

Masters of Science (Banking)

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Interest Reduction – A Solution For Financial Crisis

By

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Abstract

The paper examines the effects of interest rate and its adjustment to the economic growth. It did mention the theory on supply and demand of credit relate to interest rate movement. Background of the global financial crisis duly emphasized. The research intends to study the role of relationship between liquidity in the interbank market and effects on interest rate to GDP particulars in Malaysia for the year 2000 up to 2007. We will use quantitative approach to this research involves gathering and analysis of numeric data. The data collected will be analyze by way of correlation and regression – in the direction of prediction. The results show that interest rate adjustment is highly correlate to gross domestic products, thus play a vital role in recovering from financial crisis.

JEL classifications: G01; G21

Keywords: credit underwriting; bank lending; lending standards, loan losses

Table of contents

| | | |
|----------|---------------------------------------|----|
| 1 | Introduction | 1 |
| 1.1 | The supply of credit | 1 |
| 1.2 | The demand of credit | 2 |
| 1.3 | The allocative role of interest | 3 |
| 2 | Background of global financial crisis | 4 |
| 2.1 | Motivation of the study | 6 |
| 2.2 | Research objectives | 7 |
| 3 | Literature Review | 8 |
| 4 | Theoretical Framework | 9 |
| 4.1 | Methodology | 10 |
| 5 | Data Collection | 12 |
| 6 | Findings | 13 |
| 6.1 | Descriptive statistics | 13 |
| 6.2 | Correlation analysis | 13 |
| 6.3 | Regression analysis | 14 |
| 7 | Conclusion | 16 |
| | References | 17 |

1.0 INTRODUCTION

In a real world economy in which money exists, interest is the amount of funds, valued in terms of money that lenders receive when they extend credit; the interest rate is the ratio of interest to the amount lent. For example, suppose that \$100 is lent, and, at the end of 1 year, \$110 must be paid back. The loan principal then is \$100, the interest paid is \$10, and the interest rate is 10 percent (because $\$10/\$100 = 0.10$). All these quantities are valued in monetary units, because money is used as a standard of deferred payment.

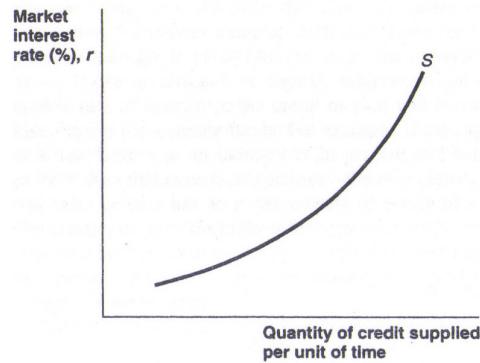
Credit market typically will arise whether or not money exists. The reason is that both lenders and borrowers can gain from credit transactions. In a modern, diverse economy in which households specialize in consumption and firms specialize in production, there are further reasons that credit market arise: (1) different households have different personalities- they have different preferences for present versus future consumption, and (2) businesses can make investment in plant, equipment, and/or inventory that are profitable enough to enable them to pay back interest.

1.1 The Supply Of Credit

The supply-of credit schedule is positively sloped; it rises from left to right. At higher interest rates more households and businesses will become net lenders, as the rate of interest increases, more households observe a market rate of interest that exceeds their personal trade-off between present and future consumptions. At very high interest, even extremely present oriented, “live-for-today” individuals will find it worthwhile to save more of their incomes. Similarly, at some very high interest rate, they can earn better rate of return by becoming net savers. Figure 1 shows the probable shape of an economy’s supply-of-credit curve.

Figure 1

Figure 7-1
The Supply of Credit. This schedule indicates that at higher interest rates more households and businesses prefer to become net lenders.



1.2 The Demand For Credit

The economy's demand for credit schedule will be negatively sloped; it falls from left to right. As the rate of interest falls, more people prefer to become net borrowers. As the interest rate decreases, more households discover that the market rate of interest is below their personal rate of interest. They decide to reduce their saving rate. At some very low rate of interest (for some it may be negative), even future-oriented people find that they prefer to consume more in the present and save less. For businesses, lower interest rates mean that more investment projects exist for which they can borrow funds, pay the interest, and keep some net profit. In short, as the rate of interest falls, other things constant, the quantity demanded for credit rises. The probable shape of a demand-for credit curve is depicted in Figure 2

Figure 2

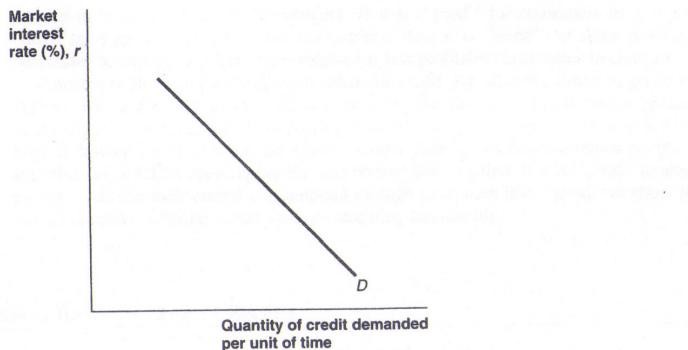


Figure 7-2

The Demand for Credit. The demand-for-credit schedule is negatively sloped, indicating that as the rate of interest falls, the quantity demanded for credit rises. This is because at lower interest rates more investment projects are profitable than at higher rates. In short, as the rate of interest falls, more households and businesses find it worthwhile to become net borrowers.

1.3 The Allocative Role Of Interest

Interest is the price that allocates loanable funds (credit) to consumers and to businesses. Businesses compete with each other for loanable funds, and the interest rate allocates loanable funds to different firms and therefore to the investment projects of those firms. Those investment, or capital, projects whose rates of return are higher than the market rate of interest in the credit market will be undertaken, given an unrestricted, or free, market for loanable funds. For example, if the expected rate of return on the purchase of new factory in an industry is 20 percent and loanable funds can be acquired for 15 percent, then that investment project – the new factory – will be purchased. If, by contrast, that same project has an expected rate of return of 9 percent, it will not be undertaken. The funds will go to the highest bidders-those who are willing and able to pay the highest interest rates. In practice, the funds will go to those firms that are the most profitable. By this method, profitable firms are allowed to expand and unprofitable firms are forced to contract or go bankrupt.

This allocation of credit among businesses can be considered efficient if efficiency is defined in terms of consumer sovereignty. If it is “good” for consumers to influence output by their dollar votes in the marketplace, then it is “good” to allow profitable business to expand and force unprofitable (or less profitable) businesses to contract.

Consumers also compete with each other for credit. By allowing credit to go to the highest bidder, the interest rate allocates consumption through time. It allows present-oriented people, who are willing to pay high interest rates, to consume more now and less later. Allowing credit to go to the highest bidder also allows future-oriented people to substitute more future consumption for less present consumption. If it is “good” to allow people to choose their rate of consumption through time, then it is “good” to allow the rate of interest to allocate credit among competing households.

2.0 BACKGROUND OF GLOBAL FINANCIAL CRISIS

When the Bretton Woods international monetary system broke down in 1973, the world’s financial officials were unable to agree on a new set of rules to regulate international trade and monetary relations. The current international monetary system which evolved out of the collapse of Bretton Woods will be referred to as dollar standard, so named because U S Dollars have become the world’s core reserve currency in place of gold, which had comprised the world’s reserve assets under Bretton Woods system as well as under the classical gold standard of the 19th century.

The primary characteristic of the dollar standard is that it has allowed the United States to finance extraordinary large current account deficits by selling debt instruments to its trading partners instead of paying for its imports with gold, as would have been required under the Bretton Woods system or the gold standard.

However, it is now becoming increasingly apparent that the dollar standard has also resulted in a number of undesirable, and potentially disastrous, consequences.

First, it is clear that the countries that built up large stockpiles of international reserves through current account or financial account surpluses experienced severe economic overheating and hyperinflation in asset prices that ultimately resulted in economic collapse.

Second, the United States trading partners have reinvested their dollar surpluses in U.S. dollar-denominated assets such as stocks, corporate bonds. This move have helped fuel the stock market bubble, facilitated the extraordinary misallocation of corporate capital, and drive U.S. property prices to unsustainable levels.

Third, the credit creation that the dollar standard made possible has resulted in over investment on a grand scale across almost every industry. Over investment has produced excess capacity and deflationary pressures that are undermining corporate profitability around the world.

During the three decades since the collapse of Bretton Woods, the United States has incurred a cumulative current account deficit of more than US 3 Trillion. That creation of credit backed only by paper reserves has generated worldwide credit bubble characterized by economic overheating and severe asset price inflation. The credit bubble is now precariously close to imploding, because much of the credit cannot be repaid.

The bubble in Japan popped in 1990 because over investment had created overcapacity throughout the domestic economy. Excess capacity exerted downward pressure on prices and profits. Slowing earnings were incompatible with frighteningly inflated share prices. Credit growth slowed sharply, reflecting a lack of viable investment opportunities in Japan's glutted market in spite of rapidly declining interest rates. Finally, the stock market and property prices began to collapse in a slump that has subsequently reduced stock prices by 75% and property values by more than 50%.

The Asia Crisis was caused by the sudden outflow of foreign capital in 1997, when in fact, it was not the outflow of capital, but the huge inflow of foreign funds during the preceding 10 years that had created the bubble in the first place. The outflow of fund was only part and parcel of the panic that occurred as the Asian credit bubble imploded.

After the collapse of the Tech Bubble, the economy needed a stimulus. But US tax cuts didn't provide much stimulus to the economy. This put the burden of keeping the economy going on the Fed, and it responded by flooding the economy with liquidity. Under normal circumstances, it's fine to have money sloshing around in the system, since that helps the economy grow. But the economy had already overinvested, and so the extra money wasn't put to productive use. Low interest rates and easy access to funds encouraged reckless lending, the infamous interest only, no down payment, no documentation subprime mortgages.

2.1 Motivation Of The Study

The paper intends to study the role of relationship between liquidity in the interbank market and effects on interest rates to Gross Domestic Products. The importance of interbank markets as distributors of liquidity is well recognized in the literature. Ho and Saunders (1985) examine a model in which banks' reserve position are affected by stochastic customers' deposits and withdrawals; interbank trading allows them to meet their reserve requirements. A common feature to these models is that a well functioning interbank market is important for bank's ability to access liquidity, and as a result, it is important for firm' and consumers' ability to access bank financing, and ultimately for the efficiency of the financial system.

In Malaysia, we observed that the government has adopted several measures relating to interest rate in order to combat financial crisis.

1997-1998

The interest rate fluctuated from 5% to 12% in between 1997 and 1998 incurred financial crisis in Malaysia. High volatility of KLIBOR interest rates badly effected the economic condition and equities market performance. As such, two special vehicles were formed by government to handle the crisis issues.

Danaharta, an asset management company, was established to "take out" large non performing loans from the worst-affected banks and financial institutions.

This—together with recapitalization of severely decapitalized banks by a companion agency, Danamodal—served to restore liquidity to the banking system.

Although banks became more careful about lending for property purchases, the government introduced higher lending targets for share purchases to boost the stock

market, with positive wealth effects raising domestic demand, helped by expansionary fiscal policies.

2007-2008

The adverse global developments have already affected the Malaysian economy, as evidenced by the slowdown in export performance and lower equity prices. While domestic demand remains resilient, there are indications of slower private sector activity amid some softening in the labour market conditions and a more challenging business environment. Under these conditions, sustaining domestic demand is key to ensuring that growth in 2009 remains positive.

Given the heightened downside risks to growth and the diminishing inflationary pressures, the reduction in the OPR from 3.25% to 3% is a pre-emptive measure aimed at providing a more accommodative monetary environment. To further reduce the cost of intermediation, the MPC also decided to reduce the Statutory Reserve Requirement (SRR) from 4% to 3.5%, with effect from 1 December 2008.

2.2 Research Objectives

Based on the above motivation, the objectives of this study are:-

- a. To examine the trend in Gross Domestic Products, Kuala Lumpur Overnight policy Rate, Base Lending Rate, Money Supply and Demand Deposit in Malaysia between 2000 to 2007;
- b. To investigate the relationship between GDP and KLIBOR, BLR, M3,DD in Malaysia;
- c. To discuss the implications of the reduction of interest rate as a solution for financial crisis.

3.0 LITERATURE REVIEW

Most of the empirical literature focused on the impact of the financial crisis on the various factors.

Wouter, Steven and Guy (2006) pointed out that during a monetary tightening – when interest rates are high and economic activity is low – bank rather invest in short term assets, such as business loans, that earn a high return (because short term interest rates are high) and are relatively safe, than invest in long term and risky assets such as real estate loans.

Bernanke and Gertler (1995) reported that the most rapid and effect of a monetary policy shock on residential investment, whereas business structured investment, also a long-lived investment, does not seem to have a stimulated consumption spending and residential investment, and not business investment.

Fiat Demir (2008) suggested that there is a need to reorganize the financial system in such a way that domestic (and foreign) savings are directed towards productive investments instead of financial ones. For this objective, their key recommendation include a) providing macro and microeconomic stability; b) reducing interest rates; c) opening up long term credit channels for fixed investment; and d) eliminating public finance problems.

Asli and Enrica (1997) highlighted that gross domestic products, real interest rate and inflation is associated with a highly probability of a banking crisis. The results showed that a weak macroeconomic environment with low GDP growth and high inflation makes crises more likely; highly real interest rates have also contributed to banking sector fragility, and so do vulnerability to balance of payments crises.

Garrick and others (2008) mentioned that the capital markets imperfections may reduce exporters' investment and thus amplify emerging market crises. While domestic exporters may have faced a credit crunch, exporters with foreign ownership could access credit through their parent company and thus insure themselves.

Krugmans' model shows that, under a fixed exchange rate, domestic credit expansion in excess of money demand growth leads to a gradual but persistent loss of international reserves and, ultimately, to a speculative attack on the currency, which results in a persistent loss of international reserves that ultimately forces the authorities to abandon the parity.

Chin and others (2008) suggested that concrete policies for increasing the chances of avoiding the crisis. The neuro fuzzy approach can usefully complement these models both theoretically and empirically.

Asish Saha and others (2007) conclude that interest rate volatility, in developing countries like India, has made Asset-Liability management extremely challenging. To get a complete picture of vulnerability of Indian banks to interest rate fluctuations yield curve risk and option risk need to be incorporated. The results also have regulatory policy implications as well.

Thorsten and Hieko (2008) stressed that a strong effect of macroeconomic policies on margins and spreads underlines the importance of macroeconomic stability for financial deepening.

Demirguc-Kunt and Dtragiache (1998) focus on a further potential trigger of financial distress and the result indicate that financial liberalization exerts a negative impact on the stability of the financial sector that is additional to those from adverse macroeconomic developments and related vulnerabilities to balance of payments crises.

4.0 THEORETICAL FRAMEWORK

Tightening the money supply is effective in battling inflation. However, increase the money supply is no cure for the deflation that results when a credit bubble pops, because it is excessive money supply growth that causes economic bubbles in the first place. The unlimited expansion of money supply will end in the death of the currency system involved.

In discussion on monetary policy, two views are often presented on the relationship between money and output. The views are credit view and money view.

Credit effects money supply of an economy: the higher the level of credit, the higher the level of money supply will be. The credit view holds that bank loans or credit are important in determining output and interest rates.

When money supply increases through bank deposits, interest rate falls, at least in the short term. This will encourage bank dependent and interest sensitive borrowers to borrow and spend. Eventually, this will translate into higher output in the economy.

The money view provides a simple relationship between money supply and economic activity through interest rate. However, the money view assumed financial intermediaries only play a passive role in the process, thereby reducing the importance of reducing information costs of borrowing and lending. (IBBM, CCP Manual)

4.1 Methodology

To examine the relationship between gross domestic growth (GDP) and interest rates (I), we will use quantitative approach to research involves gathering and analyze of numeric data, such as overnight policy rate (OPR), base lending rate (BLR), money supply (M3) and demand deposit(DD).

We will see the above factors affecting the GDP in our country, Malaysia for the year of 2000 to 2007.

Based on the past study and literature, the hypotheses are listed as follows:-

H1: KLIBOR (short term interest rate) has a negative relationship with GDP.

H2: BLR (loan term interest rate) has a negative relationship with GDP.

H3: M3 has a negative relationship with GDP.

$$\text{GDP} = \text{KLIBOR} + \text{BLR} + \Delta\text{M3} + \text{DD}$$

The common features of statistical method that they deal with are the idea of significance and the concept of null hypothesis. The terms dependent variable and independent variable are frequently used in statistical analysis. If there is a relationship between a dependent and independent variable, the implication is that changes in the former are caused by changes in the latter.

For this study, we define GDP as dependent variable and KLIBOR, BLR, M3, DD as independent variables. We do define interest rate factor as combination of KLIBOR and BLR.

5.0 DATA COLLECTION

We use the figure extracted from Bank Negara Malaysia report. The dataset consists of Malaysia GDP, KLIBOR, BLR, M3 and DD from year 2000 to 2007.

| YEAR | KLIBOR | | BLR (%) | ΔM3 (RM'JUTA) | DD (RM'JUTA) |
|--------|--------|------|---------|------------------|-----------------|
| | GDP(%) | (%) | | | |
| Jan-00 | 4.8 | 2.50 | 6.80 | 410345 | 62129 |
| Apr-00 | 4.6 | 2.53 | 6.80 | 415645 | 63475 |
| Jul-00 | 4.7 | 2.56 | 6.80 | 418743 | 64021 |
| Oct-00 | 5.1 | 2.76 | 6.80 | 422765 | 63734 |
| Jan-01 | 5.0 | 2.76 | 6.80 | 433087 | 64502 |
| Apr-01 | 5.3 | 2.77 | 6.80 | 445692 | 64987 |
| Jul-01 | 5.2 | 2.77 | 6.80 | 450921 | 65203 |
| Oct-01 | 5.4 | 2.80 | 6.40 | 456832 | 65127 |
| Jan-02 | 5.6 | 2.77 | 6.40 | 462045 | 66943 |
| Apr-02 | 6.0 | 2.71 | 6.40 | 470324 | 67852 |
| Jul-02 | 5.3 | 2.85 | 6.40 | 477594 | 69320 |
| Oct-02 | 5.8 | 2.74 | 6.40 | 486775 | 69634 |
| Jan-03 | 7.0 | 2.72 | 6.40 | 505234 | 70723 |
| Apr-03 | 6.7 | 2.73 | 6.40 | 520139 | 71322 |
| Jul-03 | 6.8 | 2.78 | 6.00 | 542340 | 72304 |
| Oct-03 | 6.8 | 2.70 | 6.00 | 553058 | 73772 |
| Jan-04 | 6.0 | 2.71 | 6.00 | 600325 | 74390 |
| Apr-04 | 5.8 | 2.71 | 6.00 | 611254 | 75644 |
| Jul-04 | 5.4 | 2.70 | 6.00 | 616023 | 76503 |
| Oct-04 | 5.3 | 2.69 | 6.00 | 621226 | 77717 |
| Jan-05 | 5.2 | 2.70 | 6.00 | 642315 | 80453 |
| Apr-05 | 5.3 | 2.70 | 6.00 | 656721 | 84053 |
| Jul-05 | 5.4 | 2.69 | 6.00 | 663452 | 86466 |
| Oct-05 | 5.8 | 2.70 | 6.00 | 672835 | 87749 |
| Jan-06 | 5.9 | 3.01 | 6.25 | 679276 | 97879 |
| Apr-06 | 5.7 | 3.24 | 6.50 | 697329 | 95178 |
| Jul-06 | 5.9 | 3.49 | 6.75 | 705586 | 99463 |
| Oct-06 | 5.3 | 3.50 | 6.75 | 725351 | 103734 |
| Jan-07 | 5.5 | 3.50 | 6.75 | 776100 | 111668 |
| Apr-07 | 5.7 | 3.50 | 6.75 | 796488 | 112768 |
| Jul-07 | 6.7 | 3.50 | 6.75 | 799902 | 118211 |
| Oct-07 | 7.3 | 3.49 | 6.75 | 807426 | 123672 |

Source : Bank Negara Malaysia Statistical Bulletin

6.0 FINDINGS

6.1 Descriptive Statistics

FIGURE 4

| | Mean | Std. Deviation | N |
|--------|-------------|----------------|----|
| GDP | 5.6969 | .68273 | 32 |
| KLIBOR | 2.8838 | .32469 | 32 |
| BLR | 6.4266 | .33432 | 32 |
| M3 | 579473.3750 | 128272.12035 | 32 |
| DD | 80643.6250 | 17894.17540 | 32 |

From the data extracted, we can concluded that in the year between 2000 and 2007, the mean for GDP in Malaysia is 5.6969%, the mean for KLIBOR is 2.8838%, the mean for BLR is 6.4266%, the mean for M3 is 579473 million and the mean for DD is 80643 million.

6.2 Correlation analysis

SPSS can be used to produce correlation coefficients between pair of variables, as shown in Figure 5. The output is in the form of a symmetrical matrix so that, for example, the correlation between GDP and KLIBOR is the same between KLIBOR and GDP. For each pair of variables the output includes the correlation coefficient, the sample size (N) and p (Sig 1 tailed), the probability related to t test. If the probability is below 0.05 we reject the null hypothesis – therefore only those correlations where value of p is below 0.05 are significantly different from zero.

From the Figure 5, we observed that KLIBOR is highly correlated to DD at 0.887. It shows that short term interest rate will affect demand deposits in circulation.

M3 also very high correlated to DD at 0.952. It shows that money supply will affect demand deposits in the liquidity market.

FIGURE 5

| | | Correlations | | | | |
|---------------------|--------|--------------|--------|-------|-------|-------|
| | | GDP | KLIBOR | BLR | M3 | DD |
| Pearson Correlation | GDP | 1.000 | .328 | -.234 | .392 | .397 |
| | KLIBOR | .328 | 1.000 | .414 | .773 | .887 |
| | BLR | -.234 | .414 | 1.000 | -.138 | .131 |
| | M3 | .392 | .773 | -.138 | 1.000 | .952 |
| | DD | .397 | .887 | .131 | .952 | 1.000 |
| Sig. (1-tailed) | GDP | . | .033 | .098 | .013 | .012 |
| | KLIBOR | .033 | . | .009 | .000 | .000 |
| | BLR | .098 | .009 | . | .225 | .238 |
| | M3 | .013 | .000 | .225 | . | .000 |
| | DD | .012 | .000 | .238 | .000 | . |
| N | GDP | 32 | 32 | 32 | 32 | 32 |
| | KLIBOR | 32 | 32 | 32 | 32 | 32 |
| | BLR | 32 | 32 | 32 | 32 | 32 |
| | M3 | 32 | 32 | 32 | 32 | 32 |
| | DD | 32 | 32 | 32 | 32 | 32 |

6.3 Regression analysis

The process of finding out the values of the parameters or coefficients is referred to as calibration of the equation: $y=a + bx$ whereby the parameters a and b are determined from examination of data using regression analysis.

The regression table shown in Figure 6:-

| Variables Entered/Removed | | | |
|---------------------------|----------------------------------|-------------------|--------|
| Model | Variables Entered | Variables Removed | Method |
| 1 | DD, BLR, KLIBOR, M3 ^a | . | Enter |

| | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------------------|----------|-------------------|----------------------------|-------------------|-----------------|----------|-----|------|---------------|
| .680 ^a | .462 | .382 | .53654 | .462 | 5.799 | 4 | 27 | .002 | |

a. Predictors: (Constant), DD, BLR, KLIBOR, M3

b. Dependent Variable: GDP

R square is 46.2% and adjusted R square is 38.2% which means percentage of the variables explained in the sample taken. Remaining percentage of 61.8% will be represented by other variables which are not discussed in his study.

| Model | coefficients ^a | | | | | | |
|-------|-----------------------------|------------|---------------------------|--------|--------|---------------------------------|-------------|
| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
| | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 18.795 | 3.845 | 4.888 | .000 | 10.906 | 26.683 |
| | KLIBOR | 1.473 | .858 | .701 | .1717 | .097 | -.287 |
| | BLR | -2.602 | .669 | -1.274 | -3.890 | .001 | -3.974 |
| | M3 | .000 | .000 | -2.884 | -3.084 | .005 | .000 |
| | DD | .000 | .000 | 2.687 | 2.838 | .009 | .000 |

a. Dependent Variable: GDP

Reject hypothesis H1:

KLIBOR ↑ GDP ↑

The movement of KLIBOR is positively correlated to GDP and is significant @9.7%.

As KLIBOR is representing liquidity and short term funding rate for working capital requirement, the availability of KLIBOR is very important for banks to fund their daily business operations. Demanding for short term fund will boost up the GDP growth.

Accept hypothesis H2:

$$\text{BLR} \quad \downarrow \quad \text{GDP} \quad \uparrow$$

The movement of BLR is negatively correlated to GDP. As to boost up GDP growth, we need to encourage more lending activities from banks to public. Reduction of BLR will bring in more loans to the market thus move up GDP growth.

Accept hypothesis H3

$$\text{M3} \quad \downarrow \quad \text{GDP} \quad \uparrow$$

Broad money circulating in the market is lesser when more economic activities happened in productive businesses. This will lower down the inflation rate as market is having excess liquidity fund. One of the reason is Malaysia is having a high savings rate of more than 30%.

$$\text{DD} \quad \uparrow \quad \text{GDP} \quad \uparrow$$

Demand deposits are positively correlated to GDP growth. The higher demand deposits, more productive investments in the market will boost up GDP growth.

7. CONCLUSION

We are now concluded that interest rate adjustment downwards has an impact to gross domestic products growth. With the movement in interest rates, lending activities will be more flexible and money circulation will be actively pump into business operation. Thus more economic activities will be generated and improve GDP growth.

There is a limitation for this research as we only taken several variables happened in Malaysia from 2000 to 2007. For future research, we need to repeat the analysis with other countries particularly United States of America to determine whether the findings are limited to Malaysia and whether there are any differences between developed country and emerging country.

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