zingales, 1995; Wald, 1999) and a few developing countries (Booth et al., 2001). However, findings of these empirical studies do not lead to a consensus with regard to the significant determinants of capital structure. This may be because of variations in the use of long-term versus short-term debt or because of institutional differences that exist between developed and developing countries Over the past years, much of the capital structure research has advanced theoretical models to explain the capital structure pattern and also to provide empirical evidence concerning whether the theoretical models have explanatory power when applied to the real business world.

The focus of both academic research and practical financial analysis has been on those large corporations with has publicly traded debt and equity securities that dominate economic life throughout the developed world.

Even if, the majority of the capital structure research has focused on understanding the factors that influence corporate financing behavior of the U.S. firms, capital structure research has become gradually more internationalized in recent years, which provides researchers the opportunity to make cross-sectional comparisons between countries and between various industries around the world. In particular, Rajan and Zingales (1995) applied the capital structure models derived from a U.S. setting to firms in the G-7 countries and found that the variables that were found to have association with leverage in the United States were also associated with leverage of firms in other G-7 countries.
While the majority of the research results has been derived from the experience of developed economies that have a lot of institutional similarities, little effort has been done to advance our knowledge of capital structure within developing countries that have different institutional structures (Rajan and Zingales, 1995; Chui et al., 2002; Wald, 1999; Ozkan, 2001). Booth et al. (2001) provided the first empirical study to test the explanatory power of capital structure models in developing countries. This study used 10 developing countries to evaluate whether capital structure theory was portable across countries with different institutional structures. They provided evidence that firms' capital choice decisions in developing countries were affected by the same variables as they were in developed countries. On the other hand, there were persistent differences of institutional structure across countries indicating that specific country factors were at work. Similarly, Booth et al. (2001) selected the countries that operating in a market orientated economic system, which bore many similarities to developed countries. It is interesting and important to know how capital structure theories work in a transitional economy environment within which institutional structures differ not only from developed countries but also from developing economies.

The issue of capital structure is an important strategic financing decision that firms have to make. It is therefore important for policy to be directed at improving the information environment. Most study regarding determinants of capital structure focused on developed countries.

The business environment of these countries is different from the developing one on the variables that includes economic level, politics, capital market existence, investment flow, business policy, demographics, culture and corporate governance. Because of these differences, the determinant factors of developed nation's capital structure cannot be directly replicable on the developing nations. Thus, it demands to study these determinant factors separately on the context of developing countries business environment dynamics. Specifically, this research focuses on one of developing country, Ethiopia, with respect to identifying the determinants of capital structure of the Large Privet Manufacturing Firms. In developing countries like Ethiopia, there is no sufficient research conducted

regarding this controversial issue of finance (i.e., the determinants of capital structure).

III. Research Question

- ✓ Which factors, those tested in the context of developed countries, affects the capital structure of Ethiopian large private manufacturing firms?
- ✓ How Ethiopian large private manufacturing firms' managers *behave* in line with different capital structure theories with the absence of efficient capital market?

IV. Objectives of the Study

The following are specific objectives of the study:

a) To investigate the possible impact of eight variables (return on asset, operating margin, size, tangibility, liquidity, non-debt tax shield, growth and earnings volatility) on the Capital Structure of Ethiopian Firms.

b) Identifying factors that really determine the Capital Structure of Ethiopian Firms.

c) So as to answer the question that which Capital Structure Theory can more explains the financing mix decisions of Ethiopian firm managers.

V. Study Variable

According to the research objectives and statement of the problem this study has set the variables that used in this study and there measurements which are largely adapted from existing literature. This will help to show to what extent and which capital structure theory explains the financing mix of Ethiopian managers in the context of Large Tax Payer Manufacturing Firms. The dependent variable is Total Leverage and the independents are Profitability (Return on Asset and Operating Margin), Size, Tangibility, Non-debt tax shields, Growth, Earning volatility (Business Risk) and Liquidity.

Table 1 : Measurement of variables

Research variables	Abbreviated as:-	Measurement of variables
Total Debt Ratio	TDR	(Total Debt)divided by (Total Asset)
Return on Asset	ROA	(Net income) divided by (Total Asset)
Operating margin	OM	(EBIT) divided by (Sales)
Tangibility	TANG	(Fixed Asset)divided by (Total Asset)
Non-debt tax shields	NDTS	(Depreciation)divided by (Total Asset)
Earning Volatility	VOL	Standard deviation of Return on Asset
Size	SIZE	Natural logarithm of Total Asset
Growth	GROW	Percentage growth of Total Asset
Liquidity	LIQU	(Current Asset) divided by (Current Liability)

Source: Different empirical studies, literatures and capital structure theories.

VI. Materials and Methods

a) Sampling Design

In order to have some representative sample for this study, the researchers used different stages of sample restriction criterion. First, to be included in the sample frame the firm must be large tax payer. According to Ethiopian Revenue and Customs Authority (ERCA) definition, large tax payers are those firms that include all banks, insurance companies and others with annual turnover of 15 million birr (USD 775,274) and above.

Firms with incomplete financial statement or no financial statement for the study period covering from 2006 up to 2010 G.C. where excluded from the sample frame. The data belonging to the year 2005 G.C used only to calculate the variable growth for the year 2006 G.C (i.e., percentage changes in total asset) and the value of standard deviation (Volatility measure) of this year.

The sample firms are determined using the sample size determination formula that developed by Cochran (1977). During the time of data collections, 46 firms where recorded by the Ethiopian Revenue and Custom Authority as Large Private Limited Manufacturing Company. Out of them only 36 firms are workable populations for this study purpose. Let the margin of error be 5% which balances type one and type two errors with 0.5 proportion of success that gives the maximum possible sample size given the amount of population (Cochran, 1977). The value of Z-score at 5% margin of error is 1.96, taking this information the optimum sample size is around 32 firms.

b) Data Source and Collection Method

The data used in this study are extracted from Ethiopia Revenue and Customs Authority (ERCA) that is compiled for the purpose of collecting tax from large tax payer companies. The location of the authority is at Addis Ababa (Capital City of Ethiopia) main branch. The collected data is the audited financial statement submitted by the tax payers for this authority. It covers a time period from 2007 through 2011G.C were the 2007 data used only as a base year so as to calculate asset growth rate and business risk.

c) Panel Data Model

Panel regression model used for the estimation of the parameters of the study variables. The panel regression equation differs from a regular time-series or cross-section regression by the double subscript

attached to each variable. The general form of the model can be specified as:

$$TDR_{it} = \alpha_0 + \sum \beta_k X_{itk} + \varepsilon_{it} \quad (1)$$

Were;

$k =$ Number of Parameters to be estimated

$\alpha_0 =$ Common y-intercept

$i =$ A Particular Firm

$t =$ Number of Time Period for Firm i

$\beta =$ Coefficient of the independent variable

$X =$ Independent Variable

$TDR_{it} =$ Total debt ratio of firm i at time t

The subscript *i* denoting the cross-sectional dimension and *t* representing the time series dimension. The left-hand variables represent the dependent variables in the model, which are the firms' debt ratio. The symbol of X_{itk} contains the set of explanatory variables in the estimation model; α_o is the constant and β_k represents the coefficients of the parameters. The regression model employed for this study is also in line with what was used in previous studies, with some modifications for the analysis. The model for the empirical investigation is therefore given as follows:

$$TDR_{it} = \beta_o + \beta_1 ROA_{it1} + \beta_2 OM_{it2} + \beta_3 SIZE_{3it} + \beta_4 TANG_{4it} + \beta_5 NDTS_{5it} + \beta_6 GROW_{6it} + \beta_7 VOL_{7it} + \beta_8 LIQU_{8it} + \varepsilon_{it} \quad (2)$$

i. *Testing the CLRM assumption*

The linearity of the parameter is assumed since the model applies linear ordinary least square (OLS).The numbers and types of variables are specified from the theory and empirical studies. The objective of the model is to predict the strength and direction of association among the independent and dependent variables.

ii. *Normality of the error term*

One assumption of classical linear regression model (CLRM) is the normal distribution of the residual part of the model. This assumption has to be tested and pass the test to use the data for further inference.

Table 2 : Residual Normality Test of the Model

Shapiro-Wilk W test for normal data					
Variable	Obs	W	V	z	Prob>z
TDR	160	0.75385	30.272	7.757	0.0000

Source: Financial statements of large manufacturing sample firms from 2007-2011 G.C.

The result of table 2 states the normality test of the residual part of the model. The P-value of zero predicts the residual of the model is not normally distributed that violets the CLRM assumption. However, the central limit theorem (CLT) assumes that distribution of error terms becomes normal as the sample size is large. This model used large sample size and, therefore, no need of worry about the normality of the error term.

iii. *Heteroskedasticity*

The homoscedasticity assumption states that the variance (var. (ε_{it})) of the unobservable error (ε_{it}), conditional on the explanatory variables, held constant. Homoscedasticity violated whenever the variance of the unobservable changes across different segments of the population, which are determined by the different values of the explanatory variables.

Table 3 : Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance chi2(1) = 0.98
Variables: fitted values of TDRProb> chi2 = 0.3231

Source: Financial statements of large manufacturing sample firms from 2007-2011 G.C.

The result of table3 indicated that the hypothesis of constant variance cannot be rejected at 5% significance since the p-value is large which is greater than 0.025 (5%/2) of two tail. Therefore, the variances of error terms are statistically significantly constant from one variable to the other. Thus, there is no heteroskedasticity problem exhibited in this study.

iv. *Multicolinierity*

The term multicolinierity indicates the existence of association between two or more of explanatory variables. This association level might be nil that can be ignored or high that significantly affects the estimation of the parameters. If multicolinierity is perfect, the regression coefficients of the independent variables are undetermined and their standard errors are immeasurable. If multicolinierity is less than perfect, the regression coefficients, although determinate, possess large standard errors, which mean the coefficients cannot be estimated with great precision or accuracy (Gujarati 2003). This problem can be tested using variance inflation factor (VIF) and pair-wise correlations.

v. *Pearson correlation coefficient matrix*

In table 4 if there exist high value of coefficient (more than 0.8), it indicates the existence of more colinierity between the variables (Gujarati 2003). The more colinierity between the explanatory variables exists, the more multicolinierity becomes the problem and vice versa.

Table 4 : Pearson correlation coefficient matrix

Variables	TDR	ROA	OM	SIZE	TANG	NDTS	GROW	VOL	LIQU
TDR	1								
ROA	-0.5649	1							
OM	0.0768	0.1695	1						
SIZE	-0.2412	0.1279	0.2017	1					
TANG	0.5942	-0.6612	0.0019	-0.2539	1				
NDTS	0.2523	-0.3226	-0.2317	-0.4547	0.3823	1			
GROW	-0.0975	0.0386	0.0151	0.2144	0.0929	0.08611			
VOL	0.3438	-0.5646	0.0446	0.136	0.4272	0.1925	0.4383	1	
LIQU	0.0143	-0.0014	-0.0689	0.215	0.0472	-0.106	-0.0213	-0.0316	1

Source: Financial statements of large manufacturing sample firms from 2007-2011 G.C.

The only coefficient above 65% is that exist between ROA and TANG. Majority of them are below 0.50 and it can be confident to say there is no significant multicolinierity since any of them are above the conventional 0.80.

vi. *Variance inflation factor (VIF) Test*

The variance inflation factor, VIF, is a measure of the reciprocal of the complement of the inter-correlation among the predictor variables: VIF= 1/ (1- r^2); where r^2 is the multiple correlations between the predictor variable and the other predictors. VIF values greater than 10 indicate significant problem of multicolinierity exist.

Table 5 : Variance Inflation Factor (VIF) Test

Variable	VIF	1/VIF
ROA	2.49	0.401199
VOL	2.41	0.415739
TANG	2.08	0.480952
GROW	1.52	0.657058
SIZE	1.51	0.663364
NDTS	1.5	0.668379
OM	1.19	0.84158
LIQU	1.07	0.931621
Mean VIF	1.72	

Source: Financial statements of large manufacturing sample firms from 2007-2011 G.C.

Referring table 5, there is no VIF score above value 10 suggesting that there is no significant co-linearity among independent variables. The two tests made above verify the absence of multicolinierity since there is no exaggerated correlation and VIF value more than 10.

vii. *Model Specification Test*

On the basis of theory or introspection and prior empirical work, the model develop believe to captures the essence of the subject under study. Then, the researcher subjects the model to empirical testing. After the results obtained, it is possible to begin the examination, keeping in mind the criteria of a good model. It is at this stage that we come to know if the chosen model is adequate.

Model specification error can occur when one or more relevant variables are omitted from the model. The consequence of omitted variable is that the usual confidence interval and hypothesis-testing procedures are likely to give misleading conclusions about the statistical significance of the estimated parameters. As another consequence, the forecasts based on the incorrect model and the forecast (confidence) intervals will be unreliable (Gujarati 2003).

viii. *Ramsey's RESET Test*

Ramsey has proposed a general test of specification error called RESET (regression specification error test).This helps to test whether the model omitted relevant variables. In this model, Ramsey RESET tests the null hypothesis that states model has no omitted variables using the powers of the fitted values of TDR.

Table 6 : Omitted Variable Test using powers of the fitted values of TDR

Ramsey RESET test using powers of the fitted values of TDR
Ho: model has no omitted variables
F(3, 148) = 1.24
Prob> F = 0.3061

Source: Financial statements of large manufacturing sample firms from 2007-2011 G.C.

As the rule of the test, the null hypothesis is rejected with small P-value. From table 6, the null cannot be rejected at 5 present level of significance since P-value of 0.3061 is statistically large. Therefore, it is concluded that the model has no omitted variable problem. All relevant variables are included to fit the model and safe to use it for further statistical inference.

ix. *Model Selection*

Model selection in panel data set involves the problem of identifying whether fixed or random effect best fits the given data. To identify the best model, let equation 3 represents the general regression function

$$TDR_{it} = \alpha_0 + \sum \beta_k X_{itk} + \nu_{it} \qquad (3)$$

Were; $\nu_{it} = \delta_i + \varepsilon_{it}$

ε_{it} = time varying error or idiosyncratic errors

δ_i =unobserved firm specific constant factor

If we can assume the δ_i are uncorrelated with all *Xit*, then the random effects (RE) method is appropriate. But if the δ_i are correlated with some explanatory variables, the fixed effects (FE) method (or first differencing) is needed. Comparing the FE and RE estimates can be a test for whether there is correlation between the δ_i and the X_{it}, assuming that the idiosyncratic errors and explanatory variables are uncorrelated across all time periods. Hausman (1978) first suggested this test.

a. For Hausman test

H_0 = If δ_i is not correlated with $X_{it,}$ then use random effect model.

H_1 = If δ_i is correlated with $X_{it,}$ then use fixed effect model.

If the estimates for the random-effects estimator are not significantly different from the estimates for the fixed-effects estimator, then the null hypothesis is accepted and conclude that δ_i is not correlated with $X_{it,}$ and therefore the random-effect model is the appropriate model. If the estimates for the random effect estimator are significantly differ from the estimates for the fixed-effect estimator, the null is rejected and conclude that δ_i is correlated with $X_{it,}$ and therefore the fixed-effect model is the appropriate model. The following table 7 provides the detail of the test:

Table 7 : Fixed and random effects test comparison

	---- Coefficients ----			
	(b)	(B)	(b-B)	
Variable	Random effects	Fixed effects	Difference	S.E.
ROA	-0.1205109	-0.0884725	-0.0320385	0.0132415
OM	0.2307417	0.1502467	0.0804951	.
SIZE	-0.183653	0.2060135	-0.3896664	.
TANG	0.1326307	0.1839149	-0.0512842	.
NDTS	-0.0055241	0.7791671	-0.7846912	.
GROW	-0.0092751	0.0026681	-0.0119432	0.0059966
VOL	0.0206148	-0.1238996	0.1445144	.
LIQU	0.0001161	-0.000043	0.0001591	0.000041
Notes: Wald Chi2 (8 df) = 72.85; Prob>chi2 = 0.0000				

Source : Financial statements of large manufacturing sample firms from 2007-2011 G.C.

The decision rule, for hausman test, is rejecting the null hypothesis when the p-value is small. Accordingly, the small p-value of 0.0000 indicates that the null hypothesis is not accepted and fixed effect model is appropriate for the given data set.

VII. Result and Discussion

a) Descriptive Statistics

Table 8 : Descriptive statistics summery of study variables Variable

	Obs	Mean	Std. Dev.	Min	Max
TDR	160	0.4686156	0.2004772	0.0178415	0.738456
ROA	160	0.0795369	0.1381673	-0.3266786	0.4060249
OM	160	0.0886626	0.2238319	-0.6013652	0.5120955
SIZE	160	7.753089	0.3296925	7.00299	8.513951
TANG	160	0.6695566	0.1592004	0.0498683	0.809972
NDTS	160	0.1280832	0.1167917	0.0009126	0.359286
GROW	160	0.1657903	0.2646498	-0.872163	0.9352877
VOL	160	0.2239808	0.9601034	0.0006407	7.295534
LIQU	160	12.42121	121.141	0.2266895	1534.608

Source : Financial statements of large manufacturing sample firms from 2007-2011 G.C.

Closely observing table 8 it indicates some general information about the distributions of the variables. The variable TDR indicates that, on average, Ethiopian large manufacturing firms have the debt levels

of 46.86 percent out of the total assets held by them. From one firm to another the level of leverage varies at an amount of 20.05 percent. Among the firms the maximum amount of debt ratio is 0.7385 levels out of total asset while the minimum is 0.0178 which is computed as the proportion of debt to asset.

The financial performance of the sample firms is measured by Return on Asset (ROA) and Operating Margin (OM). This firms, on average, generated 7.9540 percent of ROA which measured by Net Income divided by Total Asset. Similarly, the OM ratio is 8.87 percent that computed by dividing earnings before interest and tax (EBIT) to sales. This result indicates that both measure of performance prevails approximately the same amount. The average standardized variability of this performance measure (ROA and OM) is 13.82 and 22.38 percent, respectively per year which indicates OM is more variable than ROA. The ROA variable potentially has the maximum of 40.60 and the minimum of negative 32.67 percent indicating that there are some firms reported losses in the sample period. On the same way, OM of these manufacturing firms is with the range of negative 60.14 and positive 51.21 percent which shows the existence of more variability as compared to ROA above.

In the Capital Structure of the firms, as one determinant factor, tangibility (the extent to which asset of the business are fixed) is very interesting variable. This is because the more proportion of tangible asset the firm holds, the more the creditors fell safe to give more loans to the borrower. So, it is interesting in a sense that this variable has strong correlation with the level of financial leverage that the firm holds. Looking at Table 8, we can tell that Ethiopian Manufacturing Firms have assets with more of tangible or fixed, on average, at the level of 0.6695 proportions which is measured by the ratio of total fixed asset to total asset. However, each firm's proportion of tangible asset can deviate from the mean (0.6695) by 15.92 percent of standard deviation. Among the sample firms the levels of tangible asset vary from the mean by 15.92 percent standard deviation. The proportional maximum and minimum score of this variable is 0.0498 and 0.8099, respectively.

The variability, income generating ability of a firm, indicates the level of business risk which is found by computing the standard deviation of Return on Asset (ROA). In the summery table, the average volatility (business risk) of the industry is 22.40 percent.

However, this firm group's exhibited very high variation in their business risk level which is found by computing the standard deviation of ROA for each firm and time, which is 96.01 percent. Thus, these manufacturing firms held very high Business Risk. The minimum and the maximum amount of risk for the pool of the firm is 0.0006 and 7.2955 respectively.

The remaining of explanatory variable can be discussed in the same manner. On the above table 8, there are 160 observations which are found by multiplying the number of sample firms (32 firms) with number of study periods (5 years) which gives a balanced panel data.

b) Regression Result Analysis

Table 9 : The effect of explanatory variables on the total debt ratio (TDR) using the fixed effects estimation model

Robust					
TDR	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
ROA	-0.0884725	0.0347754	-2.54	0.016	[-0.1593973-0.0175476]
OM	0.1502467	0.1781945	0.84	0.406	[-0.21318340.5136767]
SIZE	0.2060135	0.2927745	0.7	0.487	[-0.39110410.803131]
TANG	0.1839149	0.0490983	3.75	0.001	[0.08377830.2840515]
NDTS	0.7791671	0.2413499	3.23	0.003	[0.28693071.271403]
GROW	0.0026681	0.0090569	0.29	0.77	[-0.01580350.0211398]
VOL	-0.1238996	0.0536272	-2.31	0.028	[-0.2332731-0.0145262]
LIQU	-0.000043	0.000043	-0.77	0.446	[-0.00015640.0000705]
_cons	-1.349553	2.288252	-0.59	0.56	[-6.0164733.317368]

Source : Financial statements of large manufacturing sample firms from 2007-2011 G.C.

R^2 is a popular measure of Goodness of Fit in ordinary regression. In the Fixed Effect Panel Data Regression, it's reported within R-square is the R^2 that obtained by running the OLS regression. Thus, from the above table 9, it can be indicated that, for this Fixed Effect Model, the R-square value of 0.5954 shows the 59.54 percent of variation in leverage is explained by the variation in independent variables and the rest (40.46

percent) are captured by the residual of the model. The residual (error term) part of the model, that accounts for the minority of the variation, captures other explanatory variables, measurement errors and other disturbances.

However; the overall model is capable enough to explain and predict the variation of leverage as a function of the explanatory variables as it can be observed from small p-value of the F-statistics at 5 percent level of significance. In addition, the total numbers of observations are 160 with 32 firm groups and the model is predicted with balanced panel data.

It is indicated that the profitability, tangibility, business risk (volatility) and non-debt tax shields variables are significant determinants of Ethiopian large manufacturing firm's capital structure while others are not, at least statistically, since they are not significant. This indicates that firm managers and creditors, in one way or another, do not take in to account the insignificant variables (Operating Margins, Size, Growth and Liquidity) in their business decisions.

Profitability is measured by two proxies which are Return on Asset (ROA) and Operating Margin (OM) variables, even if OM is not significant enough to determine the variation in leverage. Profitability variable of ROA has a significant negative coefficient that shows the inverse relationship between profitability (as measured by ROA) and debt level of the firm. This indicates, the more the company generates profit, the less it demand external source of finance. This relation predicts the tendency of managers in large manufacturing sectors to finance new projects giving more priority for internally generated funds and vice versa. Operating Margin is not statistically significant enough to determine firm's financing behavior.

The regression result indicates the proxy for tangibility is positive and significant implying that the more the firm holds tangible assets, the more creditors are willing to give loan as far as the tangible asset serve as a collateral value. The value of this coefficient tells that, other thing held constant, a one percent change in tangible asset results in 18.40 percent change in debt of the firm on the same direction.

The variable, non-debt tax shield on the regression result has positive and statistically significant coefficients .The small P-value of 0.003 indicates that NDTS variable is statistically significantly different from zero and hence has the ability to determine managers financing behavior. The coefficient of the variable prevails that a one percentage change in NDTS can results in 77.92 percentage of change in the amount of the gear that the firm holds on average on the same direction, ceteris paribus. This coefficient is the largest of all others and therefore can influence the variation of independent variable at high amount of change. The positive sign tells that firms prefer to add more debt to their capital structure when the amount of non-debt tax shield increases, which contradict with theory.

The Business Risk (volatility) variable also predicts a significant inverse relationship with debt ratio of the sample firms. It shows the coefficient of negative 12.40 and P-value of 0.028 which is statistically small enough to reject the null hypothesis that say the parameter of VOL is equal to zero. The coefficient tells that a one percentage change in VOL can results in 12.40 percentage of change in the amount of the gear that the firm holds, on average, on the same direction, ceteris paribus. Thus, it can be concluded that managers prefer to finance the new requirement of fund by considering the level and the direction of their business risk level. In other words, they behave in outsourcing more of the funds required when the level of business risk decreases.

Regarding other explanatory variables, that statistically not capable enough to predict the managers financing behavior can also be explained and discussed on the same way, as it is stated above. Beside this, the estimated Generalized Least Square (GLS) Fixed Effect Multivariate Regression Model equation for Panel Data set is stated as follows:

$$\hat{TDR}_{it} = \alpha_0 + \sum \beta_k X_{itk} + \varepsilon_{it}$$

$$\hat{TDR}_{it} = -1.3494 - 0.0885ROA_{it} + 0.1505OM_{it} + 0.2060SIZE_{it} + 0.1838TANG_{it} + 0.7792NDTS_{it} + 0.0027GROW_{it} - 0.1239VOL_{it} - 0.00004LIQU_{it} + \varepsilon_{it} \quad (3)$$

c) Empirical Discussions

When firms become more profitable, they may want to finance their growth and expansion using equity sources or just borrow. Their financing pattern (equity or debt) of managers may convey some information with regard to which theory more they favor. As of this study; return on asset (ROA), as a proxy of profitability, has significant and inverse relationship with leverage. This indicates that these managers follow the behavior of pecking order theory and hence, they prefer to financing new project using internal source, then move to external debt and the remaining by issuing new equity. Further, this finding tells tax shield from being more profitable is not their concern which indicates the rejection of tread-off theory. Such a decision might be because of the reason that underdevelopment of capital market in Ethiopia let them not to borrow with competitive cost of capital and some other factors that is not captured by this model. However; when profitability is measured by operating margin, the result is different. This variable is not statistically significant to be the determinant of capital structure of manufacturing firms even if it has a positive sign just to support tread-off theory.

Table 10 : The expected sign (+/-) of variables based on theory and empirical evidence

Explanatory Variables	Trade-off Theory	Pecking-Order Theory	Agency Cost Theory
Profitability	+	-	?
Tangibility	+	+	+ (Debt Cost)
			- (Equity Cost)
Non-debt tax shield	-	?	?
Volatility	-	-	-
Size	+	-	+
Growth	?	+	-
Liquidity	+	-	?

Notes: A positive sign "+ "Indicates a direct relationship, whereas a negative sign "- "Indicates an inverse relationship exists between the dependent and independent variables. A sign of "? " Shows that there is no clear prediction or ambiguous relationship exists.

Source: Myers, 1984; Myers and Majluf, 1984; Titman and Wessels, 1988; Jensen and Meckling (1976); Wald, 1999; Kale et al., 1991; Stulz, 1990 and other studies including Capital Structure Theory.

In the Capital structure of the firm, as one determinant factor, tangibility (the extent to which assets of a business are fixed) is the critical factor that can be expected to affect the structure positively. Capital structure theory in general explains the existence of positive relationship between tangibility and leverage. On this study, tangibility is also uncovered as determinant factors that affect gearing positively as expected by theory and many empirical studies. Ethiopian economy has no capital market (debt and equity market) that firms get financed easily and efficiently. Investors (debt and equity) cannot easily shift their investment from one company to the other since the market is not liquid. Once the firm acquired the loan from the bank, bankers may not influence their behavior and just wait what comes out at the end of the maturity period. They have no option to sell the bond to other more risk taker investors if the banker feels that the borrower is adding more risk factor to the business.

This creates a barrier to borrow by increasing cost of debt and more collateral (tangible asset) requirements. This is so because bankers have no other means to reduce the risk of loan investment that extended to firms in the absence of bond market. In Ethiopian context, private limited companies have limited menu of external source of finance. They are highly characterized by acquiring the major part of debt finance from the bank.

Capital structure theory in general explains the existence of positive relationship between tangibility and leverage. This study proved, at least empirically, that these managers do not favor trade of theory as far as profitability is concerned. Therefore, the uncovered positive coefficient of the variable, tangibility, does not tell they borrow to get tax shield since the relationship with profitability is negative. As a result, tangibility does not show whether managers act in accordance of trade-off theory and irrelevant here. In Ethiopian firms context managers do not worry about information asymmetry problem with the absence of efficient capital market and they borrow if they run out of internally generated funds. Even if managers borrow when they run out of internally generated funds, it doesn't indicate the existence of pecking-order theory as it exists in the economy with efficient capital market. However; to indicate Ethiopian managers follow the same financing pattern with those countries that have efficient capital market, it can be concluded that Ethiopian managers follow pecking-order theory.

More debt with more of tangible asset may indicate the manager's financing behavior in accordance of one or more of the theory; the selection depends on different situations. Using tangible assets as a collateral, they may borrow; to shield some of the profit from the tax, because of information asymmetry exists and to discipline managers to avoid agency cost of equity. Thus, the existence of tangible asset creates the capacity to borrow whatever the theory they hold up. In this study, the uncovered positive relation of this variable supports pecking-order theory as discussed above and, the agency cost of debt since banks do not extend loan without collateral for such manufacturing firms. This is because if firms take more debt, it is expected that they transfer wealth from debt holders to equity holders by different means. For instance, they may shift resource from less risky business to more risky projects. This in turn creates firms probability (risk) of default. That is why banks required more collateral as indicated by strong positive relation of tangibility with debt ratio. Jensen and Meckling (1976) and Myers (1977) finding suggested that the shareholders of highly leveraged firms have an incentive to invest sub optimally to expropriate wealth from the firm's debt holders to equity holders. However, debt holders can confine this opportunistic behavior by forcing them to present tangible assets as collateral before issuing loans just to avoid agency cost of debt. Therefore, the positive direction of this variable indicates the existence of agency cost theory that explains Ethiopian managers' financing pattern. Several empirical studies have reported a positive relationship between tangibility and leverage (Wald, 1999; Zou and Xiao, 2006). However, Booth et al. (2001) have reported a negative relationship between tangibility and leverage for firms in Brazil, India, Pakistan, and Turkey. Some other empirical studies have also reported a negative relationship between tangibility and leverage (Ferri and Jones, 1979; Bauer, 2004 and Mazur, 2007). Local studies reported different

result. Mintesinot (2009) studding large manufacturing firms found positive but insignificant relation. Samuel (2009), in some selected firms of all sectors, reported inverse relationship of leverage and tangibility.

The level of risk is said to be one of the primary determinants of a firm's capital structure (Kester, W,C, 1986). Table 9 indicates that the estimated coefficient of earnings volatility has the predicted negative sign and is statistically significant at 5% level of significance. From this result, firms' capital structure is substantially affected by the level of business risk they hold with inverse direction. Further, it indicates that creditors (bankers) extension of lone is the inverse function of this industry amount of risk. The more a firm in this sector is adding business risk, the less qualified to get more credit. Whatever theory that supports manager's behavior of financing a new project, the more business risk is increasing, the less bankers willing to give loan to these managers. It is not their behavior of financing or the theory they think for, it is all about how risky they are that determines the amount of loan permitted and the level of cost of capital charged. As tangibility determines firms capacity to borrow, so does the risk factor in determining how much they should borrow. Regarding which theory supports this variable, tread-off theory is not appropriate here since it is rejected with the reason stated there above. It is discussed that when firms become more profitable they inclined to use their profits to finance a new project than debt that supports pecking-order theory. Obviously, the more volatile the business is, the more they stick to internally generated funds since borrowing capacity decreases and the cost of debt increases with business risk level. According to Johnson (1997), firms with more volatile earnings may experience situations in which cash flows are too low for debt service and hence, it is expected negative relation in the context of agency cost theory.Managers may act in the interests of stockholders and that the risk of default is significant. For instance, they could invest in riskier assets or shift to riskier operating strategies deliberately by putting more debt on this riskier business that clearly creates agency cost of debt (Jensen and Meckling, 1976).

Empirical investigation has led to contradictory results. A number of studies have indicated an inverse relationship between risk and debt ratio (see Bradley et al., 1984; Titman and Wessels, 1988). Other studies suggest a positive relationship (Michaelas et al., 1999). Studies in Ethiopia also reported contradictory results. Mintesinot (2009) studding large manufacturing firms, Ashenafi (2005) and Usman (2011) reported significant negative relation exists. However, Samuel (2009) reported significant positive relationship.

In their study, DeAngelo and Masulis (1980) argue that non debt tax shields are substitutes for the tax benefits of debt financing. Therefore, the tax advantage of leverage decreases when other tax deductions like depreciation increase that leads to expect inverse relation between non-debt taxes shield (NDTS) and leverage. As discussed above, it is proved that these managers of the firms do not take tax shield advantage that makes them not to behave in accordance of tread-off theory. The finding of this paper indicates considerable positive relation of debt level and non-debt tax shield which doesn't give logic and irrelevant, with the rejection of tread-off theory. This variable only exists just to support the tread-off theory but it fails since this theory is not practiced by this managers.

Empirical findings are mixed on this issue. Bradley et al. (1984) have shown a strong direct relationship between leverage and the relative amount of non-debt tax shields. Titman and Wessels (1988) didn't found any support for the cause and effect between debt ratio and non-debt tax shields.Wald (1999) and Deesomsak et al. (2004) reported a significant negative relationship between leverage and non-debt tax shields. Bauer (2004) has shown a negative but less significant relationship between non-debt tax shields and the measures of leverage. Studies in Ethiopia also reported contradictory results. Mintesinot (2009) studding large manufacturing firms and Samuel (2009) reported trivial negative relationship while Usman (2011) reported significant direct relationship.

Regarding empirical discussion of this study, four variables discussed above found to be significantly determinant of the capital structure of Ethiopian large manufacturing sector even if non-debt tax shields doesn't give sense to be a positive determinant with the absence of tread-off theory. This means, the significance of non-debt tax shield is not an indicator of as to which theory privileged. The remaining variables (Size, growth, operating margin and liquidity) that included in this model assumed as a determinant factor supports those studies that conclude these factors are not significantly influential to lead managers behave supporting either of the theory. It is not worthy enough to have further discussion on these variables as far as they are not determinant factors and not the major concern of this study.

From all this discussion, it is possible to reach on the major findings of the study and to say something about as to which theory privileged by Ethiopian managers including determinant factors that affects their financing mix of debt and equity. This paper explicitly stated that profitability as measured by return on asset, tangibility (the extent of holding fixed assets over time) and the business risk level or income volatility of the firm are found to be significant determinant factors of capital structure in the context of an economy where such firms and managers operate. Referring to these variables, Ethiopian managers are found to behave mainly in accordance with Pecking-order theory followed by Agency cost theorywhile they select one source of

finance over the other (debt or equity) even if they have thin and few menus as an alternative source of capital. This finding also supported by those local researchers arguing the determinants of capital structure identified in the western context are able to explain much of the variation in financial leverage and the pecking-order theory more explains the financing behavior of manufacturing firms in Ethiopia (Samuel, 2009; Mintesinot,2009; Usman,2011 and Ashenafi, 2005). At the end, this study supports, to some extent, the portability of capital structure theories that exist in developed economy to the economy of developing county with the absence of secondary market and its robust explanatory power.

VIII. Conclusion

As the purpose of the study, it is hoped to uncover whether the determinants of capital structure factors of developed countries has some explanatory power of Ethiopian economy that characterized by the absence of efficient capital market. This study focuses on uncovering which determinant factors, those tested in the context of developed countries, affects the capital structure of Ethiopian firms. It also aimed at stating how managers behave in line with different capital structure theories with the absence of efficient capital market which is not discussed empirically as far as large manufacturing firms are concerned in Ethiopia.

After all the discussions made, it is found that profitability, tangibility, and earning volatility (business risk) are the major determinants of capital structure. The significant negative coefficient of profitability conveys managers behave in accordance of pecking order theory that makes them to reject the trade-off theory. The variable, tangibility, also exhibited positive sine indicating that firms are acquiring the major part of debt finance from the bank. In this study the uncovered positive relation of this variable supports pecking-order theory as it is discussed and, the agency cost of debt since banks do not extend loan without collateral for such manufacturing firms. It is found that firms' capital structure is substantially affected by the level of business risk they hold with inverse direction indicating managers behave supporting pecking order and agency cost of debt theory.

Regarding empirical discussion of this study, four variables discussed found to be significantly determining the capital structure of Ethiopian large manufacturing sector even if non-debt tax shield doesn't give sense to be a significant determinant with the absence of trade-off theory. The rest variables that included in this model assumed as a determinant factor supports those studies that conclude these factors are not significantly influential to lead managers behave supporting either of the theory.

This paper explicitly stated that Profitability, tangibility (the extent of holding fixed assets over time) and income volatility of the firm are found to be statistically determinant factors of capital structure in the context of an economy where such firms and managers operate. Referring to these variables, Ethiopian managers are found to behave mainly in accordance with Pecking-order theory followed by Agency cost theorywhile they select one source of finance over the other (debt or equity) even if they have thin and few menus as an alternative source of capital. The study also concluded that some of determinant factors and theories that tested in developed countries have robust explanatory power in the context of Ethiopian economy with the absence of efficient capital market.

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Determinants of Systemic Risk for Companies Listed on Nepal Stock Exchange

By Nabaraj Adhikari

Abstract- This paper aims at advancing empirical evidences on financial factors determining systemic risk in the pre-emerging stock market of Nepal as well as to identify whether pre-emerging stock market and developed and emerging stock markets exposed to the same financial factors that determine systemic risk. A priori hypothesis between relationship of the company-specific financial factors and systemic risk are set based on theoretical framework and previous studies, and tested on the data from 15 listed companies covering a 5-year period, 2009 to 2013. All regular dividend paying and actively traded companies are selected. Based on cross-sectional approach it is revealed that size and profitability are positively associated with the systemic risk, while the dividend payment is negatively related to the risk. The results thus indicate that financial factors have significant predictive power for the systemic risk of a stock investment in Nepal.

Keywords: *CAPM, financial factors, listed companies, stock market, systemic risk.*

GJMBR - C Classification : *JELCode : G10,G12, G14, G32*

Strictly as per the compliance and regulations of:

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I. Introduction

The term risk generally refers to the volatility of a particular security. Investments typically have an associated risk based upon their exposure to markets and the fluctuations within them. The risk of an investment is the chance that an actual return will be different than expected. Risk includes the possibility of receiving less than the initial investment. The more individual returns deviate from the expected return, the greater the risk and the greater the potential reward. Risk is one of the most fundamental aspects of investing and lies within the core of research.

The degree to which all returns for a particular investment deviate from the expected return of the investment is a measure of its risk. A measure of the volatility of a security in comparison to the market as a whole is known as beta. Beta is used in the Capital Asset Pricing Model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns. The CAPM and the concept of beta as a measurement of systemic risk have a number of practical uses in portfolio management. CAPM provides a rationale for a very simple passive portfolio strategy. Diversify your holding of risky assets according to the proportions of market portfolio and mix this portfolio with the risk free asset achieve a desired risk-reward combination. Moreover, given the fact that the CAPM is used in the determination of the discount rate in valuation models of the firm, it is not surprising that many research papers have examined the determinants of beta in the emerging and developed stock markets.

Systemic risk and its determinants have been widely discussed in financial literature and are considered the most interesting issues in stock market studies (Logue and Merville (1972), Breen and Lerner (1973), Kim et al. (2002)). Despite numerous studies on systemic risk and its determinants, the extant literature does not deal for systemic risk in pre-emerging stock market of Nepal. The current research aims at expanding the evidence arising from the existing literature by exploring the main financial determinants of systemic risk in the Nepalese stock market. More specifically, present estimates are based on accounting and market panel data on Nepalese listed companies that were publicly traded on the Nepal Stock Exchange from 2009 to 2013. Seven financial variables are explored as possible determinants of the systemic risk of listed companies stock: (1) Size, (2) leverage, (3) return on assets, (4) growth, (5) liquidity, (6) operating efficiency, and (7) dividend payment. The rationale for the selection of variables is essentially based on financial theory and investors' intuition (Beaver et al. (1970), Rosenberg and McKibben (1973), Lev and Kunitzky (1974), Bildersee (1975), Beaver and Manegold (1975), Chen et al. (1986), Martikainen, (1991), McMillan (2001), Hong and Sarkar (2007), Iqball and Shah (2011)).

Nepalese stock market is still in a pre-emerging stage of development with the structural problems-Government holding in major infrastructures-Nepal Stock Exchange Ltd. (NEPSE) and central securities depository (CSD) and fixed pricing system in public offerings; infrastructural deficiencies-absence of online trading system and proper over-the-counter (OTC) market; and regulatory weaknesses- poor disclosure practices, dominance of banks and other financial institutions in issuing and trading of securities, highly fluctuating market index, absence of enforcement of legal provisions, absence of cross-border listing and trading, and low level of international networking as Securities Board of Nepal (SEBON)-capital market regulator has not yet been the member of International Organisation of Securities Commissions (IOSCO). During the period of mid-July 1998 to mid-July 2013 (inclusive), there was annual average 14.90 percent of the listed enterprises making timely disclosure, annual

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average NPR 4370 million funds were raised from the stock market, and annual average 4.05 percent turnover was in the secondary market. This turnover percent is below than 7.5 percent specified by World Bank for emerging markets. During the same period of time, the trend of commercial banking activities as to the annual average deposits was NPR 391716.26 million, annual average loans and advances was NPR 271204.79 million, and loans and advances deposits ratio was 69.24 percent (NRB (2003, 2013)). The comparison reveals that loans and advances made by commercial banks were62.06 times higher than the funds mobilised through public issue of securities in the stock market. Similarly, turnover of banking activities is 17.10 times higher than stock market. In view of aforementioned facts, it is obvious that stock market in Nepal is in the pre-emerging stage of development.

A study devoted to per-emerging stock market on systemic risk would be interesting not only to the researchers around the globe but equally to the investors and corporate managers at home country as well as stock market authorities initiating to reform and develop stock market in the country. This paper, thus, contributes another piece to the emerging puzzle by examining the determinants of systemic risk in the pre-emerging stock market of Nepal. The policy implication section of this paper will illuminate the implication of findings in greater detail.

The relevant literature currently available for the type of empirical research is presented in section II. Since the study on systemic risk is lacking in Nepal, the review virtually concentrates on the research evidence of stock markets other than Nepal. Section III discusses the methodology and outlines the data and hypothesised relationships of select variables with the systemic risk for empirical findings. The empirical analysis is made insection IV. The findings and conclusion constitute section V. The policy implications and research avenues are stated in section VI.

II. Literature Review

Most of the empirical studies used multiple regressions with beta as the dependent variable and firm financial ratios as independent variables to identify the determinants of systemic risk.

The first significant attempt to link market risk and financial variables was made by Beaveret al. (1970). The results indicate a high degree of contemporaneous association between estimated betas and several financial variables such as dividend payout, financial leverage and earnings yield. In the case of banks, Biase and D'Apolito (2012) find that bank equity beta correlates positively with bank size and with the relative volume of loans and intangible assets, and negatively with bank profitability, liquidity levels and loan loss provisions. The available evidences clearly support the contention that accounting measures of risk are impounded in the market-price based risk measure.

Logue and Merville (1972) confirmthat debt leverage, profitability, and firm size were significant beta determinants. Size is often considered the most important factor when assessing the potential for systemic risk. Size is also relevant when analysing financial activities, exposures to other market participants, individual transactions and trading volumes. Size may be a determining factor when considering markets as well. Once they attain a certain volume, markets in of themselves can pose risks, since they often serve as important pools of liquidity. While size is an important consideration when assessing systemic risk, it should not be considered in isolation from other variables. In terms of entities, activities or markets, size alone does not necessarily imply systemic risk. It is prudent to establish empirically company size as a determinant of systemic risk and it is more so in the context of pre-emerging stock market like that of Nepal.

Titman and Wessels (1988) reveal that large firms tend to have a lower beta as large firms are likely to be well diversified and therefore less prone to financial distress. Hamada (1972) verifies that financial leverage had a significant positive relationship with beta. This conclusion was further supported by Bowman (1979) as indicated that leverage, debt to equity ratio, is an important variable that have influence on the systemic risk of a firm. Numerous empirical studies supported this notion, including Logue and Merville (1972), Mandelker and Rhee (1984), De Jong and Collins (1985), and Marston and Perry (1996). For operating efficiency, however, Logue and Merville (1972), and Borde (1998) suggest that it is negatively correlated with beta. The reason is firms that are highly efficient in generating revenues with their assets will be more likely to be profitable and less likely to suffer loss, hence lower beta.

Firms often commit to debt leverage to obtain resources for investment in growth opportunity (Roh (2002)). When growth is measured by assets growth or revenues growth, studies often show a positive relationship with beta. As high leverage leads to higher financial risk, growth becomes positively correlated with beta. On the other hand, when growth is measured by earnings before interest and taxes (EBIT), it usually shows anegative relationship with beta (Lee and Jang (2007), and Borde (1998)). As investor value growth opportunities, firms with high growth usually maintain high stock prices whereas firms with low growth may see their stock prices more volatile.

Several researchers suggest a negative relationship between beta and liquidity (Beaver et al. (1970), Logue and Merville (1972), Moyer and Chatfield (1983), Mear and Firth (1988)). This means firms with higher liquidity are expected to have less exposure to systemic risk. Studies also show a negative relationship

between beta and profitability (Logue and Merville (1972), Mear and Firth (1988)). The reason is with higher profits, firms are less likely to face bankruptcy. This is especially true for firms that are highly leveraged. Profitability is usually measured by return on asset (ROA) as unlike return on equity (ROE), it is not affected by the company's capital structure.

Lee and Brewer (1985) confirm that bank market risk relates to leverage and dividend pay-out ratio. Patroet al. (2000) expect that companies with high dividend payments may be less risky. If a company has their value tied to higher future growth, rather than to current dividends, it may be more sensitive to market performance, if one compares a company with high dividends against a growth company with no or few dividends, expectation is that the growth company may be more sensitive to future economic performance.

The review of aforementioned empirical evidences reveal that the total assets, leverage, profitability, growth, liquidity, operating efficiency, and dividend payout are the major determinants of systemic risk for companies traded on stock markets. Though there are these determinants of systemic risk of publicly traded stocks, they are all the evidences of developed and emerging stock markets. Such empirical evidence is scant in the context of pre-emerging stock markets like that of Nepal. Therefore, this paper is initiated to address the extant gap in the literature relating to determinants of systemic risk for the companies listed on Nepal Stock Exchange Ltd.

III. Research Methodoloty

The study examines the relationship of systemic risk, with company specific financial factors, such as size, profitability, growth, liquidity, operating efficiency, and dividend payment. In order to carry out this study, descriptive cum analytical research designs are employed. Descriptive research design is used mainly for conceptualisation of the issues. Analytical research design is employed to analyse the data and results. This section deals with a description of the research methodology employed in addressing the research issues of the paper.

a) Target population, data source, and sampling procedure

The population for this study consists of the companies listed on the Nepal Stock Exchange Ltd. (NEPSE). In mid-July 2013, there were 230 companies listed on NEPSE. The companies are selected based on the availability of information. The criteria by which the companies are included in the sample are: (i) The companies must have available data including dividend payment for all years, that is 2009-2013. (ii) The companies must have been listed on NEPSE before the aforementioned period of time and must have been actively traded. A review of data sources: individual annual reports-balance sheet and profit and loss statements of listed companies and annual trading reports of NEPSE reveal that there were 15 listed companies having all required data including dividend payments for the study period mid-July 2009 to mid-July 2013 (inclusive) for the purpose of the study. The reason for selection for 5 years' time span is to have a large number of companies having uninterrupted dividend payments and availability of other required data in the sample and that one business cycle is completed in 5-7 years (Rafique (2012)). Thus, cross-sectional data of 15 listed companies for the period with a total of 75 observations are used in the study as presented in Appendix 1.

b) Basic regression model, variables with hypothesized signs, and data

To examine the relationship between systemic risk and company specific financial factors, the following model developed based on empirical findings is employed with the aid of Statistical Package for Social Science (SPSS) 20:

$$\beta_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 LEV_{it} + \alpha_3 ROA_{it} + \alpha_4 GROWTH_{it} + \alpha_5 LIQ_{it} + \alpha_6 OE_{it} + \alpha_7 DPS_{it} + \mu_{it}$$

Where, the variables and hypothesized signs are as follows:

'β_{it}' is per share systemic risk of the stock of company 'i' in period't'; it is year-end systemic risk of the share of the company. The estimated beta is derived by regressing a company's yearly stock return against the yearly market return. A company's yearly stock return is measured by the yearly percentage change of stock prices, while yearly percentage change in the capital market index (NEPSE) represents a proxy for market return.

The monthly closing prices of the 15 companies are collected (2009-2013) to calculate returns as follows: $R_{it} = (P_{it} - P_{it-1}) / P_{it-1}$. Where, P_{it} is the price level of stock (i) in month (t). Market return is calculated using NEPSE returns as follows: $R_{mt} = NEPSE_t - NEPSE_{t-1} / NEPSE_{t-1}$. Where, $NEPSE_t$ is market return (R_m) in month (t). Based on the calculated monthly returns, the beta coefficient for each company is then estimated by using the market model: $R_{it} = \alpha_i + \beta_i R_{mt} + u_{it}$. Where, R_{it}: return for company (stock) (i) in month (t), α_i: the constant term that is the expected return when R_{mt} is zero, βi: the beta coefficient on yearly basis, R_{mt}: the returns on the general market index (NEPSE index) in month t, and u_{it}: the random error term with zero expectation. Market models use only a supposition of linear relationship between returns of securities and returns of the whole market. According to a study by Gu and Kim (1998), the systemic risk (beta) of each company can be estimated based on the equation or the characteristic line. The

slope of the characteristic line of each company, estimated by regressing the NEPSE index return against the company's stock return, represents the sensitivity of the stock's return to the market return and is the estimated beta. So through this market model beta for the share of each company is calculated by the formula: ßi= Cov (R_i, R_m)/Var(R_m)that is covariance of per share return and return on market)/ market variance for the year 2009 through 2013. Where, $ß_i$ is systemic risk of i_{th} stock, R_i return from i_{th} stock and R_m is market return. It is dependent variable in the model.

'$SIZE_{it}$' is size of the company 'i' in period't'. The size is measured by the total assets of the company and total assets are converted into natural logarithm of total assets. Logarithm conversion condenses the effect of skewness (Iqbal and Shah (2011)). Based on Logue and Merville (1972), Breen and Lerner (1973), Titman and Wessels (1988), Gu and Kim (2002), and Olib et al. (2008), it is hypothesised that beta of stock is negatively related to the total assets of company.

'LEV_{it}' is the leverage of company 'i' in period't'. Leverage measures the financial health of a company and help investors to determine a company's level of risk. The financial ratio selected for explaining leverage of companies is debt ratio that is total debt to total assets indicates what proportion of debt a company has relative to its assets along with the potential risks the company faces in terms of its debt-load. Total debt includes short and long-term borrowings from financial institutions, debenture/bonds, deferred payment arrangements for buying capital equipment, interest bearing public deposits, and any other interest bearing loans. Based on Amit and Livnat (1988), Kim et al. (2002), Lee and Jang (2007), Hong and Sarkar (2007), Olib et al. (2008), and Ramadan (2012), it is hypothesised that there is positive relationship between leverage and beta.

'ROA_{it}' is return on assets of company 'i' in period't' whichis net income tototal assets. It is the proxy for profitability of the company. High profitability can enhance companies' ability to lower financial instability and thus lessen systemic risk. Based on Logue and Merville (1972), Scherrer and Mathison (1996), Borde (1998), Gu and Kim (2002), Lee and Jang (2007), and Rowe and Kim (2010), it is hypothesised that there is negative relationship between return on assets and beta.

$GROWTH_{it}$ is growth of company 'i' in period't'. Annual percentage change in earnings before interest and taxes is used to compute the growth of the company. Rapidly growing firms, often measured with asset growth and revenue growth, are often considered vulnerable to economic changes. Based on Borde (1998), Gu and Kim (2002), Roh (2002), and Lee and Jang (2007), it is hypothesised that there is positive relationship between systemic risk and growth of the company.

'LIQ_{it}' is liquidity of company 'i' in period't', that is the ratioof current assetsminus inventory (sum of cash, marketable securities, and accounts receivable) to current liabilities or quick ratio. Current liabilities include creditors-outstanding loans, bills payables, accrued expenses, short-term bank loan, proposed and unpaid dividends, income-tax liability, long-term debt maturing in current year, and interest payable deposits. Companies with higher liquidity are expected to have less exposure to systemic risk. Based on Beaver et al. (1970), Logue and Merville (1972), Moyer and Charlfield (1983), Mear and Firth (1988), Gu and Kim (1998, 2002), Lee and Jang (2007), and Eldomiaty et al. (2009), the hypothesis is there is negative relationship between systemic risk (beta) and liquidity.

'OE_{it}' is operating efficiency of company 'i' in period't', it is total revenue to total assets or asset turnover. The operational efficiency of the analyzed companies is determined with the total assets turnover ratio which determines the amount of revenue that is generated from each rupee of assets. Total revenue includes interest income, commission and discount, other operating income, abnormal transaction income, non-operating income, and provision refund. Companies that are highly efficient in generating revenues with their assets will be more likely to be profitable and less likely to suffer loss. The empirical evidences reveal that companies which efficiently utilize their assets in generating revenues are more likely to reduce possible losses and consequently could have a low level of systemic risk. Based on Logue and Merville (1972), Borde (1998), Gu and Kim (1998, 2002), Eldomiaty et al. (2009), the hypothesis is the negative relationship between operating efficiency and systemic risk.

'DPS_{it}' is dividend per share of company 'i' in period't', and it is proxy for the dividend payment of the company. Agency cost can be reduced with high dividend (Ang et al. (1985)). Per share market price increases with the dividend per share distributed by the company (Graham and Dodd (1951), Bolster and Janjigian (1991), Pradhan (2003), Khan and Khan (2012), and Adhikari (2014)), hence it helps to reduce systemic risk of the company. Based onBeaver et al. (1970), Logue and Merville (1972), Breen and Lerven (1973), Borde (1998), and Gu and Kim (2002), the hypothesis is negative relationship between dividend payment and systemic risk of the company.

'μ_{it}' is random error term.

Data extracted from annual reports and trading reports were processed and transformed manually in order to obtain relevant measures of the financial factors.

IV. Empirical Analysis

Based on the time period 2009-2013, beta coefficients is estimated for total of 15 listed companies by using model set for the paper. The estimated betas are then related to their respective financial variables- company size, leverage, return on assets, growth, liquidity, operating efficiency, and dividend per share. The study is attempted at three levels using the sample, viz., (1) Descriptive statistics, (2) Correlation analysis, and (3) Regression analysis. The following sub-sections present the empirical analysis of data.

a) Descriptive statistics

Table 1 demonstrate the descriptive statistics of systemic risk (beta) and seven independent variables for 15 listed companies for five year period of 2009- 2013. Mean value of beta is 0.65. This mean value of beta is less than market beta that is always consider equal to 1 and also indicates that sample of listed companies are less riskier than the market. In the same way size has mean score of 9.02 with standard deviation of 1.70 and leverage has 0.65 mean with standard deviation of 0.31. Arithmetic means of return on assets, growth, liquidity, operating efficiency, and dividend payment are 0.09, 26.22, 0.59, 0.48, and 58.41 respectively. The descriptive statistics reveal that there is high variability in the growth and dividend per share of the select listed companies of Nepal.

Table 1 : Descriptive statistics

	BETA	SIZE	LEV	ROA	GROWTH	LIQ	OE	DPS
Mean	0.65	9.02	0.65	0.09	26.22	0.59	0.48	58.41
SD	1.34	1.70	0.31	0.17	24.25	0.79	1.0	150.99
Max	2.80	11.20	0.91	0.69	80.77	3.97	3.99	760
Min	-4.23	5.99	0.00	0.01	-44.80	0.05	0.06	0.66
N	75	75	75	75	75	75	75	75

b) Correlation analysis

Pearson correlation has been used for examining the relationship among all variables. Detection of correlation among explanatory variables is very useful for multicollinearity. Most researchers have mentioned that if the correlation between explanatory variables is 0.9 or more, it will cause the problem of multicollinearity. Table 2 shows the correlation among all variables and it indicates that there is high correlation between operating efficiency and liquidity, dividend per share and liquidity and dividend per share and operating efficiency, and there is problem of multicollinearity with liquidity and return on assets, operating efficiency and return on assets, and dividend per share and return on assets as they have correlation of 0.90 or more.

Table 2 : Correlation among select variables

	BETA	SIZE	LEV	ROA	GROWTH	LIQ	OE	DPS
BETA	1							
SIZE	0.48	1						
LEV	0.14	0.48	1					
ROA	-0.36	-0.51	-0.81	1				
GROWTH	0.02	-0.19	0.23	-0.07	1			
LIQ	-0.29	-0.39	-0.81	0.92	-0.14	1		
OE	-0.38	-0.53	-0.76	0.99	-0.03	0.87	1	
DPS	-0.38	-0.30	-0.58	0.90	-0.07	0.86	0.89	1

c) Regression analysis

The results of regression analysis of systemic risk per share on size, leverage, return on assets, growth, liquidity, operating efficiency, and dividend per share for the sample companies are shown in Table 3. The results reveal that coefficients of size and return on assets or profitability have positive signs in all equations, which are contrary to priori expectation and the coefficients are significant at 1 percent level of significance for size in all equations, and 1 percent level of significance in two equations and 5 percent level of significance in another two equations for return on assets, which indicate that size and profitability are major determinants of systemic risk of stock of the sample companies.

This table shows regression results for the model as defined by equation: $\beta_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 LEV_{it} + \alpha_3 ROA_{it} + \alpha_4 GROWTH_{it} + \alpha_5 LIQ_{it} + \alpha_6 OE_{it} + \alpha_7 DPS_{it} + \mu_{it}$. The regression analysis is based on 15 companies over 5 years of data for a total of 75 observations. β is beta which is the per share systemic risk of company, which is dependent variable. The

independent variables are defined as: SIZE is the total assets, LEV is the leverage, ROA is the return on assets, GROWTH is the annual growth in earnings before interest and tax, LIQ is the liquidity, OE is the operating efficiency, and DPS is the dividend per share.

Table 3 : Regression results for the sample companies

Eq.	Constant	SIZE	LEV	ROA	GROWTH	LIQ	OE	DPS	R^2	F-statistics
(1)	-2.64 (-1.94)	0.49 (4.83)* ((0.54))	-1.79 (-1.61) ((0.14))	10.09 (1.12) ((0.01))	0.01 (2.07)** ((0.79))	-0.55 (-0.98) ((0.08))	-1.19 (-1.15) ((0.02))	-0.01 (-1.43) ((0.08))	0.41	6.68*
(2)	-4.07 (-3.94)*	0.49 (4.80)* ((0.54))	-	17.05 (2.14)* ((0.01))	0.01 (1.63) ((0.88))	-0.35 (-0.62) ((0.08))	-1.62 (-1.59) ((0.02))	-0.01 (-3.42)* ((0.15))	0.39	7.19*
(3)	-3.41 (-3.55)*	0.45 (4.48)* ((0.57))	-	15.38 (1.92)* ((0.01))	-	-0.39 (-0.69) ((0.08))	-1.41 (-1.39) ((0.02))	-0.01 (-3.21)* ((0.15))	0.36	7.19*
(4)	-3.39 (-3.54)*	0.44 (4.45)* ((0.57))	-	11.08 (2.21)** ((0.02))	-	-	-0.96 (-1.23) ((0.03))	-0.01 (-3.30)* ((0.15))	0.36	9.84*
(5)	-3.54 (-3.72)*	0.46 (4.67)* ((0.60))	-	5.53 (2.49)** ((0.12))	-	-	-	-0.01 (-3.32)* ((0.15))	0.35	12.53*
(6)	-2.07 (-2.67)*	0.32 (3.83)* ((0.91))	-	-	-	-	-	-0.01 (2.48)** ((0.91))	0.29	14.63*

T-statistics are shown in single parentheses under estimated values of the regression coefficients, and tolerances are shown in double parentheses under estimated t-statistics.

** &** denote the significance of coefficients at 1 percent and 5 percent level of significance respectively. And, Eq. is equations*

Dividend per share is also appeared to be an important determinant of systemic risk of stock as its coefficient is significant at 1 percent level of significance in four equations and coefficient of dividend per share is as per priori expectation that is inverse relationship between dividend per share and systemic risk of stock of the sample companies. Hence, dividend per share affects negatively the systemic risk of the stock of listed companies in Nepal.

To gauge robustness and sensitivity-to-specification error of the regression, each independent variable having insignificant coefficient is removed from the complete model and the regressions are re-estimated. These results are shown in Table 3, Equations 2-5. The coefficients of the variables did not change in sign or size (regression coefficients are not sensitive to these alterations in terms of sign and significance). In the additional four equations, the explanatory power of the regression model as reflected by R2 decreased slightly. The closer tolerance (TOL) is to zero of the variable, the greater the degree of collinearity of that variable with the other regressors (Gujarati and Porter (2009)). The TOL of return on assets is close to zero in Equations 1-4 indicating some degree of multicollinearity between the systemic risk and return on assets. To avoid multicollinearity problem the variable return on assets is removed in Equation (6), the results remain the same in terms of sign and significance of coefficients of the variables, hence, indicating that muticollinearity is not a significant problem.

The R2, which has explained about 35 percent of cross-sectional variability in systemic risk of the stock with the independent variables used in the models, is considered as satisfactory in view of the pre-emerging stock market of the country. Similarly, F-value in all equations show that it is significant at 1 percent level of significance reflecting that regression equations provide statistically significant results.

In overall, the empirical results reveal that size and profitability influence positively and dividend payment affects negatively, and unlike in developed and emerging stock markets leverage, growth, liquidity, and operating efficiency do not affect systemic risk of the stock of sample companies in Nepal. The present inconsistent findings with the developed and emerging stock markets are attributed to idiosyncratic nature of pre-emerging stock market.

V. Findings And Conclusion

The results reveal that there is negative relationship between systemic risk and dividend per share, which is consistent and supportive to common intuitions of investors and previous empirical evidences of developed and emerging stock markets (Beaver et al. (1970), Logue and Merville (1972), Breen and Lerven (1973), Borde (1998), and Gu and Kim (2002)). However, contrary to financial intuition and several empirical evidences of developed and emerging stock markets such as Logue and Merville (1972), Breen and Lerner (1973), Titman and Wessels (1988), Gu and Kim (2002), and Olib et al. (2008)) for the relationship

between systemic risk and size, and Logue and Merville (1972), Scherrer and Mathison (1996), Borde (1998), Gu and Kim (2002), Lee and Jang (2007) and Rowe and Kim (2010)for the relationship between systemic risk and return on assets, the relationship is found to be positive in this paper. The findings, thus, partly move in line with the theoretical aspects of finance and empirical evidences of developed and emerging stock markets.

The results demonstrate that company's size, profitability, and dividend payment are significantly related to systemic risk. The conclusion resulting from this study is that systemic risk is significantly determined by financial characteristics of the listed company.

VI. Policy Implications and Future Research Avenues

It is believed that present findings provide a significant contribution to the understanding of the fundamental determinants behind the systemic risk of listed companies of Nepal. Their empirical value is threefold. First, present estimates allow corporate executives to better assess the consequences of different strategic options on the risk profile of listed companies under their control (e.g. with regard to size, profitability, and dividend payment). Second, this study may be of use to regulatory authorities, providing them with insights of the effects of their regulatory choices on risk profiles of listed companies. This point is particularly noteworthy in light of the stock market reform pressure created in the country from indigenous, non-resident Nepalese as well as foreign portfolio investors. Third, the importance of beta is also evident from the investor's point of view. Risk is differentiated from 'uncertainty' because it is measurable; therefore, investors must methodically research the securities they invest in to mitigate loss. Their research and analyses are crucial in deciding what kind of position, if any, should be taken. Systemic risk estimation is useful for investors in order to analyse the nature of risk associated with different investment options, recognise risk-return relationships within portfolio investment strategies and most importantly estimation of intrinsic value of stock as information contained in financial indicators is relevant.

Given the importance of CAPM and beta in financial analysis and informed investment decisions in the stock markets, NEPSE as the market operator and SEBON as the regulator should promote and encourage independent studies on systemic risk and its determinants. Stock market regulator has a key role to play in addressing systemic risk, bringing its particular perspective as market integrity regulator. To this end, IOSCO has identified reducing systemic risk as one of the three objectives of securities regulation. The financial crisis, 2007-09 has led securities regulators to put greater emphasis on systemic risk and financial stability. The IOSCO principles recognised the importance of systemic risk and the role of securities regulators in preventing and mitigating such risks as the principle 6 of IOSCO is identifying, assessing and mitigating systemic risk. Unless one is able to measure systemic risk objectively, quantitatively, and regularly, it is impossible to determine the appropriate trade-off between such risk and its rewards and, from a policy perspective and regulatory objective, how best to contain it. One of the illuminations of the present paper is how to measure the systemic risk and its determinants in Nepalese stock market. Further, it raises public awareness of key issues and potential systemic risks in the pre-emerging stock markets. Stock market regulators around the globe, who are concerned with the efficient functioning of markets, should try to ensure that investors are well-informed of investment risks; hence, SEBON cannot be exception. SEBON should pay sufficient attention to measure systemic risk and raise risk awareness based on the present paper. SEBON should also be concerned to promote transparency of financial reporting by incorporating mandatory provisions in the securities regulations for the listed companies to publish information about systemic risk in the financial reports that will help investors to reach a fair value of their investment and ultimately stabilize overall stock prices. The highly fluctuating trend of market index illustrated in the paper indicates that inadequate regulatory presence in the Nepalese stock market, hence, deeper structural changes are required, including regulatory reforms.

Based on the present efforts; future research should consider the relationship between systemic risk of the listed companies and major macroeconomic variables such as the ratios of exports to GDP, imports to GDP, tax revenues to GDP, inflation, and GDP growth rate. This type of research should be updated and extended using increased sample size and longer study period as well as including other financial factors like earnings variability and liquidity of the shares to have greater insights.

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Appendix 1 : List of the select listed companies for the study including years of dividend payments and number of observations

S.N.	Name of the companies	Years	Observations
1	Nabil Bank Limited (Nabil)	2009,10,11, 12, 13	5
2	Nepal Investment Bank Limited (NIBL)	2009,10,11,12,13	5
3	Standard Chartered Bank Nepal Limited (SCBNL)	2009,10,11,12, 13	5
4	Himalayan Bank Limited (HBL)	2009,10,11,12, 13	5
5	Nepal SBI Bank Limited (NSBL)	2009, 10,11,12,13	5
6	Bank of Kathmandu Limited (BKL)	2009,10,11,12,13	5
7	Everest Bank Limited (EBL)	2009,10,11,12, 13	5
8	NirdhanUtthan Bank Ltd. (NUBL)	2009,10,11,12, 13	5
9	SwabalamwanLaghubittaBikash Bank Ltd.(SLBBL)	2009,10,11,12,13	5
10	ChhimekLaghubittaBikash Bank Ltd.(CLBBL)	2009,10,11, 12, 13	5
11	United Finance Company Limited (UFCL)	2009,10,11,12,13	5
12	Shree Investment Finance Company Limited (SIFCL)	2009, 10,11,12,13	5
13	Soaltee Hotel Limited (SHL)	2009, 10, 11, 12, 13	5
14	Butwal Power Company Ltd. (BPCL)	2009,10,11,12,13	5
15	Unilever Nepal Limited (UNL)	2009,10,11,12,13	5
Total observations			75

Note: S.N. indicates serial number for the companies selected.
Source: Annual reports of the listed companies for the fiscal year mid-July 2009 to mid-July 2013 and annual trading reports of Nepal Stock Exchange Ltd.

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Title: The title page must carry an instructive title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) wherever the work was carried out. The full postal address in addition with the e-mail address of related author must be given. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining and indexing.

Abstract, used in Original Papers and Reviews:

Optimizing Abstract for Search Engines

Many researchers searching for information online will use search engines such as Google, Yahoo or similar. By optimizing your paper for search engines, you will amplify the chance of someone finding it. This in turn will make it more likely to be viewed and/or cited in a further work. Global Journals Inc. (US) have compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Key Words

A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art.A few tips for deciding as strategically as possible about keyword search:

- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

Acknowledgements: Please make these as concise as possible.

References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

The Editorial Board and Global Journals Inc. (US) recommend the use of a tool such as Reference Manager for reference management and formatting.

Tables, Figures and Figure Legends

Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table 4, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used.

Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.

Preparation of Electronic Figures for Publication

Even though low quality images are sufficient for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit (or e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings) in relation to the imitation size. Please give the data for figures in black and white or submit a Color Work Agreement Form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution (at final image size) ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs) : >350 dpi; figures containing both halftone and line images: >650 dpi.

Color Charges: It is the rule of the Global Journals Inc. (US) for authors to pay the full cost for the reproduction of their color artwork. Hence, please note that, if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a color work agreement form before your paper can be published.

Figure Legends: Self-explanatory legends of all figures should be incorporated separately under the heading 'Legends to Figures'. In the full-text online edition of the journal, figure legends may possibly be truncated in abbreviated links to the full screen version. Therefore, the first 100 characters of any legend should notify the reader, about the key aspects of the figure.

6. AFTER ACCEPTANCE

Upon approval of a paper for publication, the manuscript will be forwarded to the dean, who is responsible for the publication of the Global Journals Inc. (US).

6.1 Proof Corrections

The corresponding author will receive an e-mail alert containing a link to a website or will be attached. A working e-mail address must therefore be provided for the related author.

Acrobat Reader will be required in order to read this file. This software can be downloaded

(Free of charge) from the following website:

www.adobe.com/products/acrobat/readstep2.html. This will facilitate the file to be opened, read on screen, and printed out in order for any corrections to be added. Further instructions will be sent with the proof.

Proofs must be returned to the dean at dean@globaljournals.org within three days of receipt.

As changes to proofs are costly, we inquire that you only correct typesetting errors. All illustrations are retained by the publisher. Please note that the authors are responsible for all statements made in their work, including changes made by the copy editor.

6.2 Early View of Global Journals Inc. (US) (Publication Prior to Print)

The Global Journals Inc. (US) are enclosed by our publishing's Early View service. Early View articles are complete full-text articles sent in advance of their publication. Early View articles are absolute and final. They have been completely reviewed, revised and edited for publication, and the authors' final corrections have been incorporated. Because they are in final form, no changes can be made after sending them. The nature of Early View articles means that they do not yet have volume, issue or page numbers, so Early View articles cannot be cited in the conventional way.

6.3 Author Services

Online production tracking is available for your article through Author Services. Author Services enables authors to track their article - once it has been accepted - through the production process to publication online and in print. Authors can check the status of their articles online and choose to receive automated e-mails at key stages of production. The authors will receive an e-mail with a unique link that enables them to register and have their article automatically added to the system. Please ensure that a complete e-mail address is provided when submitting the manuscript.

6.4 Author Material Archive Policy

Please note that if not specifically requested, publisher will dispose off hardcopy & electronic information submitted, after the two months of publication. If you require the return of any information submitted, please inform the Editorial Board or dean as soon as possible.

6.5 Offprint and Extra Copies

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You must strictly follow above Author Guidelines before submitting your paper or else we will not at all be responsible for any corrections in future in any of the way.

Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

5. Ask your Guides: If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

8. Use the Internet for help: An excellent start for your paper can be by using the Google. It is an excellent search engine, where you can have your doubts resolved. You may also read some answers for the frequent question how to write my research paper or find model research paper. From the internet library you can download books. If you have all required books make important reading selecting and analyzing the specified information. Then put together research paper sketch out.

9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

11. Revise what you wrote: When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

14. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

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.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

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.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

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.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

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.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- 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.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- 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.

Results:

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.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- 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.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

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
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

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
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

Please carefully note down following rules and regulation before submitting your Research Paper to Global Journals Inc. (US):

Segment Draft and Final Research Paper: You have to strictly follow the template of research paper. If it is not done your paper may get rejected.

- The **major constraint** is that you must independently make all content, tables, graphs, and facts that are offered in the paper. You must write each part of the paper wholly on your own. The Peer-reviewers need to identify your own perceptive of the concepts in your own terms. NEVER extract straight from any foundation, and never rephrase someone else's analysis.

- Do not give permission to anyone else to "PROOFREAD" your manuscript.

- Methods to avoid Plagiarism is applied by us on every paper, if found guilty, you will be blacklisted by all of our collaborated research groups, your institution will be informed for this and strict legal actions will be taken immediately.)
- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

Criterion for Grading a Research Paper (Compilation) by Global Journals Inc. (US)

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals Inc. (US).

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
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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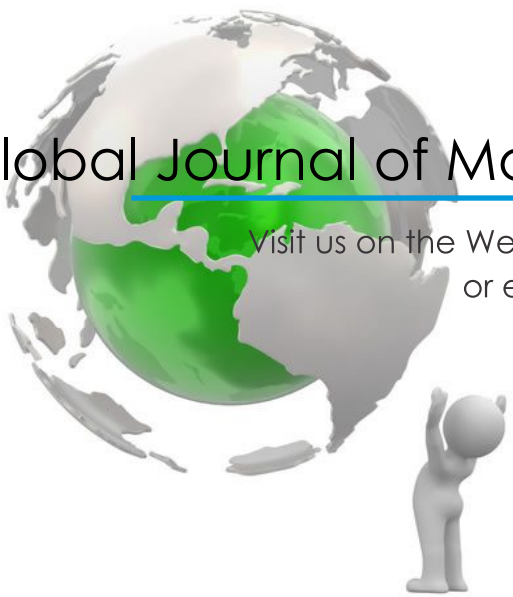

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