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The Effect of Credit Risk

Economic Integration, Trade Balances

Highlights

Evaluation of Capital Structure

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Discovering Thoughts, Inventing Future

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Economic Integration, Trade Balances and Socioeconomic Development in Nigeria

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Abstract- This article examined the link between economic integration, trade balances and socioeconomic development in Nigeria. Specifically, the work was designed to trace the trend of the variables of exports and imports, trade flows and trade balances as well as the variables of socio-economic development including the gross domestic product (GDP), unemployment and inflation rate in Nigeria from 1981 to 2013. In order to achieve this objective, the exploratory, descriptive and desk research design were used. In line with these, data were sourced from existing documents and materials including the Central Bank of Nigeria (CBN) statistical Bulletin, CBN Annual Reports and Statement of Account, CBN Bullion, Journals, textbooks, periodicals and internet-based sources.

Keywords: economic integration, trade balances, trade flow and socio-economic development.

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Economic Integration, Trade Balances and Socioeconomic Development in Nigeria

Uduak B. Ubom [α], Anthonia U. Ubom [σ] & Akpan J. Williams [ρ]

Abstract- This article examined the link between economic integration, trade balances and socioeconomic development in Nigeria. Specifically, the work was designed to trace the trend of the variables of exports and imports, trade flows and trade balances as well as the variables of socio-economic development including the gross domestic product (GDP), unemployment and inflation rate in Nigeria from 1981 to 2013. In order to achieve this objective, the exploratory, descriptive and desk research design were used. In line with these, data were sourced from existing documents and materials including the Central Bank of Nigeria (CBN) statistical Bulletin, CBN Annual Reports and Statement of Account, CBN Bullion, Journals, textbooks, periodicals and internet-based sources. The data were analysed descriptively and inferentially using simple percentages mainly to portray the characteristic movement of the variables. It was discovered that on average over 97% of the total exports from Nigeria for the period under consideration were oil exports, while non-oil import controlled the total of import values at least 75% level for the various years. This made it impossible for the country to really enjoy the benefit of economic integration in the area of socio-economic development as unemployment and inflation rates kept on increasing even in the face of increasing gross domestic product and trade balances. Following from above, it was recommended that the development of the non-oil sectors of the economy through aggressive investment and incentives to encourage private investors with export oriented focus be promoted. Other recommendations include adequate investments in infrastructure mainly in the areas of power supply, transportation, communication and health care facilities and promotion of broad-based entrepreneurship to promote small and medium scale export businesses, among others. It was therefore, concluded that the possibility of exploiting the benefits of economic integration through improved trade balances for improved socio-economic development in Nigeria could be achieved both in the short run and in the long run through aggressive implementation of the above recommendations.

Keywords: economic integration, trade balances, trade flow and socio-economic development.

I. Introduction

The management of any economy at any point in time is aimed at the attainment of macroeconomic objectives. Such objectives include economic development and growth, price stability, equilibrium balance of payment, equitable distribution of income and poverty reduction, among others. Operationally, economic and business transactions create trade relationships among nations. These relationships involve import and export of goods and service. Depending on the stage of development, level of technology and other elements of capabilities, less developed and developing countries adopt various economic policies to promote export more than import. This strategy is expected to produce favorable trade balance aimed at improving the balance of payment (BOP) and foreign reserve positions of one country over the other. To achieve this, requires some elements of trade barriers such as increased tariff on import, quota reduction, subsidy removal on imported goods and services as well as gross reduction in custom duties, among others are required. Traditionally, these are protectionists' economic approaches designed to protect infant industries in a domestic economy.

However, with the advancement in technology and increasing volume of trade across international boundaries, efforts to come together by many countries to form economic blocks that facilitate the flow and marketing of goods and services become quite imperative. These economic blocks developed both at regional and global level include Economic Community of West African States (ECOWAS), Organisation for African Unity, the European Union (EU), Organization of Africa Unity, (now African Union (AU)), the World Trade Organization (WTO), among others. The formation of these regional and global economic blocks creates what is referred to as economic integration.

Economic integration involves liberalization of economic and trade policies to remove barriers among member countries in order to promote trade relationship among them. In addition to these, member countries of the various economic blocks raise tariffs and other barrier tools against the non-member countries. Expectedly, those countries involved in economic integration aim at exploring avenues to improve their trade positions and achieve increased productivity, domestic stability and socio-economic development. Many developing countries of the world including those from Asia (e.g China and South Korea) and Latin America e.g. Argentina have achieved improved reduction in poverty level, human capacity building and improved life span, among others.

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However, in Nigeria, the situation is rather adverse irrespective of her membership in most of these economic blocks. For instance, the world bank reports of 2010, 2011 and 2012 placed Nigeria among the poorest countries in the world based on it high poverty index of 69%, 69.8% and 73% respectively for the years 2010, 2011 and 2012. Equally, literacy rate and human development index are declining year after year. These therefore create the concern about the relevance of economic integration and trade balances recorded in Nigeria for some years now in promoting socioeconomic development in the country. Although there are some scholarly researches in the areas international economics, international trade, international economic management as well as development management such as those of Todaro and Smith, (2006: 645-646), Eun & Resnick, (2001:10-11) and Abel and Bernanke, (1998:208-212), there is no concrete research with specific focus on investigating the relevance of economic integration and trade balances in enhancing socioeconomic development in Nigeria. This article is therefore an attempt to examine the link between roles of economic integration, trade balances and socioeconomic development and growth in Nigeria. After this introduction is section two which covers conceptual and theoretical reviews. This is followed by methodology and design presented in section three. Section four houses the empirical review and analysis while section five covers the discussions, recommendations and conclusions.

II. Conceptual and Theoretical Review

a) The Concept and Philosophy of Economic Integration

The need for countries (mainly developing economies) to remove trade barriers and restrictions and come under one common market is informed by their desire to ensure free flow of investments, people, goods and services, ideas, technologies and to stimulate export. This is in line with the south-south trade hypothesis which states that less developed and developing countries should go beyond greater trade with one another and move in the direction of economic integration (Todaro and Smith, 2006: 645).

Economic integration involves the coming together of a group of countries in the same region to form an economic union or regional trading block by raising a common tariff wall against the product of non-member countries while freeing internal trade among members. According to Eun and Resnick (2001: 10), economic integration requires policy liberalization which moves countries away from inward-looking, protectionist ideologies to an increasing level of free market and open economic policies. The major aim of economic integration is to ensure the realization of the benefits of international trade based on comparative advantage theory.

As observed by Eun and Resnick (2001: 11);

> *Although the theory of comparative advantage is not completely immune to valid criticism, it nevertheless provides a powerful intellectual rationale for promoting free trade among nations. Currently, international trade is becoming further liberalized at both the global level and regional level. At the global level, the General Agreement on Tariffs and Trade (GATT), in which a multilateral agreement among member countries has played a key role in dismantling barriers to international trade. Since it was founded in 1947, GATT has been successful in gradually eliminating and reducing tariffs, subsidies, quotas and other barriers to trade.*

Economic integration is an agreement between contagious nations to allow for the free flow of ideas, investment funds, technologies, goods and services within economic block in which a simple large market subsists with the benefits of comparative advantage and economies of scale (Ogwuma, 1998: 3). In other words, economic integration removes all impediments to free trade and investment and ensures efficient resource allocation to promote greater output of goods and services and over all economic wellbeing of member states. As further explained by Ogwuma (1998: 3), economic integration promotes trade creation, trade diversion and complements the efforts at achieving the objectives of the multilateral trading arrangements specified in General Agreement on Trade and Tariff (GATT) and World Trade Organization (WTO).

The main rationale for economic integration is the long term benefits of providing the opportunity for industries that have not yet been established as well as for those that have to take advantage of economies of large-scale production made possible by expanding markets. Another key rationale for integration is in terms of promoting coordinated industrial strategy especially in industries where economies of scale are likely to exist (Todaro and Smith, 2006: 646). This is possible through the division of labour among a group of countries. Division of labour is one of the features of economic integration. The highest level of economic integration is the Monetary Union, which involves the integration of trade and macroeconomic policies and the establishment of a common central bank and a single currency. The establishment of a Monetary Union is, however, consequent upon the member states meeting the convertibility conditions of monetary and fiscal prudence and other macroeconomic convergence indicators. This involves acceding to the obligation of the International Monetary Fund (IMF) Article VIII, to make their currencies convertible on current account basis (Ogwuma, 1998: 3).

b) Nature, Scope and Basis of International Trade

Different countries have natural endowment, technology and resource potentials that enable them specialize in the production of certain products based on comparative advantage. Those countries with the capabilities to produce such products expect their goods and services to satisfy the needs of other nations who import those products. Export and import of goods and services take place through international trade. Therefore, international trade is any trading arrangement or exchanges that occur across international boundaries.

As noted here, international trade is concerned with exporting and importing goods and services. Exporting implies selling products to another country while importing means buying products from another country.

There are many reasons why countries trade with other countries. According to Nickels, McHugh and McHugh (2002: 65), no nation, (not even a technologically advanced one) can produce all of the products that her people want and need. Again even under self-sufficiency, other countries would seek trade with that country in order to meet the needs of their own people. In addition, some countries such as China and Russia have an abundance of natural resources but lack technological know-how while other countries, for instance, Japan, Taiwan and Switzerland have sophisticated technology but few natural resources.

Trade relationships therefore exist to enable each nation produce what it is most capable of producing and to buy what it needs in a mutually beneficial exchange relationship. This takes place through the process of free trade. Free trade occurs when there is a movement of goods and services among nations without political or economic trade barriers (Nickels, McHugh and McHugh, 2002: 65).

There are two important theories that form the basis of international trade. These are the theories of comparative and absolute advantage. According to Colander, (1994:731). The theory of comparative advantage holds that;

> *As long as relative opportunity costs of producing goods (what must be given up in one good in order to get another good) differ among countries, there are potential gains from trade, even if one country has an absolute advantage in everything.*

In contrast, a country has an absolute advantage if it has a monopoly in the production of a specific product or is able to produce it more effectively than all other nations. South Africa was once noted to have absolute advantage in diamond production (Nickels, McHugh and McHugh, 2002:66).

As observed by Colander (1994:73), it is the comparative advantage, not absolute that forms the basis of trade. If one country has a comparative advantage in producing one product, the other countries must by definition have a comparative advantage in the other goods.

As viewed by Onyewueni (2005: 65), international trade has been sustained globally on the generally accepted belief that it makes variety of goods available and prices of goods comparatively cheaper because of the competitive production techniques. The technological advantage in which a country would enhance are the market control and the revenue from export trade. The more revenue a country earns from trade, the greater her capacity to command goods and services from other countries and the higher will be the standard of living of its people. It is in recognition of these outcomes that trade has come to be recognized as the engine of development and growth in any economy.

c) Nature, Concept of and Strategies for Managing Trade Balance

When countries enter into trade relationships with one another, the governments of such economies strive to protect the transactions among them by tracking these transactions in the balance of payment of their respective economies. The transactions are classified as either payment or receipts. The payments are debit items while receipts are the credit items. The transactions are further classified into major categories in the balance of payments. We have trade balances, balance on current account, balance on capital account, balance on capital plus current account and the changes in official reserves. This means that the balance of payments is classified into three categories or components which are the current account, capital account and the official reserves. This section examines the nature and concept of trade balances and the strategies that could be adopted to promote favorable trade balances in an economy.

Trade balances simply refers to the naira value of exports and imports in a given period of time usually one year. The trade balances are usually recorded in the current account section of the balance of payments and it comprises merchandise exports and imports of tangible goods such as oil, wheat, clothes, automobiles, computers, coffee, cocoa, iron ore and other goods produced by a country that could be seen and touched when the cross international boundaries. In addition to tangible goods are the intangibles such as insurance, education expenses, engineering, tourism, shipping, freight, haulage, royalties for patients, payment and receipts for legal and consulting services, and royalties for intellectual properties, among others (Eun and Resnick, 2001: 61) and (Lipsey & Steiner, 1981: 772-778).

The components of trade balances above show that trade balances are classified into the visible and the invisibles. Other items of visible and invisibles are

government current transactions such as military expenditures in foreign lands, unilateral transfer such as gifts and pensions to persons living abroad, payment of interest and dividend on loan and investments respectively made by various economies in foreign countries.

Following from the above, it shows that international trade traditionally links up several national economies. Because of the gains from international trade, many countries are now increasingly pursuing free and open market economic policies as against their initial protectionist economic policies. To protect themselves, these countries adopt several strategies or measures to manage their balance of payments disequilibrium positions. The balance of payments under normal circumstances is supposed to be at a balance at all times since each credit item has corresponding debit item. But in most cases, the balance of payments do not always balance because of the effect of certain factors such as seasonal changes, business cycle changes, fluctuations in exchange rates and changes in demand and supply of certain products, among others. This leads to the balance of payments disequilibrium. The balance of payments disequilibrium occurs when there is an excess of exports over imports (surplus) or when there is an excess of imports over exports (deficits). We can also have a balance of payments disequilibrium when some sub items in the various accounts are in deficits while others are in surplus. For instance, when a country invests in foreign securities and makes payments to the foreign country, the current account is in deficits while the capital account will be in surplus, when such investment starts yielding profits, or when dividends are paid. In this direction, a balance of payments deficits means that on the aggregate, debit items exceed credit items while a balance of payments surplus means that on the aggregate, credit items exceed debit items. This gives rise to accommodating items and autonomous items. Autonomous items exist independent of the balance of payments while accommodating items are those transactions that are used in financing any differences between autonomous payments and autonomous receipt (Abel and Bernanke, 1998: 146-149).

When a country is faced with excessive surplus over its deficits, such a country can adopt any of the following strategies to promote favorable trade balances: investment of the excess funds in domestic productive investments that would generate more income, increase foreign investments, acquisition of foreign assets and repayment of external debts including the interest charges. The surpluses could also be used to help poorer nations by way of gifts, loans, written off deficits and special loans to encourage and maintain international relationship and/or brotherhood. Apart from the above, a country with surplus trade balances could held the surplus as reserves in foreign currencies and can use part to meet international obligations, part of the surplus can also be used to increase domestic imports. These strategies are however short term in nature but there might be need for adjustment processes which provide long term solutions. These adjustment processes are mostly applicable to the trade deficits (Afolabi, 1999: 333-334).

When trade deficits occur, the country involved tends to accumulate more debts than necessary. In this circumstance, the deficits could be financed temporarily or through the adjustment process. The option selected by a country to manage trade deficits depend on the size of the debt, the age, spread and causes of the debt. The strategies available are that the country can obtain loans from other countries, recall external loan, if any and if permitted by the agreed repayment schedule. If the deficit is small or insignificant, it could be maintained with the hope that in subsequent years, trade surpluses might eliminate such debts. The government of such an economy can sell part of its foreign investment and apply the proceeds in solving the problem, met the deficits out of past reserves, schedule the debt or convert it to equity by investing in shares and other assets of the creditor country. The debtor country can seek financial assistance from the International Monetary Fund (IMF) through special facilities and or sell her gold reserves. These are all financial methods which are short term in nature. The adjustment procedures which are long term in nature and which might require a complete overhaul of the economy include resorting to counter trade, stimulation of exports through reduction or elimination of export duties, production of export goods, sourcing for more markets for export and control of import through outright ban on importation, imposition of tariffs and import quota. The deficit economy can also deflate domestic prices to cheapen export and make goods cheaper relative to imports. This is mostly achieved, where the monetary and fiscal policies of the economy is very strong. The country can seek better terms of trade which may result in her exchanging less units of exports for a unit of import. It can appeal to creditor countries for debt forgiveness and cancellation if possibility of repayment is slim and as a last resort, such a country can devalue her currency (Afolabi, 1999: 334-335).

III. Methodological Issues

a) Research Design

In this article, the blends of exploratory, investigatory and desk research designs were used. This makes the research approach composite in nature. This was in line with the nature of the problem and the type of data (secondary) required. Specifically, the variant of research design employed in the work were to capture the dynamics of economic integration and its characteristic influences on trade flows, trade balances

and socioeconomic development in Nigeria from 1981-2013.

b) Variables Identification

The major variables used in this work were those of economic integration and those of socioeconomic development. The variables of economic integration include exports, imports and trade balances. These variables reflect the flow of trade between Nigeria and other countries of the world in various economic blocks.

On the other hand, the variables of socioeconomic development include the gross domestic product (GDP), unemployment and inflation rates.

c) Types and Sources of Data

The data used in this work were secondary data. These were the aggregate data on the various variables identified in section 3.2 above.

The data were time series and cross sectional in nature, sourced and extracted from various documents and materials including the Central Bank of Nigeria (CBN) statistical bulletin, CBN annual report and Statement of Account, CBN Bullion, annual report from National Bureau of Statistics (NBS), textbooks, journals and internet sources, among others.

d) Method of Data Analysis

The data collected were presented in tables indicating the series of observations, the trend and movements of the variables studied. Percentages (%ages) and ratios were computed to analyze the characteristic trend movement of the exports, imports and trade balances traceable to the influences of economic integration as compared to the variables of socioeconomic development in Nigeria for the various years.

IV. Empirical Details and Analysis

This article was designed to study economic integration and trade balances in order to establish the link between them and socioeconomic development in Nigeria. Economic integration is seen as the removal of various trade barriers and restrictions to enhance free flow of trade across international boundaries. The level of economic integration is reflected by the volume of exports and imports of goods and services on yearly basis. Exporting more goods and services by a country than imports gives such a nation favorable trade balances and increased revenue which is expected to result in improved level of socioeconomic development. Therefore, this section is set aside to present and analyze the data on the key variables examined in the article. These variables are the exports, imports, trade balances as well as the gross domestic product (GDP), unemployment rate, inflation rate, and consumer price index (CPI) in Nigeria from 1981 to 2013.

Table 4.1 : Trend or Exports, Imports and Trade Balance in Nigeria, 1981-2013

	Exports (₦b)			Imports (₦b)			Total Trade (₦b)			Balance of Trade (₦b)		
Period	Oil	Non-Oil	Total	Oil	Non-Oil	Total	Oil	Non-Oil	Total	Oil	Non-Oil	Total
1981	10.7	0.3	11.0	0.1	12.7	12.8	10.8	13.1	23.9	10.6	(12.4)	(1.8)
1982	8.0	0.2	8.2	0.2	10.5	10.8	8.2	10.7	19.0	7.8	(10.3)	(2.6)
1983	7.2	0.3	7.5	0.2	8.7	8.9	7.4	9.0	16.4	7.0	(8.4)	(1.4)
1984	8.8	0.2	9.1	0.3	6.9	7.2	9.1	7.1	16.3	8.6	(6.6)	1.9
1985	11.2	0.5	11.7	0.1	7.0	7.1	11.3	7.5	18.5	11.2	(6.5)	4.7
1986	8.4	0.6	8.9	0.9	5.1	6.0	9.3	5.6	14.9	7.5	(4.5)	2.9
1987	28.2	2.2	30.4	3.2	14.7	17.9	31.4	16.8	48.2	25.0	(12.5)	12.5
1988	28.4	2.8	31.2	3.8	17.6	21.4	32.2	20.4	52.6	24.6	(14.9)	9.7
1989	55.0	3.0	58.0	4.7	26.2	30.9	59.7	29.1	88.8	50.3	(23.2)	27.1
1990	106.6	3.3	109.9	6.1	39.6	45.7	112.7	42.9	155.6	100.6	(36.4)	64.2
1991	116.9	4.7	121.5	7.8	81.7	89.5	124.6	86.4	211.0	109.1	(77.0)	32.0
1992	201.4	4.2	205.6	19.6	123.6	143.2	220.9	127.8	348.8	181.8	(119.4)	62.5
1993	213.8	5.0	218.8	41.1	124.5	165.6	254.9	129.5	384.5	172.6	(119.5)	53.1
1994	200.7	5.3	206.1	42.3	120.4	162.8	243.1	125.8	368.8	158.4	(115.1)	43.3
1995	927.6	23.1	950.7	155.8	599.3	755.1	1083.4	622.4	1705.8	771.7	(576.2)	195.5
1996	1286.2	23.3	1309.5	162.2	400.4	562.6	1448.4	423.8	1872.2	1124.0	(377.1)	746.9
1997	1212.5	29.2	1241.7	166.9	678.8	845.7	1379.4	708.0	2087.4	1045.6	(649.7)	395.9
1998	717.8	34.1	751.9	175.9	661.6	837.4	893.6	695.6	1589.3	541.9	(627.5)	(85.6)
1999	1169.5	19.5	1189.0	211.7	650.9	862.5	1381.1	670.3	2051.5	957.8	(631.4)	326.5
2000	1920.9	24.8	1945.7	220.8	764.2	985.0	2141.7	789.0	2930.7	1700.1	(739.4)	960.7
2001	1839.9	28.0	1868.0	237.1	1121.1	1358.2	2077.1	1149.1	3226.1	1602.8	(1093.1)	509.8
2002	1649.4	94.7	1744.2	361.7	1151.0	1512.7	2011.2	1245.7	3256.9	1287.7	(1056.3)	231.5
2003	2993.1	94.8	3087.9	398.9	1681.3	2080.2	3392.0	1776.1	5168.1	2594.2	(1586.5)	1007.7
2004	4489.5	113.3	4602.8	318.1	1668.9	1987.0	4807.6	1782.2	6589.8	4171.4	(1555.6)	2615.7
2005	7140.6	106.0	7246.5	797.3	2003.6	2800.9	7937.9	2109.5	10047.4	6343.3	(1897.6)	4445.7
2006	7191.9	133.6	7324.7	710.7	2397.8	3108.5	7901.8	2531.4	10433.2	6480.4	(2264.2)	4216.2

2007	8110,5	199.3	8309.8	768.2	3143.7	3912.0	8878.7	3343.0	12221.7	7342.3	(2944.5)	4397.8
2008	9861.8	252.9	10114.7	1315.5	3922.7	5238.2	11177.4	4175.6	15352.9	8546.3	(3669.8)	4876.5
2009	8105.5	296.7	8402.2	1068.7	4047.7	5116.5	9174.2	4344.4	13518.6	7036.7	(3751.0)	3285.7
2010	11300.5	406.2	11706.7	1757.1	5857.5	7614,7	13057.7	6263.7	19321.4	9543.4	(5451.3)	4092.1
2011	14323.2	499.5	14822.6	3043.6	7191.6	10235.2	17366.8	7691.0	25057.8	11279,6	(6692.1)	4587.4
2012	14260.0	576.1	14736.1	3064.3	6020.2	9084.5	17324.2	6496.3	23820.6	11195.7	(5544.1)	5651.6
2013	14131.8	708.9	14840.7	2429.4	6378.7	8808.1	16561.2	7087.6	23648.8	11702.5	(5669.9)	6032.6

Source: CBN Statistical Bulletin, Dec. 2013.

As indicated in table 4.1 above, the total value of exports recorded in Nigeria in 1981 was N11.00 billion. This was made up of the oil and non-oil exports of N10.7billion and N0.3billion respectively. This implies that at least 97.27% of the exports in the country for that year came from oil and the balance of 2.73% from non-oil. Within this year, the country imported goods and services to the value of N12.8 billion comprising N12.7billion and N0.1 billion respectively for non-oil and oil imports. During this period also, a total trade flow of N23.9billion was recorded with a trade balance of - N1.8billion. In subsequent years i.e 1982 and 1983, negative trade balances of - N2.6 billion and - N1.4 billion were recorded in Nigeria as the country continued to import in excess of exports.

However, in 1985, the volume of exports made by the country increased from N11.0billion in 1981 to N11.7billion while imports decreased from N12.7 billion to N7.1billion. This made it possible for the country to record a total trade flow of N18.5 billion and a positive trade balance of N4.7billion. In 1990, exports made in Nigeria rose to N109.9billion with oil exports leading at N106.6billion level. The volume of imports also increased to N45.7billion in 1990 pushing the total value of trade to N155.6billion from N18.5billion in 1985. The country therefore recorded the highest level of trade balance of N64.2billion within a period of ten (10) years from 1981.

From 1990 to 2000, total exports had increased from N109.9 billion to N1945.7billion while imports rose from N45.7billion to N985.0 billion. Hence, total trade volume jumped from N155.6billion to N2930.7billion creating a trade balance of N960.7billion. The trend of exports and imports as well as trade balance kept on increasing in Nigeria as they moved from the values recorded in 2000 to N7246.5billion, N2800.9billion and N4,445.7billion, respectively in 2005. These variables continued their increasing trend movements as the total value of exports reached its peak in 2013 at N14,840.7 billion while the highest value of imports was recorded in 2011 with a total sum of N10,235.2billion which slided to N8808.1billion in 2013. Total trade flow and trade balance followed similar increasing characteristic movement as their values rose to N23648.8billion and N6032.6billion in 2013. However, some fluctuations were observed in the trend movement of total trade flows in the country between 2007 and 2013. In 2007, for instance, total trade stood at N12,221.7 billion and increased to N15,352.9 billion in 2008 but dropped to N13,518.6 billion in 2009. By the year 2011, it had increased to N25,057.8 billion and dropped again to the value of N23648.8 in 2013. This was caused by the decline in the volume and value of oil exports from N10114.7billion in 2008 to N8402.2 billion in 2009 following incessant oil theft and bunkering in the economy.

On aggregate therefore, it is noted that at least 95% of the total exports recorded in Nigeria from 1981 to 2013 came from oil exports. For instance, 97.27%, 95.73%, 98.73% and 95.22% of the export value came from oil export respectively in 1981, 1985, 2000 and 2013. The remaining fraction of less than 5% came from non-oil exports on yearly basis.

In contrast, non-oil imports dominated total value of imports into Nigeria for the period under consideration. For example, in 1981, when the total value of imports stood at N12.8billion, 99.21% (i.e. N12.7billion) was non-oil import. As at 1995, non-oil import accounted for 79.37% of the total import value of N755.1 billion. This trend continued up to 2005, 2010 and 2013 when 71.53%, 76.92% and 72.42% of the total import values of N2800.0 billion, N7614.7billion and N8808.1 billion, respectively came from non-oil imports.

The dominance of the oil exports and non-oil imports in the country shows the neglect of the non-oil sectors of the economy such as agriculture, mining, manufacturing, automobile, textile, etc. The export potentials of these neglected sectors are not fully exploited and harnessed for improved socioeconomic development of the country. This fact is portrayed by the trend of socioeconomic development indicators in the economy as shown in table 4.2 below.

Table 4.2 : Trade Balance, GDP, Inflation and Unemployment Rates in Nigeria, 1981-2013

Period	Trade Balances (₦b)	GDP at Current Basic Price(₦b)	Unemployment Rates	Inflation Rate (%)
1981	(1.8)	94.33	8.5	20.9
1982	(2.6)	101.01	10.8	7.7
1983	(1.4)	110.06	8.3	23.2

1984	1.9	116.27	7.3	39.6
1985	4.7	134.57	7.0	5.5
1986	2.9	134.60	6.6	5.4
1987	12.5	193.13	5.7	10.2
1988	9.7	263.29	5.3	38.3
1989	27.1	382.26	5.4	40.9
1990	64.2	472.65	3.5	7.5
1991	32.0	545.67	3.1	13.0
1992	62.5	875.34	3.2	44.5
1993	53.5	1089.68	5.4	57.2
1994	43.3	1399.70	2.2	57.0
1995	195.5	2907.36	1.8	72.8
1996	746.9	4032.30	3.8	29.3
1997	395.9	4189.25	3.6	8.5
1998	(85.6)	3989.45	3.2	10.0
1999	326.5	4679.21	3.0	6.6
2000	960.7	6713.57	3.6	6.9
2001	509.8	6895.20	3.8	18.9
2002	231.5	7795.76	4.1	12.9
2003	1007.7	9913.52	4.0	14.0
2004	2615.7	11411.07	5.2	15.0
2005	4445.7	14610.88	5.6	17.9
2006	4216.2	18564.59	4.4	8.2
2007	4397.8	20657.32	4.9	5.4
2008	4876.8	24296.33	7.2	11.6
2009	3285.7	24794.24	9.7	12.4
2010	4092.1	54204.80	21.1	13.7
2011	4587.4	63258.58	23.9	10.8
2012	5651.6	71186.53	-	12.2
2013	6032.6	80222.13	-	8.4

Source: CBN Statistical Bulletin for the various years.

As shown in table 4.2 above, from 1981 to 1983 negative trade balances of -N1.8billion, - N2.6billion and - N1.4billion were recorded. These coincided with the value of gross domestic product (GDP) of N93.33 billion, N101.01 billion and N110.06 billion respectively for 1981, 1982 and 1983. Within these three years, the average rate of unemployment was 9.2% as inflation rate fluctuated between 7.7% and 23.2%.

From 1984, trade balances started to exhibit positive trend movement with N1.9billion and rose to N746.9 in 1996 when the GDP jumped from N116.27billion to N4032.30 billion. This was enough to reduce unemployment rate from 7.3% to 3.8% and inflation rate from 39.6% to 29.3% after it had recorded its highest level of 72.8% in 1995.

However, from 2005, unemployment rate increased from 3.8% in 1996 to 5.6% and rose thereafter to 23.9% in 2011 as inflation rate fluctuated between 17.9% and 8.4% in 2013. This was not consistent with the increasing trends of trade balances and gross domestic products of N4445.7billion, N4876.8billion, N60328billion and N14610.88billion, N24296.33billion and N80222.13billion, respectively for 2005, 2008 and 2013.

V. Discussion, Recommendations and Conclusion

a) Discussion

The issue of socioeconomic development has captured the attention of many scholars and international discuss for some times now. For instance, this issue featured prominently during the World Summit on Sustainable Development in 2002 when ten strategic approaches to socioeconomic development and sustainability were identified. These include ensuring workability of globalization (social and economic integration), poverty eradication and sustainable livelihood, promotion of health care delivery, access to energy and energy efficiency, among others (Ubom and Ubom, 2008:196). In making specific reference to Nigeria, Ajakaiye (2002:49) observed that:

> *The national economic development aspiration in Nigeria has remained that of altering the structure of production and consumption activities so as to diversify economic base, reduce dependence on oil and imports all in a bid to put the economy back on the path of self-sustaining, inclusive and non-inflationary growth, thereby reducing poverty.*

At the centre of the above observation is the fact that a broad based economic posture with focus on

development of non-oil sectors of the economy, promotion of exports and reduction in import of goods and services are required for improved socioeconomic development. While Udoidem and Udofot (2014:175) had made efforts to explain the link between foreign capital inflows, entrepreneurship and socioeconomic development in Nigeria, they were not quite explicit in their analysis to highlight the role of economic integration which is expected to ginger foreign capital inflows, export promotion and improved trade balances needed for socioeconomic development.

However, a more critical and analytical perspective had been presented on the role of economic integration on socioeconomic development by Onyewuenyi (2005:65-66) in his work on Intra-ECOWAS Trade: Process, Challenges and Prospects. This he pointed out that most countries achieved their status of industrialization and socioeconomic development through the export of manufactured goods and services. Hence, he called for economic integration to provide access to markets of industrial countries.

In line with this, Musawa (2014:192) identified the various approaches to improving trade balances and enhancing economic development to include removal of trade and labour market barriers in order to promote free flow of trade. These are the strategies for economic integration. A better way to enjoy the benefits of economic integration according to Henderson and Poole (1991:1204) is to solve the problem of unbalanced development which involves the strategy of investing a nation's resources in only one or two sectors of the economy. In other words, to encourage socioeconomic development and growth there should be a spread of investments across sectorial lines alongside the strategies of economic integration. This is one of the key areas lacking in Nigeria in her quest for socioeconomic development and sustainability. This as identified in this work has resulted in only one sector (i.e the oil sector) dominating in the export trend and profile in the country while the non-oil dominates the imports.

b) Recommendations

It has been discovered from this work that economic integration is the most potent approach to encouraging exports and improving foreign earnings through favourable trade balances on grounds that imports of goods and services are moderated or discouraged. The strategic option is the attainment of this objective is to promote a broad based economic focus in which investment diversifications and development in many sectors of the economy is encouraged. It has been established through various researches that many countries of the world rely on economic integration to achieve their socioeconomic drive. This countries as pointed out earlier include; the Asian Tigers such as China, Korea, and the Latin Americans exemplified by the Argentina. This has been possible because aside from the steps toward economic integration, massive provision of infrastructure as well as the promotion of grass-root entrepreneurship in the various sectors with export oriented focus have been stepped up. Unfortunately, in Nigerian economy, only the oil sector with very little or no attention on the other sectors has been focused on. This make it possible for oil export to control over 96% of the total export of the country on yearly basis while non-oil import dominate the total import into the economy with over 75% on average on yearly basis.

To this end, the following recommendations became pertinent;

i. Encouragement of the development of the non-oil sector of the economy through aggressive investment and incentives to encourage private investors with export oriented focus.
ii. Adequate investment in infrastructure mainly in the areas of power supply, transportation, communication and health care facilities among others.
iii. Promotion of broad-based entrepreneurship to promote small and medium scale export businesses and discouragement of massive consumption of imported goods and services leading to unfavourable trade balances.
iv. Objective use of the earnings from favourable trade balances for domestic investment and adoption of other strategies to take advantage of the access industrial markets provided by economic integration.

c) Conclusion

Economic integration is a milestone to socioeconomic development in less developed and developing countries of the world especially in this era of globalization. Through economic integration, many countries of the world have formed common economic blocks regional and globally, thereby providing access to market that ensure the free flow of goods and services among the members of the various economic blocks. The hope in this approach is to ensure that adequate exports of goods and services will lead to favourable trade balances that provide the needed earnings for socio-economic development and growth of domestic countries.

However, various impediments exist in Nigeria that make economic integration irrelevant in the realization of its noble objectives. Such impediments range from the unbalanced development focus in which only one (or two sectors) sector of the economy is given attention and prominence. In the country, the oil sector, is given prominence while other sectors such as agriculture, manufacturing, automobile, textile, mining, among others, are being neglected. In this circumstance, heavy importation of non-oil products and

services reign making nonsense of the oil exports over the years. In other words, the benefits associated with the economic integration have been suppressed by the effect of unbalanced development. It is therefore, concluded that the possibility of exploiting the benefits of economic integration through improved trade balances for improved socio-economic development in Nigeria could be achieved both in the short run and in the long run through aggressive implementation of the above recommendations.

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An Evaluation of Capital Structure and the Profitability of Companies

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Introduction- For development and growth of any society, the provision of basic infrastructure is quite necessary. This perhaps explains why the government shows great concern for a medium through which fund can be made available to achieve their set goals for the society. Government needs money (fund) to be able to execute its social obligations to the public. These social obligations are not limited to the provision of infrastructure and social services. According to Murkur (2001), meeting the needs of the society call, for huge funds which an individual or society could not contribute alone. It becomes the responsibility of the government to source for the funds to enable her provide these basic amenities to the citizen who are the beneficiaries.

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ANEVALUATIONOFCAPITALSTRUCTUREANDTHEPROFITABILITYOFCOMPANIES

Strictly as per the compliance and regulations of:

An Evaluation of Capital Structure and the Profitability of Companies

Akakabota Edward Eta

I. Introduction

For development and growth of any society, the provision of basic infrastructure is quite necessary. This perhaps explains why the government shows great concern for a medium through which fund can be made available to achieve their set goals for the society. Government needs money (fund) to be able to execute its social obligations to the public. These social obligations are not limited to the provision of infrastructure and social services. According to Murkur (2001), meeting the needs of the society call, for huge funds which an individual or society could not contribute alone. It becomes the responsibility of the government to source for the funds to enable her provide these basic amenities to the citizen who are the beneficiaries. One of the medium through which fund is derived is through taxation. Therefore, the citizens are expected to discharge their civic responsibility by paying their taxes as these contribute to the development and administration of the society at large.

In the light of the importance of taxation as a source of revenue to the government, Hammer, Jager and Norddlow (2005) argued that unless people pay the taxes they are obliged to pay, government may not function properly. However, it is well known and accepted that some people do not like paying taxes and because of this reason, it is difficult for tax authority to levy and collect taxes anywhere and time. Therefore, the amount of tax revenue generated by government for its expenditure programmed depends among other things, on the willingness of the taxpayers to comply with tax laws of a country (Eshang, 1983). Not complying with tax obligations suggests that a taxpayer may be committing an act of non- compliance and the resulting tax revenue loss from such act may cause serious damage to the proper functioning of the public sector, thereby threatening its capacity to finance its expenditure programmed (Franzoni, 2000).

No one likes to pay taxes, even though tax payment is inevitable for the provision of social welfare, hence individual and. companies want to reduce their tax liabilities and they try to do this either legally, by tax avoidance or illegally by tax evasion. However, one of the greatest problems facing Nigeria tax system is the problem of tax evasion and avoidance. Tax evasion and avoidance has been an important subject of inquiry in developing countries over a long period of time. All form of taxes in Nigeria is to some extent avoided or evaded largely because the administrative machinery to ensure effectiveness is weak. Because of diversity and complexity in human nature and activities, no tax law can capture everything. Loophole will exist and can only be reduced and not completely eliminated.

Ogundele (1999) defines taxation as the process or machinery by which communities or groups of persons are made to contribute in some agreed quantum and method for the purpose of the administration ad development of the society. It can be inferred that the payment of tax will in turn be beneficial to the entire citizen. This view is also similar to the definition of Sayode and Kajola (2006) who defined tax as a compulsory exaction of money by a public authority for public purposes. Nightingale (1997) describes tax as a compulsory contribution (contribution imposed by the government). These various authors concluded that it is possible for tax payers not to receive anything identifiable for their contribution but that they have the benefit of living in a relatively educated, healthy and safe society. However, the infrastructure which tax payers are supposed to enjoy is in a deplorable condition (Fafunwa. 2005), educational system in disarray (Obaji, 2005). Hence, there has been a clamor by leaders that a huge sum of the resources which they are to used, find their way out the Nation's income through tax evasion and tax avoidance.

Soyode and Kajola (2006) distinguished between tax evasion and tax avoidance. They defined tax evasion as a deliberate and willful practice of not disclosing fill taxable income so as to pay less tax and as a contravention of tax laws whereby a taxable person neglect to pay tax due or reduces tax liability by making fraudulent or untrue claims on the income tax form. While tax avoidance can be defined as the arrangement of tax payers affairs using tax shelters in the tax laws. Abdulrazaq (2001) gave this example to differentiate between tax evasion and tax avoidance. If two people marry in order to reduce their tax liabilities, they are involved in tax avoidance, but when they tell the tax authority that they are married when they are not, they are quit of tax evasion, and would be prosecuted as such. Tax evasion is an attempt to escape tax liability

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(wholly or partially) by breaking the tax law and it is a criminal act since it is achieved principally by making false declaration such as underreporting income or over reporting relieves and allowances. While, tax avoidance is an attempt to escape tax liability by circumventing that is finding a way to bend the avoider have a similar end (that is reducing tax liability) their means to that end differ (Ayua, 1996). The tax evaded is a criminal while the tax avoided is just a smart taxpayer who exploits loopholes in tax laws (and related laws) to reduce tax liability.

One is the functioning of accounting is to provide adequate information decision making of which guiding the government on revenue generated through taxation is not an exception. Tax avoidance and evasion makes it difficult to keep accurate records for proper accounting and also causes poor budget planning which negatively affect the carrying out of the required social responsibility. According to Braide (1984:5), Accounting responds to the need of the society. It changes as society or culture changes. As the society grows economically, accounting also develops to meet up with the requirements of which adequate accounting for taxation is no exception.

Tax evasion in most developing countries like Nigeria is so rampant, and the scenario is much worsened by the fact that not many of these governments have made an effort to measure the ethical reasons that tax payers give, the extent of this problem and at the same time analyze its impact. Hence, when required revenue for smooth operation cannot be raised, these countries often times resort to increase tax rates or borrowings which may not only crowd out the rates or borrowings which may not only crowd out the private sector of their economies but also lead them to debt traps (Chiumya, 2006). On the other hand, tax evasion has the effect of distorting the principle of perfect market resource allocation and income redistribution. This can lead to economic growth stagnation and far much reaching socio- economic repercussions that is having indirect effect on the National income. Thus, there is the need to understand the behavior of tax payers and the reason that cause such specific behavior.

Tax evasion and tax avoidance are practices that have eaten deeply into the revenue that ought to be generated by the government, and hence affect the economic life of the country as a whole as well as affecting the Nation's income. In view of this, this research seeks to examine these practices in Nigeria and finding out the accounting and social implication of tax avoidance and evasion on the National income of the country by evaluating the reasons why people evade and avoid taxes, the methods used by people to achieve these and thereby proffer solution to the practices.

II. Statement of the Problem

Tax avoidance and tax evasion are problems that face every tax system, but the Nigeria situation is unique when view against the level and scale of corrupt practices prevalent in Nigeria economy. Tax is one of the major sources of revenue in Nigeria and is a factor to be reckoned with. The tax collected comes back to the tax payer in form of social amenities. Tax has encouraged or discouraged some activities in the private sector, depending upon whether the policy of the government is towards encouraging or discouraging such companies. Although tax revenue has shown remarkable increases, available evidence shows that fiscal viability of the government would have been higher if better structures are in place to enhance tax planning, tax administration, collection of taxes and the reduction of the level of tax evasion and tax avoidance.

In this study, therefore, it is set out to examine the various problems both internal and external problems confronting the revenue department in the collection of taxes and levies under their jurisdiction which hindered most proper accounting and carrying out adequate social responsibilities with a view to finding solution to them.

The accounting and social implication of tax avoidance and tax evasion on National income of Nigeria is a serious problem which this study is out to analyze and tackle.

III. Objectives of the Study

The broad objective of this study is to find out why people evade and avoid tax and suggest ways of minimizing the practices in Nigeria. The broad objective is broken down to the following specific objectives:

i. To determine the effect of tax evasion and tax avoidance on the National income of Nigeria.
ii. To examine the major accounting and social implication of tax evasion and tax avoidance.
iii. To proffer solution to the problems of tax evasion and tax avoidance.
iv. To examine the effect of perceived corruption in government on tax evasion and avoidance.

IV. Research Questions

This research attempted to provide answers to the following questions in other to achieve the objectives stated above:

i. Is there any effect of tax evasion and tax avoidance on the National income of Nigeria?
ii. Is there any accounting and social implication of tax evasion and tax avoidance?
iii. What are the possible solution to the problem of tax evasion and tax avoidance?

iv. What is the attitude of tax payers when government is perceived to be corrupt?

V. Research Hypotheses

The following alternative hypotheses (HO and Hi) will be statistically tested in the course of this study:

i. Ho: There is no significant effect of tax evasion and tax avoidance on the National income.
ii. Hi: There is a significant effect of tax evasion and tax avoidance on the National income.
iii. Ho: There is no significant relationship between the accounting and social implication of tax avoidance and tax evasion.
iv. Hi: There is significant relationship between the accounting and social implication of tax avoidance and tax evasion.
v. HO: Company income tax has no positive impact on the economic growth.
vi. Hi: Company income tax has positive impact on the economic growth.
vii. HO: Tax revenue has no significant relationship with tax administration in Nigeria.
viii. Hi: Tax revenue has significant relationship with tax administration in Nigeria.

VI. Scope of the Study

This research is premised on obtaining evidence on the accounting and social implication of tax avoidance and tax evasion on the National income of the country (Nigeria). Thus, the study will be restricted to cover the performance of tax revenue in Nigeria for a period of fifteen years (15 years) that is from 1996 to 2010. Primary data will be sorted from Federal Inland Revenue office, Asaba and Delta State Board of Internal Revenue, Asaba while secondary data will be obtained from Central Bank of Nigeria Annual Bulletin.

a) Significant of the Study

From the finding of the research work, the following are the significance itemize below:

i. This research is expected to be a benefit to revenue officials who are saddled with the responsibility of ensuring that taxpayers are not negligent in paying their taxes.
ii. It will also assist to knowing why taxes are avoided and evaded.
iii. This research is also expected to be of benefit to researchers and students of accounting since it is an important aspect of taxation. Hence, it serves as a reference point for future researchers and a blue point for the policy makers.
iv. The research is also aim at studying the social and accounting implication and tax evasion on the National income.

b) Limitation of the Study

It is not unusual for researchers to encounter some problems during studies of this nature. The constraints of this study include:

i. *Time*

The time allocation for the completion of the study is not sufficient enough to carry out adequate research, considered with other engagements of the researcher. Due to the time constraint, the researcher will not be able to get adequate information about the research topic.

ii. *Lack of Data*

The availability of data is usually a problem in study of this nature. There are some data or information, which will be needed but is termed confidential for office use only. In this situation, the study will be limited to only those data available.

iii. *Lackof Co -Operation*

Persons in position to help researcher gather information are usually hostile because of the fact that some of them believe that the researcher has the intention of knowing the secret about their job which the researcher would exposed to the tax authority. This attitude makes them raise a strong opposition to researcher and these in turn hinder the research work.

iv. *Finance*

Finance has been a constraint to research work done in this country and likely to affect this work too.

v. *Error*

Some of the data when obtained are usually subject to error and changes due to their sources. This would also limit this study.

However, it is believed that the researcher would take adequate steps to maintain the validity and reliability required in this study.

VII. Definition of Major Terms

The following terms are defined to assist in proper understanding of this work by its users:

i. *Tax*

This could be defined as revenue which government derived from its citizen for carrying out its social responsibilities and for the development of the Nation.

ii. *Tax Liability*

This is the amount of money that is borne by the taxpayer.

iii. *Tax Evasion*

This is described as intentional illegal behavior, or as behavior involving a direct violation of tax law to escape the payment of tax.

iv. *Tax Avoidance*

Is a term used to describe tax payer behavior aimed at reducing taxpayer tax liability without infringing the tax laws.

v. *Social Responsibility*

It is an obligation to protect and improve the welfare of the society as a whole along with one's own interest.

vi. *Corporation Tax*

This is the amount of money paid by company as tax.

vii. *Property Tax*

This is the tax paid on the property of the taxpayer.

viii. *Capital Gain Tax*

This is a type of tax paid based on the gain realized on the sales of capital goods.

ix. *Accounting*

Is the process of recording, classifying, selecting, measuring, interpreting and communicating financial data of an organization to enable user make assessments and decision. Accounting records monetary terms the flow of economic values within or between economic entities.

x. *Revenue*

Amount of money which is being realized by an individual, group or government.

xi. *State Board Of Internal Revenue*

The body is responsible for collection of taxes for the state.

xii. *Federal Inland Revenue*

The body is responsible for collection of federal taxes.

VIII. Theoretical Study

The theoretical study reviews some theories in taxation.

a) Optimal Taxation of Labour Income

i. *The Mirrlees Model*

In the canonical model of optimal income taxation set up by Mirrlees (1971) consumers are assumed to maximize a utility function of the general form

$$U = U(C,L), \tag{1}$$

Subject to the budget constraint

$$C = wL - T(wL), \tag{2}$$

C = Consumption

L = Labour Supply

W = Real wage

T (*wL*) = a non - linear tax transfer schedule.

The solution to the consumer's problem yields his indirect utility function V (w). In the Mirrlees model the pre — tax real wage rates are treated as and taken to reflect the different non - observable ability levels of individual taxpayers. With wage rates being distributed over the internal (w w), $0 \leq w \leq +\infty$ Mirrlees assumed that the benevolent policy maker wishes to maximize an individualistic Bergson on welfare function of the form

$$\overline{W} = \int_{\underline{w}}^{\overline{w}} \Psi\{v(w)\} f(w) dw, \Psi' > 0, \Psi'' \leq 0, \tag{3}$$

Here f $(w)^w$ indicates the density of taxpayers earning the wage rate w, and the (numerical) magnitude of the second derivation ψ reflects strength of the policy maker's preference for equity. The maximization of (3) takes place subject to the constraint that the government must raise an exogenous amount of revenue R: T

$$\int_{\underline{w}}^{\overline{w}} T\{wL(w)\} f(w) dw = R.$$

The solution to the above optimal tax problem is technically demanding and does not yield very clear — cut results regarding the shape of the optimal income tax schedule. Mirrlees carried out simulations assuming Cobb — Douglas utility functions, a classical utilitarian social welfare function (with ψ = 1 and ψ =0) and a log — normal wage distribution. On these assumptions he found that optimal tax schedule was approximately linear, with an exemption level below which positive net transfers are payable.

Had this early result been robust, it would have had great practical policy relevance, since a linear labour income tax is fairly simple to administer.

In practical, because a linear income tax features a constant marginal tax rate, it does not require information on individual income, since it can be implemented as a proportional payroll tax combined with a flat transfer to all taxpayers. However, subsequent work by Tuomola (1984) and other revealed that the near — optimality of a linear income tax is not a robust result once one allow for plausible respecifications of utility function and of the shape of the wage distribution. Atkinson and Stiglitz (1980, ch. 13) also found that the optimal tax schedule deviates substantially from linearity when the social planner has more egalitarian preferences than those implied by classical utilitarianism.

IX. Empirical Study

a) Comparision of Tax Evasion and Tax Avoidance

Tax evasion has been defined by researchers in a number of ways, one of which is in contrast to tax

avoidance. Sayode and Kajola (2006) defined tax evasion as a deliberate and willful practice of not disclosing full taxable income in order to pay less tax. It is a violation of tax laws whereby the tax due by a taxable person is unpaid after the minimum specified period. Likewise, tax evasion is evident in situations where tax liability is fraudulently reduced or false claims are filled on the revenue tax form. On the other hand, Kay,(1980) opined that tax avoidance takes place when facts of the transaction are admitted but they have been arranged or presented in such a way that the resulting tax treatment differs from that intended by the relevant legislation. In essence, tax evasion is illegal while tax avoidance is not illegal under the ambience of the law.

Eboziegbe (2007) noted that this unlawful practice of tax evasion remains a serious threat to revenue generation effort of government. According to Nwachukwu (2006) tax evasion is the general term of efforts by individuals, firms, trust and other entities to evade taxes by illegal means. Tax evasion usually entails taxpayers deliberately misrepresenting or concealing the true state of their affairs to the tax authorities to reduce their tax liability. It also includes, in particular, dishonest tax reporting such as declaring less income, profits or gains than actually earned; or overstating deductions. Conversely, tax avoidance as defined by Aim and Martinez (2001), is the legal reduction in tax liabilities by practiced that take full advantage of the tax code, such as income splitting, postponement of taxes and tax arbitrage across incomes that face different treatments.

From the comparison of various definitions given in the literature, it can be seen that paying less tax or not at all than what one is legally obliged to is described as tax evasion while tax avoidance is an act of doing everything possible within the confines of the tax law to reduce the tax paid. Therefore, the main difference between them is the legality of the taxpayer's action. This study also takes the position of the researchers as it is in conformity with the structure of Nigeria tax system.

b) Empirical Investigation of Tax Evasion

Tax evasion can be traced back to the study of Allingharn and Sandmo (1972) the study observed a positive correlation between tax rates and evasion. This finding is also consistent with the findings of Chipeta (2002) which identified causes of tax evasion. Firstly, he noted that the rates at which taxpayers are being taxed impacts on tax evasion. He observed that the higher the rate, the higher will be the likelihood for the taxpayers to evade, as this increases their tax burden and hence lowers their disposable income. Secondly, the probability of being detected after evading taxes also influences the decision of a taxpayer as whether to evade or not. This is directly linked to the level of how street tax laws are being enforced.

Literature also provides a link between tax evasion and corruption. Acconnia et al, (2003) noted that the level of corruption depends on such factors as the wealth of a tax payer and the wage of the tax officer.

Maclearn (1996) further worked on a model, which tried to identify the optimal wage at which tax officers should be remunerated. He argued that government face the dilemma of identify, a salary level which will ensure that its tax officers are not enticed to bribery, as there is a link between tax evasion and the salary level of a tax officer though corruption.

According to Pashev, (2005) the failures of the government to provide basic infrastructures which are supposed to be funded by the tax being collected may aggravate tax evasion. Lack of transparency and accountability in the use of public fund has the effect of building public distrust both in the tax system as well as the government. Hence, this is believed to increase the level of tax evasion.

Some of the studies, Armstrong and Robison (1998), Olivia (1998), McGee (1998b; 1999b), Srnatrakalev (1998) and McGee and An (2006) have taken different opinions on tax evasion. All these studies have one or more opinion portrayed in their studies. These opinions include philosophical opinion, practitioner's opinion and religious opinion. Some studies also have two opinions combined together. In the study of Morale (1998). Tax evasion was discussed from a philosophical point of view by gathering evidence from Mexican workers. His study concluded that Mexican workers have a more important duty to their family than to the state. This point of view is also believed to have a religious underlining as it has a bearing with the Catholic theological literature as identified by Crowe in 1944.

c) Three Opinions on the Ethics of Tax Evasion

All the opinions found on tax evasion in the literature can be grouped into three broad areas. These are the unethical opinion, the anarchist opinion and the circumstance opinion.

With these discouraging findings, it seemed for a while that optimal tax theory could offer little guidance on income tax design. But building on earlier contributions by Revesz (1989), piketty (1997), Diamond (1998), and Roberts (2000), Saez (2001, 2002 a) showed how a fonnular for the optimal marginal tax rate at every income level can be derived in terms of the relevant elasticity's of taxable income and the properties of the wage distribution. Since these parameters can in principles be observed or estimated empirically, the work of Saez has greatly enhanced the practical application of optimal income tax theory. Another important contribution by Saez (2002 a) was the explicit allowance for tax

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Distressed Company Prediction using Logistic Regression: Tunisian's Case

By Fayçal Mraihi

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I. Introduction

Many firms react very late or improperly facing the first signs of distress. Three to five years elapse, usually between the early difficulties encountered by the company and the first operating mechanisms.

This delay generally results from a lack of understanding of the mechanisms and causes the degradation of process and an obvious lack of foresight. Thus, it is useful to examine the sequence that implies that process and to define, in the area of prevention, methods or models to predict the decline of the company in the medium term.

An objective definition of a distressed company or a firm in a difficult situation does not exist, so we can refer to the definitions suggested by Haehl (1981) and The French Superior Council of Economic Professions (FSCEP).According to the first definition « In state of difficulty the company which, because of certain economic, financial or human imbalance, revealed by the conjunction of diverse indications, ratios, and the examination of all elements, cannot envisage in the predictable, short and medium-term future, to continue its activity in a normal way or could only by proceeding in transactions of partial liquidation, economic transformation, inflow of outer permanent capital or redundancy of a part of the staff ».

For the second definition « In the absence of legal definition on the subject, and to define the firm in difficulties we can base on the criteria of liquidity, solvency, profitability and added value and to consider that a company is in a difficult situation from the moment it evolves in such a way, for economic, financial, organizational, social or other reasons, it will meet sooner or later difficulties to generate the sufficient income to fill its legal and contractual commitments and make the necessary investments ».

In such context, to which is added a bubbling socioeconomic environment, the regular appeal to the diagnosis establishes not only a requirement of good management, but also an imperative for the survival of the company.

A successful diagnostic has to detect, in time, the causes of the distressing. These causes show themselves in the company by a battery of indicators that must be identified as soon as possible to a successful recovery plan.

The diagnostics of default risk knew an important development through the use of multivariate statistical methods to analyze the financial situation from a given set of ratios. Among the most commonly used statistical methods, we find logistic regression. The principle of this method is the following: having the characteristics described by financial ratios, and a sample of companies that cover both "healthy" companies and "distressed" companies, logistic regression leads to determine the best combination of ratios to differentiate the two business groups.

To achieve this goal and to develop a model for predicting corporate default based on a logistic regression, this article will address, in a first section, the methodology through the presentation, writing and justification of the model used, the constitution of the samples and the set of distressed determinants, while being interested in the Tunisian case. The estimate of the discriminatory power of the model in time and space will be in the second section. The third section analyzes the sensitivity that will allow us to test the elasticity of the model results due to the variation of the explanatory variables. Thus, we try to classify, in the fourth section, each ratio according to its degree of participation in the discriminatory power of the model.

II. The Methodology

In this work, we use regression for predicting business distress, and then we test its validity in time and space. However, it is primordial to define what a logistic model is, explain its approach and show its

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usefulness, then present the hypotheses and tests to perform and discuss the constitution of the samples.

a) Overview and principle of the logistic model

i. *Literature review*

Logistic regression, viewed as a generalization of linear discriminant analysis, has been introduced by Day & Kerridge (1967), Cox (1970), and developed by Anderson (1972, 1982), Martin (1977), Olshon (1980) who was the pioneer in the use of logistic regression in the domain of prediction of business distresss. Among the major works that have used this method we can cite Mensah (1984), Albert & Lesaffre (1986), Aziz &*al* (1988), Bardos (1989), Burgstahler & *al* (1989), Flagg & *al* (1991), Platt & Platt (1991), Zopounidis (1995), Bardos et Zhu (1997), Mossman & *al* (1998) and more recently Altman & *al* (2005), Jones & Hensher (2004, 2007, 2007a), Zeitun & *al* (2007), Li & *al* (2011), Ahn & al (2011), Tserng & al (2011), kim & Kang (2012), Serrano-cenca & al (2013) et Wang & al (2014), Yu & al (2014).

As in multiple linear regression, it is relates to estimate parameters of model, to measure its adequacy (quality of adjustment) and to deduce the significance and the interpretation of the estimated parameters. Logistic regression is an econometric technique with a dichotomous dependent variable yi, representing the state of the company that takes:

- The value 1 if the company is "distressed"
- The value 0 if the firm is "healthy".

This type of regression allows to determinate the probability that a firm is classified in the group of « healthy » or the group of « distressed ».

At this discrimination, there can be two types of errors:

- The error of the first kind I: classify a distressed company with the healthy ones.
- The type of the second kind II: classify a healthy company with distressed ones.

We must notice, however, that the cost associated with the error of the first kind is very different from that associated with type II. Indeed, the first cost is that a creditor support in case of default of the debtor. While the second one is an opportunity cost representing the difference between remuneration that a creditor could collect on the, not accepted, and the rate of return offered by the use of these funds.

To the extent that the cost of a Type I error is much higher than that of a Type II error (about 1 to 20 according to Altman et al. "Zeta analysis" in 1977), then it seems more relevant to judge the quality of the model on the basis of correct classification percentages, in general, and the error rate of type I that it induces, in a particular way.

In general, from a sample of base and a set of ratios, we will proceed as follows:

- Check the distribution normality of selected ratios by eliminating those not responding to the corresponding test.
- Examine the individual discriminating power of these ratios by classifying them by categories.
- Evaluate the existing correlations between the ratios by eliminating those that are redundant.
- Observe the discriminating power of different combinations and select by iteration the combination that offers the best correct percentage of classification with the lowest cost of the first kind, that is the one that provides the best value:

intergroup dispersion / intragroup dispersion.

ii. *logistic model principle*

we have :

y_1, y_2,.....y_n : random variables, called dependent variables, each taking the value 1 or 0, values that correspond to groups G1 and G2 to discriminate.

x_1, x_2,.....x_J : the components of a multi-dimensional vector X = (x_1, x_2,.....x_J) and that represent random variables called explanatory or independent variables.

(β) = (β_0, β_1,.....β_J): are the unknown coefficients of the model to be estimated.

The idea is to build a model linking $\pi(x)$ = p[Y=1/ X] (he probability that Y = 1 given X).

With :

$$\text{probability of default}\,[\pi(x)] = P(Y=1/\,X=x) = \frac{1}{1+e^{-(\beta_0+\beta_1 x_1+\beta_2 x_2+.....+\beta_K x_K)}}$$

and

b) Hypotheses and significance tests of the coefficients

Formally, the null hypothesis is as follows:

H_0 : $a_1 = a_2 = \cdots = a_k = 0$

This is a global evaluation assessment of the regression. Indeed, if the null hypothesis is accepted, it would mean that none of the explanatory variables contribute to the explanation of the dependent variable. The model can be rejected.

H1: at least one of the coefficients is non-zero.

The objective of significance tests is to determine the role of each of several or all, of explanatory variables.

We have two approaches to test the hypotheses:

Use the principle of the likelihood ratio. The approach is generic and consistent with the process of parameter estimation. It can detect better the alternative hypothesis when it is true. The disadvantage is that it is heavier in terms machine. Indeed, every hypothesis to evaluate gives rise to a new estimation of the parameters, so to a process of optimization. Certainly, software and computers today are very efficient, but when the databases processed are important, the calculations to be made will not be as significant as that. Use the asymptotic normality of estimators (maximum likelihood). We talk about Wald test. The main advantage is that the information that we want to use, are all-available when estimating the global mode, including all variables. The obtaining of the results is immediate. A disadvantage is that the Wald test is conservative; it tends to favor the null hypothesis.

c) The constitution of samples and variables determination

The choice of the sample posed us serious problems. Indeed, the implementation of logistic regression assumes the existence of two business groups « healthy » and « distressed ». The selection of the reference population leads to a choice between two alternatives:

- Constitute a sample the widest possible, which includes companies from different industries, size, geographical location and economic environments.
- Choose a reference population so as to guarantee the homogeneity of the sample, leave to limit its size.

In practice, and according to most studies [Beaver (1966), Altman (1968), Edmister (1972)], we adopted the option of a larger sample affecting several sectors. Our sample consists of 212Tunisian companies in the various sectors (which will be discussed below), (106 "healthy" companies and 106 "distressed" companies) over the period 2005-2010.

The "healthy" companies were selected from the Tunisian stock exchange and among statutory accountants. While "distressed" companies come from the office of assistance to companies in difficulty, which sits at the Ministry of Industry. The selection of firms in difficulty was based on the following criteria:

- Be suspension of payments for at least six months
- Have very serious social problems,
- Must be identified by statutory auditors, National Social Security Fund or fiscal institutions

From this basic sample, and referring to the approach of Platt and Platt, (1991); Altman et al, (1994); Bardos (1998a) and Varetto (1998), it was possible to set up two sub-samples:

- A first, called "Initial" sample consisting of 152 companies, 76 "healthy" and 76 "distressed". We'll take the last three years of the same companies to form three sub-samples we call "Initial one year prior to distress," "Initial two years before distress" and "Initial three years prior to distress." these sub-samples used to develop the model and to test its validity in time.
- A second sample, called "Control" sample, composed of 60 other companies, 30 "healthy" and 30 "distressed". From the last three years of these companies, we will establish three sub-samples that we call "control one year prior to distress," "Control two years prior to distress" and "Control three years prior to distress." These sub-samples are designed to test the validity of the model in space.

Companies belonging to both sample of "healthy" and the "distressed" companies are distributed between the different sectors as follows:

Table 1 : The distribution of the companies between the different sectors

Companies / Sectors	Healthy	Distressed
Textile , Clothing and Leather Industries	28	23
Food-processing industry	23	19
Various industries	19	19
Industries of Building materials, Ceramic and Glass	13	18
Mechanical engineering industries, Metallic, Metallurgical and Electric	11	13
Services (hotel)	8	9
Chemical industries	4	5
Total	106	106

In the absence of a theory of business distress, the choice of indicators is completely subjective. Indeed, it is based on experience and intuition of the one who develops the model. Generally, this choice often results from previous choices, this is to say the choice of all first authors of reference(Ramser and Foster, 1931 ; Fitzpatrick, 1932 ; Winakor and Smith, 1935 ; Merwin, 1942 ; Beaver, 1966 ; Altman, 1968 ; Deakin, 1972 ; Edmister, 1972 ; Blum, 1974 ; Altman and al, 1977 ; Taffler, 1983).

The number of ratios that can be included in a financial analysis is extremely high. To avoid making an excessively statistical treatment, we limited ourselves to ratios calculated on the basis of different valuesrelative

to the same year and concerningthe Fundamental and classic aspects of the financial analysis: liquidity, funding, debt, profitability, balance sheet structure and financing costs.

Moreover, for each category, we selected three or four ratios, in order to avoid a high number of ratios for the study to be carried out and thus avoid the redundancy phenomenon. But on the other hand the number of ratios should not be too small for all aspects of business situation are covered.. Despite these limitations, we were finally brought to retain only 87 ratios shown in Appendix 1.

The assignment of a ratio to one or to the other categories can be discussed. Indeed, among selected ratios some are composite in nature and thus reflect, at the same time, several aspects of corporate behavior to be taken into account in the interpretation. This classification has only for objective the convenience of the presentation and the analysis of the results.

III. Estimation of the Model Parameters

From the three subsamples which we called "Initial one year prior to distress," "Initial two years before distress" and "Initial three years before distress," each consist of the same 152 firms (76 "distressed" and 76 "healthy") but for different years (each sample is interested in the same year for all companies), and a set of 87 ratios (Appendix 1), we will try to formulate a logistic model, estimate its coefficients, calculate the probability of default in posteriori and develop a decision rule.

To perform the estimation, we used the "SPSS" software.

In a first step, it was assumed a model with 87 explanatory variables. The estimated model has provided us with results rather critical because the error rate is 50%:

Table 2 : Classification Table [a,b]

			Predicted		
			Y		
	Observed		0	1	Percentage Correct
Step 0	Y	0	0	76	,0
		1	0	76	100,0
	OverallPercentage				50,0

Constant is included in the model.

The cut value is ,500

Such an error rate is explained by the importance of correlations between the explanatory variables: collinearity problem, correlation matrix and variance-covariance. Thing that leads us to take great care in selecting all ratios. Indeed, the number of ratios should not be too high for the study to be performed (Rose and Giroux (1984) identified more than 130 different ratios). Also, the phenomenon of redundancy between ratios must be avoided: from the analysis of the correlation matrix, we observed a strong correlation between some explanatory variables; there is a great redundancy (the same information is provided by several ratios).

To solve this problem of collinearity, we opted for the "Feedward" method. It consists in introducing into the model, each time, the most correlated explanatory variable with the dependent variable until the matrix becomes not inversible. During this operation, we must be careful and retain only the independent variables that are significant at the 5% and can improve the $\overline{R^2}$ and we will ensure that all aspects of the situation of the company are covered.

Once this is done, based on 87ratios initially taken, we are left with only 12ratios, which will constitute the explanatory variables of the model to be estimated.

The estimate by the logit model gives the following results:

Table 3 : Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	R_5	14,088	15960,342	,000***	1	,999	1312882,320	,000	.
	R_6	-131,311	43256,749	,000***	1	,998	,000	,000	.
	R_7	-272,144	40875,140	,000***	1	,995	,000	,000	.

R_{15}	10,482	20133,088	,000***	1	1,000	35663,913	,000	.
R_{19}	-23,350	13228,722	,000***	1	,999	,000	,000	.
R_{26}	66,129	15652,150	,000***	1	,997	5,243E28	,000	.
R_{28}	178,682	40767,715	,000***	1	,997	3,988E77	,000	.
R_{33}	-13,401	6809,594	,000***	1	,998	,000	,000	.
R_{40}	87,654	29863,406	,000***	1	,998	1,169E38	,000	.
R_{61}	-,502	319,246	,000***	1	,999	,606	,000	3,348E271
R_{74}	-15,515	25788,736	,000***	1	1,000	,000	,000	.
R_{79}	52,925	14977,442	,000***	1	,997	9,663E22	,000	.
Constant	126,426	38236,323	,000***	1	,997	8,052E54		

a. Variable(s) entered on step 1: R5, R6, R7, R15, R19, R26, R28, R33, R40, R61, R74, R79.

A careful analysis of the Wald test shows that all the variables used by the model are significant at a rate of 5 %.

The last twelve ratios represent the explanatory variables in our final model:

$$Z = 14{,}057\ R_5 - 131{,}311\ R_6 - 272{,}144\ R_7 + 10{,}482\ R_{15} - 23{,}350\ R_{19} + 66{,}129\ R_{26} + 178{,}682\ R_{28} - 13{,}401\ R_{33} + 87{,}654\ R_{40} - 0{,}501\ R_{61} - 15{,}515\ R_{74} + 52{,}925\ R_{79} + 126{,}426$$

R_5 = Cash and cash equivalents / current liabilities
This is the quick ratio (ratio of immediate liquidity), which determines the proportion of current liabilities covered by cash and equivalents of liquidity.
R_6 = Permanent Capital / Total Balance Sheet
This is a ratio that measures the creditworthiness (solvency) of the company reporting the means of stable funding to total assets.
R_7 = Current assets / Total assets
This ratio represents the degree of liquidity; it defines the importance of current assets relative to total real assets.
R_{15} = Equity / Total Assets
This ratio, called the ratio of financial autonomy is particularly studied by bankers because their equity represents a guarantee. Indeed, in case of liquidation of the company, share holders will be last served in case of the sale of assets. If the assets are insufficient to cover liabilities, the loss will thus be imputed on stockholders' equity before being on other debts.
R_{19} = Short-Term Debt / Total Liabilities. It measures the share of short-term debt of the company in all of its liabilities. It is an indicator of the debt structure.
R_{26} = Amortization of Capital Assets / Gross Fixed Assets. This ratio is often used as an indicator of the degree of aging equipment
R_{28} = Working Capital / Total Assets. This ratio expresses the degree of liquidity of the firm. Indeed, he reports the excess of current assets after providing for short-term debt relative to total assets.
R_{33} = current assets (excluding stocks) / current liabilities. The ratio of reduced liquidity is a more restrictive measure of the liquidity of a company than the current ratio. It indicates the portion of current liabilities covered by current assets excluding stocks.
R_{40} = current assets (excluding stock) / Total assets. This ratio is an indicator of the liquidity of the company; it expresses the proportion represented by trade receivables, investments and other current assets, liquidity and cash equivalents to total assets.
R_{61} = Medium and long-term debt / Cash flow
It is a debt ratio, it gives us information on the proportion that debt in the medium and long terms represents over resources generated by the activity of the company in terms of cash. This cash allows the firm to invest and continue its development.
R_{74} = Net Income / Total liabilities
It is a profitability ratio that expresses the proportion of net income for each currency of liabilities invested in the company.
R_{79} = Total Liabilities / Total Assets
This overall solvency ratio must be significantly less than one. Indeed, if its value is equal to ½, this means that the company has a significant debt capacity because in case of liquidation, for example, the value of its assets can be used to repay twice all its commitments.

In the equation used by logistic regression forecasting, we notice the presence of several ratios that have been selected as explanatory variables in previous studies.

Table 4 : the presence of several explanatory ratios in previous studies

Ratio	Authors
R_6	Conan & Holder (1979) ; Holder & al (1984)

R_7	Deakin (1972) ; Taffler (1982) ; Holder & al (1984)
R_{15}	Le crédit commercial de France (1995)]
R_{19}	Beaver (1966) ; Plat & Plat (1991)
R_{26}	Altman & al (1974) ; le modèle du C.E.S.A. (1974)
R_{33}	Deakin (1972) ; Edmister (1972) ; Houghton (1984) ; Burgstahler & al (1989) ; Michalopoulas & al (1993)
R_{40}	Conan & Holder (1979)]
R_{61}	Conan & Holder (1979) ; Bardos (1984)
R_{79}	Deakin (1972) ; Rose & Giroux (1984) ; Burgstahler & al (1989) ; Michalopoulas & al (1993) ; Altman & al (1994)

The overall significance test used in the logistic regression is the chi-square with k degrees of freedom (k is the number of explanatory variables in our case k = 12). If the critical probability is less than the significance level that one is fixed, we can consider that the model is globally significant. In our model the statistical likelihood ratio (chi-square) is equal to 210.717; the critical probability associated is zero. The model is generally very significant, there is indeed a relationship between the explanatory variables and the variable to be explained.

Table 5 : Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	210,717	12	,000
	Block	210,717	12	,000
	Model	210,717	12	,000

Similarly decrease in value - 2 logliklihood from one stage to another also indicates the same result, that the introduction of new variables improves the model. In our case, this value down from 210.717 to zero.

Table 6 : Itération History[a,b,c]

Itération		-2 Log likelihood	Coefficients
			Constant
Step 0	1	210,717	,000

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 210,717

c. Estimation terminated at iteration number 1 because parameter estimates changed by less than ,001.

Table 7 : Model Summary

Step	-2 Log likelihood	Cox &Snell R Square	Nagelkerke R Square
	,000[a]	,750	1,000

a. Estimation terminated at iteration number 20 because maximum iterations has been reached.

Cox & Snell R Square and Nagelkerke R Square tests help to determinate the percentage of the binary dependent variable that is explained by the explanatory variables retained confirmed the significativity of our model. Indeed, the Nagelkerke R Square test is an adjusted version of the Cox & Snell R Square one and therefore closer to reality. So, for our model, we notice that 100% of the variation in the dichotomous variable could be explained by the explanatory variables used and retained.

Once the overall significance of the model used is demonstrated, it remains to be seen whether the explanatory variables are significant. The Wald test in the logistic regression (see table above) demonstrates that, the twelve explanatory variables, retained in our model, are significant at 5 %.

The Hosmer and Lemeshow test divided into deciles based on predicted probabilities, then computes a chi-square from observed and expected frequencies. The value p = 100% here is calculated from the chi-square distribution with 6 degrees of freedom, it indicates that the logistic model used is excellent.

Table 8 : Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	,000	6	1,000

After checking the overall significance of the model and the significance of the explanatory variables, our job is now to verify the performance and stability of the logit model retained both in time, by applying it to the initial samples a year, two and three years prior to distress and in space using control samples a year, two years and three years before distress (Appendix 3-1, 3-2, 3-3, 3-4 and 3-5).

IV. Estimation and Validation of the Discriminatory Power of the Model in Time and Space

a) Estimation of the model discriminatory power one year before distress

The estimation of the logit model on the original sample, one year prior distress, shows that in the "healthy" firms group, the model classifies all "healthy" firms in their original group correctly.

In the distressed companies group, that interests us the most, we find no firm misclassified, so the model classifies successfully both companies "healthy" as "distressed" (Appendix 1 and Appendix 3-1). As far as the error Type I cost is much higher than that of an error type II [about 1 to 20 in Altman and al (1977)], then it seems more appropriate to judge the quality of the model on the base of the correct percentages of classification, in general, and of the error type I rate that it induces, in a particular way. These results "appear" as a whole interesting because they have the advantage of providing a combination of ratios based on which one can make a diagnostic of the company.

We say "appear interesting" because we should not judge the model before testing the performance over time (testing the model on the same companies but for different periods of time, two years and three before distress) and in space (testing the model on a control sample consisting of companies other than those in the sample of origin).

b) Validation of the model discriminatory power over time

i. *For the same companies two years before distress*

The validation of model on exercises that come two years before distress gives the results in Appendix 1 and Appendix 3-2.

In the « healthy » companies group, we find that the model correctly classifies all « healthy » firms in their original group. In the « distressed » firms group, there are five firms misclassified, so the firms are considered as "healthy" when they are actually distressed. The model retains thus its discriminatory power, since the percentage of correct classification varies by only 0.66% from 100% to 99.34%, the error type I increases from 0 to 1.32%, while the error type II remains zero.

ii. *For the same companies three years before distress*

We will proceed in the same way as before, the same firms but for three years before distress, we get the results presented in Appendix 1 and Appendix 3-3. In the group of « failed » firms, we find that the model classifies four firms in the group of « healthy » one, while they are « distressed » which produces an error type I of about 5.26%. In the group of « healthy » companies, all companies are correctly classified and we have a percentage of error Type II equal to zero.

The forecasting ability of selected ratios, showed a satisfactory stability over time, since the overall error rate only increased from 0% to 3.29% % over the last three years preceding the distress, particularly some stability is noted for the classification of « healthy » companies .The following table will present a summary of changes in correct percentages of classifications and in errors of type I and II in time.

Table 9 : Results of estimation in the time

	1 year before distress	2 years before distress	3 years before distress
% of correct classification	100 %	99. 34 %	96.71 %
% of classement error	0 %	0. 66 %	3.29 %
% of error type I	0 %	1. 32 %	6.58 %
% of error type II	0 %	0 %	0 %

Indeed, we notice that for the model used, the percentage of the error Type I varied only by 6.58% between the first and third years before distress. Furthermore, we find that the correct percentage of classification decreased only by 3.29% (it goes from 100% to 96.71%).

For our model, the most interesting element, in addition to its high correct percentage of classification, it

is the weakness of the error Type I whose cost is higher. Concerning the error type II, we see that it remains zero.

c) Validation of the model discriminatory power in space

To test the discriminatory power of the model in space, we use a control sample consisting of two new groups. The first contains the distressed firms while the second contains "healthy" companies, each lists 30 firms. The model will be tested on companies other than those that were originated. The application of our Logit model on these samples gives us the estimates presented in Appendix 2 and Appendix 3-1.

In the « healthy » companies group, we find that the model classifies two firms in the « distressed » group when they are « healthy ». In the « distressed » group, there are also misclassified firms so they are considered by the model « healthy » when they are actually distressed.

This model has a remarkable accuracy by classifying 95% of the control sample correctly. The error Type I is around 10% while the error type II is zero.
Studying companies' exercises of control sample in case of two years before distress, we get the results announced at Appendix 2 and Appendix 3-4.

In the « healthy » companies group, we find that the model classifies all firms correctly so we conclude an error type II equal to zero. While in the group of distressed companies, there is a single firm misclassified, giving us an error Type I of about 3.33%.
The increase of the efficiency of the Logit function, in this validation test (it passed from 5% to 98.33%), is due to the fact that the two samples of distressed firms (the initial sample and the control one) are randomly selected from a pool of 106failed firms. Moreover, as the samples are both small, the distributions of firms by size and industry differ considerably and this affects the efficiency of the function.

If we further increase the time period between the prediction date and the advent of distress, using the same control sample but for three years before distress, we obtain the results reported in Appendix 2 and Appendix 3-5

In the « healthy » companies group, all firms are correctly classified. But, in the « distressed » firms group, there are two misclassified companies so they are considered as "healthy" when they are actually distressed.
If we summarize, we get the following table:

Table 10 : Results of estimation in the time and space

	Initial sample			Control sample		
	1year	2 years	3 years	1year	2 years	3 years
% of correct classification	100%	99,34 %	96,71 %	95 %	98,33 %	96,67 %
% of classement error	0%	0,66 %	3,29 %	5 %	1,67 %	3,33 %
Error type I	0%	1,32 %	6,58 %	10 %	3,33%	6,67 %
Error type II	0%	0 %	0 %	0 %	0 %	0 %

We notice that the percentage of correct classification, in the initial sample, varies from 100% to 96.71% (a change of 3.29%). It is a result that remains well above those achieved by Ohlson (1980) and Olson et al (2012). Note that Ohlson was the pioneer in the use of logistic regression in the prediction of business distresss. For the control sample that percentage increased from 95% to 96.67%, a negative variation of 1.67%. Overall, the results provided by our model outperforms those presented by Wilcox (1973), Zavgren (1985), Flagg and al (1991), Barniv and Mcdonald (1992), Back and al (1996), Charalambous and al (2000), Charitou and al (2004), Wu and al (2007), Ahn and al (2011), Tserng and al (2011), Serrano-cenca and al (2013) and Wang and al (2014) (Appendix 4 et 5).

V. The Determinant Power of Variables

The basic equation of the model is:

$$Z = 14{,}057\ R_5 - 131{,}311\ R_6 - 272{,}144\ R_7 + 10{,}482\ R_{15} - 23{,}350\ R_{19} + 66{,}129\ R_{26} + 178{,}682\ R_{28} - 13{,}401\ R_{33} + 87{,}654\ R_{40} - 0{,}501\ R_{61} - 15{,}515\ R_{74} + 52{,}925\ R_{79} + 126{,}426$$

Our objective now is to classify each ratio according to its degree of participation in the discriminatory power of the model to deduce the most determinant ones.

The observation of the coefficients of the previous equation does not allow us to evaluate the contribution of each ratio. To do this, we made an adjustment by multiplying the coefficients of these variables by their standard deviation, in order to transform them into a scalar vector. Indeed, since the variance matrix is as follows:

Table 11 : The variance of selected ratios

Ratio	Variance
R_5	0,08

R_6	0,63
R_7	0,07
R_{15}	0,647
R_{19}	0,071
R_{26}	0,059
R_{28}	0,645
R_{33}	0,608
R_{40}	0,059
R_{61}	137,076
R_{74}	0,135
R_{79}	0,692

The contribution of the j variable $j = |b_j\sigma_j|$ *with*

bj : Ratio weighting coefficient of R_j *in the function LOGIT*

σj *:standard deviation of ratio* R_j *for all companies of initial sample.*

Table 12 : The contribution of the selected variables

	Coefficients b_j	standard deviation σ_j	Scalar vector $\lvert b_j\sigma_j \rvert$	classification
R_5	14,088	0,282842712	3,984688133	12
R_6	-131,311	0,793725393	-104,2248751	2
R_7	-272,144	0,264575131	-72,00253448	3
R_{15}	10,482	0,804363102	8,431334036	8
R_{19}	-23,35	0,266458252	-6,221800182	9
R_{26}	66,129	0,242899156	16,06267829	6
R_{28}	178,682	0,80311892	143,5028949	1
R_{33}	-13,401	0,779743548	-10,44934328	7
R_{40}	87,654	0,242899156	21,29108262	5
R_{61}	-0,502	11,70794602	-5,877388902	10
R_{74}	-15,515	0,367423461	-5,700575004	11
R_{79}	52,925	0,831865374	44,0264749	4

From this table, we can conclude that the three most significant variables of distress risk in the model are: R28, R06and R07.

Thus, we see that the liquidity and solvency have more weight in predicting the distress than profitability and management. This is logical and consistent with reality since the filing of corporate balance sheets is never caused by the deficits, but rather a cash flow problem that is manifested by the inability of the company to meet its obligations or an insolvency problem.

VI. Conclusion

Both on the original sample as the control sample, the results provided by the method used are very efficient either in terms of correct percentage of classification or in terms of discriminative power stability over time and space.

The ratios selected and used in the model can cover all aspects of the company: its solvency, its degree of liquidity, financial independence sees its financial structure, the level of payment of its debts, and the degree of ageing its equipment.

Despite the relevance of the results obtained by logistic regression, the presence of several predicting methods allows us a wider choice and therefore more satisfaction and confidence.

Indeed, if the application of models for the same company, gives us the same result (different models apply the same classification) then the creditor or financial analyst make its decision with more confidence. If instead the models give contradictory results, then the decision maker is forced to push more research on this company.

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Appendix 1: Ratios used in the study

R1= Financial expenses / Operating income
R2= Cash-flow / Turnoverexcluding taxes
R3= Cash-flow / Total debt
R4= Cash-flow / Equity
R5 = Cash and cash equivalents/ Current liabilities
R6= Permanent capital/ Total Balance Sheet
R7= Current assets / Total Assets
R8= Financial expenses / Turnover
R9= Personnel costs / Added value
R10= Operating income / Added value
R11= Total debt / Equity
R12= Working Capital /Turnover
R13= Added value / Fixed assets
R14= Financial expenses/ Added value
R15= Equity /Total Assets
R16= Working Capital / Cash-flow
R17= Cash and cash equivalents/ Short-term debt
R18= Stocks / Total Assets
R19= Short-term debt / Total Liabilities
R20= Turnovers / Equity
R21= Total Debts/ Total Liabilities
R22= Equity / Permanent equity
R23= Permanent equity / Net fixed assets
R24= Equity / Net fixed assets
R25= Current assets / Current liabilities
R26= Amortization of Capital Assets / Gross Fixed Assets
R27= Added value / Actifs non courants
R28= Working Capital / Total Assets
R29= Added value / Total Assets
R30= Turnover / Total Assets

R31= Cash-Flow / Short-term debt
R32= Short-term debt / Equity
R33= Current assets (excluding stocks)/ Current liabilities
R34= Added value / Turnovers
R35 = Staff costs / Trade accounts payable
R36 = Current assets t – Current assets t-1 / Current assets t-1
R37 = Non-current assetst – Non-current assetst-1 / Non-current assetst-1
R38 = Current assets (excluding stocks) / Turnover
R39 = Current assets (excluding stocks) / Current bank accounts
R40 = Current assets (excluding stocks) / Total Assets
R41 = Current assets (excluding stocks) / Current assets
R42 = Current assets / Turnover
R43 = EBIT(Earnings Before Interest and Taxes) (/ Total Assets
R44 = EBIT / Turnover
R45 = EBIT / Financial expenses
R46 = Net operating result / Equity
R47 = Net operating result / Turnover
R48 = Net operating result / Total Assets
R49 = Working capital requirements / Working capital
R50 = Cash Flow / Total Liabilities
R51 = Cash-Flow / Turnoverexcluding taxes
R52 = Cash-Flow / Non-current liabilities
R53 = Cash Flow / Total Assets
R54 = Staff costs / Gross operating incomes
R55 = Turnover t – Turnover t-1 / Turnover t-1
R56 = Turnover t-1 / Total Assets t-1
R57 = Purchase cost of materials consumed (or purchase cost of production sold) / Average stock material or production
R58 = Receivables/ Total Assets
R59 = Receivables + Stocks / Suppliers
R60 = Non-current liabilities/ Equity
R61 = Medium and long-term debt / Cash flow
R62 = Customer credits Duration
R63 = Credits suppliersDuration
R64 = Gross operating incomes/ Turnover
R65 = Gross operating incomes/ Total Assets
R66 = Gross operating incomes/ Added value
R67 = Working Capital/ Added value
R68 = Non-current liabilities / Non-current assets
R69 = Reserves / Total Assets
R70 = Pre-tax income/ Current liabilities
R71 = Gross operating incomes / Total Assets
R72 = Net Income / Equity
R73 = Net Income / Turnover

R74 = Net Income / Total Liabilities
R75 = Inventory turnover
R76 = Working capital requirements turnover
R77 = Stocks / Total Assets
R78 = Size[Ln (total assets)]
R79 = Total Liabilities / Total Assets
R80 = Growth rate of real assets = (Total Assets t – Total Assets t-1) / Total Assets t-1
R81 = Growth rate of Equity – Growth rate of assets
R82 = Added value t – Added value t-1 / Added value t-1
R83 = Added value / Total Liabilities
R84 = Net fixed assets / Total Assets
R85 = Working Capital/ Cash-flow
R86 = 1 if net income is negative for the past two years, zero otherwise
R87 = 1 iftotal liabilitiesexceedtotal assets, zerootherwise

Appendix 2 : Estimates of initial samples

		Correctly classified	Misclassified	Total
One year before distress	Healthy	76 (100 %)	0 (0 %)	76 (100 %)
	Distressed	76 (100 %)	0 (0 %)	76 (100 %)
	Total	152 (100 %)	0 (0 %)	152 (100 %)
		Correctly classified	Misclassified	Total
Two years before distress	Healthy	76 (100 %)	0 (0 %)	76 (100 %)
	Distressed	75 (98. 68 %)	1 (1. 32 %)	76 (100 %)
	Total	151(99. 34 %)	1 (0.66) %	152 (100%)
		Correctly classified	Misclassified	Total
Three years before distress	Healthy	76 (100 %)	0 (0 %)	76 (100 %)
	Distressed	71(93.42 %)	5 (6.58 %)	76 (100 %)
	Total	147 (96.71 %)	5 (3.29 %)	152 (100 %)

Appendix 3 : Estimates of control samples

		Correctly classified	Misclassified	Total
One year before distress	Healthy	30 (100 %)	0 (0 %)	30 (100 %)
	Distressed	27 (90 %)	3 (10 %)	30 (100 %)
	Total	57 (95 %)	3 (5 %)	60 (100 %)
		Correctly classified	Misclassified	Total
Two years before distress	Healthy	30 (100 %)	0 (0 %)	30 (100 %)
	Distressed	29 (96.67 %)	1 (3.33 %)	30 (100 %)

	Total	59 (98.33 %)	1 (1.67 %)	60 (100 %)
Three years before distress		Correctly classified	Misclassified	Total
	Healthy	30 (100 %)	0 (0 %)	30 (100 %)
	Distressed	28 (93.33 %)	2 (6.67 %)	30 (100 %)
	Total	58 (96.67 %)	2 (3.33 %)	60 (100 %)

Appendix 3-1 : Estimates of initial and control samples one year before distress :

Classification table[c]

Observations			Predicted					
			Selected observations[a]			Excluded observations[b]		
			Y		Percentage correct	Y		Percentage correct
			0	1		0	1	
Etape 1	Y	0	76	0	100,0	30	0	100,0
		1	0	76	100,0	3	27	90,0
		Pourcentage global			100,0			95,0

a. Selected observations Partition EQ 1
b. Excluded observations Partition NE 1
c. The cut value is ,500

Appendix 3-2 :Estimates of initial sample two years before distress :

Classificationtable[c]

Observations			Predicted					
			Selected observations[a]			Excluded observations[b]		
			Y		Percentage correct	Y		Percentage correct
			0	1		0	1	
Etape 1	Y	0	76	0	100,0	76	0	100,0
		1	0	76	100,0	1	75	98,7
		Pourcentage global			100,0			99,3

a. Selected observations Partition EQ 1
b. Excluded observations Partition NE 1
c. The cut value is ,500

Appendix 3-3 :Estimates of initial sample three years before distress :

Classification table[c]

Observations			Predicted					
			Selected observations[a]			Excluded observations[b]		
			Y		Percentage correct	Y		Percentage correct
			0	1		0	1	
Etape 1	Y	0	76	0	100,0	76	0	100,0
		1	0	76	100,0	5	71	93,4
		Pourcentage global			100,0			96,7

Classification table

Observations			Predicted					
			Selected observations[a]			Excluded observations[b]		
			Y		Percentage correct	Y		Percentage correct
			0	1		0	1	
Etape 1	Y	0	76	0	100,0	76	0	100,0
		1	0	76	100,0	5	71	93,4
		Pourcentage global			100,0			96,7

a. Selected observations Partition EQ 1
b. Excluded observations Partition NE 1
c. The cut value is ,500

Appendix 3-4:Estimates of control sample two years before distress:

Classification table[c]

Observations			Predicted					
			Selected observations[a]			Excluded observations[b]		
			Y		Percentage correct	Y		Percentage correct
			0	1		0	1	
Etape 1	Y	0	76	0	100,0	30	0	100,0
		1	0	76	100,0	1	29	96,7
		Pourcentage global			100,0			98,3

a. Selected observations Partition EQ 1
b. Excluded observations Partition NE 1
c. The cut value is ,500

Appendix 3-5:Estimates of control sample three years before distress:

Classification table[c]

Observations			Predicted					
			Selected observations[a]			Excluded observations[b]		
			Y		Percentage correct	Y		Percentage correct
			0	1		0	1	
Etape 1	Y	0	76	0	100,0	30	0	100,0
		1	0	76	100,0	2	28	93,3
		Pourcentage global			100,0			96,7

a. Selected observations Partition EQ 1
b. Excluded observations Partition NE 1
c. The cut value is ,500

Appendix 4 :

Authors	Year	Method	Percentage of correct classification		
			One year	Two years	Three years
Ahn & al	2011	LOGIT	89,47%		
Aziz & al	1988	LOGIT	91,8%	84,7%	78,6%
Back & al	1996	LOGIT	96,49%	71,6%	74,3%
Barniv & Hershbarger	1990	LOGIT	91,1%	85,7%	

Barniv& MCdonald	1992	LOGIT	83,7%	80%	71,9%
Boyacioglu & al	2009	LOGIT	81,81%		
Charalambous & al	2000	LOGIT	82,3%	74,5%	69,8%
Charitou & al	2004	LOGIT	80,95%	73,81%	72,92%
Dimitras & al	1999	LOGIT	90%	82,5%	78,75%
Min & Lee	2005	LOGIT	79,31%		
Kira & al	1997	LOGIT	95,5%		
Laitinen & Laitinen	1998	LOGIT	86,6%	68,3%	
Laitinen & Laitinen	2001	LOGIT	74,7%	65,3%	
Lau	1987	LOGIT	80%	79%	85%
Min & al	2006	LOGIT	78,13%		
Nam & Jinn	2000	LOGIT	84,4%	76,1%	76,1%
Ohlson	1980	LOGIT	82,84%	86%	
Olson & al	2012	LOGIT	79,8%		
Serrano-canca & al	2013	LOGIT	95,36%		
Tserng & al	2011	LOGIT	73,61%		
Wang & al	2014	LOGIT	73,9%		
Wilcox	1973	LOGIT	94%	90%	88%
Wu & al	2007	LOGIT	92,05%	89,78%	80,68%
Zavgren	1985	LOGIT	96%	96%	96%
Chen & al	2006	LOGIT	84,68%		

Appendix 5 :

Authors	Year	Method	Percentage of correct classification					
			Distressed			Healthy		
			1 year	2 years	3 years	1 year	2 years	3 years
Aziz& al	1988	LOGIT	85,7%	85,7%	79,6%	98%	83 ,7%	77,6%
Back& al	1996	LOGIT	86,49%	72,97%	83,78%	86,49%	70,27%	64,86%
Barniv& Hershbarger	1990	LOGIT	89,3%	89,3%		89,3%	85,7%	
Barniv& MCdonald	1992	LOGIT	80%	75,4%	61,1%	87,1%	84,2%	81,2%
Dimitras & al	1999	LOGIT	92,5%	77,5%	77,5%	87,5%	87,5%	80%
Dwyer	1992	LOGIT	90%	97%	80%	62%	57%	43%
Flagg& al	1991	LOGIT	73%			97%		
Globos & Grammatikos	1988	LOGIT	66,7%	60,9%	50%	85,7%	82,6%	78,6%
Jiang	1993	LOGIT	76%	78%	84%	82%	71%	74%
Laitinen & Laitinen	1998	LOGIT	87,8%	65,9%		85,4%	61,7%	
Laitinen & Laitinen	2000	LOGIT	74,1%	61,2%		75,3%	69,4%	
Mahmood & Lawrence	1987	LOGIT	52,4%	45,2%	31%	92,7%	94,7%	91,7%
Martin	1977	LOGIT	91,3%	83,3%	92,3%	91,1%	90,3%	87,4%
Mossman & al	1998	LOGIT	80%			70%		
Ohlson	1980	LOGIT	87,6%			82,6%		
Peel	1987	LOGIT	67%	75%	92%	79%	83%	88%
Philipe Du Jardin	2007	LOGIT	89,56%			90,44%		90%
Platt & Platt	1991	LOGIT	85%			88%		
Suominen	1988	LOGIT	71%	57%	33%	86%	84%	89%
Tam & Kiang	1992	LOGIT	68%	85%		95%	100%	

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Assessment of Influencing Strategiesused by Moroccan Stock Exchange Companies

By Amine Elharti & Bouchra Elabbadi
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Summary - This paper, highlights the specificities of influencing strategies used by Moroccan companies listed in Casablanca Stock Exchange. It attempts to evaluate their impact in terms of stockholders' value creation. In fact, this document shed the light on the findings of a study of 232 influencing actions used by 31 listed companies.

After a thorough analysis leading to identify 5 different categories of lobbying behaviors, we proceed with an event study to determine the most efficient lobbying strategies.

Keywords: lobbying strategies, value creation, event studies, abnormal returns, cluster analysis.

GJMBR - C Classification : JEL Code: H54

Strictly as per the compliance and regulations of:

Assessment of Influencing Strategiesused by Moroccan Stock Exchange Companies

Amine Elharti [α] & Bouchra Elabbadi [σ]

Summary- This paper, highlights the specificities of influencing strategies used by Moroccan companies listed in Casablanca Stock Exchange. It attempts to evaluate their impact in terms of stockholders' value creation. In fact, this document shed the light on the findings of a study of 232 influencing actions used by 31 listed companies.

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Keywords: lobbying strategies, value creation, event studies, abnormal returns, cluster analysis.

I. Introduction

Actions of influence are essential to the proper functioning of financial markets: they facilitate the allocation of resources which contribute in some way, to the adjustment of the positions of operators. In recent years they have become increasingly important to the point now of being an integral part of the strategies in major trading companies. Shown by actions of influence or by corporate lobbying, this activity is to conduct interventions designed to perform manoeuvres on the financial market to obtain, alter or oppose a decision.

In Morocco, the disaffection of investors, both domestic and foreign, generated an unprecedented decline in the stock market. As well as, falling stock indices in Casablanca, what concerns most professionals instead, is the anaemic level of trade recorded by the market within the last five years. This deterioration of liquidity generated in 2013 downgraded Morocco from being classed as an "emerging country" to a "border country" in the Morgan Stanley Capital International Emerging Market -MSCI EM[1]

Therefore, Moroccan trading companies must provide more managerial effort in communication strategies and towards the influence of contributors in order to regain their confidence and thus restore the dynamism previously experienced before this period. In this way, the strong will of companies controlling the stock market push winning strategies by actions of influence to respond against operations of environmental destabilization.

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[1] The MSCI EM measures the performance of equity markets in emerging countries whose eligibility criterion is based on three variables: capitalization, float capitalization and liquidity.

This study, is based on an analysis of the informative content of the actions of influence exercised by Moroccan companies listed between 2010 and 2013, and aims to measure the efficiency of such practices in terms of value creation.

II. Influential Strategies Through Literature

While it is common to speak of lobbying in the US since the mid-eighties, the adoption of this terminology is not in our opinion a mere fad. Replacing the traditional terminology of financial communication has more to do with the idea of legal obligation, especially for trading companies; the influence of communication defends a different logic.

Considered a subjective construction of reality, the influence is a strategic process designed to increase awareness of the company's performance, promote its image, share strategic perspectives and express its values with investors and other stakeholders in order to maintain with them long-term relationships.

III. The Theoretical Foundations of Influential Practices

The practice of influence appears as an object of research on the border of several disciplines:

a) Political theories

Approached in terms of theories of interest groups, the analysis of influence activities presents a real interest to the analysis of decision making. The different contributions in this area provide insights essential for the understanding of the practice as a way of defending the interests of companies. However, these theories do not address, or very rarely, issues relating to the purpose of economic and strategic actions of lobbying.

b) Economical theories

According to the treaties noted in the theory of the «resource dependence» (Pfeffer and Salancik, 1978), the influence allows the company to control vital resources necessary for its existence and to reduce uncertainty associated with it and therefore as a result give the procurer «guaranteed income» and thus increase its profits. For this part, the theory at play offers another interpretation, more hegemonic, it focuses on the analysis of the relationships between the players and

the rationality of the driving influence. However, the advanced explanations given by such a mathematical model seem too simplistic to convey the process of influence, the complexity of the players and multiplicity and simultaneity of rationalities implemented.

c) Managerial theories

Contemporary models of strategic management perceive the influence as a key instrument for the sustainability of business. In the competitive analysis of Porter, for example, activities of influence appear to be a key factor of success. From another point of view, the theories of the firm including the property rights and information asymmetry emphasis more on analyzing the relationship of the firm with its environment. Thus, the introduction of the concept of "stakeholder" or "shareholder" has led to the emergence of a different kind of relationship between companies and environmental stakeholders namely: the relationship of influence.

IV. The Challenges of Corporate Lobbying

This is to evoke in turn the financial issues, strategic and marketing actions of influence.

a) Financial issues

From a strictly financial point, the major issue of the action of influence is to reduce the asymmetric information that resides between the leaders and all stakeholders, including investors, financial intermediaries and prescribers. The influence process involves the dissemination of relevant, reliable, instant, financial as well as non-financial, that would contribute to the efficiency of financial markets[2]. The practice of influence wouldreduce the priceof volatility and increase liquidity. So it decreases the prime risk demanded by capital providers, and therefore lowers the cost of capital and further develops the expected cash flows further.

b) The strategic challenges

The share of influence goes beyond the financial logic and participates in the strategic development of the company, in the sense that it integrates, distributes and reveals the principles, rules, norms and values which constantly guide the company and define its image with various stakeholders .Integrated in the overall strategy of the company, this practice has the main function of legitimizing the action of the leaders of the firm by informing, educating or persuading the various external actors. This creates a sense of strategic credibility outside the company through the dissemination of reliable information, accurate and precise. The companies' leaders must also use messages reflecting on the one hand, their ability to control or change the environment and secondly, control over the organization.

c) Marketing issues

Through a good approach of influence, leaders seek to develop and retain their shareholdings by deploying ways to change in their direction, the conditions of the exchange between their trading companies and shareholders .The process akin well for marketing actions.

The shareholder marketing is a set of actions planned in the form of requests for a permanent savings available to convert demand for securities in favor of the company in order to realize a capital gain and / or return for its investors. This new dimension seeks to develop a long-term relationship with its shareholders for their loyalty.

V. The Legitimacy of the Evaluation of Actions of Influence

Like any strategic action, the practice of influence is conducted according to objective. Therefore, it must be evaluated to an end. But this postulate of performance measurement remains difficult to apply in reality. Indeed, apart from some quantitative studies (De Figueiredo and Tiller, 2001 and Madina Rival, 2002), the action of lobbying has been the subject of several descriptive studies and that are rather focused on certain aspects (political, collective action ...). In addition, there is little research on the assessment of economic, financial and policy of such a practice.

Despite this complexity, the evaluation of the strategies of influence is considered essential for two interests: the action of influence is an expensive activity in terms of resources, in addition, its losses are uncertain and therefore it is too risky.

a) The influence seen as a cost center

An overview of the relative literature on the action of influence of corperations, allows us to identify three types of lobbying costs which are:

i. *Operating expenses*

They are usually related to the costs of the factors used by the company for the conduct of lobbying. They result from the aggregation of various expenses borne by the company include: cost of the day before, consultant fees, costs of lobbying media.

ii. *Transaction costs*

They cover dealing costs, acquisition and transmission of information found in the activities of influence in companies.

iii. *Hidden costs*

You can sum upin the three sources of cost:

[2] Lev**B,** *"Information Disclosure Strategy",California Management Review*, 1992

a. The cost of opportunity

It refers to the unrealized loss due to the allocation of resources to the function of lobbying over other profit centers.

b. The cost of misunderstanding or distortion

It affects three main aspects: the incompetence of the author of the action of influence and targets the disagreement with the interests of the issuer.

c. Costs against influences

These are responses that can be exercised by competitors of the company or any other markets, reduce neutralizing the effect desired by the action of influence.

a) The influence as a performance vector

From the above we can see that lobbying profits are not clear and have otherwise been very volatile. However, the important contribution of lobbying practitionershas allowed rare research on the subject which has highlighted the strategic nature of the action of influence. From this, if done well, could provide lobbying companies with a competitive advantage as a source of value creation3 4.

This original analysis lays the foundation of the debate of the profitability of lobbying that is evaluated by its ability to deliver value to the lobbying companies. Thus, it is possible to estimate the efficiency of the action of influence through the following formula:

$$VCL = G_{AC} - C$$

Avec :

- VCL :Value created by lobbying
- G_{AC} : Gains generated from the benifit (s) competitive(s) obtained (s) following the action of influence
- C :The various costs incurred by the company due to the conduct of lobbying (economic costs, transaction costs, agency costs).

This reasoning leads us to question themethods of earnings valuation that are generated by the action of influence and therefore on how to approach its ability to create value for the lobbying firms.

In what follows, we are particularly interested in the analysis and evaluation of lobbying strategies of public trading Moroccan companies.

VI. Analyses of Specifications of Actions of Influence within Moroccan Trading Companies

Based on the foregoing assumptions, the measure of the relevance of the action of lobbying proves to be of great difficulty. Therefore, our study was inspired by similar research about the evaluation of some aspects of lobbying in other countries [4][5]. It is therefore of transposed tools adopted by this work toa Moroccan context. Thus we are particularly interested in the analysis of corporate lobbying practices that the company performs towards its financial environment.

Our work then seeks to examine the response of the Moroccan stock market towards the actions of influence exercised by trading companies and, ultimately, to explain the benefits of such a practice in training over the renown lobbying firms and thus the wealth of its shareholders.

Given the purpose of this study, a qualitative or quantitative approach alone is not sufficient. For this, a choice to combine the two approaches to retain a hybrid approach, I proceeded to highlight the different practices of influence by our example companies by sequential approach was taken. First, with a qualitative their ranking and ultimately lead to obtain some idea of the behavior of studied lobbying companies. Secondly, we tried through assessing the impact of the event of actions of lobbying identified by corporate performance and bring out the best practices contributing to the creation of value. This step reviews a quantitative perspective.

The choice of the companies studied took place in two stages:

- Firstly, the study focused only on companies introduced before 2010; the addition of the recently introduced on the stock market could bias our assessment of the creation of shareholder value, as they could still be due to underestimation or on assessment in trading. ---Also, we eliminated from our field of study values for which the actions of influence are non-existent or rare (less than 6 shares) over the period of the study.

VII. The Practice of Lobbying Amoungst Moroccan Trading Companies

In Morocco, the practice of lobbying is not popular among the majority of Moroccan companies. However, large companies have, over the past decade made undeniable efforts in this area. Current practices

[4]A renown example of the research from MADINA RIVAL in the case of political actions of the French and British companies

[3]RAPPAPORT A., "*Creating shareholder value, the new standards for business performance"*, Free Press, New York, 1986.

indicate, in fact, a tendency to go more and more to meet investors, trying to seduce and guide their decision to act in their favor. Although Moroccan lobbying companies always act in response to the vagaries of their environment, some break the rule of silence and prefer to play the game; that of direct confrontation with the market.

This new trend of lobbying in Moroccan trading companies in particular, has fueled our thinking to measure the efficiency of such practices to create value for lobbying firms.

a) The data selection

Research of actions of influence by firms in our examples over the period of this study has led us to search the archives of two major journals in Morocco: The ECONOMIST and LIFE-ECO. The choice of a data source is motivated by two reasons. On the one hand because of the lack of pre-established database of the actions of influence of Moroccan companies, on the other hand, the subject of confidentiality of lobbying companies prevents us from applying directly to these companies through interviews and questionnaires.

Thus, our empirical study involved 31 Moroccan companies listed in Casablanca stock exchange for which we collected 760 shares of influence over the period 2010 to 2013. A thorough recount was needed to identify the relevant actions to be adopted in our analysis. Finally, 232 actions are judged to be sufficiently appropriate to our research subject.

VIII. Evaluation of the Actions of Influence by the Event Studies Method

Originally intended to test the theory of efficient financial markets, the event also used to verify the immediate reaction, studies of markets following the announcement or completion of a particular event that may affect the activity and / or performance of a company. The choice of this method has its justification in the inability of current techniques mostly long term, whereas on the horizon, several other phenomena can intervene and bias our analysis of the contribution of actions of influence to the creation of value.

The technique involves the analysis of abnormal returns[5] and cumulative abnormal returns during the period surrounding the event. This analysis is important in that it allows to conclude on the relevance of the information content of the newly disclosed ads and therefore to identify the factors determining the stock investor behavior. Given the novelty of the application of event studies of the actions of influence, special focus was taken in the implementation of the method.

a) Implementation of the the method

The application of event studies of the actions of influence requires us to determine a period of observation rather spread out to contain all the possible reactions, but at the same time it must be reduced in order to avoid the incorporation of other interfering events. Thus, and like the majority of research in this area, we selected an initial 10-day window [J-4, J + 5].However, in some cases, market data were sought on a wider window [J-6, J + 7] due to the presence of weekends and holidays.

In addition, to the range of methods for calculating theoretical yields[6] (Rit), we retained our case to the market model that we consider more accurate and easy in implementation.

Furthermore, to reinforce the validity of our results, our previous examples underwent further adjustments which aims to make it more suitable to our research aim, and also to achieve the implementation of event studies under the correct conditions. To this end, we excluded shares for companies who have not posted a listing of days during the period of the event. This restriction is intended to ensure some consistency in the calculation of abnormal returns.

Ultimately, in the 232 actions of lobbying identified between the years 2010 and 2013, only 117 have been retained shares, or 51% of the sample.

b) The results of the evaluation: the impact of actions of influence by the creation of stock value

Initially, we plan through the implementation of the technique of event studies to demonstrate the impact of lobbying on the creation of value. Secondly, we are interested in identifying one of the five practices observed in the cluster analysis, those having more input on the wealth created by lobbying companies.

a. For the sample as a whole

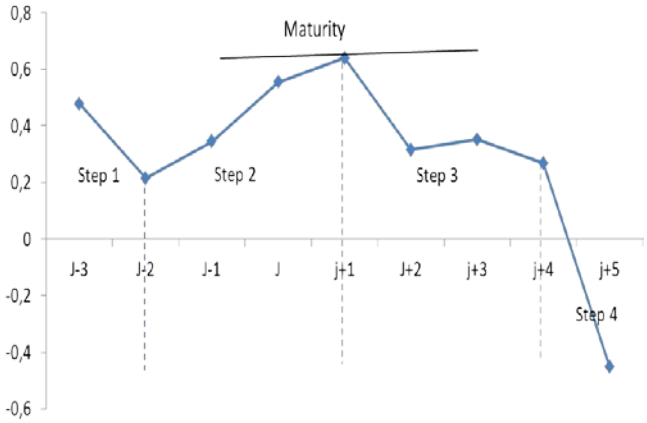
The table below shows that daily abnormal returns are significantly different from zero entirety (except for the date of j-2). However, this finding is not the same for the entire period of the event. Indeed, we see, value creation mainly around the event date [J-1; J + 3].

[5] The abnormal return is the excess return relative to a level considered normal calculated using various models

[6] We quote indicative model adjusted returns by the average, the model of the market index and Capital Asset Equilibrium Model

Graphique 1 : Evolution des rendements anormaux moyens pour l'échantillon

Jour	RAM	T- Student	RAMC	T-Student
J-3	0,4782	0,010	0,4782	0,010
J-2	0,2151	0,202	0,6930	0,005
J-1	0,3443	0,047	1,0375	0,002
J	0,5535	0,003	1,5915	0,000
J+1	0,6395	0,001	2,2306	0,000
J+2	0,3159	0,062	2,5468	0,000
J+3	0,3516	0,014	2,8981	0,000
J+4	0,2674	0,072	3,1659	0,000
J+5	-0,4511	0,003	2,7150	0,000

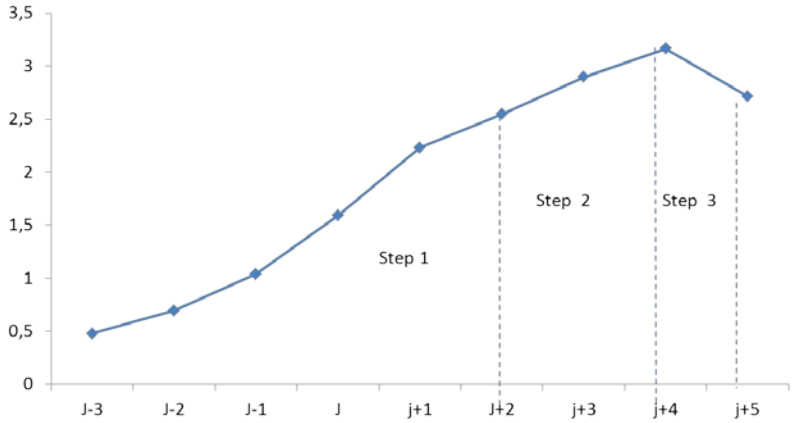


In general, the announcement of a action of influence generates abnormal returns of sizeable magnitude (up to 64 points on D + 1). Thus, the lobbying practice would be perceived by the market as a strategic element of great importance but the effect is very limited in time (the impact of the announcement fades in D + 5). Furthermore, the action of influence is often anticipated by investors, it helps unlock value even before its official publication.

The results obtained from the calculations of average cumulative abnormal returns RAMC confirms our previous assumption. The reproduction of the data from the second part of the previous table on a curve clearly shows exceptional growth of abnormal returns following the announcement of the actions of influence. This curve traces three phases of evolution of the RAMC which are:

- A first step with accelerated upward pace starting three days before the official publication of the event and ending on the day after its announcement.
- The second phase ([D + 2; J + 4]) less agitated experiencing a slowdown in the effect of the announcement of lobbying, but it still allows to generate more returns than the market.

Graphique 2 : Evolution of the average cumulative abnormal returns of the total sample



- Finally, from the 3rd day after the announcement, the effect of the action influence dissipates due to the loss of opportunity offered by the new information. Thus, the title finds its price equilibrium.

IX. Conclusion

From the results of our study let us assume, first, that the action of influence of Moroccan companies could be considered in some cases to be a strategic replica to obtain a competitive advantage in the financial market, and secondly, a financial marketing campaign to retain existing and attract potential investors.

The signal theory is one of the most developed in literature to explain the interest of the lobbying action towards companies in their financial environment. Indeed, in the case of information asymmetry between shareholders and managers, they have an interest to intervene with the opinion leaders to restore investor confidence. In this context, the lobbying instrument has chosen to send a signal to the insurance market.

Behavioural finance also brings a very relevant part of the answer to the impact of lobbying on the

share price. Proponents of this approach (behavioural finance) suggest that the explanation for the formation of asset prices following the advent of strategic information is based on cognitive biases. Thus, in the financial market, we can identify two groups of investors according to their degree of rationality. One group, termed 'news-watchers "are based on the fundamentals of the company for the formulation of their expectations. The second "momentum traders" refer to the recent price developments in the formation of their portfolios. The first group of investors tend to under-react to the transmitted information, while the input of the second group, the "momentum traders' exploit the initial feedback, generates an over-reaction of the price.

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The Effect of Credit Risk on the Banking Profitability: A Case on Bangladesh

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The Effect of Credit Risk on the Banking Profitability: A Case on Bangladesh

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Abstract- The study aims to find the effect of credit risk on profitability of the banking sectors of Bangladesh. The study uses an unbalanced panel data and 172 observations from 18 private commercial banks from 2003 to 2013. The study uses NPLGL, LLRGL, LLRNPL and CAR as credit risk indicators and ROAA and ROAE and NIM as profitability indicators. Using OLS random effect model, GLS and system GMM the study finds a robust negative and significant effect of NPLGL, LLRGL on all profitability indicators. The analysis also finds a negative and significant effect of CAR on ROAE. As an additional analysis, the results reveal that the effect of the implementation of Basel II is significantly positive on NIM but significantly negative on ROAE. The analysis reveals some significant policy implications for increasing profitability and protecting banks from crisis.

I. Introduction

The role of commercial banks is alike blood arteries of human body in developing economies as it accounts for more than 90 percent of their financial assets (ADB, 2013) due to less borrowers' access to capital market (Felix Ayadi *et al.,* 2008). Therefore, efficient intermediation of commercial banks is vital for developing economies in order to achieve high economic growth, while insolvency of them leads to economic crisis. However, intermediation function of commercial banks gives rise to different types of risks with different magnitudes and level of causes on bank performance such as credit risk, liquidity risk, market risk, operational risk etc (Van Gestel & Baesens, 2008). Among the others Credit risk is found most important type of banking risk (Abu Hussain & Al-Ajmi, 2012; Khalid & Amjad, 2012; A. Perera *et al.,* 2014). As it accounts for 84.9 percent of total risk elements of a bank (Bangladesh Bank, 2014) and more than 80 percent of Balance sheet items are also exposed to it (Van Greuning & Bratanovic, 2009).

On the other hand, some recent studies (Chaplinska, 2012; Gropp *et al.,* 2010; Mileris, 2012; Romanova, 2012); GAO, 2013) reveal that excessive credit expansion, poor lending quality and inappropriate credit risk management are the main reasons of recent global financial crisis. The problem starts in the application stage and increases in the approval, monitoring and controlling stage if credit risk management guideline is weak or incomplete (Richard *et al.* 2008). Recognizing the effect of credit risk and providing an extensive approach for managing this risk, the Basel Committee on Banking Supervision adopted the Basel I Accord in 1988, followed by the Basel II Accord in 2004 and in recently the Basel III accord by experiencing the loopholes of previous accords to deal credit risk during financial crisis (Jayadev, 2013; Ouamar, 2013).

Banking system of Bangladesh consists of 56 banks of which 4 state owned commercial banks, 4 development financial institutions, 39 private commercial banks and 9 foreign commercial banks with 8685 branches across the country. Here, banking plays a vibrant role for ensuring sustainable economic growth with continuously six percent plus gross domestic product in last decade by expanding its network to rural Bangladesh. Liberalization and globalization in the banking industry brought advancement in technical adoption, quality and quantity in banking operations in the country in recent years. Following the adoption of Basel accords and core risk management guidelines of Bangladesh Bank[1], banking industry of Bangladesh could avoid the effect of global financial crisis during 2007-2009. But, dependency of bank borrowing of the country has increased from 2010 due to capital market shock in recent years. As a consequence, aggregate nonperforming loan ratio[2] of banks has increased from 6.1 percent in 2011 to 13.2 percent in third quarter of 2013 and the ratio of bad loan to classified loan has also increased from 66.7 percent in 2012 to 78.7 percent in 2013 (Bangladesh Bank, 2013). This is the indication of degradation of lending quality and increase of the credit risk in the banking sector of Bangladesh which may adversely affect the profitability of the banks.

One of the most pioneer paper in banking profitability, Haslem (1968) identifies that bank management, time, location and size influence on bank's profitability. It remains a great interest among the researchers to investigate the effect of credit risk on

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[1] Central bank of Bangladesh
[2] Percentage of Nonperforming loan to gross loan is considered as a proxy of credit risk.

profitability. For example, Berger (1995) surprisingly finds a strong positive relationship between capital adequacy ratio and profitability of US banks during 1980s however, he considered the relationship should be negative under certain situations. In another study Kosmidou *et al.* (2005) also find finds the similar result for UK commercial banks during 2000-2005.

Moreover, many studies also devote to investigate the relationship. Hosna *et al.* (2009) find a positive relationship between credit risk and profitability on four commercial banks in Sweden during 2000 to 2008. However, in another study Kithinji (2010) investigates the impact on profitability of credit risk on the Kenyan commercial banks but finds a neutral effect of credit risk on profitability. In addition, Kolapo *et al.* (2012) also find a negative relationship between credit risk and the profitability on 5 Nigerian commercial banks over 2000-2010. In another study, Ruziqa (2013) investigates the joint effect of credit risk and liquidity risk on the profitability of large banks of Indonesia and finds negative effect of credit risk and positive effect of liquidity risk on the profitability. The extent of research does not reach at any conclusive evidence regarding the effect of credit risk on profitability of the banks. Furthermore, most of the researches cover US, Europe and African countries and no study is found in the context of Bangladesh to the best of the knowledge of the researchers which reinforce us to investigate the effect of credit risk on profitability considering Bangladesh. Moreover, it has been a regulatory requirements among the banks in Bangladesh to imply with Basel II accords since January, 2010 (Shahabuddin *et al.,* 2013); but it remains undiscovered whether implementation of Basel II has brought any influence on profitability which also need to be identified for regulatory policy reform. Therefore, in order to fulfill the literature gap the study warrants achieving two objectives which are the effect of credit risk on profitability and the effect of the implementation of Basel II on the profitability of the banking sector of Bangladesh.

II. Methodology of the Study

a) Selection of variables and data

This study uses financial ratios for determining the effect of credit risk on profitability. The use of ratio in measuring credit risk and profitability performance is common in the literatures of finance and accounting practices which is evident from the previous studies such as among the others Athanasoglou *et al.* (2008); Francis (2013); Heffernan and Fu (2008); S. Perera *et al.* (2013). The greatest advantage for using ratio for measuring banks' performance is that it compensates bank disparities created by bank size (Samad, 2004). The study has considered the seven financial ratios of which four proxy credit risk and three proxy profitability of the banks which are explained below:

The previous study uses different proxies for measuring credit risk or lending decision quality of the banks such as (Berger & DeYoung, 1997; Kolapo *et al.*, 2012; Rajan & Dhal, 2003; Samad, 2004) use the ratio of nonperforming loan to gross loan (NPLGL) as credit risk indicators. It measures the percentage of gross loans that are non performing or doubtful in banks' loan portfolio. It is considered as one of the most important indicator of credit risk and loan quality the bank. Lower the ratio is the indication of better asset quality and lower doubtful loan, therefore, lower credit risk. Another extent of literatures such as Boahene *et al.* (2012); Kolapo *et al.* (2012); Samad (2004) use loan loss reserve ratio (LLRGL) as credit risk indicator. This ratio measures the percentage of gross loan which has been set side but not yet charged off. Historically higher the ratio is the indication of week loan portfolio management quality and high credit risk. Loan loss reserve to non performing loan ratio (LLRNPL) also uses as a measure of banks asset quality and prudent credit risk management which is evident from the findings of Boahene *et al.* (2012); Kolapo *et al.* (2012); Samad (2004). It measures the percentage of the reserve held against the non performing loan or impaired loan. Higher the ratio is the indication of the better asset management quality and low credit risk. Capital adequacy ratio (CAR) is recommended by Basel accord Basel (1998) for judging asset quality and prudent credit risk management. It is the ratio of total capital to risk adjusted assets of the bank. The higher the ratio is the indication of adequacy the bank's capital and better assets quality, therefore, low credit risk.

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

indicator of a bank's financial performance and managerial efficiency. It shows how competent the management is in using shareholders' equity for generating net profit. In addition, Chortareas *et al.* (2012); Heffernan and Fu (2008); Lee *et al.* (2014); Nguyen (2012) consider Net Interest Margin (NIM) as the indicator of profitability of the bank which is the ratio of the net interest to the amount of the earning assets. Higher the ratio is the indication of the better assets management quality for using the assets in profitable way.

b) Model Specification

In order to determine the effect of credit risk on profitability of the commercial banks in Bangladesh we use the following basic panel linear regression model:

$$Y_{it} = c + \sum \beta_i X_{it} + \alpha_i \text{Basel II}_{it} + \varepsilon_{it} \text{----------} \quad (1)$$

Where subscript i indicates individual bank and t indicates time period. The dependent variable Y indicates profitability of the banks. We consider three profit proxies based on the aforementioned literature review which are ROAA, ROAE and NIM. Moreover, the explanatory variable X is used for indicating credit risk where we also consider four proxies for credit risk which are NPLGL, LLRGL, LLRNPL and CAR based on identified previous literatures. We use a dummy variable with 1 for the years after the implementation of Basel II and 0 for the years before the implementation of Basel II accord in Bangladesh banking sector. In addition, c is constant, β and α are coefficient of the regressors. Finally, ε is the disturbance or error term, which expresses the effect of all other variables except for the independent variables on the dependent variable that we use in the function.

The ordinary least square (OLS) is primarily used in the study for identifying the relationship due to the advantage of yielding the best fit of coefficient for the future prediction provided that all the assumptions are met (Molyneux *et al.*, 2013). Panel data involves two models which are OLS fixed effect and random effect. Where, Fixed effect model is used to control omitted variables that differ between cases but are constant over time and random effect is used where some omitted variables may be constant over time but vary between cases, others may be fixed between cases but vary over time. Hausman test is used in order to determine whether to use fixed effect or random effect in our analysis. However, Most important econometric concerns in analyzing banking data are dynamic nature of bank competition and endogeneity of some exogenous variables (Liu *et al.*, 2014; Schaeck & Cihák, 2014). Therefore, in order to handle the potential endogenity of explanatory variable we also use System GMM (Generalized Methods of Moments) as it considers econometric concerns for unobserved bank level heterogeneity, potential endogeneity and autoregressiveness in the data on the behavior of dependent variables (Cubillas & Suárez, 2013). We particularly use a two-step GMM system and specify the robust estimator of the variance–covariance matrix which is an alternative of GMM proposed by Arellano and Bond (1991) and developed by Arellano and Bond (1991) and modified by Blundell and Bond (2000). We further use Generalized Least Square (GLS) for diagnostic checking of autoregressiveness and homogeneity of the data.

c) Data

In order to investigate the effect of credit risk on profitability of the commercial banks in Bangladesh we have collected the bank specific data from Bankscope data base from the period of 2003 to 2013. There are 56 banks in Bangladesh out of which 4 are state owned commercial banks, 4 development bank, 39 are private commercial bank and 9 are foreign banks as we mentioned earlier. But our sample consists of only 18 private commercial banks and can not consider other banks due to high missing value and unavailability of relevant data. Therefore, our study represents only commercial banks of Bangladesh.

We use econometric software package stata for processing our results.

III. Analysis and Findings

a) Descriptive Statistics

Table 1 presents the descriptive statistics of the variables. The table reports four credit risk indicator which are the ratio of NPL to gross loan, ratio of LLR to gross loan, ratio of LLR to NPL and capital adequacy ratio and three profitability ratios which are net interest margin, return on average assets and return on average equity.

Table 1 : Shows the descriptive statistics of the variables indicating profitability and credit risk

Variable	Observation	Mean	Std. Dev.	Min	Max
NPLGL	159	4.63	4.67	0.15	25.55
LLRGL	151	3.06	1.84	0.77	12.44
LLRNPL	139	90.11	91.26	2.19	866.35
CAR	163	11.41	1.99	6.78	21

NIM	163	3.56	1.28	0.23	7.88
ROAA	172	1.48	0.96	-4.85	6.06
ROAE	172	19.28	17.73	-176.08	50.61

It is likely that every commercial bank in Bangladesh follows strictly the regulations of central bank regarding different statutory issues. However, high standard deviation of the credit risk indicators indicates the credit risk management quality differs among the banks.

The nonperforming loan ratio among the private commercial banks in Bangladesh is varied from 0.15 percent to 25.55 percent with the mean and standard deviation 4.63 and 4.67 respectively which indicates the there is a high volatility among the banks' ability in credit risk management. There is also high variation among the banks in loan loss reserve ratios which is evident from high standard deviation of the ratio of loan loss reserve to nonperforming loan which is 91.26 percent. The minimum capital adequacy ratio is 6.78 percent with is lower than regulatory requirement of 10 percent which is the evidence of the noncompliance of a few banks regarding Basel II requirements.

The mean of ROAA, ROAE and NIM are 1.48, 19.28 and 3.56 which indicates banks are competing among them for making profit however their standard deviations evident that their profit making capacity is divergent from each other.

To ensure the unbiased result it is needed to look at the correlation coefficient of independent variables to see whether there is any multicolinearity between two independent variables. If there is a multicolinearity between the independent variables, the result will be biased. Table 2 reports Pearson correlations for the different credit risk indicators to depict multicolinearity.

Table 2 : presents Pearson correlation coefficient matrix of the credit risk indicators

	NPLGL	LLRGL	LLRNPL	CAR
NPLGL	1			
LLRGL	0.6911*	1		
LLRNPL	-0.34*	-0.15	1	
CAR	-0.18*	-0.14	0.09	1

**indicate the coefficient is significant at 5%. The variables indicates Credit risk indicators where NPLGL stands for nonperforming loan ratio, LLRGL stands for ratio of loan loss reserve to gross loan, LLRNPL stands for the ratio of loan loss reserve to nonperforming loan and CAR stands for capital adequacy ratio.*

The above table presents that the independent variables are not highly correlated as their correlation coefficient are less than 0.7.

As we discussed earlier we primarily use OLS model for investigating the effect of credit risk on the profitability of the commercial banks in Bangladesh. To identify to use between OLS fixed effect and random effect we run Hausman test with the null hypothesis of error terms are uncorrelated with regressors. From the Hausman test statistics 2.58 with P-value 0.7639 we cannot reject the null hypothesis, therefore we decided to use OLS random effect. We have also used system GMM in order to handle the presence of endogeneity of the banking variables as concerned by the earlier literatures. Besides, we further use, GLS for robustness of the result.

Table 3 : OSL, GLS and System GMM output showing the effect of credit risk on profitability of the commercial banks in Bangladesh

Model	OSL-Random effect			GLS			One step GMM System		
Dep. Variables	ROAA	ROAE	NIM	ROAA	ROAE	NIM	ROAA	ROAE	NIM
Constant	1.73 (.43)***	35.81 (5.13)***	3.11 (.65)***	1.48 (.41)***	36.11 (4.99)***	2.98 (.66)***	1.49 (.31)***	36.45 (3.80)***	2.98 (.44)***
NPLGL	-.05 (.02)**	-.54 (.24)**	-.12 (.03)***	-.04 (.02)**	-.49 (.23)**	-.10 (.03)***	-.04 (.01)***	-.49 (.17)***	-.10 (.02)***
LLRGL	-.10 (.05)	-1.25 (.59)**	-.02 (.07)	-.11 (.05)**	-1.23 (.55)**	-.02 (.07)	-.11 (.03)***	-1.24 (.412)***	-.02 (.05)
LLRNPL	.001 (.001)	.004 (.01)	-.01 (.001)**	.001 (.001)	.005 (.01)	-.00 (.001)***	.00 (.00)	.00 (.01)	-.003 (.001)***

			*						
CAR	.01 (.03)	-.75 (.40)**	.09 (.05)*	.04 (.03)	-.77 (.39)**	.08 (.05)*	.04 (.02)	-.78 (.30)***	.08 (.03)**
Dummy Basel II	.10 (.11)	-3.85 (1.37)**	1.03 (.18)***	.08 (.12)	-4.33 (1.44)***	1.01 (.20)***	.08 (.09)	-4.35 (1.09)***	1.01 (.13)***
R^2	0.22	0.21	0.36						
Wald chi2(5)	39.08***	34.72***	96.69***	39.51***	34.92***	68.13***	69.28***	60.86***	165.36 ***
Observations	134	134	129	134	134	129	134	134	129
Panel				Homoskadistic	Homoskadistic	Homoskadistic			
Correlation				No autocorrelation	No autocorrelation	No autocorrelation			
Instrument							132	132	127
AR(1)							-1.97 ***	-2.23***	-2.03 ***
AR(2)							-1.12	-1.45	-0.91
Sargan test							142.98 ***	142.21 ***	166.95 ***

*The values in the table indicate the coefficient of the variables and the values within parenthesis indicate standard error of the estimates. Moreover, *, ** and *** indicate significant of the coefficient value at 10%,5% and 1% respectively. we identified earlier we have considered non performing loan ratio (NPLGL), Loan loss reserve ratio based on gross loan and nonperforming loan (LLRGL) and (LLRNPL) and capital adequacy ratio (CAR) as credit risk indicators and return on assets average assets (ROAA), return on average equity (ROAE) and net interest margin ratio (NIM) as profitability ratio for investigating the effect of credit risk on the profitability of the commercial banks in Bangladesh. Furthermore, we use a dummy variable indicating the implementation of Basel II accord.*

Table 3 reports that Wald test statistics is significant at 1 percent level at all models indicating the goodness of fit. GLS outputs show that the results are free from serial correlation and heteroscadisticity problem. GMM outputs also indicate the goodness of fit of the models which is evident from the lower instruments than observations, significance of AR(1) and Sargan test statistics and insignificance of AR(2) statistics.

As expected relationship between nonperforming loan ratio and profitability is found negative and significant in every models indicating that high non performing loan reduces the profitability and sound credit risk management is a precondition for ensuring the profitability of the banks. The results further show that one unit rise in non performing loan decreases return on average assets by 0.05 unit, return on average equity by 0.54 unit and net interest margin by 0.12 units respectively keeping other regressor constant which is consistent with Kolapo *et al.* (2012) and Ruziqa (2013). Therefore, improving the profitability indicators sound credit risk management is essential. The result is robust in all other specifications with GLS and GMM.

The effect of loan loss reserve to gross loan on profitability also negative as we find in the earlier literature such as (Kolapo *et al.*, 2012; Sufian, 2009) indicating that profitability will be reduced as banks use more profit as buffer against their loan loss. Therefore, prudential credit management also required for reducing loan loss in order to reduce reserve ratio and increase the profitability. The beta coefficients of the ratio of loan loss reserve to gross loan indicate that one unit increase in the ratio decreases return on average assets by 0.1 unit, return on average equity by 1.25 units and net interest margin by 0.02 unit keeping other explanatory variables constant. However, the effect of loan loss reserve to gross loan on return on average equity is significant but the effect is insignificant on other two indicators which is not unusual as supported by Kosmidou *et al.* (2005). The result is also robust is all other specifications with GLS and GMM.

The effect of the ratio of loan loss reserve to non performing loan on profitability is mixed. It effects on return on average assets and return on average equity positively but on net interest margin negatively and significantly. The results reveal that the effect of the ratio is very little indicating that one unit increase in the ratio increases return on average assets by 0.001 unit and return on average equity by 0.004 units but decreases net interest margin by -.01 unit keeping other explanatory variables constant. The results also found robust in alternative specification GLS and GMM.

Capital adequacy increases the strength of the bank which improves the solvency of the bank and capacity to absorb the loan loss and protect bank by run. The results show that capital adequacy ratio effects return on average assets and net interest margin positively following (Kosmidou *et al.*, 2005) but effects return on average equity negatively following Abiola and Olausi (2014); Choon *et al.* (2012). The result may indicate that the commercial banks in Bangladesh may

heavily depends on the equity capital as the source of funding but it can not use it profitably due to the lack of fund management quality which is evident from the fall of return on average equity by 0.75 unit with the rise of capital adequacy by one unit keeping the other explanatory variables constant. The result also found robust in both GLS and GMM estimations.

We also investigate the effect of Basel II implementation on the profitability of the commercial banks in Bangladesh. In order to test it we use a dummy variable with one for the years from which Basel II has been implemented in Bangladesh and zero for the years indicating the years preceding the implementation of Basel II. The result indicates that Basel accords effects return on average assets and net interest margin positively but on return on average equity negatively and significantly. The possible explanation could be that as per Basel accords all commercial bank needs to maintain minimum 10 percent of the equity as buffer as precaution for credit risk and other shocks, therefore their credit creation capability may hamper which might effect on the inversely on return on average equity. This result also robust in GSL and GMM specifications.

IV. Conclusion and Policy Implication

Credit creation is the prime operation of the banks, but, it expose to credit risk for the bank due to the failure of the borrowers to fulfill the commitment with the banks. Moreover, banks need identify and manage the credit risk prudently because it may affect profitability and lead a bank to the banking crisis and economy to systematic crisis. In order to strengthen banks ability to handle and manage credit risk, Basel committee on banking supervision initiated Basel accords. Our study aims to investigate the effect of credit risk on profitability and also the effect of Basel II implementation effect on profitability of the banks in Bangladesh. We use an unbalance panel data of 172 observations from 18 private commercial banks from the period of 2003 to 2013. We use NPLGL, LLRGL, LLRNPL and CAR as credit risk indicator and ROAA, ROAE and NIM as profitability indicators. In the investigation process we use OLS random effect model based on the result of Houseman test. We further use GLS and GMM for checking robustness of our result. The results are found free from multicolinearity, heteroscadisticity and autocorrelation. The results reveal a robust significant negative relationship between NPLGL and LLRGL and all profitability indicators of the commercial banks in Bangladesh. More specifically it is found that that one unit rise in NPLGL decreases ROAA by 0.05 unit, ROAE by 0.54 unit and NIM by 0.12 units respectively keeping other regressors constant and one unit increases LLRGL decreases ROAA by 0.1 unit, ROAE by 1.25 units and NIM by 0.02 unit keeping other explanatory variables constant. The results further reveal that the effect of LLRNPL and CAR on profitability is mixed which is found robust in all specifications. It is worth noted that the effect of LLRNPL on different profit proxies is very little in spite of found negative and significant on NIM and positive and insignificant on both ROAA and ROAE. The effect of CAR is found negative and significant on ROAE but positive and significant on NIM while it affects ROAA positively and insignificantly. The results further show that implementation of Basel II accord increases NIM of of the commercial bank significantly but reduce ROAE significantly in all specifications. The analysis finds that credit risk effects profitability of the commercial banks negatively. Therefore, banks need to use prudent credit risk management procedure in order to ensure profitability and safe the bank form loss and crisis.

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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.

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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.

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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.

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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.

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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.

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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.

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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.

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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

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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:

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- 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.

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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.

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- 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.
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- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

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

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

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
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- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
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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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