# Impact of Term Deposits Determinants on Term Deposits Demand in Financial Institutions

## Empirical Evidence from Financial Sector in Sri Lanka

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*Abstract*

***This study builds a macro-micro economic model to test the relationship between demand for term deposits of a financial intermediary with bank specific determinants, industry specific determinants and macroeconomic indicators, and tested it using panel data of term deposits of fifteen financial institutions in Sri Lanka. The model predicts the demand for term deposits as a function of liquidity, interest rate, income level of people and total asset of the firm. The most prominent findings from estimating this combined function is total asset and cash are the most determining factors of term deposit demand where interest rate and income level which tested through GDP1 give fairly insignificant results. The reason for this insignificance has been identified as the implications in applying macro information and micro information in one single function in practical aspects.***

*Keywords: Term Deposits, Financial Institutions, Bank Specific Determinants, Industry Specific Determinants and Macroeconomic Indicators*

## INTRODUCTION

The global financial crisis results created an uncertainty in the financial market where investors are in the question of where to invest their excess money. Even though earlier investors initial intention was to maximize return and there by investors mostly liked stock market and other related investment option which are highly risk but which had a term deposits which are a safer place to park investor's excess money as stock market and most of other investment alternatives continuously deal with the Global Financial Crisis aftermath. Banks also making good portion from these term deposits as bank do not have to buy more expensive money from the whole sale money market. Therefore it's a win - win situation.

Term deposit is one of the most famous ways of investment by most of the ordinary financiers. Normally investors plan their place of investment, amount of investment, time of investment by considering lot of factors. Accordingly, investment planning focuses on identifying effective investment strategies according to an investor's risk appetite and financial goals. This begins after investors have taken into account their current and expected income level and have put down their financial goals.

Most of the studies in the financial markets are based on the assumption that the markets are efficient and the investors are rational (Dann et.al. 1977), nevertheless in the actual market, people not merely are rational. Investors hardly take high risk, uncertain, unpredictable hazards in decision making and they would not just stop at high return investments. For this most obvious solution is the Term deposit. Because in one way this gives not sky-scraping rates but better rates and on the other way especially they give fixed return so people comfortable with invest in the Term deposits.

As a result of above mentioned sequence most of the investors will then tend to move into other investment options available in the market rather than keeping their money in Term deposits. Nevertheless, some of the customers are deemed to maintain Term deposits even though there are fluctuations in deposit rates, inflation rates and other micro economical fluctuations as well as internal or bank specific issues. This contradicting behaviour of investors can be studied by examining the impact of fluctuations in the amount of Term deposits held in different time periods in different financial institutions. Therefore, this research aims to study the various determinants of term deposits, identifying their significance and relationship with term deposit based on the behaviour of term deposit amounts of bank and financial institutions of Sri Lanka in different time periods.

## METHODOLOGY

This study has been prepared grounded on collected secondary data from annual reports in Commercial banks as well as finance sector in Sri Lanka. For the sample of study, out of entire bank and financial system of Sri Lanka Researcher has selected 9 Commercial banks and 6 Finance companies for five financial years from 2014 to 2018 which maintain Term deposits, in deciding the term deposit, other macroeconomic indicators, and industry specific data and in deciding bank specific determinants.

The research findings were generated through the quantitative data analysis. Reviews were used to tabulate and analyze the data for quantitative data analysis. The data and sample were designated using percentages, means, and frequency distribution tables. The regression analysis test, which is utilized to test for any variances towards banks and financial businesses, was used to build associations among the independent and dependent variables.

Researcher developed a multiple regression model for the analysis. The variables are Bank Specific Determinants, Industry specific determinants, Macroeconomic indicators and term deposits amounts. Out of these, the independent variables will be Bank Specific Determinants, Industry specific determinants, Macroeconomic indicators, for the reason that the demand for term deposits not determine by merely interest rate but various other factors.

When forming the regression function combining to variables the function will be:

$$Y = ß_1 + ß_2CASH\_V + ß_3 \, AVG\_IR + ß_4 \, GDP + ß_5 \, TA + U$$

Where;

$Y$ = Term deposits amounts (Selected bank and finance industry)

$ß_1$ = Intercept (When the all available independent variables fluctuations are nil amounts of fixed deposits)
$ß_2 \, CASH\_V$ = Slope (responsiveness of term deposit amount when Bank Specific Determinant for liquidity position change by a unit)
$ß_3AVG\_IR$ = Slope (responsiveness of term deposit amount when Industry Specific determinant change by a unit)
$ß_4 \, GDP$ = Slope (responsiveness of term deposit amount when Macroeconomic indicator change by a unit)
$ß_5TA$ = Slope (responsiveness of term deposit amount when Bank Specific Determinant for size of the financial institution change by a unit)
$U$ = Error term

## RESULTS AND DISCUSSION

### Correlation Analysis

**Table 1:** Correlation Analysis

| Variable | Term Deposits | Cash | TA | TB |
|---|---|---|---|---|
| Cash | 0.624 | | | |
| | 0.000 | | | |
| **TA** | **0.789** | **0.910** | | |
| | 0.000 | 0.000 | | |
| TB | -0.102 | -0.106 | -0.152 | |
| | 0.392 | 0.366 | 0.198 | |
| GDP | 0.142 | 0.179 | 0.164 | -0.723 |
| | 0.230 | 0.124 | 0.167 | 0.000 |

Source: - Calculations based on the annual report from selected financial institutions.

In analyzing the correlation relating to this model (Pearson correlation) have tested the condition of how independent variables are related to each other. According to the table 1, between cash and average interest rate as well as total asset and average interest rate the relationship is negative but it is representing a less value (weak negative). Furthermore, GDP with cash and GDP with total assets represent a positive relationship but with very less amount (weak positive). Those relationships demonstrate an imperfect relationship. But total assets with cash can be seen a multi co linearity of 91% which is likely to be high (strong positive). Therefore, there is a correlation between only cash and total assets out of all other independent variable combinations.

**Coefficient Analysis**

The data from the sample of 15 Financial Institutions are pooled for all five years (2014-2018). Different specifications of equations were estimated. In arriving at optimal situation, using different combination of variables has run the estimations. The estimated coefficients and summary statistics for regression is presented in below table.

Term Deposits = -28358597 (5.29 Cash) + 0.4150 TA + 4194346 TB + 0.00148 GDP

**Table 2:** Coefficient Analysis

| Variable | Coefficient | SE. of Coefficient | P-value |
|---|---|---|---|
| Constant | -28358597 | 100213393 | 0.778 |
| Cash | -5.29 | 1.55 | 0.001 |
| TA | 0.4150 | 0.0527 | 0.000 |
| TB | 4194346 | 5735751 | 0.467 |
| GDP | 0.00148 | 0.00647 | 0.820 |

Source: -Calculations based on the annual report from selected financial institutions.

**Table 3:** Regression Analysis: Term Deposits versus Cash, TA, TB, GDP

| Source | Degrees of freedom | Adjusted SS | Adjusted mean sum of Square | F value | P value |
|---|---|---|---|---|---|
| Regression | 4 | 6.0876E+17 | 1.52196E+17 | 35.46 | 0.000 |
| Cash | 1 | 5.00583E+16 | 5.00583E+16 | 11.66 | 0.001 |
| TA | 1 | 2.65881E+17 | 2.65881E+17 | 61.94 | 0.000 |
| TB | 1 | 2.29537E+15 | 2.29537E+15 | 0.53 | 0.467 |
| GDP | 1 | 2.83301E+17 | 2.24916E+14 | 0.05 | 0.820 |
| Error | 66 | 8.92087E+17 | 4.29244E+15 | - | - |

Source: - Calculations based on the annual report from selected financial institutions.

**Table 4:** Hypothesis Testing

| Hypothesis | Test | F | P | Decision |
|---|---|---|---|---|
| **CASH** | Analysis of variance | 11.66 | 0.001 | Accepted |
| **TA** | Analysis of variance | 61.94 | 0.000 | Accepted |
| **TB** | Analysis of variance | 0.53 | 0.467 | Rejected |
| **GDP** | Analysis of variance | 0.05 | 0.820 | Rejected |

Source: - Calculations based on the annual report from selected financial institutions.

The outcome of the designed model describes the significance of each of the independent variable in concerned with dependent variable (adj.$R^2$ is 65.8%) and how model can be used to understand the nature of relationship between bank specific determinants, industry specific determinants , macroeconomic indicators and demand for Term Deposit as well as to understand whether the bank specific determinants, industry specific determinants and macroeconomic indicators of a country perform as key factors in making investment decisions which are forced by the demand for Term Deposits. Total assets of a financial institution reflect 62% of significance level in determining Term Deposit amount and whereas income level of a country as well as liquidity position of the financial institution reflects 68% of significant. But average interest rate in that particular period is an insignificant amount. As well as incorporating TB with other independent variable there is no significantly impact to the adj. R.

**CONCLUSION**

This research has developed and tested a model of the demand for time deposits of fifteen Financial Institutions in Sri Lanka. It is the first time that a combination of all institution specific, industry specific and macro-economic indicator inclusive function has been developed and tested. The model, which was estimated for the period of 2014 to 2018, explained 66% of the variability in the annual changes of Term Deposits. The discussions of the outcome basically focus on the way how it meets the objectives of the research. The main objective of identifying the relationship between the behavior of liquidity of the firm, interest rate of the economy, income level of the people and total assets in the firm over Term Deposits demand and the impact on making key investment decisions. Then it confers about the reasons why the previous research results and this research results are contradicting. Finally, researcher has analyzed whether the outcome is compatible with some stated hypotheses or not.

Total asset and cash value (liquidity) are the most significant variables effect on Term Deposit demand where it represented a positive direction, income of the people (gross domestic product) variable is insignificant at approximately 38% ($R^2$) and have weak positive directions but average interest rate behavior of a country not have significant impact on Term Deposit demand where it was recorded a negative relationship.

Term Deposits = -28358597 - 5.29 Cash + 0.4150 TA + 4194346 TB + 0.00148 GDP

This provides evidence of existence of a linear relationship between the response Time deposits and the four explanatory variables (cash, average interest rate, GDP and total assets).

The most significant factor of this function is the total asset value. Hence the justification on why the total assets have a huge impact on Term Deposits is, a smaller sized financial institution has to generate fewer deposits in absolute terms to achieve the same deposit growth than a large bank, thus possibly favoring smaller banks in achieving higher deposit growth. But a larger bank with economies of scale as well as larger branch network might be able to better attract deposits. At the same time people more overly prefers a place where they can make their investment in safe. A company with large amount of assets means their business going concern at optimum and they can mitigate their risk factor by diversification.

These results suggest that Term Deposit demand is largely explained by both cash value and total asset of a firm which represent just the micro or internal information of a firm but macro factors of GDP and average interest rate (TB) is not good representations of Term Deposits.

As comparison with other research studies, certain limitation should be considered when interpreting the result. In order to prevent this limitation, some potential directions are suggested for future researchers. The first suggestion is that the future research should have larger size of sample. There are currently 71 listed financial institutes (licensed finance companies 46 and licensed commercial bank 25) in the Colombo Stock Exchange under above sector. But, this study covered only the 15 institutes in CSE. Therefore, additional investigation is required to examine all listed finance companies. The study covered only the listed finance Companies. Therefore, additional investigation is required to examine firms in the different sectors. The other suggestion for future research is that it should be conducted on different types of variables (sensitivity to economic and financial conditions, the size of long-Term Deposits, advertising, staff incentives etc.) This study focused only five-year period further study must include changes over long time period.

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