THE EFFECTS OF GLOBAL FINANCIAL CRISIS ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS OFFERING MORTGAGE FINANCE IN KENYA

Eunice Wambui Macharia

MBA Student, Jomo Kenyatta University of Agriculture and Technology


ABSTRACT

The global financial crisis which first showed signs in the United States of America (USA) is becoming contagious and is apparently affecting directly or indirectly, every economy on the globe. In order to increase their profitability, commercial banks in Kenya moved into housing and consumer lending, thus exposing themselves to the burst of the bubble in real estate markets or to the risk of a potential increase in the level of household indebtedness as a consequence of the current turmoil. This study sought to establish the effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya. The study also sought to determine the influence of inflation, interest rates, capital flow and foreign exchange rates on the financial performance of commercial banks offering mortgage finance in Kenya.

This study was carried out through a descriptive research design. The target population of this study therefore was 330. The sample size of this study was therefore 99 respondents. The study collected primary data which was largely quantitative, using semi-structured questionnaire. In addition the researcher used both descriptive and inferential statistics to analyze the data. In descriptive statistics, the researcher used frequencies, percentages, mean and standard deviation. In inferential statistics, the researcher used multivariate regression analysis to determine the relationship between variables (dependent and independent). This study established that capital flow as a result of global financial crisis was influencing financial performance of commercial banks offering mortgage finance in Kenya followed by foreign exchange rates, inflation and interest rates. This study recommends that financial institutions should avoid high level of debts. This study also recommends that financial institutions should ensure that their interest rates are well regulated so as to avoid poor financial performance.

Key Words: global financial crisis, financial performance, commercial banks, mortgage finance
Introduction

The global financial crisis began in the United States of America and the United Kingdom when the global credit market came to a standstill in 2007 (Avgouleas, 2008). The crisis, brewing for a while, really started to show its effects in the middle of 2008. Due to the upsurge in urbanization in Africa orchestrated by rural – urban migration, demand has intensified for housing finance services. The term financial crisis is applied broadly to a variety of situations in which some financial institutions or assets suddenly lose a large part of their value.

Mortgage finance is the provision of finance or capital for housing. Mortgage finance also means the capital required for construction of housing or the resources required to acquire or access housing project by household or the credit supplied by housing finance institutions against some collateral. (Dymski, 2007). In Kenya the institutions that lend money for real estate projects include: banks, mortgage firms, saving and loans firms, insurance companies, government parastatals, pension funds, trusts and other real investment institutions as noted by Lwali (2008). Unlike unsecured loan, mortgage finance is a secured loan whereby the mortgaged property acts as collateral by the customer as a pledge for security of the extended credit. (Copeland & Weston, 1995)

UN Habitat (1991) categorizes housing finance as governmental or parastatal housing banks, authorities or corporations who receive funds through forced taxation, payroll levies on all or some individuals or organization but may also allow individual or institutional deposits subject to approval from regulating authorities. Private housing banks are established by the private sector and their source of funds includes deposits, bonds and debentures, though they might have governmental and or external (international) funding as well. Mortgage finance providers may also include mutually owned organizations, societies and associations like building societies, savings and loans (S&L) associations, housing co-operatives which exist as a means of their members accumulating to access housing finance. According to the CBK (2009), East Africa Building Society (EABS) which graduated into a fully regulated bank in 2007 and Savings and Loans (S&L), a subsidiary of KCB, merged its operations with the main group in 2009. At the moment we have Housing Finance Company of Kenya (HFCK) as the only independent mortgage institution in Kenya.

Lwali (2008) notes that the demand for housing in Sub-Saharan Africa (SSA) has surpassed the supply. In an effort to meet this demand a few International Housing Finance Institutions (IHFI) have come into play. These include shelter afrique, overseas private investment corporation, East African Development Bank (EADB) and PTA bank among others. According to Mitchell (2005), there are 44 commercial banks in Kenya out of which 9 control 74% of the total assets in the sector. 10 mainstream commercial banks have ventured into the mortgage industry, the latest entrants being CFC Stanbic bank, Equity bank, Co-operative bank of Kenya, Family bank and K-Rep bank. The other forerunners include Barclays bank, Standard chartered bank, KCB through its (S&L) and I&M bank. The focus of this research will be the responses of commercial banks offering mortgage finance in Kenya to the challenges of global financial crisis.
According Kenya Financial Sector Stability Report (2010) inflation rose to historical high in 2011 compared with the situation 2010. The annual and overall inflation averaged 7.99 percent and 13.97 percent, respectively in 2011, compared to 5.6 percent and 3.9 percent, respectively, in 2010. Further, Kenya Shilling weakened against major world currencies in the year 2011. Against the US dollar, the shilling averaged 101.270 in October 2011 from 81.029 in January 2011. In order to increase their profitability, commercial banks in Kenya moved into housing and consumer lending, thus exposing themselves to the burst of the bubble in real estate markets or to the risk of a potential increase in the level of household indebtedness as a consequence of the current turmoil (Ng'ang’a, 2012). In Kenya, however, only about 5% of the banking system’s credit went to real estate (RE) over 1997-2008 with a declining trend, about 6% to private households (PH) with an increasing trend and 2% to consumer durables (CD) with an increasing trend. Building and construction (B&C) took an average 5% (Kilonzo, 2008).

According to the central bank of Kenya (CBK), Equity, a Kenyan bank announced that it was taking Ksh1 billion worth of losses on mortgage related securities and several days later, S&L , a mortgage affiliate of KCB bank unveiled Shs1.4 billion in losses with other banks following suit (Ng'ang’a, 2012). Local studies done on this field include Lwali (2008); the study looked at the challenges of international housing finance institution by considering a case study on Shelter Afrique. Kilonzo (2008) carried out a survey on credit risk management techniques on unsecured bank loans of commercial banks in Kenya for the period 2004 to 2007 and found out that market risk, credit risk, operational risk and event risk are the major risks prevalent in the banking industry nowadays. However, there was no known study that has been conducted on the effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya, knowledge gap. The general objective of this study was to establish the effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya. The study sought to:

i. To determine the effect of inflation as a result of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya.

ii. To establish the effect of interest rates on the financial performance of commercial banks offering mortgage finance in Kenya.

iii. To find out the effects of foreign exchange rates on the financial performance of commercial banks offering mortgage finance in Kenya.

iv. To establish the effect of capital flows on the financial performance of commercial banks offering mortgage finance in Kenya.

Theoretical Review

Structural Inflation Theory

About 40 years ago, the concept of structural inflation entered in economic discussion and research. It is related to the effect of structural factors on inflation. Structural analysis attempts to recognize how economic phenomena and finding the root of the permanent disease and
destruction such as inflation that evaluates lawful relationship between the phenomena. In the economic structural factor causes, supply increase related to demand-push, even if abundant unemployment production factor is impossible or slow. Avgouleas (2008) reasoning of less developed countries, till the time not successful to change in the form of lagging behind structure or not to make attempt for immediate self-economic growth or should compromise with the inflation that is very severe sometimes. This inflation giving the structural improvement, results as a cost in fact that is given for immediate economic growth. Structuralism, even the group that does not fine necessary for changing the present policy foundation for eradicating inflation, with the control of inflation through government intervention in the market structure and also, by adopting decisive plans for justly division of inflation pressure there is no opposition and in fact stress is done on these arrangement (Aglietta and Deusy, 1995)

Classical Theory of interest rate

According to the classical theory, interest, in real terms, is the reward for the productive use of capital, which is equal to the marginal productivity of physical capital. In a money economy, however, as physical capital is purchased with monetary funds, the rate of interest is taken to be the annual rate of return over money capital invested in physical capital assets (Keynes, 2001). According to Keynes (2001), true classical theory of interest rate is the savings investment theory. Basically, the theory holds the proposition based on the general equilibrium theory that the rate of interest is determined by the intersection of the demand for and supply of capital. Thus, an equilibrium rate of interest is determined at a point at which the demand for capital equals its supply.

Scapegoat Theory of exchange rate

The essence of the scapegoat theory of exchange rates is that some macroeconomic factors receive an unusually large weight and thus are made scapegoats of exchange rate movements. Such episodes can happen when investors do not know the true model of exchange rates or the true parameters of the model, and when some of the drivers of exchange rate fluctuations are unobservable (Bacchetta & Wincoop, 2009). In particular, the weight or scapegoat role of a macroeconomic variable is higher when both the role of the unobservable for currency movements is larger, and the macroeconomic fundamental shows large variation which is consistent with the observed movement in the exchange rate (Carter & Kohn, 2004).
Neoclassical theory of capital follow

The standard neoclassical theory predicts that capital should flow from rich to poor countries. Under the usual assumptions of countries producing the same goods with the same constant returns to scale production technology using capital and labor as factors of production, differences in income per capita reflect differences in capital per capita (Carlin and Mayer, 2003). Thus, if capital were allowed to flow freely, new investments would occur only in the poorer economy, and this would continue to be true until the return to investments were equalized in all the countries. However, in his now classic example, Calvo and Reinhart (2002) compares the U.S. and India in 1988 and demonstrates that, if the neoclassical model were true, the marginal product of capital in India should be about 58 times that of the U.S. In face of such return differentials, all capital should flow from the U.S. to India. In practice, we do not observe such flows.

Conceptual framework

This study will seek to establish the effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya. The independent variables in this study will be inflation, interest rates, capital flows and foreign exchange rates. The study will therefore seek to establish the influence of the independent variables on the dependent variable which will be financial performance of commercial banks offering mortgage finance.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>Financial performance of commercial banks offering mortgage finance</td>
</tr>
<tr>
<td>Interest rates</td>
<td></td>
</tr>
<tr>
<td>Capital flows</td>
<td></td>
</tr>
<tr>
<td>Foreign exchange rates</td>
<td></td>
</tr>
</tbody>
</table>
Research Methodology

This study was carried out through a descriptive research design. The target population of this study therefore was 330. In this study the sampling frame comprised of low level management, middle level management and top level management in the 10 commercial banks in Kenya offering mortgage finance. According to Mugenda & Mugenda a sample size of between 10 and 30 % is a good representation of the target population and hence the 30% is adequate for analysis. The sample size of this study was therefore be 99 respondents. This research relied on both primary data. The study collected primary data which was largely quantitative, using semi-structured questionnaire. The questionnaires were administered through drop and pick later method to the respondents. After collection, data was coded into the Statistical Package for Social Sciences (SPSS version 17) for analysis. In addition the researcher used both descriptive and inferential statistics to analyze the data. In descriptive statistics, the researcher used frequencies, percentages, mean and standard deviation. In inferential statistics, the researcher used multivariate regression analysis to determine the relationship between variables (dependent and independent). The study findings were presented by use of tables, bar charts and pie charts. The multivariate regression model was; \( Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \)

Results

The sample size of this study was 99 respondents who were working in the Low level management, Middle level management and Top level management. Out of this 77 responses were obtained which represents a 77.77% response rate. According to Babbie (2002) any response of 50% and above is adequate for analysis thus 77.77% is even better. A construct composite reliability co-efficient (Cronbach alpha) of 0.6 or above, for all the constructs, is considered adequate. The acceptable reliability coefficient is 0.6 and above, if the Cronbach alpha is below 0.6 the reliability of the questionnaire is considered too low and thus the research tool should be amended. The findings of the pilot test showed that ‘inflation’ scale had a Cronbach’s reliability alpha of 0.763, ‘interest rates’ scale had an Alpha value of 0.754, ‘foreign exchange rates’ had an Alpha value of 0.721 and ‘capital flow’ had a reliability value of 0.716. This implies that the pilot test showed that the scales measuring the objectives met the reliability criteria (\( \alpha > 0.6 \)). This therefore indicated that the research tool was sufficiently reliable and valid and needed no amendment.

Global Financial Crisis and Strategic Responses

According to the findings, the respondents indicated that the main causes of global financial crisis include depreciation, devaluation of currency; economic activities; excessive debt levels; government deregulation; credit default swaps and over leverage; poor governance; fluctuating exchange rates; high interest rates; increased inflation; international trade imbalances; real estate bubbles; asset liability mismatch; basic commodity prices; poor credit appraisal; overvaluation of
houses and properties; poor regulation of mortgages and lack of adequate capital holdings from banks and insurance to back up. From the findings, 53% of the respondents indicated that leverage led to global financial crisis, 37% indicated that asset liability mismatch leads to global financial crisis, 26% indicated that liberalization of financial institutions leads to global financial crisis and 15% indicated that globalization leads to global financial crisis. From these findings we can deduce that leverage leads to global financial crisis most followed by asset liability mismatch, liberalization and globalization.

Inflation and financial performance

The respondents were further requested to indicate the extent to which inflation as a result of global financial crisis affect the financial performance of bank. From the findings, 58.4% of the respondents indicated that inflation as a result of global financial crisis affect the financial performance of bank to a moderate extent, 29.9% indicated to a great extent, 10.4% indicated to a low extent and 1.3% indicated to no extent at all. From these findings we can deduce that inflation as a result of global financial crisis affect the financial performance of bank to a moderate extent. Dymski (2001) had earlier indicated that economic recession is a financial meltdown, which can last for a period of few months to couple of years and can affect regional or world economy, leading to financial crisis, market crash, unemployment and economic depression.

Aspects of interest rate and financial performance

The respondents were also asked to indicate the extent to which the stated aspects of interest rate affect the financial performance of commercial banks in Kenya. According to the findings, the respondents agreed with a mean 4.0649 and a standard deviation of 0.76670 that large inflows of foreign funds affects the financial performance of commercial banks in Kenya. The respondents also agreed with a mean of 3.8571 and a standard deviation of 0.83846 that easy credit affects the financial performance of commercial banks in Kenya. The respondents also agreed with a mean of 3.7662 and a standard deviation of 0.75909 that remittances affect the financial
performance of commercial banks in Kenya. In addition, the respondents agreed with a mean of 3.8182 and a standard deviation of 0.73855 that donor behavior and conditions affects the financial performance of commercial banks in Kenya. Lastly, the respondents agreed with a mean of 3.9610 and a standard deviation of 0.93811 that taxes affects the financial performance of commercial banks in Kenya. According to Daly (2008) taxes can be used for countercyclical intervention, but in practice they are a clumsy instrument for demand management. Changing the public sector’s net contribution to aggregate demand with the tax instrument requires either new taxes or altering tax rates.

Aspects of interest rate and financial performance

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large inflows of foreign funds</td>
<td>4.0649</td>
<td>.76670</td>
</tr>
<tr>
<td>Easy credit</td>
<td>3.8571</td>
<td>.83846</td>
</tr>
<tr>
<td>Remittances</td>
<td>3.7662</td>
<td>.75909</td>
</tr>
<tr>
<td>Donor behavior and conditions</td>
<td>3.8182</td>
<td>.73855</td>
</tr>
<tr>
<td>Taxes</td>
<td>3.9610</td>
<td>.93811</td>
</tr>
</tbody>
</table>

Aspects of foreign exchange rate and financial performance

The respondents were asked to indicate the extent to which the stated aspects of foreign exchange rate affect the financial performance of commercial banks in Kenya. From the findings, the respondents agreed with a mean of 4.3766 and a standard deviation of 0.82779 that USD influences the financial performance of commercial banks in Kenya. The respondents also indicated with a mean of 4.2208 and a standard deviation 0.92656 that political stability influences the financial performance of commercial banks in Kenya. The respondents also agreed with a mean of 4.0519 and a standard deviation of 0.72359 that term of trade influences the financial performance of commercial banks in Kenya. The respondents further agreed with a mean of 4.0130 and a standard deviation of 0.78629 that public debt influences the financial performance of commercial banks in Kenya. The respondents also agreed with a mean of 4.0000 and a standard deviation of 0.70711 that liquidity of financial markets influences the financial performance of commercial banks in Kenya. Further, the respondents indicated with a mean of 3.9351 and a standard deviation of 0.92249 that differentials in interest rates influence the financial performance of commercial banks in Kenya. The respondents also agreed with a mean of 3.7922 and a standard deviation of 0.95059 that EUR influences the financial performance of commercial banks in Kenya. Lastly, the respondents agreed with a mean of 3.7662 and a standard deviation of 0.88698 that current-account deficits influence the financial performance of commercial banks in Kenya.
Aspects of foreign exchange rate and financial performance

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD influence</td>
<td>4.3766</td>
<td>.82779</td>
</tr>
<tr>
<td>EUR influence</td>
<td>3.7922</td>
<td>.95059</td>
</tr>
<tr>
<td>Liquidity of financial markets</td>
<td>4.0000</td>
<td>.70711</td>
</tr>
<tr>
<td>Differentials in Interest Rates</td>
<td>3.9351</td>
<td>.92249</td>
</tr>
<tr>
<td>Current-Account Deficits</td>
<td>3.7662</td>
<td>.88698</td>
</tr>
<tr>
<td>Terms of Trade</td>
<td>4.0519</td>
<td>.72359</td>
</tr>
<tr>
<td>Public Debt</td>
<td>4.0130</td>
<td>.78629</td>
</tr>
<tr>
<td>Political Stability</td>
<td>4.2208</td>
<td>.92656</td>
</tr>
</tbody>
</table>

Capital flow and financial performance

The respondents were also requested to indicate whether capital flow affects the financial performance of banks in Kenya. From the findings, 93.5% indicated that capital flow affects the financial performance of banks in Kenya and 6.5% disagreed. From the findings we can deduce that capital flow affects the financial performance of banks in Kenya. According to Avgouleas (2008) the last three years have been unusual for the major world economies. Output in advanced economies has slumped, deflation risk has risen, and policy rates have approached the zero limits as central bank balance sheets have greatly expanded.

Regression Analysis
Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted Square</th>
<th>R</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.833</td>
<td>0.732</td>
<td>0.724</td>
<td>0.4216</td>
<td></td>
</tr>
</tbody>
</table>

The four independent variables that were studied, explain 72.4% of the effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya as
represented by the $R^2$. This therefore means that other factors not studied in this research contribute 25.8% of the effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya.

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2.241</td>
<td>3</td>
<td>1.243</td>
<td>2.322</td>
<td>0.022</td>
</tr>
<tr>
<td>Residual</td>
<td>7.772</td>
<td>74</td>
<td>2.315</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.877</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The significance value is 0.022 which is less than 0.05 thus the model is statistically significant in predicting how inflation as a result of global financial crisis, interest rates, foreign exchange rates and capital flows affect financial performance of commercial banks offering mortgage finance in Kenya. The F calculated at 5% level of significance was 2.322. Since F calculated is greater than the F critical (value = 2.290), this shows that the overall model was significant.

**Coefficient of determination**

<table>
<thead>
<tr>
<th>Model</th>
<th>Un-standardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>I (Constant)</td>
<td>1.214</td>
<td>1.335</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>-0.543</td>
<td>0.128</td>
<td>0.245</td>
<td>3.562</td>
</tr>
<tr>
<td>Interest rates</td>
<td>-0.425</td>
<td>0.241</td>
<td>0.126</td>
<td>3.453</td>
</tr>
<tr>
<td>Foreign exchange rates</td>
<td>0.652</td>
<td>0.222</td>
<td>0.196</td>
<td>3.942</td>
</tr>
<tr>
<td>Capital flow</td>
<td>0.726</td>
<td>0.147</td>
<td>0.189</td>
<td>3.327</td>
</tr>
</tbody>
</table>

The regression equation will be;

\[ \text{Y} = 1.214 - X_10.543 - X_20.425 + X_30.652 + X_40.726 \]

The regression equation above has established that taking all factors into account (inflation as a result of global financial crisis, interest rates, foreign exchange rates and capital flows) constant at zero financial performance of commercial banks offering mortgage finance in Kenya will be 1.214. The findings presented also shows that taking all other independent variables at zero, a unit increase in inflation will lead to a 0.543 decrease in the scores of financial performance of commercial banks offering mortgage finance in Kenya; a unit increase in interest rates will lead to a 0.425 decrease in the financial performance of commercial banks offering mortgage finance in Kenya; a unit increase in foreign exchange rates will lead to a 0.652 increase in the scores of
financial performance of commercial banks offering mortgage finance in Kenya; and a unit increase in capital flow will lead to a 0.726 increase in the scores of financial performance of commercial banks offering mortgage finance in Kenya. This infers that capital flow as a result of global financial crisis was influencing financial performance of commercial banks offering mortgage finance in Kenya followed by foreign exchange rates, inflation and interest rates. However, inflation and interest rates have a negative effect on the financial performance of commercial banks offering mortgage finance in Kenya while capital flow and foreign exchange rates had a positive effect on financial performance of commercial banks offering mortgage finance in Kenya.

Conclusion

This study concludes that there is a negative relationship between inflation as a result of global financial crisis and financial performance of commercial banks offering mortgage finance in Kenya. A unit increase in inflation will lead to a 0.543 decrease in the scores of financial performance of commercial banks offering mortgage finance in Kenya.

The study also concludes that there is a negative relationship between interest rates as a result of global financial crisis and financial performance of commercial banks offering mortgage finance in Kenya. A unit increase in interest rates will lead to a 0.425 decrease in the financial performance of commercial banks offering mortgage finance in Kenya.

The study also concludes that there is a positive relationship between foreign exchange rates as a result of as a result of global financial crisis and financial performance of commercial banks offering mortgage finance in Kenya. A unit increase in foreign exchange rates will lead to a 0.652 increase in the scores of financial performance of commercial banks offering mortgage finance in Kenya.

The study also concludes that there is a positive relationship between capital flow as a result of as a result of global financial crisis and financial performance of commercial banks offering mortgage finance in Kenya. A unit increase in capital flow will lead to a 0.726 increase in the scores of financial performance of commercial banks offering mortgage finance in Kenya.

Recommendations

This study established that high level of debts leads to inflation which subsequently affects financial performance of commercial banks in Kenya. The study also established that Due to inflation, the demand for acquiring of housing through mortgages. This study therefore recommends that financial institutions should avoid high level of debts.
This study also revealed that interest rate affects the financial performance of banks in Kenya to a great extent. The study also established that interest rates in commercial banks were moderate. This study therefore recommends that financial institutions should ensure that their interest rates are well regulated so as to avoid poor financial performance.

The study also established that foreign exchange rates affect the financial performance of banks in Kenya to a great extent. This study therefore recommends that the government of Kenya should formulate policies to govern and regulate foreign exchange rates in financial institutions in Kenya.

The study also found that capital flows affect the financial performance of banks in Kenya to a great extent. This study therefore recommends that the government of Kenya should encourage capital inflows from other countries. This can be done by establish good trade policies.

References


Kimeu, T (2008). *Credit risk management techniques on unsecured loans of commercial banks in Kenya*, Unpublished MBA project UON.


