Research Paper

THE IMPACT OF INTEREST RATE ON ECONOMIC DEVELOPMENT: A STUDY ON ASIAN COUNTRIES

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ABSTRACT

The purpose of this study is to investigate the impact of interest rate on economic development in Asian Countries. This research is conducted on 20 countries in Asia within the period of 2006-2015. The Target population of this research is 48 countries while the sample of 20 companies was selected using convenience sampling technique. The independent variable used in this research is Interest Rate and dependent variables are Growth Domestic Product, Foreign Direct Investment and Inflation. The research employed Descriptive Analysis, Correlation Analysis and Regression Analysis using E-view software. The findings of the study shows that interest rate has a negative significant impact on Gross Domestic Product and Inflation while have negative insignificant impact on Foreign Direct Investment. Furthermore, it is recommended that future researchers are encourage conducting an investigation on different countries in Asia with the same framework to discover the impact of interest rate which might be different since the difference in the context. Future researchers also can design another framework using other variable such as Exchange Rate, Export and Savings to see more aligned results. This study estimated to be beneficial for other researchers and academics as a foundation for theory development. Furthermore, government can develop policies that can be used to stable economy achievements. This study will increase the economic researcher’s knowledge and placed in higher education institution’s library. This study will also pave the way for many researchers out there to carry out some arguing in an area not covered by the study in issues of interest rate.

Key Terms: Interest Rate, Growth Domestic Product, Foreign Direct Investment, Inflation, Asia.
1. INTRODUCTION

This study was aimed to investigate the impact of interest rate on economic development. Numerous studies have been conducted to examine the impact of interest on economic development across the globe. Some notable amongst them are; Sulaiman et al. (2013) did a research on examining the corporate sector of Pakistan. Algahtani (2015) did a research on the private sector of Saudi Arabia. Wuhan et al. (2015) did their study on the retail sector of China. Smithin (2002) did a research on the public sector of Europe. Bhattarai (2011) did a research on the retail sector of United Kingdom. Barro (2013) did a research on the private sector of England. The main concern for the financial analysts for a long time ago was about the devastating impact of interest rates on the macro variables. The opinions expressed by Mutinda (2012) about rising interest rate is able to bring a negative impact on important variable such as GDP, FDI, and Inflation which is will give a pressure to business entities and entire national economy. Interest rate actually is the factor that can give the effect to the economic core operation in production and consumption terms via the transmission mechanism GDP, FDI and inflation between other financial variables. The general purpose of this research is to investigate empirically the effectiveness of interest rate as policy tool to affect macroeconomic performance in Malaysia.

The specific objectives of this study are as follows:

✓ To investigate the impact of interest rate and gross domestic product GDP.
✓ To investigate the impact of interest rate and foreign direct investment FDI
✓ To investigate the impact of interest rate and inflation.

2. LITERATURE REVIEW

Generally, interest rate was defined by Patterson and Lygnerud (1999) as prices. Interest is a price that payable for the money that borrowed in a time period and stated in percentage from overall outstanding balance left where is changeable or fixed. In the context of most common, interest is the amount of charge to the debtors within the time of using the credit provided (Mutinda, 2014). Finan (2016) defines interest rate as a credit cost in economy and for more specific is a charge for price per year from the creditor to borrowers which is get a loan.

Named based on US market analysts Fisher (1930) is certainly understandable hypothesis and standard structure proposed on real interest rate (Marshall, 1991). Considers that the relevant financial market will aggressively establish the nominal interest rate on deposits is positive in real terms (Clarke, 1982). The reason is that the depositor must incite to money held in connection with the assets and real assets grow at average rate of inflation (Mishkin, 1998).

Number of theories has discussed the interest rates and its influence. Debt funds theory of interest rate has determinant views on the interest level in financial market as a result of factors that give the impact to the Debt funds supply and demand. This theory determined the interest rate is like determined the supply and demand of goods, Debt funds supply is increases as increases in interest, the all other factors is held constant (Saunders, 2004). According to Keynes (1965), he describes liquidity preference theory as the interest rate that mentions as money theory, employment theory or interest theory. According on Keynes (1965), money supply and demand had influenced the interest rate. Keynes mentions
that through the effects on the scheduled investment spending that is the main way that will affect the rates of interest.

Furthermore, Fisher (1930) states that the power of interest rate was influenced by the two factors such as source of savings were determined by the household or the source of investment demand and capital mostly from commercial industry. This theory deliberate the high interest rate will enhance the desirability to saving more rather than consumption expenditure that make it have the positive relationship among the interest rate and the size of savings.

Moreover, ample amount of studies has been conducted stating the significance of Interest rates. Some notable literatures amongst them are; Obamuyi and Olorunfemi (2009) did a research on Financial Reforms, Interest Rate Behavior and Economic Growth in the financial sector of Nigeria. Udoka and Roland (2012) did a research on The Effect of Interest Rate Fluctuation on the Economic Growth of Nigeria using agricultural, manufacturing, financial, education and industrial sector. Saymeh and Orabi (2013) did a research on The Effect of Interest Rate on Economic Growth Rate. Daniel Musyoka Mutinda (2014) did a research on The Effect of Lending Interest Rate on Economic Growth of Kenya.

2.1. Conceptual Framework

![Conceptual Framework](Image)

Figure 1: Conceptual Framework
Source: Author’s development

The result from Idoko et al. (2012) concludes that interest rate had an insignificant effect on GDP and Hatane and Stephanie (2015) also has examined that there is significant negative correlation between interest rate and GDP. According to Uwubanmwen and Ajao (2012), interest rate has a positive significant effect on FDI flows. High in interest rates according to Anna et. al. (2011) to get a positive effect in FDO inflows but Faroh and Shen (2015) states a different which is no impact by high interest rate on FDI flow. While there is negative relationship between interest rate and FDI expressed by Siddiqui and Aumeboonsuke (2014). According to Mahdi and Masood (2011), interest rate has a long run relationship with inflation. Jaradat and Al-Hhosban (2014) states that inflation has a positive relationship with interest rate and there is also a two-way causal relationship among them. According to Wijesinghe (2002), there is no co-integrated between interest rate and inflation rate.
2.2 Hypothesis

H1: There is a positive significant impact of Interest Rate on GDP
H2: There is a positive significant impact of Interest Rate on FDI
H3: There is a positive significant impact of Interest Rate on Inflation

3. RESEARCH DESIGN AND METHODOLOGY

The research design used in this study is explanatory research since Zikmund (2012), explanatory research can be important role model based on determine the cause of various processes. The research methodology used in this paper is quantitative type because this method can be used to study virtually unlimited number of phenomena which is makes this method is relatively flexible (Stroie, 2011). Secondary data analysis was used in this study as it has advantages of methodology and research can contribute to this by creation of new knowledge (Creswell, 2009). This research is not using formula since the data is taking from World Bank. This study will choose Asia to be the total population which is having 48 countries and 20 countries is selected to be the sample size. There will be 10 years of data for each country as data analysis methods from 2006-2015 study time periods. Sample are pulled through convenience sampling technique because it would be easily attract the data from any environment that is close which means it not necessary to make a journey for great distances to fetch data (Ilker, Sulaiman & Rukayya, 2015). The study is relatively less with the lay of ethical issues since the study is fully deserved for the secondary data that did not point to any meeting with behavior of humans. Descriptive, Correlation and Regression analysis will be conducted using E-Views software to examine the impact of interest rate on economic growth in Asian Countries.

4. RESULTS AND ANALYSIS

4.1. Descriptive Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest Rate</td>
<td>3.88503</td>
<td>6.212575</td>
</tr>
<tr>
<td>Growth Domestic Product</td>
<td>5.27685</td>
<td>4.360258</td>
</tr>
<tr>
<td>Foreign Direct Investment</td>
<td>3.97172</td>
<td>5.108165</td>
</tr>
<tr>
<td>Inflation</td>
<td>4.54355</td>
<td>6.408303</td>
</tr>
</tbody>
</table>

In accordance to Table 1, the average mean for interest rate is 3.88 and the standard deviation is 6.21. The result indicates that the sample Asian countries experience an average interest rate of 3.88% within the studied time span of 10 years. Secondly, the average mean for growth domestic product is 5.27 and the standard deviation is 4.36. The result indicates that the sample Asian countries experience an average growth domestic product of 5.27% within the studied time span of 10 years. Furthermore, the average mean for foreign direct investment is 3.97 and the standard deviation is 5.10. The result indicates that the sample Asian countries experience an average foreign direct investment of 3.97% within the studied time span of 10 years. Lastly, the average mean for inflation is 4.54 and the standard deviation is 6.40. The result indicates that the sample Asian countries experience an average inflation of 4.54% within the studied time span of 10 years.
4.2. Regression Analysis

Table 2: Regression of Growth Domestic Product

<table>
<thead>
<tr>
<th>Model</th>
<th>R-squared</th>
<th>Adjusted R-squared</th>
<th>F-statistic</th>
<th>Durbin-Watson statistic</th>
<th>Probability (F-significant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.57029</td>
<td>0.496987</td>
<td>7.779854</td>
<td>1.763946</td>
<td>0.000</td>
</tr>
</tbody>
</table>

In accordance to table above, the r-square value is 0.570 which show 57% of the dependent variables is relatively link with interest rate. The adjusted r-square is 0.496 which shows that the model is not good fit model with a value of 49% which is lower than 60% (Rawlings, Pantula & Dickey, 1998). F-significant value is 0 which means that overall model is significant (Blackwell, 2008). The Durbin Watson value is 1.763 which shows there’s no autocorrelation among the selected sample for this research since it lies in average of 1.5 to 2.5 (Dufour & Dagenais, 1985).

Table 3: Beta Coefficient

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized Beta Coefficient</th>
<th>Standard Error</th>
<th>T-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>5.61164</td>
<td>0.275804</td>
<td>20.3465</td>
<td>0.000</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>-0.08617</td>
<td>0.043264</td>
<td>-1.99182</td>
<td>0.048</td>
</tr>
</tbody>
</table>

According to table above, Standardized beta coefficient is -0.086 with the probability value of 0.048 which is lower than 0.05. It shows that interest rate has a negative significant impact on growth domestic product in the selected Asian Countries within the studied span of time. Therefore H1 is accepted.

Table 4: Model Fitness Summary- Foreign Direct Investment

<table>
<thead>
<tr>
<th>Model</th>
<th>R-squared</th>
<th>Adjusted R-squared</th>
<th>F-statistic</th>
<th>Durbin-Watson statistic</th>
<th>Probability (F-significant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.775345</td>
<td>0.737022</td>
<td>20.23163</td>
<td>1.647139</td>
<td>0</td>
</tr>
</tbody>
</table>

In accordance to table above, the r-square value is 0.775 which show 77.5% of the dependent variables is relatively link with interest rate. The adjusted r-square is 0.737 which shows that the model is a good fit model with a value of 73% which is higher than 60% (Rawlings, Pantula & Dickey, 1998). F-significant value is 0 which means that overall model is significant (Blackwell, 2008). The Durbin Watson value is 1.647 which shows there's no autocorrelation among the selected sample for this research since it lies in average of 1.5 to 2.5 (Dufour & Dagenais, 1985).

Table 5: Beta Coefficient-FDI

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.056137</td>
<td>0.233627</td>
<td>17.3616</td>
<td>0</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>-0.02173</td>
<td>0.036648</td>
<td>-0.5929</td>
<td>0.554</td>
</tr>
</tbody>
</table>

According to table above, Standardized beta coefficient is -0.021 with the probability value of 0.554 which is higher than 0.05. It shows that interest rate has a negative insignificant impact on Foreign Direct Investment in the selected Asian Countries within the studied span of time. Therefore H2 is rejected.
Table 6: Model Fitness Summary - Inflation

<table>
<thead>
<tr>
<th>Model</th>
<th>R-squared</th>
<th>Adjusted R-squared</th>
<th>F-statistic</th>
<th>Durbin-Watson statistic</th>
<th>Probability (F-significant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.922791</td>
<td>0.90962</td>
<td>70.06221</td>
<td>1.86076</td>
<td>0.000</td>
</tr>
</tbody>
</table>

In accordance to table above, the r-square value is 0.922 which show 92.2% of the dependent variables is relatively link with interest rate. The adjusted r-square is 0.909 which shows that the model is a good fit model with a value of 90% which is higher than 60% (Rawlings, Pantula & Dickey, 1998). F-significant value is 0 which means that overall model is significant (Blackwell, 2008). The Durbin Watson value is 1.860 which shows there’s no autocorrelation among the selected sample for this research since it lies in average of 1.5 to 2.5 (Dufour & Dagenais, 1985).

Table 7: Beta Coefficient - Inflation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant</td>
<td>7.896599</td>
<td>0.171822</td>
<td>45.95805</td>
<td>0</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>-0.86307</td>
<td>0.026953</td>
<td>-32.0215</td>
<td>0</td>
</tr>
</tbody>
</table>

According to table above, Standardized beta coefficient is -0.863 with the probability value of 0.00 which is lower than 0.05. It shows that interest rate has a negative significant impact on Inflation in the selected Asian Countries within the studied span of time. Therefore H3 is rejected.

4.3. Summary Result of Hypotheses Testing

Table 8: Summary of Hypothesis

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Significant Level</th>
<th>Result</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Interest rate has a significant impact on GDP.</td>
<td>0.048</td>
<td>Rejected</td>
<td>The p-value is 0.048 which is lower than 0.05 significant levels. This shows that interest rate is significant with GDP of the countries.</td>
</tr>
<tr>
<td>H2: Interest rate has an insignificant impact on FDI.</td>
<td>0.554</td>
<td>Rejected</td>
<td>The p-value is 0.554 which is more than 0.05. This indicates that interest rate is not significant with FDI of the countries.</td>
</tr>
<tr>
<td>H3: Interest rate has a significant impact on inflation</td>
<td>0.000</td>
<td>Rejected</td>
<td>The p-value is 0.000 which is less than 0.05 significant levels. This shows that interest rate is significant with inflation of the countries.</td>
</tr>
</tbody>
</table>

5. CONCLUSION AND RECOMMENDATION

This study examines the impact of interest rate on economic development (growth domestic product, foreign direct investment and inflation) in the Asian countries. This study focus on 20 countries for sample size and using descriptive analysis, correlation analysis and regression analysis to find the impact between independent variable and dependent variable selected in this study. At the end of research, the result showing that interest rate has a significant impact on growth domestic product and inflation while interest rate has an insignificant impact on foreign direct investment. So, it does can conclude that there is
evidence that interest rate will affect directly either increase or decrease growth domestic product and inflation of the country. Interest rate is not impact foreign direct investment directly since there is no strong evidence has been stated that interest rate will give an effect on foreign direct investment of the country.

5.1. Recommendation

Future researchers are recommended to make a research on other variables differences with this study did that would be examined to meet the different interest rate factor impacting on economic development of the countries in Asia. The sample size also can be increase by future researcher because it only 20 countries in Asia was used in this research.

5.2. Limitations

This study should be not representing for all developing and developed countries since it only addresses some of the country in Asia. Minimum size has been chosen caused by a data is lack of availability for the countries in Asia. The effect of which was proposed to be measured in the short term may not accurately reflect the performance of many countries as possible can have an impact in the long term.

5.3 Implications

In addition, this research is important to literature because it will give support to any other researchers who have the research in future to provide solid evidence and solid result through the development of an efficient economy. The findings of this study also give a useful piece of literature to government in identifying and managing problem has occurred to guarantees the stability of the national economy.

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