THE CORRELATION BETWEEN CASH POSITION OF TIME DEPOSITS TOWARD TIME DEPOSIT INTERESTS AND INFLATIONS
(CASE STUDY OF COMMERCIAL BANKS DURING PERIOD OCTOBER 2007 – MARCH 2010)

For

By
AMBAR SETIAWAN
007200600002

A thesis presented to the
Faculty of Economics President University
In partial fulfillment of the requirements for
Bachelor Degree in Economics Major in Management

September 2010
The Panel of Examiners declare that the thesis entitled “The Correlation between the Cash Position of Time Deposits toward Time Deposit Interests and Inflations in Commercial Banks during Period October 2007 – March 2010” that was submitted by Ambar Setiawan majoring in Banking & Finance from the Faculty of Economics was assessed and approved to have passed the Oral Examinations on September 24, 2010.

Maria Jacinta Arquisola, M.HRM
Chair-Panel of Examiners

Drs. Josef Raco, MSc. MA
Examiner

Irfan Habsjah, MBA., CMA
Examiner
I declare that this thesis entitled “The Correlation between the Cash Position of Time Deposits toward Time Deposit Interests and Inflations in Commercial Banks during Period October 2007 – March 2010” is, to the best of my knowledge and belief, an original piece of work that has not been submitted, either in whole or in part, to another university to obtain a degree.

Cikarang, August 30, 2010.

Ambar Setiawan
ABSTRACT

This research is carried out to know the effect of time deposit interest and inflations toward cash position of time deposit during period from October 2007 until March 2010. This research used secondary data such as time deposit, time deposit interest and also inflation. These data are limited and only used data 30 monthly period from Bank Indonesia website.

The research is using simple regression analysis using SPSS student version 16 to process the secondary data to find correlation between independent and dependent variable. The results that we get from SPSS are in form of Correlation (R), Coefficient of determination (R square), Significance (ANOVA) and also Normality (F-Test).

This correlation is used to know the relation of these variables either strong or not. CD is used to measure how much percent these variable affected each other variable. F-Test is used to see the factors that individually significant or not between independent and dependent variable.

This analysis showed that the partial correlation time deposit interest and inflations toward time deposit are strong. Whereas the correlation between inflations and time deposit is strong but the correlation between time deposit interest and time deposit is weak. So after the analysis of these data finish, I can conclude that not only internal factors like interest rate and inflation that influences time deposit but also external factors also like politic and environment condition.
ACKNOWLEDGMENT

I shall first express my praise and gratitude towards God Almighty for the opportunity to start and finish this thesis.

I give my special thank for my family: Papa, Mama, my sibling and others who shower me with their love and support in doing this thesis.

For President University, I give my thank for the joyful experience of learning for four full years as Banking and Finance student, To my thesis advisor, Mr. Choirul and Mr. Josef Raco, thank you so much for a very helpful and informative consultations and also for Ms. Jacy and Mr. Irfan as my examiner who gave me passed for my thesis.

My particular thanks to PT Revo Indonesia and PT Jababeka as the place where I first learned the putting of theories I learned in class into professional practice. Thanks to the HRD divisions, this division whom I regretfully cannot name one by one, due to limited space.

To my PU friends, especially Banking and Finance folks, surely I am blessed to be surrounded by a wonderful companion, not just in thesis, but also in life. It has been fun with you guys! I am looking forward to see the successful ourselves in years to come. I also give the thanks to my friends in pavilion C3-05, B1-10 dormitory because from beginning to the last everything was the best moment with you fellas.

Last but not least, I give my thanks to others who supported me in particular in my quest to do this thesis, it is with pride that I declare that thesis is dedicated for everyone whom I care, and who care for me.
# TABLE OF CONTENTS

PANEL OF EXAMINER APPROVAL SHEET ..................................................... i
DECLARATION OF ORIGINALITY ................................................................. ii
ABSTRACT ........................................................................................................... iii
ACKNOWLEDGMENT ........................................................................................ iv
TABLE OF CONTENTS ................................................................................. v
LIST OF TABLES .............................................................................................. vii
LIST OF FIGURES ............................................................................................ viii

## I. INTRODUCTION ................................................................. 1

1.1. Background of Study ................................................................. 1
1.2. Problem Identified ................................................................. 4
1.3. Statement of Problem ............................................................... 5
1.4. Research Objectives ................................................................. 5
1.5. Significance of Study ................................................................. 5
1.6. Theoretical Framework ............................................................ 6
1.7. Limitations of Study ................................................................. 6
1.8. Assumptions and Hypothesis .................................................. 7
1.9. Definitions and Terms .............................................................. 7

## II. LITERATURE REVIEW ..................................................... 9

2.1. Deposits and Its Characteristics ............................................ 9
  2.1.1. Deposit and Bank ............................................................... 9
  2.1.2. Saving deposit ................................................................. 10
  2.1.3. Time deposit ................................................................. 10
  2.1.4. Transactions Accounts ................................................... 13
  2.1.5. Savings and Time Deposits ............................................ 13
  2.1.6. Other borrowings ........................................................... 14
  2.2. Inflation and Definitions ....................................................... 16
    2.2.1. Types of inflation ......................................................... 18
LIST OF TABLES

Table 2.1 Differences Time deposits and Certificate of Deposit .................. 12
Table 3.1 Research Data Gathering......................................................... 29
Table 3.2 Correlation Coefficient Interpretation........................................ 32
Table 3.3 Level of Significance Value..................................................... 34
Table 4.1 Correlation between Time Deposits and Inflations.................... 35
Table 4.2 Correlation between Time Deposits and Time Deposit Interests...... 37
Table 4.3 Partial Correlation between Time Deposits toward Time Deposit Interests and Inflations................................................................. 38
LIST OF FIGURES

Figure 1.1 Theoretical Framework.........................................................6
Figure 2.1 Time Deposits Index of Commercial Bank in Bank Indonesia..........15
Figure 2.2 Inflation Index of Commercial Bank in Bank Indonesia..............21
Figure 2.3 Time Deposit Interest Index..................................................26
Figure 3.1 Research Framework..............................................................31
I. INTRODUCTION

1.1. Background of Study
Balance of payments crises are a pain in the neck for bankers and finance ministers. Not only do they seem to arise quite frequently, but also recur. In order to deal with such crises, and avoid future ones, it is important to recognize that speculative capital flows generally arise from the decisions of rational investors making forecasts on the basis of the real conditions and information they have available at the time. In order to reverse the draining run on a currency, the conditions that give rise to the speculative flow must be reversed. In this case, stepping on the monetary brakes would be a possible solution, although only a committed policy would change the investors’ expectations. A casual, temporary, once-and-for-all decline in the money supply would have no effect on agents’ expectations and would not prevent the crisis. Long-term commitments to policy changes would be required. (Batiz, 1985, page. 385).

From that quotation we can make the reflection when the crisis happened in Indonesia. The commitments of government become the most important things to give trust for the investors. The steady commitment from government will give positive effect to increase the economic growth with stability in financial market and banking. In financial market, the roles of investors become very important to encourage and stabilize the exchange rate and also inflation. Besides we must give attention to the internal economic factors, we must also give the attention to external factor like politic condition, natural condition and etc.

During period 1997-1998, Southeast Asia area got crisis that destroy the economic condition. This was caused by serious financial instability so that many industries in Indonesia become collapse. This condition was on the top condition and dynamic situation. Ten years later, after little by little the economic condition in
Indonesia was growing 6-7%, crisis occurred again. The problem was second housing loan (subprime mortgage crisis) which impacted very serious destroy financial market in investment, insurance, and banking sector. (Harian Pikiran Rakyat, Kamis 15 Januari 2009)

Monetary crisis was started by decreasing of IDR toward USD. This condition destroyed the economic industry, such as banking sector. Inflation is one of the causal factors that occurring economic crisis in a particular country. Inflation is a condition of the prices increase sharply (absolute) all the while for long time period and followed by real (intrinsic) value of money in a particular country (Tajul Kahalwaty, 2000:5).

Commonly, the fundamental factor occurred economic crisis in Indonesia is not caused by the fundamental of economic weakness, but because of decreasing exchange rate rupiah toward USD. Short term of foreign private debt since beginning of 1990 had already accumulated very big which mainly are not-hedging conditions (kept the value from foreign exchange). And then this case add the pressure toward rupiah exchange, because of unsupplied enough of exchange (devisa) to pay the yield maturity of debt included interest (Lepi T Tarmidi (EKI: 1999).

In middle of 1997, the problem of inflation and exchange crisis flipped because the inflation became two digits and rupiah fall away sharply until reach 11,05 percent. This crisis will effect to companies which their load debt become very big in foreign currency. Whereas, all of the financing and transaction depend on bank, banks also get difficult to supply the operational liquidity to every day. (Jurnal Ekonomi dan Bisnis Antisipasi Vol. 10. No. 1, Oktober 2006)

The global financial crisis in 2008-2009 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. The financial crunch has its roots in a banking practice called sub-prime lending or sub-prime mortgage
lending in the USA. It is traceable to a set of complex banking problems that developed over time, caused specifically by housing and credit markets mismatch, poor judgement by borrowers and/or the lenders, inability of home owners to make mortgage payments, speculation and overbuilding during the boom period, risky mortgage products (financial innovations with concealed default risks), high personal and corporate debt profiles and inactive/weak central bank policies. The crisis is presently putting to test the ingenuity of the management of various central banks world over.

In response to the challenges posed, many countries, governments and their central banks have intervened by slashing interest rates in the bid to reduce the negative impact and avoid compounding the crisis from becoming a global financial meltdown. To contain the impact of the crises, there has so far, been mixed reactions; in Europe for instance, central banks injected more cash to the market in an on-going attempt to provide liquidity to the financial system.

The problem of interest rates in Indonesia becomes important to determine effective or not banking recapitalization program. Interest rate that still too high is not effective for banking performance after recapitalization. It means, although already inject with much of fresh money, national banking will not be strong to stand up if their capital still decrease persistently as a consequent of negative spread.

Actually in market mechanism like in Indonesia, the interest rate is occurred by reflection from the power of demand and supply fund in society. This is because interest rate is very important in economic policy. Increasing of needs for financing will effect raising the interest rate. In Indonesian policy, interest rate will push the inflation movement and maintain high interest rate. In other word, the circulation will be stretched can maintain the level of price in secure.

One of the important parts of financial crisis in Indonesia is related to time deposit. Time deposit is the indicator to run the business of the banking industry.
Banking industry also gets profit from here. Deposit or saving is used by bank as a capital and instrument to give credit for the industries and companies. Time deposit is influenced by internal factors like GDP, Exchange Rate, Interest Rate and Inflation and external factors like politic and natural factors.

1.2. Problem Identified

According to the law of banking no. 1998, fund gathering about saving society that done by commercial bank. Fund gathering types are: Gyro, Time Deposit, Certificates of Deposit, savings and other type that can be similarized. From several funds society neither in rupiah nor foreign exchange, the biggest portion is time deposit component. This time deposit in the beginning is very dependence on the power of saving this society itself, where it reflects in national income. Before the public decide to save their money in the bank, there are many factors to consider like: SBI (Bank of Indonesian interest rate), exchange rate rupiah toward US$, inflation, and time deposit interest rate.

Instability condition of economic is very impacted to the banking sector which is determined the policy to stabilize the economic activity like loans and other financing. In this case, balancing of credit and saving is very important to support each other in banking sector. According to classic theory, interest rate is the function of saving which is the interest rate is high; the public will be influenced to save their money in banking sectors. When the condition in Indonesia is in financial crisis or unstable, the inflation will be fluctuated. So in this case, we can determine the number of time deposit in the bank sectors would be influenced or not toward the economic factors like inflation and time deposit interest. Through this research, we will proof whether those factors correlate or not between independent and dependent variables. According to the background that already describes, the author attracts to doing research about “The Correlation between the Cash Position of Time Deposits toward Time Deposit Interests and Inflations in Commercial Banks during Period October 2007 – March 2010”.
1.3 Statement of Problem

This research is analyzing the effect of time deposit interest, inflation, and exchange rate toward the demand of time deposit in commercial bank.

The following problem statements have been used to guide this research work:

1. Is there any effect of time deposit interest and inflation with the cash position of time deposit in commercial bank during period October 2007 to March 2010?
2. How is the effect and correlation between time deposit interest and inflation with cash position of time deposit in commercial bank during period October 2007 to March 2010?

1.4 Research Objectives

This study aims to determine and explain the correlation between time deposit interests and inflations with cash positions of time deposit in commercial banks during period October 2007 to March 2010.

1.5 Significance of Study

This research is conducted for several benefits, which are divided into several aspects:

1. Academic

   This thesis is used as fulfillment of final requirement for graduation from President University, majoring in Banking and Finance of bachelor degree.

2. Writer

   The writer will understand the extent of the relationship between time deposit interest and inflation toward cash position of time deposit. Thus, this book will be benefit and become one of references if someone wants to do research about time deposit someday.

3. Banking industry

   Banking can understand and apply the correlation between time deposit interest and inflation with cash position of time deposit which is helping banks to formulate appropriate strategy in concordance with bank’s
missions and objectives. It also helps government to analyze the situation about economics’ condition.

1.6. Theoretical Framework

![Diagram showing the sequence of correlation between deposit, inflation, and time deposit interest.](image)

*Figure 1.1 the sequence of correlation between deposit, inflation, and time deposit interest*

*Source: adapted from Frederic S. Mishkin. The Economic of Money, Banking, and Financial Market, 2007*

1.7. Limitations of Study

The research is analyzing the impact on time deposit interest, inflation, and exchange rate toward the demand of time deposit. For the sake of reliability, the scale and scope of this research are limited to prevent bias and information overload. Here are several limitations on this research:

1. This research uses secondary data of 30 time series in commercial bank data between periods of October 2007 to March 2010 based on Indonesian Financial Statistic in Bank Indonesia website.
2. This research will focus mainly on cash position of time deposit that available in statistic Bank of Indonesia and all the components that influence time deposit such as inflation and time deposit interest. All of the data is come from Bank of Indonesia’s website so that we can get easier to analyze that.

1.8. Assumptions and Hypothesis

Based on problem statement, there are four variables will be tested and evaluated. Time deposit interest and inflation are independent variable and the demand of time deposit is dependent variable.

1. Ho: \( ry_{x1} = 0 \) (There is no significant correlation between Cash Position of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Bank)
   Ha: \( ry_{x1} \neq 0 \) (There is significant correlation between Cash Position of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Bank)

2. Ho: \( ry_{x2} = 0 \) (There is no significant correlation between Cash Position of Time Deposits in Commercial Banks with Indonesia’s Inflations)
   Ha: \( ry_{x2} \neq 0 \) (There is significant correlation between Cash Position of Time Deposits in Commercial Banks with Indonesia’s Inflations)

3. Ho: \( ry_{x1x2} = 0 \) (There is no significant correlation of Cash Positions of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Banks and Indonesia’s Inflations)
   Ha: \( ry_{x1x2} \neq 0 \) (There is significant of correlation Cash Position of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Bank and Indonesia’s Inflation)

1.9. Definitions and Terms

1. Cash position: the number of money in term of period like monthly, yearly
2. Inflation: a sudden increase in the price of goods and services in the economics, which lead other goods’ price to increase as well.
3. Loan: money advanced to borrower, to be repaid at later date, usually with interest charged on it.
4. LDR: loan to deposit rates
5. SBI: Bank of Indonesia interest rate
6. NPL: Non performing loan
7. Interest income: sum of interest and fees earned on all of bank’s assets, including loans, deposits held in other (financial) institutions, municipal and taxable securities, and trading account securities.
9. Sample: smallest statistical unit used in analysis.
10. Variable: any characteristics of an object that can be represented in number.
11. Independent variable: the X-variable in regression model. This is used to help predict the dependent variable.
12. Dependent variable: the Y-variable in regression model. This is used to help predict the independent variable.
13. Hypothesis: a tentative explanation of a phenomenon, used as basis for further investigation.
14. Null Hypothesis: the hypothesis to be tested
15. Alternative hypothesis: the hypothesis accepted when the null hypothesis is rejected.
II. LITERATURE REVIEW

2.1 Deposits and Its Characteristics

2.1.1 Deposit and Bank
As stated by Shelagh Hefferman (2005), bank is a financial firm which offers loan and deposit products on the market, and accommodate to the changing liquidity needs of its borrowers and depositors. A bank is having is fund from the depositors and then used that fund to distribute to the borrower in order to create a balanced flow of funds in the market. But in other hand, a bank should have enough funds if the depositor takes their deposit.

Based on IAI (Ikatan Akuntan Indonesia) about PSAK Number 31 in Financial Accounting Standard, (1991:31.1), bank is defined as follows:

“Bank adalah suatu lembaga yang berperan sebagai perantara keuangan antara pihak-pihak yang memiliki kelebihan dana dan pihak-pihak yang memerlukan dana, serta sebagai lembaga yang berfungsi memperlancar lalu-lintas pembayaran”

PSAK “Pernyataan Standar Akuntansi Keuangan” is describing bank as an institution acting as intermediary between parties having surplus in funds and those lacking funds, also as institution serving in flow of payments.

The writer shall take conclusion based on these two definitions of bank that as a financial institution, banks have their role as intermediary by giving services of loan and deposit, which is, reinforcing the flow of funds. Due to important role of bank in an economy as well as community, there is a misunderstanding about bank. Nowadays, bank is not only place for saving and borrowing money, but it is already expanding the scope of business to compete with other financial institutions. The function of a bank is very various; there are nine functions of a
bank. Therefore, this day is quite difficult to differentiate bank to others financial institution such as insurance company.

2.1.2 Saving deposit
Based on IAI (Ikatan Akuntan Indonesia) about PSAK Number 10 in Financial Accounting Standard, (1998), saving deposits is defined as follows:

“simpanan yang penarikannya dapat dilakukan menurut syarat-syarat tertentu yang disepakati, tetapi tidak dapat ditarik dengan cek atau BG atau alat lainnya yang dipersamakan”. Saving deposit is saving that withdraws with using certain agreed requirements, but can’t withdraw with using check or demand deposit or certain equal instrument.

2.1.3 Time deposit
Based on IAI (Ikatan Akuntan Indonesia) about PSAK Number 10 in Financial Accounting Standard, (1998), saving deposits is defined as follows:

“simpanan yang penarikannya hanya dapat dilakukan pada waktu tertentu berdasarkan perjanjian nasabah penyimpan dengan bank”. Deposit is saving that withdraw only in certain time based on agreement each party between bank and customer.

Deposit can be called also as time deposit is product of banking like saving that can be offered to people. Fund in deposit was guaranteed by government through Lembaga Penjamin Simpanan (LPS) with some particular requirements. Sometimes deposit have period of time which means money itself cannot be withdrew by costumer. Deposit can be liquefied based on the date of maturity. Sometimes deposit has maturity in 1, 3, 6, and 12 months. If deposit liquefies before maturity of date, so we will get penalty.

Deposit can be extended automatically using ARO (Automatic Roll Over). Deposit will be extended automatically after maturity date until the owner liquefies their deposit. The interest of deposit sometimes is higher than common interest. Interest can be taken after date of maturity or put in the next period of deposit to deposit again. ([www.wikipedia.com](http://www.wikipedia.com))
According to *Management of Banking* by McDonald/Koch, time deposit is a part of nontransaction accounts. They are interest-bearing accounts with limited or no check-writing privileges. The accounts generally pay more competitive rates of interest and are fully FDIC-insured up to USD 100,000 per individual. Time deposits have specified maturities ranging from seven days to any longer negotiated term, with interest penalties for early withdrawal.

According to *The Economics of Money, Banking, and Financial Markets* by Mishkin, time deposit is part of nontransaction deposits, constituting primary source of bank funds. Time deposits have a fixed maturity length, ranging from several months to over five years, and assess substantial penalties for early withdrawal (forfeiture of several months’ interest). Time deposits are a more costly source of funds for the banks.

The source of fund from public (third party funding) is the most important funding for operational bank activity and standard of successful bank if bank can be able to defray their operation from this fund. Collection of fund from public can be mentioned easier if we compare with another funding. The society’s funding can be done effectively with higher interest and give the interesting facility like door prize and satisfying service.

Second deposit is certificate of deposit (CDs). It is time saving based on bank of Indonesia permission that produced by bank as saving proof which can be traded or hand moved to third party. Deposit is time saving that produce by bank which withdrew by certain time only based on term in agreement before. Deposit is divided by two. There are time deposit and certificate of deposit.

Third deposit is Deposit on call. This is time deposit with maturity minimum seven days and maximum is 30 days. It is produced with the name of owner and big amount of money, therefore the interest will appropriate with the agreement from customer and banking parties.
Table 2.1 Differences Time deposits and Certificate of Deposit

<table>
<thead>
<tr>
<th>No.</th>
<th>Difference</th>
<th>Time Deposit</th>
<th>Certificate of Deposit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Interest payment</td>
<td>In every maturity date</td>
<td>In opening bank account (discounted)</td>
</tr>
<tr>
<td>2</td>
<td>Holding deed (right)</td>
<td>Cannot move</td>
<td>Can move</td>
</tr>
<tr>
<td>3</td>
<td>Ownership</td>
<td>In the name of</td>
<td>On sight</td>
</tr>
<tr>
<td>4</td>
<td>Counting of interest</td>
<td>not discounted</td>
<td>Discounted</td>
</tr>
</tbody>
</table>

Source: Kelembagaan Perbangkan (1993:39)

Target market of deposit is whole of the public, neither individual nor group. The time period of deposit itself, bank usually offers deposits in certain time period like:

- time period: 1 month
- time period: 3 months
- time period: 6 months
- time period: 12 months
- time period: 18 months
- time period: 24 months

As a note: in commercial bank, development bank, or credit public bank can be produced time deposit. It means bank itself can gather money from public like time deposit. But to produce certificate of time deposit only commercial bank and development bank that allowed it. In fact, it must have permission from bank of Indonesia after fulfill the certain requirement like health and capability bank itself from capital needs aspect (Thomas Suyatno, 1993:39)

Historically, banks were limited in what interest rates they could pay on different types of deposit. Since 1986, all interest rate restrictions have been eliminated, except for prohibition of interest on corporate demand deposits. Banks can now compete for deposits by offering unrestricted interest rate interest rates on virtually all of their liabilities. Larger bank also issue subordinated notes and debentures, which are long term un-insured debt.

Bank liabilities are composed of transaction accounts, savings and time deposits, and other borrowings (Management of Banking 2006:59-60).
2.1.3 Transactions Accounts

1. **Demand deposits** are held by individuals, partnerships, corporations, and governments that pay no interest. Prior to the Depository Institutions Act of 1980, they served as the only legal transactions account nationally that could be offered by depository institutions. Businesses now own the bulk of existing demand deposits because they are not allowed to own interest-bearing transactions accounts at banks.

2. **Negotiable orders of withdrawal (NOW) and Automatic transfer from savings (ATS)** pay interest set by each bank without federal restrictions. These accounts most commonly referred to as interest checking accounts. Banks often require minimum balances before a depositor earns interest, impose service charge, and may limit the number of free checks a customer can write each month, but these terms vary among situations. These accounts are available only to noncommercial customers.

3. **Money market deposit accounts (MMDAs)** similarly pay market rates, but a customer is limited to no more than six checks and automatic transfer each month. This restriction exempts banks from holding required reserves against MMDAs as they are technically savings accounts, not transactions accounts. With no required reserves, banks can pay higher rates of interest on MMDAs versus NOWs for the same effective cost. (Management of Banking 2006:59-60).

2.1.4 Savings and Time Deposits

1. **Savings and time deposits** contribute a large portion of funding, especially at community banks. Pass-book deposits are small-denominations accounts that have no set maturity and no check–capabilities. Two general time deposit categories exist with a $100,000 denomination separating the groups.

2. **Time deposits less than $100,000** are most often small certificates of time deposits (CDs). The features of small CDs are not as standardized as large CDs although most banks market standardized instruments so that customers are not confused. Banks and customer negotiate the maturity,
interest rate and dollar magnitude of each deposit. The only stipulation is that small time deposits carry early withdrawal penalties whereby banks reduce the effective interest paid if a depositor withdraws their fund prior to the stated maturity date.

3. **Time deposits of $100,000 or more** are labeled jumbo certificates of deposit (CDs) and are negotiable. It means they can be bought and sold in the secondary market with a well-established secondary market. Anyone who buys a jumbo CD can easily sell it in the secondary market as long as the issuing bank is not suffering known problems. The most common maturities are one month, three months, and six months, with $1$ million the typical size. Most CDs are sold to non-financial corporations, local government units, and other financial institutions. (Management of Banking 2006:59-60).

2.1.5 **Other borrowings**
1. **Federal funds and securities sold under agreement to repurchase** (Repos) are liabilities created from the exchange of immediately available funds, or balances that can be cleared immediately. Federal funds purchased generally have maturities of 1-7 days and represent the exchange of clearing balances at the Federal Reserve Bank or correspondent bank. Federal Funds are unsecured while repos are collateralized by securities owned by borrowing institution.

2. **Brokered deposits** most often refer to jumbo CDs that a bank obtains through a third-party broker or brokerage house that markets the CDs to its customers. These are separated because the bank has virtually no customer contact with the holders of these CDs. The funds are considered volatile and will leave the bank quickly when a competitor offers a higher rate. Regulators can designate other bank deposits depending on the rate paid of customers. Specifically, if a bank pays an above market rate, such as 3 percent on NOWs as brokered deposits because the bank is viewed as “buying the funds”. Banks that fund operations by marketing time deposits...
on the internet suffer the same problem, as they generally pay rates paid by local (Geographic) competitors.

3. **Deposits held in foreign** offices refer to same types of dollar – denominated demand and time deposits discussed above except that balances are issued by a bank subsidiary (owned by the bank holding company) located outside the United States. The average foreign deposit balanced is generally quite large. Nonfinancial corporations engaged in international trade and governmental units own most of these deposits.

4. **Subordinate notes and debentures** consist of notes and bonds with maturities in excess of one year. Most meet requirements as bank capital for regulatory purposes. Unlike deposits, the debt is not federally insured and claim of bond holders are subordinated to claims of depositors. Thus, when a bank fails, depositors are paid before subordinated debt holders. Other liabilities include acceptances outstanding taxes and dividends payable, trade credit, and other miscellaneous claim. (Management of Banking 2006:59-60).

Figure 2.1 Time Deposits Indexes of Commercial Bank in Bank Indonesia

![Time Deposit Graph](image)

*Source: data processing from Bank Indonesia October 2007 – March 2010*
From this chart above, we can say that the improvement of time deposit from year to year is very good starting from October 2007 until February 2010. Actually, this improvement is very influenced by increasing branch office of the banks, increasing trust of customer and banks also give the product of deposits with the big prizes. Besides that, customer feel safety because the product of government that is called LPS (Lembaga Penjamin Simpanan) which is giving guarantee for the customer that put their money in the bank.

The most important factor that influences people to deposit their money in the bank is more affected by internal factor from each person such as passion of investment, education, and feeling safety. People will choose the best way to invest their money by doing deposit in the bank than if they invest their money in stock market or money market. These conditions are affected by fluctuation of money market and stock market so people are scare to save their money in the bank. In around 2007 until 2010 occurred massive financial crisis in around the world so it would affected also toward the increasing time deposit in the bank.

### 2.2 Inflation and Definitions

In economics, **Inflation** is a rise in the general level of prices of goods and services in an economy over a period of time. When the price level rises, each unit of currency buys fewer goods and services; consequently, inflation is also erosion in the purchasing power of money – a loss of real value in the internal medium of exchange and unit of account in the economy. A chief measure of price inflation is the inflation rate, the annualized percentage change in a general price index (normally the Consumer Price Index) over time.

Inflation can have many effects that can simultaneously have positive and negative effects on an economy. Negative effects of inflation include a decrease in the real value of money and other monetary items over time; uncertainty about future inflation may discourage investment and saving, or may lead to reductions in investment of productive capital and increase savings in non-producing assets. E.g. selling stocks and buying gold. This can reduce overall economic
productivity rates, as the capital required to retool companies becomes more elusive or expensive. High inflation may lead to shortages of goods if consumers begin hoarding out of concern that prices will increase in the future. Positive effects include a mitigation of economic recessions, and debt relief by reducing the real level of debt.

Economists generally agree that high rates of inflation and hyperinflation are caused by an excessive growth of the money supply. Views on which factors determine low to moderate rates of inflation are more varied. Low or moderate inflation may be attributed to fluctuations in real demand for goods and services, or changes in available supplies such as during scarcities, as well as to growth in the money supply. However, the consensus view is that a long sustained period of inflation is caused by money supply growing faster than the rate of economic growth.

Today, most mainstream economists favor a low steady rate of inflation. Low (as opposed to zero or negative) inflation may reduce the severity of economic recessions by enabling the labor market to adjust more quickly in a downturn, and reduce the risk that a liquidity trap prevents monetary policy from stabilizing the economy. The task of keeping the rate of inflation low and stable is usually given to monetary authorities. Generally, these monetary authorities are the central banks that control the size of the money supply through the setting of interest rates, through open market.

Inflation is primarily caused by an increase in the supply of money and credit. In fact, inflation is the increase in the supply of money and credit. In American College Dictionary, the definition of inflation is “Undue expansion or increase of the currency of a country especially by the issuing of paper money not redeemable in specie”. In second definition by American College Dictionary, inflation is substantial rise of prices caused an undue expansion in paper money or bank credit.
The word “inflation” originally applied solely to the quantity of money. It meant that the volume of money was inflated, blown up, over extended. It is not mere pedantry to insist that the world should be used only in its original meaning. To use it mean “a rise in prices” is to deflect attention away from the real cause of inflation and the real cure for it.

Keynesian economic theory proposes that changes in money supply do not directly affect prices, and that visible inflation is the result of pressures in the economy expressing themselves in prices. The supply of money is a major, but not the only, cause of inflation. When the supply of money is increased, people have more money to offer for goods. If the supply of money is increased, people have more money to offer for goods. If the supply of goods does not increase or does not increase as much as the supply of money then the prices of goods will go up. Each individual dollar becomes less valuable because there is more dollars. A price is an exchange ratio between a dollar and a unit of goods. When people have more dollars, they value each dollar less. Goods then rise in prices, not because goods are scarcer than before, but because dollars are more abundant.

According to Bodie and Marcus (2001:331), inflation is the value where the price of good and service commonly get rise. Inflation is one of the monetary events that showing tendency of prices commonly, it means getting down the value of money. It happens because in the society get increasing amount of money or money surplus based on quantity theory of money.

### 2.2.1 Types of inflation

**Based on qualitative difference:**

It means classification based on difference situation. In this case we are divided into 3 stages (Samuelson dan Nordhaus, 1998: 299), which are:

1. **Moderate Inflation** This type is happened when the prices increase slowly. We can say this inflation categorize as moderate when the number is under 10 percent per year. In this situation the prices relatively will not
move far. People will not think more to use their money, because real interest rate is not too low. If the inflation low, so the money will have interest rate close to nol, maximum get real interest rate close to negative. Beside that the people will get more safety to do transaction with using nominal value of money.

2. **Medium inflation** This type of inflation is happened if the prices increase 20, 100, or 200 percent per year. It means this inflation is labeled with increasing of the prices huge sometimes double digit or triple digit. This inflation is often called with two or three digit inflation. In this case if the inflation becomes very serious so it will effect to economic condition become unstable. Commonly the contracts of transaction is fastened on the prices of index and currency like ($) dollar. People will lose their money quickly and also people will get real interest rate negative 50 or 100 percent per year. Therefore, people will not save their money in the bank although in terms of minimum transaction. Money market will be bad and sometimes funds will allocate more with sharing calculation interest rate. People are race also to overstock the goods, buy property, land, and will not lend their money with high interest rate.

3. **Hyperinflation** This type is very dead inflation that was called hyperinflation. There are characteristics if this inflation: there are speed of money cycles (money is very fast when we get and spend) increase very fast for example money will turn 30 times faster in the beginning of period and the prices is very unstable relatively, and salary for people only change one percent or even less from month to month. Hyperinflation is also known as runaway inflation or galloping inflation. This type of inflation occurs during or soon after a war. This can usually lead to the complete breakdown of a country’s monetary system. However, this type of inflation is short-lived. In 1923, in Germany, inflation rate touched approximately 322 percent per month with October being the month of highest inflation.
According to Keynes on General Theory of Employment, interest and Money, explained that inflation is caused by gap between people economic power toward desires to buy goods (Shapiro, 2002). The meaning of gap here is the demand of people on goods is bigger than available so causing increase of prices. Then, in this case we know the terminology of Inflationary gap. There are three major types of inflation, as part of what Robert J. Gordon calls the "triangle model":

1. **Demand-pull inflation** is caused by increases in aggregate demand due to increased private and government spending, etc. Demand inflation is constructive to a faster rate of economic growth since the excess demand and favorable market conditions will stimulate investment and expansion.

2. **Cost-push inflation**, also called "supply shock inflation," is caused by a drop in aggregate supply (potential output). This may be due to natural disasters, or increased prices of inputs. For example, a sudden decrease in the supply of oil, leading to increased oil prices, can cause cost-push inflation. Producers for whom oil is a part of their costs could then pass this on to consumers in the form of increased prices.

3. **Built-in inflation** is induced by adaptive expectations, and is often linked to the "price/wage spiral". It involves workers trying to keep their wages up with prices (above the rate of inflation), and firms passing these higher labor costs on to their customers as higher prices, leading to a 'vicious circle'. Built-in inflation reflects events in the past, and so might be seen as hangover inflation.

**Sectoral Inflation**: This is the fourth major type of inflation. The sectoral inflation takes place when there is an increase in the price of the goods and services produced by a certain sector of industries. For instance, an increase in the cost of crude oil would directly affect all the other sectors, which are directly related to the oil industry. Thus, the ever-increasing price of fuel has become an important issue related to the economy all over the world. Take the example of aviation industry. When the price of oil increases, the ticket fares would also go up. This would lead to a widespread inflation throughout the economy, even
though it had originated in one basic sector. If this situation occurs when there is a recession in the economy, there would be layoffs and it would adversely affect the work force and the economy in turn.

**Fiscal Inflation**: Fiscal Inflation occurs when there is excess government spending. This occurs when there is a deficit budget. For instance, Fiscal inflation originated in the US in 1960s at the time President Lydon Baines Johnson. America is also facing fiscal type of inflation under the presidentship of George W. Bush due to excess spending in the defense sector.

![Figure 2.2 Inflation Index of Commercial Bank in Bank Indonesia](source)

From this graphic, we can see that the condition of inflations fluctuated during period October 2007 until March 2010. Therefore, government issued policies to face crisis so that the inflation still can be handled to keep the economic condition still stable because inflation is the one of the important factors in Indonesia’s economic. Inflation started to be fluctuated in beginning 2008. In that time, we got crisis that centered in USA and uncontrolled the price of fuel. Because of that, the condition of economic almost each country in the world got the impacts, included Indonesia.
In the crisis era, the commodity of food like CPO, cooking oil, wheat and gold also increase uncontrolled. The stock market got decline so that the IHSG on the lowest position at the time. That was very bad situation because Indonesia started to stand up after the crisis era in 1998. In around 2008 and 2009 is the dark economic. Government tried to keep the inflation maximum 12% to decrease the probability failure of economic like happened in USA. Indonesia is one of the successful countries that still survive toward crisis 2008 and 2009.

At the end of 2009 and beginning 2010 the inflation become stable because the economic condition such as the price of fuel, IHSG, commodity and exchange rate started increase.

2.3 Interest Rate and Definitions

Interest rate is price of fund that can be borrowed (loanable funds), the nominal is determined by preference and source of market and economic actor in market. Interest rate is not only influenced by changing of preference economic actor in loanable case or loanable fund, but also influenced by changing buying power of money. Because of market interest rate or valid interest rate changes from time to time and interest rate from a lot of long term obligations is determined in publication time, so the price of stocks will be changed based on changing interest rate.

According to Karl and Fair (2001:635), interest is year interest payment from is particular loan in the form of percentage from loan that we get from number of interest that we accept every year divided by number of loan. Interest is the price from loan called as percentage of main money per time unit. Interest is a price measurement of resources that used by debtor which must be paid to creditor.

There are the functions of interest are:

1. As a tractive power for depositor that have savings more to be invested
2. Interest can be used as a monetary tool to manage supply and demand of money in the circulation of economic. For example government supported
increasing of industry sector so if companies from industry itself will borrow money, government must give the interest lowers than other sector.

3. Government can use interest to control the number of money circulation. It means, government can control the circulation of money in an economic.

Interest itself is determined by two powers, are: supply savings and capital investment demand (especially from business sector). Saving is difference between income and consumption. Interest is used as main supporter in order to desire saving, the number of saving itself will be depended by high-low of interest. Higher interest, people will interest to saving their money and vice versa. High-low offering of investment will be decided by high–low interest deposit of people.

According to Lipsey, Ragan, and Courant (1997:471) interest rate is price that paid for unit of currency that borrowed in the certain period of time. According to Lipsey, Ragan, and Courant (1997:99-100) interest rate are differed become two parts which are nominal interest and real interest. Nominal interest rate is ratio between amounts of money that repaid with amount of money that borrowed. Whereas, real interest rate is more emphasize on the purchasing power ratio of money that repaid toward purchasing power of money that borrowed. Real interest rate is difference nominal interest rate with inflation.

According to Samuelson and Nordhaus (1998) interest rate is payment of using amount money. According to Nopirin (1992:176), the function of interest rate in economic is allocation production factor to produce goods and services that used now and later. According to Ramirez and Khan (1999), there are two factors that determined interest rate which are internal and external. Internal factors include national income, amount of money supply, and inflation. Whereas, external factors are foreign exchange rate and changing level of foreign exchange that estimated.
2.3.1 Types and Theories of Interest Rate

Nominal Interest Rate
Nominal interest rate will be changed if the elements are changed the most important thing is each of them is influenced of different factors. Real interest rate is nominal interest rate minus inflation in the same period of time.

\[ R_r = R^* - R_i \]

Description:
\( R^* \) = Real interest rate
\( R_i \) = Inflation rate

\( R_i \) is symbol for inflation rate that really happened in that period, whereas \( R_i^* \) is inflation that hoped in the same period of time (Boediono, 1990 : 6).

Fishers’s theory about interest rate
Interest rate is a premium that must be paid to the customers so that saving owners interest to lend their money. Fisher said that there is positive correlation between nominal interest rate and inflation. With the condition of interest rate which is constant in the long term so the expectation of inflation will adapt to the valid inflation. Interest rate is happened when difference of nominal interest rate and actual inflation. With the condition of interest rate is constant so the condition of inflation will follow the nominal interest rate. In another said, nominal interest rate will increase as much as inflation progress (Dornbusch, Fisher, 1989, page. 592).

Parity theory of interest rate
According theory of parity mechanism process, price level of goods and services or interest rate in economic that relatively small and opening full toward world economic relation will tend to be same with price level as well as interest rate in international market. Based on this theory small economic and open like that cannot determine interest rate of price or interest rate itself. Foreign investment in current country can be organized as directly investment, portfolio investment or deposit additions of public that wants to abroad in domestic bank. And the other
way, abroad investment by public influences the supply of currency in the certain country and shift the curve of supply to the right. The amount of investment that flow to domestic and to abroad from certain country depended on benefit rate of mentioned country is relatively toward benefit rate in other country.

The addition of interest rate or profit that hoped in certain country cause increasing of demand from the currency of certain country toward abroad investment additions and also cause decreasing supply of the currency of that country from reducing public’s investment to abroad. The effect from that raising interest or profit that hoped cause appreciation of the currency and the currency will increase the investment in that country and will affect the currency itself become appreciation. Appreciation the currency in the future that hoped will affect the currency increase like another asset (Salvatore, 1995 : 141).

According to Prasetiantono (2000: 99-101).related to interest rate is if interest is high, automatically people will be prefer to save their money in the bank because they are hoped high return of money payback. And in this position the demand of people to hold cash money become lower because they are prefer to allocate their money into banking portfolio form (deposits and savings). Along with decreasing of money supply, passion of shopping is also decrease. Then, the price of goods and service will tend to stagnant or no inflation urge. On the contrary, if interest rate is low, people tend to unenthusiastic again to save their money in the bank.

Some aspects can explain the phenomena of high interest rate in Indonesia which is high interest rate related to competency of banking sector that functions as an intermediary institution, habit people to socialize and using banking service effectively are not high enough, and get difficulty to decrease banking interest rate if inflation rate is always high.
From this graphic, we can see that the condition of deposit interest fluctuated during period October 2007 until March 2010. Therefore, government issued policies to face crisis so that the interest rate can be handled to keep the economic condition still stable. Interest rate is the one of the important factors in Indonesia’s economic. Interest started to be fluctuated in beginning 2008. In that time, we got crisis that centered in USA and uncontrolled the price of fuel. Because of that, the condition of economic almost each country in the world become very badly, included Indonesia.

In 2008 sometimes the number of time deposits interest less than inflation. This means the number of saving is increase but the power of money that we have is negative because the gap of the inflation and also interest rate. For example, when we save our money in the bank with interest 8%, we will get much money 8% than previous year in the next year. But when the price is increase, the power of money that we have is not 8%. It depends on the inflation that happened now. If the inflation is 4% so the power of money that we have is 4%.

In around 2008 and 2009, many people got loss their money from the bank. It caused incapable of the bank to maintain their deposit and they also try to put their money in the stock market so when the crisis happened they got loss much
money. In Indonesia, there is the bank that cannot maintain their liquid of money and they also put in the stock market so they got loss much money and collapse now. Many people think that high interest, they will get much money. In this situation interest rate must be balanced with the number of inflation.
III. Methodology

3.1. Research Method

The author used quantitative research since data for this study is secondary data in form of numbers. Quantitative research uses data that are structured in the form of numbers or that can be immediately transported into numbers (Ross, 1999). In this study, quantitative research aimed to figure out correlation of TD Position, TD Interest and Inflation to answer the statement of problems exist in the first chapter. By using quantitative, numerical data can be processed to prove and disapprove notion or hypothesis given previously.

3.2. Variables

One important element in quantitative analysis is variable. Variable is measurable quantity that may vary or is subject to change (Render, 2006). Another definition of variable comes from Cooper and Schindler (2006) in which it is a symbol of an event, act, characteristic, trait, or attribute that can be measured and to which we assign categorical values. There are 3 variables used in this study, which is no independent and dependent variables since this study aims to seek the correlation between 2 and more variables.

The author uses correlation method to answer the problem statements in the first chapter. Correlation is a technique used to measure the strength of the relationship between 2 variables. It provides a measure of how well a least squares regression line fits the given set of data and is concerned with describing the strength of the relationship between 2 variables by measuring the degree of ‘scatter’ of the data values. The less scattered the data values are, the stronger the correlation is said to be (Francis, 1998).
Another definition of correlation comes from Sugiyono (2008). Correlation is a numeral figure to show direction and strength of relationship between 2 variables. The direction is represented in form of negative or positive relationship while the strength is measured by correlation coefficient. Correlation can exist in such a way that increases in the value of one variable tends to be associated with increases in the value of other. This is known as positive (or direct) correlation.

On the other hand, a correlation coefficient is normally represented by symbol $r$, lies between -1 and +1, with $r = +1$ signifying ‘perfect’ positive correlation. A value of $r = 0$ signifies that there is no correlation present, while the further away from 0 (towards -1 or +1) $r$ is, the stronger the correlation.

Besides correlation, partial correlation is also used to seek the correlation amongst 3 or more variables since there are 4 variables used in this study. In probability theory and statistics, partial correlation measures the degree of association between two random variables, with the effect of a set of controlling random variables removed (Francis, 1998).

### 3.3. Research Time and Place

The study is conducted within October 2007 and March 2010, using secondary data which is retrieved directly from reliable sources in internet (see appendix 3). Variables used in this study are Outstanding (Position) of Time Deposits in Commercial Banks ($y$), Interest Rate of Time Deposits in Rupiah by Commercial Bank ($x_1$), Indonesian Inflation ($x_2$). Table 3.1 in the next page shows the sources of 4 different variables:

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Interest Rate of Time</td>
<td>Bank Indonesia</td>
</tr>
</tbody>
</table>

Table 3.1 Research Data Gathering
3.4. Research Instruments

According to Kriyantono (2006), a research instrument is a supplementary tool that is chosen and used by the researcher to make the research more systematic and easy to conduct.

3.4.1. Gathering Data

Base on Yin (1994) data may be collected as either primary or secondary. In the context of this study and to achieve its purpose, secondary data were used. According to Uma Sekaran (2000), secondary data defined as data that have already been gathered by researchers, data published in statistical and other journals, and information available from any published or unpublished source available either within outside the organization, all of which that is useful for this study.

3.4.2. Data Processing Tool

In analyzing the data, the author used statistical software which is SPSS 16. By using SPSS 16, the process of test and calculation of the data can be constructed faster and easier than using manual calculation.

3.4.3. Research Framework

Research framework is design starts from collecting data until the results are gained and interpreted that can be explained as follow:
Figure 3.1 Research Framework

To illustrate clearly the correlation and partial correlation among variables, design below can be used:

From the figure above, there are several correlations that will be calculated:

1. Correlation between Outstanding (Position) of Time Deposits in Commercial Banks (y) and Interest Rate of Time Deposits in Rupiah by Commercial Bank (x₁) noted as ryx₁.
2. Correlation between Outstanding (Position) of Time Deposits in Commercial Banks (y) and Indonesian Inflation (x₂) noted as ryx₂.
3. Partial correlation of Outstanding (Position) of Time Deposits in Commercial Banks (y) with Interest Rate of Time Deposits in Rupiah by Commercial Bank and Indonesia’s Inflation (x₂); noted as ryx₁x₂.

3.5. Statistical Treatment

Seeing the research framework model above, the researcher uses several statistical statements to answer the problem statement as follows:

3.5.1 Correlation

Correlation aims to find the relationship strength between 2 variables that is represented by coefficient correlation by using formula in the next page (Francis, 1998):

\[
r = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}} \quad \text{............... \ (3.1)}
\]
Where:

- \( r \) : coefficient correlation
- \( n \) : number of data
- \( y \) : Cash Outstanding (Position) of Time Deposits
- \( x \) : Indonesia’s Inflation or Interest Rate of Time Deposits

To interpret the results, table 3.2 shows the interval coefficient for categorizing the correlation strength:

<table>
<thead>
<tr>
<th>Coefficient Interval</th>
<th>Correlation Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive (variables move in the same direction)</td>
<td>Negative (variables move in opposite direction)</td>
</tr>
<tr>
<td>0.00 until 0.199</td>
<td>0.00 until -0.199</td>
</tr>
<tr>
<td>0.20 until 0.399</td>
<td>-0.20 until -0.399</td>
</tr>
<tr>
<td>0.40 until 0.599</td>
<td>-0.40 until -0.599</td>
</tr>
<tr>
<td>0.60 until 0.799</td>
<td>-0.60 until -0.799</td>
</tr>
<tr>
<td>0.80 until 1.000</td>
<td>-0.80 until -1.000</td>
</tr>
</tbody>
</table>

Source: Sugiyono, 2008

3.5.2. Partial Correlation

Partial correlation measures the degree of association between two random variables, with the effect of a set of controlling random variables removed (www.wikipedia.com). Partial correlation is calculated by using below formula (Berenson, 2002):

\[
rx_1.x2y = \frac{r^2_{x1y} + r^2_{x2y} - 2(r_{x1y})(r_{x2y})(r_{x1x2})}{1 - r^2_{x1x2}} \quad \text{........ (3.2)}
\]

3.5.3. Coefficient of Determination

The coefficient determination is the ratio of explained variation to total variation and is obtained by squaring the value of \( r \) (the correlation coefficient). In words, the coefficient of determination gives the proportion of all the variation (in the y-values) that is explained (by the variation in the x-values) (Francis, 1998).
3.5.4. F-test Hypothesis

F-test determines whether there is a significant correlation between variables (Berenson, 2002, p.564). Because there is more than 1 explanatory variables, the null and alternative hypothesis are set up as follows:

1. **Ho:** $r_{yx_1} = 0$ (There is no significant correlation between Outstanding (Position) of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Bank)
   **Ha:** $r_{yx_1} \neq 0$ (There is significant correlation between Outstanding (Position) of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Bank)

2. **Ho:** $r_{yx_2} = 0$ (There is no significant correlation between Outstanding (Position) of Time Deposits in Commercial Banks with Indonesia’s Inflations)
   **Ha:** $r_{yx_2} \neq 0$ (There is significant correlation between Outstanding (Position) of Time Deposits in Commercial Banks with Indonesia’s Inflations)

3. **Ho:** $r_{yx_1x_2} = 0$ (There is no significant correlation of Outstanding (Position) of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Bank and Indonesia’s Inflation)
   **Ha:** $r_{yx_1x_2} \neq 0$ (There is significant of correlation Outstanding (Position) of Time Deposits in Commercial Banks with Interest Rate of Time Deposits in Rupiah by Commercial Bank and Indonesia’s Inflation)

\[
CD = \frac{\text{explained variation in all items}}{\text{total variations in all items}} = r^2 \quad \ldots \ldots \ (3.3)
\]

Note: CD stands for Coefficient Determinant  
$r$ is for the coefficient correlation
The F test statistic is equal to the regression mean square (MSR) divided by the error mean square (MSE) that is represented by formula below:

\[ F = \frac{\frac{R^2}{k}}{\frac{1-R^2}{n-k-1}} \]  \hspace{1cm} (3.3)

Where:

- \( k \) = number of independent variables
- \( F \) = test statistic from an F distribution with \( k \) and \( n-k-1 \) degrees of freedom

The decision rule is: reject \( H_0 \) at the \( \alpha \) level of significance if \( F > F_U (k, n-k-1) \); otherwise, do not reject \( H_0 \). Here, \( F \) is from SPSS computation and \( F_U (k, n-k-1) \) is from table (see appendix 4).

Nevertheless, the significant value in SPSS for F test shows the significance correlation level of one variable to another as categorized in table 3.3 below:

<table>
<thead>
<tr>
<th>Significance Value</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00-0.01</td>
<td>Highly significant</td>
</tr>
<tr>
<td>0.01-0.05</td>
<td>Significant</td>
</tr>
<tr>
<td>&gt; 0.05</td>
<td>Not Significant</td>
</tr>
</tbody>
</table>

*Source: SPSS guidelines*

As correlation, partial correlation, coefficient determinant and F test have been done, the author is able to analyze the data and answer problem statements exist in chapter 1.
IV. ANALYSIS OF DATA AND INTERPRETATION OF RESULTS

4.1. Analysis of Data
There are 3 variables: Cash Position of Time deposits, Inflation and also Time deposit interest. As explained before in chapter 3, data for these 3 variables lie within the period of October 2007 – March 2010 monthly in ascending order (see appendix 3).

These data analyzed to find the correlation within variables that is constructed in a set of pair to further answer problem statement in the first chapter. The set of correlation pair divided into correlation and partial correlation as settled up in research framework in chapter 3 to further be interpreted.

4.2. Interpretation Results
This study used 4 statistical treatments that are presented orderly in table to answer problem statements in the first chapter. Correlation treatment is implied for finding correlation between 2 variables while partial correlation one is implied for finding correlation amongst 3 variables. By using SPSS 16, results for correlation are figured out below:

4.2.1. Correlation between Cash Position of Time Deposits and Inflation
Correlation between Cash Position of Time Deposits and Inflation is noted by correlation between y and x₁ (ry₁).

Table 4.1 Correlation between Time Deposits and Inflations

<table>
<thead>
<tr>
<th>R</th>
<th>R square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.590</td>
<td>0.349</td>
<td>14.981</td>
<td>.001</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflations
b. Dependent Variable: Time Deposits

Source: SPSS 16 output
From table above, it can be derived that the correlation between Cash Position of Time Deposits and Inflations ($r_{xy}$) is 0.590. As it is closed to +1, the correlation between both variables is average. It can be said that inflation has influence and significant toward cash position of time deposit, vice versa.

According to Inflation theory, the higher Inflation of a country, the number of demand of time deposit will decrease or vice versa. The lower of Inflation will increase the demands of deposit in the bank. When inflation happened, the prices of goods and services become increase. This condition will effect to the country and trust of people to save their money will decrease. From the correlation result between cash positions of time deposits and inflation, 0.590 represents that theory is correlated enough with the study result. The increasing of inflation correlates with the decrease of Indonesia’s inflation.

R square 0.349 represents that 34.9% change in variable cash position of time deposits can be explained by changes in inflation, and the rest 65.1% can be explained by other variables other than inflation.

F test which is 14.981 is higher than F table ($F_{1, 30}$) which is 4.13. As F test is higher than F table, $H_0$ for hypothesis testing in F test number 1 is rejected and $H_a$ is accepted. This also explained by the significance figure in table 4.1 which is .001; meaning that there is highly significant correlation between cash position of time deposits and inflation.

Inflation is the one of the important indicators to know the condition of economic from October 2007 until March 2010. In that time, the condition of economic in the world was fluctuated. Subprime mortgage crisis is the causal factor. In Indonesia also get the impact of the crisis such us unemployment, many bank and big companies collapsed, stock market and exchange rate fell down. From many impact that we can see, the impact also influence to situation in Indonesia was started by increasing the price of oil so that it will influence also to the commodity
and industry in Indonesia. In Indonesia almost all the industry and commodity depend on the price of fuel because the price of oil influences also to the price of production. Therefore, the prices of daily needs become increase. This situation still happened until end of 2008.

4.2.2. Correlation between Cash Position of Time Deposits and Time Deposit Interest
Correlation between Cash Position of Time Deposits and Time Deposit Interests is noted by correlation between y and x₂ (ryx₂).

Table 4.2 Correlation between Time Deposits and Time Deposit Interests

<table>
<thead>
<tr>
<th>R</th>
<th>R square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.046</td>
<td>0.002</td>
<td>0.060</td>
<td>.809</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Time Deposit Interests
b. Dependent Variable: Time Deposits

Source: SPSS 16 output

The correlation between Cash Position of Time deposits and Time Deposit Interests (ryx₂) is 0.046. It shows that there is very weak correlation between both variables. There is almost no correlation between Cash Position of Time deposits and Time Deposit Interests.

According to Interest Rate theory, people will put their money in the bank if the interest is high. It can be said that higher interest rate, the number of deposits will increase. In fact, higher time deposit interest not really effect to demand of time deposits. This case is affected by unstable condition like politic. Although banks itself give high interest but people are scare to put and save their money in the bank. From the correlation result between Time Deposits and Time Deposit Interest, 0.046 represents that theory is not similar with the study result. The increasing Time deposit interests don’t correlate with the increasing Cash Position of Time Deposits.
R square 0.002 represents that time deposits interests doesn’t explain or determine Cash Position of Time Deposits. F test which is 0.060 is lower than F table ($F_{30}$) which is 4.13. As F test is lower than F table, Ho for hypothesis testing in F test number 2 is accepted and Ha is rejected. This is also explained by the significance figure in table 4.3 which is .809; meaning that there is no significant correlation between Cash Position of Time Deposits and Time Deposit Interests.

### 4.2.3. Partial Correlation between Cash Position of Time Deposits with Inflation and Time Deposit Interest

Partial Correlation between Cash Position of Time Deposits with Time Deposit Interests and Inflations is noted by correlation between $y$ with $x_1$ and $x_2$ ($r_{yx_1x_2}$).

<table>
<thead>
<tr>
<th>Source: SPSS 16 output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 4.3 Correlation between Time Deposits toward Time Deposit Interests and Inflations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>R square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.614</td>
<td>0.377</td>
<td>8.154</td>
<td>.002</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Time Deposit Interests  
b. Dependent Variable: Time Deposits

The correlation of Cash Positions of Time Deposits with Inflations and Time Deposit Interests ($r_{yx_1x_2}$) is .614. As it is closed to +1, there is strong correlation amongst variables. It can be said that the higher time deposits interest and inflations, the higher Cash Position of Time Deposits, vice versa.

From the correlation result of Cash Position of Time Deposits with Time Deposit Interests and Inflations which is $0.614^a$, it is higher than correlation of either Cash Position of Time Deposits and Inflations ($r_{yx_1}$=0.590) or Cash Position of Time Deposits and Time Deposits Interests ($r_{yx_2}$= 0.046). It can be derived that Time Deposits interests and Inflations collectively has stronger partial correlation with Cash Position of Time Deposits than if these variables are correlated as in $r_{yx_1}$ and $r_{yx_2}$. 

---

38
In other words, if Time Deposit Interests and Inflations are high then Cash Position of Time Deposits is supposed to be also high. High Interest represents demands of time deposit increase. It is caused people will think that they will get more money with high interest. Not only that, high inflation rate that will make domestic price incline. It will encourage people to save their money in the bank because the value of their money is decrease. The increase of both of these conditions collectively will also be responded by the Cash Position of Time Deposits.

R square 0.377 represents that 37.7% change in variable Cash Position of Time Deposits can be explained by any change in Time Deposits interests and Inflations. The rest, which is 62.3%, can be explained by other variables other than Time Deposits interests and Inflations.

F test which is 8.154 is higher than F table ($F_{2, 29}$) which is 3.33. As F test is higher than F table, Ho for hypothesis testing in F test number 4 is rejected and Ha is accepted. This also explained by the significance figure in table 4.4 which is .002; meaning that there is highly significant correlation of Cash Positions of Time Deposits with Inflations and Time Deposit Interests.

Based on the theory Irving Fisher, there are positive correlation between interest rate and inflation. Higher interest rate is also increasing demand of time deposit because people think that they will get much money with high interest. In this condition, with inflations were fluctuated people will look the other instruments for investment like buy gold or something like that because the condition of economic Indonesia was unstable to invest money neither in the bank nor financial market

Along the global crisis happened, the probability correlation between interest rate and inflation become very weak because interest rate increase which is influenced by banks that got scarcity of liquidity and become unhealthy structurally. From
here, we can see banks only rely on funds from people, whereas many people withdraw rush their money from the banks. Because the risk of giving loan increased in financial crisis and market segmentation, so interest rate is grow up and influence to the SBI interest rate and savings.

When crisis global is coming, central bank get the problem to solve the crisis because the instrument of economic is very limited. In this situation, central bank only is focusing to interest rate. As the monetary instrument of central bank, interest rate becomes the role of stability of economic in Indonesia to maintain depreciation of rupiah and also inflation. As a result of the interest rate is instability, interest rate become increase and affected to the inflation and depreciation of rupiah overshooting.

The research showed that interest rate is effective to strength exchange rate if there are no factors other non-economic disturb. On the contrary, the increasing of interest rate is not effective to consolidate exchange rate if there are still factors non-economic disturb like mass turbulence, negative rumor, and mass disturbance. In the way to restrain inflation, effective interest rate becomes lower. It was affected by demand factor (core inflation) and also supply factors (noise inflation), like production and distribution.

Interest rate is very effective to maintain the core inflation, but not effective to restrain inflation. In certain months especially in 2008 and 2009, core inflation is more dominated. People withdrew their money in the bank after hearing the news that financial crisis in US will also impact to the economic condition in Indonesia. As the reason of that, people become very scary. Supply of deposit decrease and also inflation become unstable again.

The relation of time deposit toward time deposit interest and inflation are very strong in crisis era. The amount of time deposit in the bank is very influenced by those two factors. In this situation because the amount of time deposit is increasing every month during 2008-2009 so we can conclude those two factors is
very important elements. We can see that time deposit interest and inflation are unstable moves. Because this condition will make the time deposit become decrease so the government issued policy to maintain the condition of time deposit in commercial bank to become still can be handled and the reserve money in the bank is safety.

Actually the financial crisis in Indonesia is not very influenced to the condition of economic in Indonesia because when the crisis happened, government anticipate this crisis with appropriating the amount of inflation and interest rate so time deposit and the reserve money in the still high. Besides this action, many banks in Indonesia also give the people who want to invest their money in the bank with giving high interest so people still trust to the bank and deposit of the bank still running. The rumors about the economic in Indonesia will be down also impact to amount of money in the bank. With this situation government give the announcement that the crisis in Indonesia will not really impact to economic.

4.2.4. Correlation Summary
From analysis Ruddy N Sasadara “Dampak Finansial Global Terhadap Sektor Ekonomi dan Perbankan” Economic review September 2008 no. 213

If we see survey of perception in 3rd quarter of 2008, bank Indonesia still optimistic that economic growth until 6.4% with inflation 11.1% - 12% and rupiah Rp 9,250 – 9,500/USD. But, with the condition of economic of Indonesia was going down, is Indonesia still can be survived?

The impact of economic sector occurred when flight of capital happened, which affected rupiah rate decrease and interest rate increase sharply. Because the decrease of exchange rate, inflation for import (imported inflation) will increase so that production cost will increase too. This condition will effect to competitiveness Indonesian product will decrease in global market because the price is more expensive followed material price. In addition, domestic will be
competed with same product from others countries like from Thailand, Vietnam, and china with the cheap price.

If we saw from fundamental of economic, actually we can say that the economic condition is relatively strong and stable with the characteristic NPL (non performing loan/NPL gross) less than 5% so it showed that intermediation system still healthy. LDR less than 80% it means liquidity is good, CAR (Capital Adequacy Ratio) around 16 % (August 2008) it means the capital is strong, rupiah depression less than 5% that showed rupiah is stable, inflation was around 10%, foreign exchange reserve per October 2008 USD 52,4 billion.

In that time government and bank Indonesia become more responsive to issue policies toward the impact of financial crisis. The main impact from this crisis to banks in Indonesia was there is struggle between banks to interact people deposit their money in the banks. This is make sense because depositor will get higher interest than deposit their money in financial market which is the condition is unstable. Per august 2008, composition of third party funding is gyro 26 %( Rp 405 trillion), saving 29% (Rp 452 trillion) and deposit 45% (Rp 676 trillion).

According to the results of correlation and partial correlation amongst variables, it can be derived that Cash Position of Time Deposits has strong correlation with other variables except Time Deposit Interest. Only correlation between Cash Position of Time Deposits and Time Deposit Interests that is very weak, even it can be arrived at the conclusion where both of them do not have correlation. To summarize, table in the next page presents the complete correlation and partial correlation result:
From table above, it can be derived that the strongest correlation comes from correlation noted by correlation code $r_{yx_1x_2}$ while the weakest one comes from correlation $r_{yx_3}$. All of the correlation codes are highly significant except one noted by $r_{yx_2}$. Correlated respectively with Cash Position of Time Deposits, Inflation has the highest correlation, followed by Inflations has very weak correlation and not significant.

From those explanations above we can conclude that the relation of time deposit toward inflation and interest rate is significant. It means time deposit here is very affected by time deposit interest and inflations. Although the development of time deposit from 2007 – 2010 is growing up but in current months also going down. It was happened because the condition of economic in that time was instable. Financial crisis is the causal factor of the condition in Indonesia become unstable.

Commonly the condition is not really influenced to the condition of time deposit in commercial bank in Indonesia. Investors still believe in Indonesia which is one of the countries that can solve the financial crisis although the stock exchange value is getting down. Government also gives the attention to the banks to not really aggressive give the high interest to customers and put their money in financial market. So when the crisis happened and there is bank that becomes collapse because the internal policies to put their money in the bank without anticipating the financial crisis are coming.
After the explanations above, we can conclude the effects of correlations between time deposit interests and inflations in financial crisis of commercial bank in Indonesia, such as:

1. Time deposit is depended on the inflation and time deposit interest. Although the correlation of time deposit and inflation are not really strong, and also time deposit and time deposit interest is very weak. When the inflation is constant and time interest is also constant even higher so the demand of time deposit interest will grow up. Based on the theory of Irving Fisher the relationship between inflation and interest rate is strong, so when the inflation increases, time deposit will increase also. In this situation, it will effect to supply of money on society. When the deposit in banking increase so banks will be easier to manage their money with giving the credits for companies and industries. After all of these are running well, the condition of economic will be conducive.

2. In financial crisis era, Inflation is the indicator to know the condition of economic in certain country. When inflation is high, people will not invest their money although the interest rate is also high because inflation is effected by the condition of economic. When the condition of economic is good, the inflation will be stable. But when economic is not good, the inflation will be unstable. Therefore, people think to not deposit in that time until the condition back to normal. In this situation, inflation is very important to stabilize the price and maintain money supply in society.

3. In the condition of financial crisis, time deposit will be benefit as the source of fresh money which is very important to help bank run their business and survive from the financial crisis. One of the ways to get the fresh money with inviting people to deposit their money in the bank. This is can be done by giving short time deposit for 3, 6, and 12 months with giving competitive interest rate so when the crisis happened deposit is not problem.

4. Time deposit is the indicator to stabilize of economic condition and reserve fund for the commercial bank to run their business and supply
credit to the companies and industries. In this role, banking will get benefit from the aggregate interest rate and time deposit interest. If banks don’t have money to run their business, bank will get problem and at the end will be collapse. So if this problem happens, bank will take action to merge or sell their ownership to companies that is healthy financially.
V. CONCLUSION AND RECOMMENDATION

5.1. Conclusion
This thesis studies the correlation of Time Deposits with Inflation and Time Deposit Interests. It applies the case of commercial bank in Indonesia based on data of Bank of Indonesia monthly within period September 2007 - March 2010. Based on data analysis and interpretation in previous chapter, there are several conclusions that can be derived based on the statements of problems like:

1. The correlation between Time Deposits and Inflations is 0.590, which is average correlation and highly significant toward the demands of time deposit in commercial bank. It means that this hypothesis is proved. It indicates that higher inflation will decrease the demand of time deposits. The other side, lower inflation will increase the demand of time deposits. In this condition, with inflations were fluctuated people will look the other instruments for investment like buy gold or something like that because the condition of economic Indonesia was unstable to invest money neither in the bank nor financial market. When the prices of oil in the oil market become very high and crisis subprime mortgage that also effect to economic condition in Indonesia, people will think that this condition is unstable so people is scare to save their money in the bank. Therefore, people will interest to invest their money in other instrument of investment.

2. The correlation between Time Deposits and Time Deposit Interests is 0.046, which is very weak correlation and not significant. It means that this hypothesis is unproved which is variable of time deposit interest doesn’t affect increase or decrease the demand of time deposit in commercial bank. Based on the theory classic higher interest will attract people to save their money in the bank. Higher interest rate also increasing demand of time deposit because people think that they will get much money with high interest.
3. The correlation of Time Deposits toward Time Deposit Interests and Inflation is 0.614, which is strong correlation and highly significant. It means these models are good enough to present the correlation of time deposits as dependent variable toward inflations and time deposits interest as independent variable. Because in theory Irving Fisher there are positive correlation between the interest and inflation. Real interest rate is the gap of nominal interest rate minus inflation. In other words, nominal interest rate will increase according to inflations. From this situation, we can see that when inflation is constant and the nominal interest rate follow it so it will influence to the condition of economic. When the inflation is constant and interest rate increase so it will be affected to people to invest their money in the bank like time deposit.

5.2. Recommendations

1. In increasing the number of time deposits, banks should effectively and efficient in managing money. Government should have efforts to keep stability of inflation and interest rate. In this situation, inflation shouldn’t exceed more than interest rate. If this happened interest rate will be negative so that people will scare to save their money in the bank because the condition is unsecure even their money will be loss.

2. The efforts of the bank in gathering money and fund from people must be followed with increasing services and products to interact people saving their money in the bank like guarantee, insurance and promotion products of deposit.

3. Management of banking is related with two activities, which are gathering fund and allocating fund. Gathering fund activities like deposits, saving money and etc. Allocating fund activities like long term and short term credit. The purpose of management banking is getting profitability as much as possible. In gathering money activity like time deposit, bank should be able to increase the number of funds in form of time deposits so that liquidity bank will be kept.
4. Every bank should have insurance deposit scheme (IDS) which is the insurance guarantee for the money that deposit in the bank. It is much needed because people will be more secure to save their money in the bank.
LIST OF REFERENCES

Books


Hefferman, Shelagh (2005), *Modern Banking*, John Wiley & sons Ltd


### APPENDIXES

#### Table from September 2008 – March 2010

<table>
<thead>
<tr>
<th>Period</th>
<th>Time Deposit</th>
<th>Inflation</th>
<th>Time Deposit Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct-07</td>
<td>659457</td>
<td>0.0688</td>
<td>0.0643</td>
</tr>
<tr>
<td>Nov-07</td>
<td>668462</td>
<td>0.0671</td>
<td>0.1198</td>
</tr>
<tr>
<td>Dec-07</td>
<td>681529</td>
<td>0.0659</td>
<td>0.0896</td>
</tr>
<tr>
<td>Jan-08</td>
<td>679239</td>
<td>0.0736</td>
<td>0.0719</td>
</tr>
<tr>
<td>Feb-08</td>
<td>684476</td>
<td>0.074</td>
<td>0.1075</td>
</tr>
<tr>
<td>Mar-08</td>
<td>649171</td>
<td>0.0817</td>
<td>0.0688</td>
</tr>
<tr>
<td>Apr-08</td>
<td>662301</td>
<td>0.0896</td>
<td>0.0686</td>
</tr>
<tr>
<td>May-08</td>
<td>669425</td>
<td>0.1038</td>
<td>0.0698</td>
</tr>
<tr>
<td>Jun-08</td>
<td>683826</td>
<td>0.1103</td>
<td>0.0719</td>
</tr>
<tr>
<td>Jul-08</td>
<td>673000</td>
<td>0.119</td>
<td>0.0751</td>
</tr>
<tr>
<td>Aug-08</td>
<td>688239</td>
<td>0.1185</td>
<td>0.0804</td>
</tr>
<tr>
<td>Sep-08</td>
<td>741296</td>
<td>0.1214</td>
<td>0.0926</td>
</tr>
<tr>
<td>Oct-08</td>
<td>773547</td>
<td>0.1177</td>
<td>0.1014</td>
</tr>
<tr>
<td>Nov-08</td>
<td>791068</td>
<td>0.1168</td>
<td>0.104</td>
</tr>
<tr>
<td>Dec-08</td>
<td>819791</td>
<td>0.1106</td>
<td>0.1075</td>
</tr>
<tr>
<td>Jan-09</td>
<td>828260</td>
<td>0.0917</td>
<td>0.1052</td>
</tr>
<tr>
<td>Feb-09</td>
<td>851782</td>
<td>0.086</td>
<td>0.0989</td>
</tr>
<tr>
<td>Mar-09</td>
<td>848829</td>
<td>0.0792</td>
<td>0.0942</td>
</tr>
<tr>
<td>Apr-09</td>
<td>840070</td>
<td>0.0731</td>
<td>0.0904</td>
</tr>
<tr>
<td>May-09</td>
<td>849256</td>
<td>0.0604</td>
<td>0.0877</td>
</tr>
<tr>
<td>Jun-09</td>
<td>856903</td>
<td>0.0365</td>
<td>0.0852</td>
</tr>
<tr>
<td>Jul-09</td>
<td>851407</td>
<td>0.0271</td>
<td>0.0831</td>
</tr>
<tr>
<td>Aug-09</td>
<td>858044</td>
<td>0.0275</td>
<td>0.0794</td>
</tr>
<tr>
<td>Sep-09</td>
<td>857642</td>
<td>0.0863</td>
<td>0.0743</td>
</tr>
<tr>
<td>Oct-09</td>
<td>870502</td>
<td>0.0257</td>
<td>0.0738</td>
</tr>
<tr>
<td>Nov-09</td>
<td>873623</td>
<td>0.0241</td>
<td>0.0716</td>
</tr>
<tr>
<td>Dec-09</td>
<td>895360</td>
<td>0.0278</td>
<td>0.0687</td>
</tr>
<tr>
<td>Jan-10</td>
<td>895740</td>
<td>0.0372</td>
<td>0.0709</td>
</tr>
<tr>
<td>Feb-10</td>
<td>902515</td>
<td>0.0381</td>
<td>0.0693</td>
</tr>
<tr>
<td>Mar-10</td>
<td>931177</td>
<td>0.0343</td>
<td>0.0677</td>
</tr>
</tbody>
</table>
Table 4.1 Correlation between Cash Position of Time Deposits and Inflations

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.590ª</td>
<td>.349</td>
<td>.325</td>
<td>77201.394</td>
<td>.180</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation  
b. Dependent Variable: Time Deposit

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>1</td>
<td>8.929E10</td>
<td>14.981</td>
<td>.001ª</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>28</td>
<td>5.960E9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>29</td>
<td>2.562E11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation  
b. Dependent Variable: Time Deposit

Table 4.2 Correlation between Cash Position of Time Deposits and Time Deposit Interests

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.046ª</td>
<td>.002</td>
<td>-.034</td>
<td>95548.007</td>
<td>.046</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Time Deposit Interest  
b. Dependent Variable: Time Deposit
### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>5.459E8</td>
<td>1</td>
<td>5.459E8</td>
<td>.060</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2.556E11</td>
<td>28</td>
<td>9.129E9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.562E11</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Time Deposit Interest  
b. Dependent Variable: Time Deposit

### Table 4.3 Partial Correlation between Cash Position of Time Deposits with Time Deposit Interests & Inflation

#### Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.614a</td>
<td>.377</td>
<td>.330</td>
<td>76909.195</td>
<td>.254</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation, Time Deposit Interest  
b. Dependent Variable: Time Deposit

### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>9.646E10</td>
<td>2</td>
<td>4.823E10</td>
<td>8.154</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>1.597E11</td>
<td>27</td>
<td>5.915E9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.562E11</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation, Time Deposit Interest  
b. Dependent Variable: Time Deposit
## Correlations

<table>
<thead>
<tr>
<th></th>
<th>Time Deposit</th>
<th>Time Deposit Interest</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Deposit</td>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>-.046</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.809</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Time Deposit Interest</td>
<td>Pearson Correlation</td>
<td>-.046</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.809</td>
<td>.062</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Inflation</td>
<td>Pearson Correlation</td>
<td>-.590**</td>
<td>.344</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.062</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).