# The Role of Financial Sector toward Economic Growth

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**Abstract:** This paper attempts to empirically examine the rule of financial sector toward economic growth and to determine the determinants of economic growth in some countries. The relationship between independent variables, exchange rate and total reserve, and economic growth was investigated for selected 67 countries. The data were analyzed using the OLS Method. Findings of the research showed that the total reserve is significant, while the exchange rate is not significant in explaining the economic growth for the selected 67 countries. The implication of the study is that countries need to increase their total reserves to boost economic growth. In the future, study should categorize countries according to those using pegged and unpegged exchange rate systems as to see the differences of impact on economic growth.

**Keywords:** total reserve; exchange rate; gross domestic product

**JEL Classification:** F43; F65

## 1. Introduction

This study attempted to empirically examine the rule of financial sector toward economic growth and to determine the determinant of economic growath in some countries. Cross sectional data were utilized in the study, i.e. year 2013. The OLS test results proved that the total reserve is significant, while the exchange rate is not significant. Total reserve comprises the holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities[3]. Fapetu and Oldapo (2014) noted that exchange rate is the rate at which a currency purchases another; and as pointed out by Jhingan (2003), it is a reflection of the strength of a currency when measured against another country's currency. It is the price of one currency in terms of another, which is an important decision making variable in every nation; thus making it a crucial issue for any country desirous of economic growth, refer to Ahmed and Zarma (1997). According to Akpan and Atan (2012) the exchange rate

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[3]http://www.indexmundi.com/facts/malaysia/total-reserves.

policies in developing countries are often sensitive and controversial, mainly because of the kind of structural transformation required, such as reducing imports or expanding non-oil exports, which invariably implies a depreciation of the nominal exchange rate. This paper has the research objective to identify:

i. The role of financial sector toward economic growth.

ii. The relationship between economic growth and total reserve.

iii. The relationship between economic growth and exchange rate.

iv. The determinants of economic growth in selected countries.

## 2. Literature Review

According to Akpan and Atan (2012) the earliest and leading theoretical foundation for the choice of exchange rate regimes rests on the optimal currency area (OCA) theory, developed by Mundell (1961) and McKinnon (1963). Based on the theory, a fixed exchange rate regime can increase trade and output growth by reducing exchange rate uncertainty; and thus the cost of hedging, and also encourage investment by lowering currency premium from interest rates. However, on the other hand it can also reduce trade and output growth by stopping, delaying or slowing the necessary relative price adjustment process. According to the theory, a fixed regime can increase trade and output growth by providing a nominal anchor and the often needed credibility for monetary policy by avoiding competitive depreciation, and enhancing the development of financial markets as pointed out by Barro and Gordon (1983), Calvo and Vegh (2004), Edwards & Savastano (2000), Eichengreen, et. al. (1999), and Frankel (2003). Based on the Fapetu and Oladapo's (2014) research, the finding proved that the exchange rate does not significantly determine the economic growth, but the relationship is positive. However, the variables; an effective foreign exchange rate management is deemed to affect export, while foreign direct investment is found to affect economic growth. According to Fapetu and Oladapo (2014), Harris (2002) in his research using the Generalised Least Square technique found that real exchange rate, when well managed affects productivity growth in both the short and long run. This result is consistent with the competitiveness hypothesis which suggests that the exchange rate's depreciation boosts productivity growth in the short run. Meanwhile, Dubas and Lee (2005) found a robust relationship between exchange rate stability and growth rate. Unugbro (2007) in Nigeria case observed that exchange rate appreciation stimulates foreign direct investment, while Salami (2006) found that exchange rate is the most important variable that affects private foreign investment in Nigeria as compared to other macroeconomic variables.

## 3. Research Methodology

In total, three variables were used in this study; those are Gross Domestic Product (GDP), total reserve and exchange rate. We utilized 67countries'observations in selected cross sectional data for the year 2013. The data were sourced from the world statistics[1]. The major variables are defined below:

**Total reserves:** Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (December 31st) London prices.[2] Meanwhile, **Foreign reserve (R)** is the total assets of central bank held in different reserves currencies abroad. The reserve currencies include; US dollar, Pound Sterling, Euro, Japanese Yen etc. The common scale variables used in the model are GDP and imports (Irefin & Yaaba, 2011).

**Exchange Rate:** According to Fapetu and Oladapo (2014) exchange rate is the rate at which a currency purchases another; and as pointed out by Jhingan (2003), it is a reflection of the strength of a currency when measured against another country's currency.

**Economic growth:** The aggregate welfare definition of economic growth derives directly from something approximating this concept of "Universal Utility". Aggregate welfare is defined as a quantitative concept; as a phenomenon which "can be brought under the category of greater or less". The quantity which changes in the process of growth is precisely the quantity of aggregate economic welfare. Therefore, the measurement of economic growth involves the measurement of changes in aggregate economic welfare. This is taken to mean quantification of the neo-classical concept of real income. The flows of goods and services, the concrete results of economic activity, are significant only as the physical counterparts of psychic want-satisfactions.[3]

### 3.1. Econometric Model

The following econometric model is used:

$$Ln\ Y = \beta_O + \beta_1 X_1 + \beta_2 X_2 + \mu$$

Whereby,

Y- Economic growth/ Gross domestic product
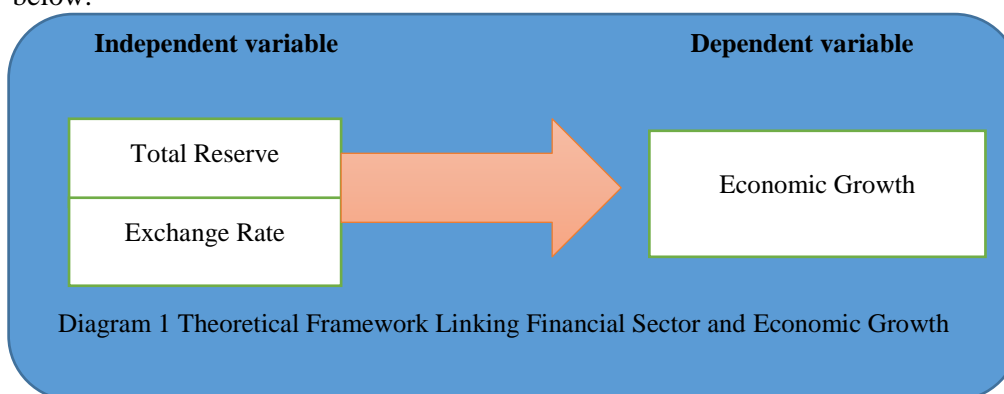
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[1]http://www.gemconsortium.org/news/766/gem-data-now-on-world-statistics
[2]http://www.indexmundi.com/facts/malaysia/total-reserves
[3]http://deepblue.lib.umich.edu/bitstream/handle/2027.42/75479/j.1467-6435.1961.tb00368.x.pdf?sequence=1

$X_1$- Total reserve (TR)

$X_2$- Exchange rate (ER)

## 3.2 Theoretical Framework

The theoretical framework based on the literature review is shown in Diagram 1 below:

**Independent variable**                    **Dependent variable**

Total Reserve

Exchange Rate

Economic Growth

Diagram 1 Theoretical Framework Linking Financial Sector and Economic Growth

Based on the above framework, the following hypothesis is derived for testing;

**Hypothesis 1**

$H_0$: TR does not influence Y

$H_1$: TR influences Y

**Hypothesis 2**

$H_0$: ER does not influence Y

$H_1$: ER influences Y

*Method of Analysis*

The data analysis will help to answer the research question and research hypothesis, and to test the hypothesis. The data will be analyzed using Eviews, which is using Ordinary Least Square (OLS) method to investigate the relationship between the independent variables and dependent variable. The hypothesis test is to estimate the value of Test Statistic, i.e. whether to reject or accept the null hypothesis.

## 4. Research Findings and Discussion

The results of the Ordinary Least Square (OLS) testing is shown below:

**Table 1. OLS Testing**

Dependent Variable: lnY
Method: Least Squares
Date: 11/11/15   Time: 20:48
Sample: 1 67
Included observations: 67

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 12.50307 | 0.193978 | 64.45622 | 0.0000 |
| TR | 1.20E-06 | 2.07E-07 | 5.786494 | 0.0000 |
| ER | -1.61E-05 | 0.000140 | -0.115100 | 0.9087 |

| | | | | |
|---|---|---|---|---|
| R-squared | 0.343555 | Mean dependent var | | 12.88318 |
| Adjusted R-squared | 0.323041 | S.D. dependent var | | 1.762804 |
| S.E. of regression | 1.450392 | Akaike info criterion | | 3.625287 |
| Sum squared resid | 134.6327 | Schwarz criterion | | 3.724005 |
| Log likelihood | -118.4471 | Hannan-Quinn criter. | | 3.664350 |
| F-statistic | 16.74738 | Durbin-Watson stat | | 2.028781 |
| Prob(F-statistic) | 0.000001 | | | |

Based on the Table 1 above, we can reject the null hypothesis with 1 percent level of significant, where the probability (t-statistic) is 0.0000 is less than 0.01 and the probability (t-statistic = 5.786494) is more than critical value 2 which represents highly significant relationship between TR and Y. Thus, we can accept the alternate hypothesis. Based on Table 1 the probability (t-statistic = 0.115100) is less than critical value 2 and the probability (t-statistic = 0.9087) is not significant, which represents the relationship between ER and Y. Thus, we cannot reject null hypothesis, but to reject the alternate hypothesis instead.  R-squared is 0.343555 shows that 34.3555 percent of economic growth is explained by total reserve and exchange rate; and the balance 65.6445 percent is explained by other factors, not included in the model. Durbin Watson is 2.028781. Durbin Watson 2.028781 is more than critical value, whereby dL=1.377 and du=1.500. Therefore, we can conclude that the data do not have autocorrelation. This is because the data are cross sectional data, which are not influenced by time factor.

## 5. Conclusion and Suggestion

From the research we found that the total reserve is significant, while the exchange rate is not significant in explaining the economic growth for the selected 67 countries. Total reserve is highly significant in explaining the economic growth of the 67 countries; and as such we can suggest that as the reserve increases, the economic growth will also increase. In view that the total reserve is influenced by the net export, as the net export is a component in total income, this suggests that the result is supported by the theory. The net export is a variable of the total reserve. The exchange rate is probably not significant and has negative coefficient as some countries adopted fixed exchange rate while other countries adopted flexible exchange rate. The results are similarly with the research by Harris (2002), and Fapetu and Oladapo (2014). Harris (2002) found that exchange rate depreciates to boost productivity growth in the short run. Meanwhile, Fapetu and Oladapo (2014) study showed that the exchange rate does not significantly determine the economic growth, but it has a positive relationship. However, the variables, which have an effective foreign exchange rate management is deemed to affect export, while foreign direct investment is found to affect economic growth.

To observe the differences of impact on economic growth, future study should categorize countries according to those using pegged and unpegged exchange rate systems.

## 6. Acknowledgement

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## Appendix

| No. | Observation | Official exchange rate, LCU per USD, period average.xlsx | Total Reserves.xlsx | GDP at market prices, current US$, millions, seas. adj..xlsx |
|---|---|---|---|---|
| 1 | Argentina | 4.549547 | 39920.3 | 475196.4 |
| 2 | Developing Asia | 831.9153 | 4179035 | 11770056 |
| 3 | Australia | 0.965787 | 44866.05 | 1554792 |
| 4 | Austria | 0.778129 | 12232.1 | 394685.8 |
| 5 | Belgium | 0.778129 | 18600.11 | 483265.6 |
| 6 | Bulgaria | 1.521871 | 18371.02 | 50918.33 |
| 7 | Bolivia | 6.91 | 11659.29 | 27018.8 |
| 8 | Brazil | 1.954034 | 369566 | 2253022 |
| 9 | Canada | 0.999576 | 68364.97 | 1820902 |
| 10 | Switzerland | 0.937754 | 475659.2 | 631278 |
| 11 | Chile | 486.3323 | 41636.11 | 268375 |
| 12 | China | 6.309287 | 3333386 | 8190647 |
| 13 | Colombia | 1797.299 | 36444.02 | 370418.7 |

| 14 | Costa Rica | 502.9185 | 6856.67 | 45141.2 |
|----|------------|----------|---------|---------|
| 15 | Czech Republic | 19.56353 | 44265.28 | 196673.2 |
| 16 | Germany | 0.778129 | 67422.25 | 3430201 |
| 17 | Denmark | 5.792204 | 86137.54 | 315261.2 |
| 18 | East Asia & Pacific | 1074.159 | 3874222 | 9992303 |
| 19 | Europe & Central Asia | 589.7774 | 314459 | 1152065 |
| 20 | Egypt, Arab Rep. | 6.07065 | 11627.54 | 273543.2 |
| 21 | Spain | 0.778129 | 35522.62 | 1322962 |
| 22 | Estonia | 12.17508 | 287.3478 | 22396.5 |
| 23 | Finland | 0.778129 | 8453.225 | 247424.8 |
| 24 | France | 0.778129 | 54230.62 | 2612188 |
| 25 | United Kingdom | 0.631018 | 88596 | 2479815 |
| 26 | Georgia | 1.650514 | 2872.949 | 15843.14 |
| 27 | Greece | 0.778129 | 1269.616 | 249281.2 |
| 28 | Hong Kong SAR, China | 7.757025 | 317250.8 | 262963.6 |
| 29 | Croatia | 5.848283 | 14807.13 | 56457.55 |
| 30 | Hungary | 225.0717 | 44506.05 | 124655.5 |
| 31 | High income: OECD | 43.77112 | 3072346 | 44415484 |
| 32 | Indonesia | 9362.746 | 108837.3 | 880306.4 |
| 33 | India | 53.42984 | 270586.5 | 1718433 |
| 34 | Ireland | 0.778129 | 1386.38 | 210740.6 |
| 35 | Italy | 0.778129 | 50498.86 | 2014749 |
| 36 | Jordan | 0.708492 | 8089.514 | 27198.69 |
| 37 | Japan | 79.81889 | 1227147 | 5937979 |
| 38 | Korea, Rep. | 1126.426 | 323207.1 | 1130185 |
| 39 | Sri Lanka | 127.6523 | 6377.645 | 59319.15 |
| 40 | Lithuania | 2.686292 | 8218.173 | 42178.03 |
| 41 | Luxembourg | 0.778129 | 870.9995 | 55143.61 |
| 42 | Latvia | 0.542592 | 7110.871 | 28556.68 |
| 43 | Macao SAR, China | 7.989736 | 16600.23 | 43516.63 |
| 44 | Mexico | 13.15545 | 160413.4 | 1179044 |
| 45 | Malaysia | 3.088025 | 137783.9 | 304853.8 |
| 46 | Netherlands | 1.71477 | 22050.3 | 771050.1 |
| 47 | Norway | 5.818355 | 51856.4 | 499797.2 |
| 48 | New Zealand | 1.234821 | 17582.96 | 169490.4 |
| 49 | Peru | 2.637371 | 62300.32 | 199584.9 |

| 50 | Philippines | 42.22274 | 73478.39 | 250191.2 |
|---|---|---|---|---|
| 51 | Poland | 3.25522 | 103396.2 | 489794.8 |
| 52 | Portugal | 0.778129 | 2196.025 | 212275 |
| 53 | Paraguay | 4425.05 | 4556.609 | 24542.62 |
| 54 | Russian Federation | 31.06153 | 486576.8 | 2012199 |
| 55 | South Asia | 60.26146 | 304816.4 | 1777753 |
| 56 | Singapore | 1.249456 | 259094.5 | 276659.3 |
| 57 | Sub-Saharan Africa | 263.0689 | 195732.3 | 382756.9 |
| 58 | Slovakia | 23.44189 | 818.4068 | 91148.74 |
| 59 | Slovenia | 186.4709 | 782.1872 | 45461.03 |
| 60 | Sweden | 6.772264 | 45519.23 | 524299.9 |
| 61 | Thailand | 31.07915 | 173327.7 | 366304.7 |
| 62 | Tunisia | 1.562155 | 8357.241 | 45123.11 |
| 63 | Turkey | 1.80033 | 99942.63 | 786483.5 |
| 64 | Taiwan, China | 29.58199 | 403169 | 475951.9 |
| 65 | Ukraine | 8.083841 | 22655.84 | 174164.9 |
| 66 | United States | 1 | 139133.9 | 16244575 |
| 67 | South Africa | 8.208319 | 43995.47 | 382756.9 |