

EFFECTS OF MONETARY POLICY ON ECONOMIC GROWTH: EVIDENCE FROM SOME DEVELOPING AND DEVELOPED ECONOMIES

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ABSTRACT

The study examined the effects of monetary policy on the economic growth of some developing and developed economies. This study selected 33 countries grouped into 11 each as first group, second group and third group countries and showed how monetary policy have influenced their economic growth in the past 40 years, capturing the economic growth performances before and after the global financial crisis. This study is unique because it captures a broader range of countries compared to previous studies, uses an updated data, and shows how monetary policy is transmitted through bank lending and financial intermediation. Furthermore, we use panel data and employ fixed effect to correct for the endogeneity that existed in the variables of deposit interest rate, inflation, log nominal GDP, logbroad money, and how they affect the dependent variable (GDP growth rate). The exponential increase in money/GDP ratio for all the 33 countries shows that the size of these economies has grown considerably from 1980 to 2020. The panel data regression shows that the deposit interest rate and inflation were statistically significant while the logbroad money and logGDP were not statistically significant at 5%. In the Fixed effect regression, all the variables were statistically significant and the same negative relationship of inflation and logbroad money with GDP growth rate was observed as well. Also, the study shows that 1% increase in deposit interest rate leads to 8.5% increase in GDP growth, 1% increase in inflation reduces the GDP growth rate by 7.3%, 1% increase in logbroad money reduces the GDP growth by 4.7% and 1% increase in logGDP drives the growth rate up by 14.3%. The economic indicators for the poor countries were not significantly affected by the IMF's conditionality prescribing fiscal and monetary discipline and the explanation for the cross-country differences in growth rate can be explained by the production approach and institutional approach.

From empirical finding, this study recommends that international financial institutions issue debt securities which can deploy domestic saving from high income countries to low-income countries, financial deepness and its structures and directing more credit towards non-financial corporations.

Keywords: *Economic growth, monetary policy, GDP growth rate, financial intermediation developed and developing countries*

1.1 INTRODUCTION:

Monetary growth involves the role of money in a growing economy. Since money is a medium of exchange and store of value, which may be used in production, monetary policy is concerned with how these money is managed. Hossain and Chowdhury (1996) assert that a successful economy is one which has at least two main features namely: its actual real output does not fluctuate much from the natural real output; and its natural real output grows at a rapid, but steady pace.

Further, the determination of the level and rate of growth of natural real output tend to be the focus of growth theory. The focus of stabilization theory is determination of the actual real output relative to natural real output and the growth and stabilization theory form an integral path of macroeconomics. Branson (1989) opine that implicit macroeconomic theory have questions about the role of economic policies in growth and stabilization.

From Literature, we observed that while the role of monetary and financial policies is associated with taming of business cycles in developed countries, monetary and financial policies are integral in promoting economic growth and development in developing economies. This portrays the dichotomy in the role of monetary policies in these countries and the difference help to set priorities for policy makers. "Although the principal preoccupation of policy makers in developing countries is to attain rapid growth and change in the composition of output, the concern for growth of output and structural change is not independent of the concern for price stability and external balance" (Coates and Khatkhate, 1984). Hossain and Chowdhury (1996) observe that the experience of Latin American countries shows that if inflationary pressure that emerges

during the process of development is ignored and inflation allowed to go up rapidly, resources will be allocated inefficiently and hence this will impede development. The Latin American experience show us that higher inflation rate in these countries vis a vis their trading partners causes loss of competitive and worsening of balance of payments positions, which leads to exchange rate crisis and capital flight which has an adverse effect on output growth.

Additionally, given that the objectives of stable price level, the balance of payment equilibrium and economic growth are connected, any differentiation in the roles of monetary and financial policies in the growth (long run and short run) and stabilization in developing countries is artificial and can be misleading. Hossain and Chowdhury (1996) assert that in the short run, monetary and financial policies have the role of maintaining key macroeconomic variables e.g interest rate, inflation and exchange rate, at levels which will ensure the balance between aggregate demand and aggregate supply. Also, in the long run, they argue that these key macroeconomic variables (interest rate, inflation, and exchange rate) boost savings and investment rates and hence the economy grows at a faster rate.

1.2: MOTIVATION FOR THE STUDY

The need for an understanding of monetary growth on the economy through financial inclusion is a motivation for this study. The close relations between financial and real sectors based on economic growth encourage growth, and poverty alleviation due to an income distribution. (Fan et al, 2000; Ravallion and Datt, 2002). Lack of development of the real sector, inaccessible capital boost, lack of ease of accessibility and availability of formal financial services such as bank deposits, credits, insurance e.t.c for participants in the economy have contributed to poverty experienced. Romer (1986) considered capital boost as a form of financial sector's role in encouraging endogenous growth through positive impact of capital accumulation, investment, savings, technological innovation, income growth and financial determination (Levine et al, 2000; Honohan, 2004).

The impact of developing financial sector can impact poverty alleviation indirectly considering the correlation between economic growth and financial variables. Some studies conducted in this regard notably Demirguc-Kunt and Klapper (2012) analyzed savings, credit, payment methods using Global Financial Index for 148 countries and showed that approximately 50 percent of adults had bank accounts in formal financial institutions around the world, while 50 percent did not own any. Also, Demirguc-Kunt and Klapper (2012) found out that 35 percent of those without a bank account faced high cost of living, distance challenge, lack of documentation, track record of poor transactions and other obstacles. Thus, these inefficiencies that occurs among countries inhibit economic growth and indirectly increase poverty due to unequal financial accessibility.

Moreover, Uddin et al. (2012) carried out research using data obtained from 1976 – 2010 in Bangladesh with Autoregressive Distribution Lag (ARDL) approach and the result showed that the long run development in the banking sector was related with poverty alleviation. Boukhatem (2016) opine that many studies believe that the continued impact of financial inclusion on economic growth causes poverty reduction. Data obtained from 67 low- and middle-income countries from 1988 to 2012 show that finance development directly imparts poverty reduction through increasing money supply or bank credit, which contributes to improving welfare of the poor, increasing financial transactions that provides opportunities for capital accumulation, income distribution and consumption. Donou-Anderson and Sylvester (2015) research considered the financial inclusion, economic growth and poverty using data from 71 developing countries for 2002 – 2011 based on fixed effects and two stage least squares in the form of panel data, which showed that financial inclusion strengthens Microfinance Institutions (MFIs). The results portrayed that the existence of MFIs in developing countries when compared to banks, possess more forms of financial inclusion, which encourages employment and reduce poverty (Erlando, Riyanto and Masakaa, 2020).

Gertler and Hofman (2018) observe that disinflation since early 1980s has likely weakened money growth-inflation nexus and strengthened the relationship between

credit growth and financial crisis. A decline in the regime rate of inflation ensures a permanent drop on nominal interest rates and opportunity cost of holding money. This identified velocity shift drives a wedge between money growth and inflation, hence reducing the reliability of money growth as an indicator of inflation (Lucas, 1988; Reynard, 2006; McCallum and Nelson, 2011). In an environment of low and stable inflation, the nexus between money growth and inflation may become obscure as velocity shocks play a more prevailing role, obscuring the signal from money growth. (Estrella and Mishkin, 1997; De Grauwe and Polan, 2005).

1.3: RESEARCH QUESTIONS

This research attempts to explain the effects of Monetary policy on economic growth in some developing and developed Economics. In a bid to achieve that, the research questions are as follows:

1. What is the link between money and deposit interest rate in influencing monetary growth and inflation during the 40 – year- period including during financial crisis?

In the years leading up to the Global financial crisis, money and credit aggregates were influential in monetary theory and policy. The link between money growth and inflation on the one hand and the link between credit growth and financial crisis risk on the other hand was manifest in the financial crisis for its role in monetary analysis and modelling to show how credit boom and bust, money growth and inflation are correlated across these countries. This question attempts to show how this long run link and core monetary fact of the post war period have influenced financial stability.

2. What is the position of the monetary aggregates in driving monetary and economic growth?

The growth of financial markets has driven economic growth, improved financial conditions in the community, provided capital boost and developed the financial sector. Monetary aggregates such as credit, bank deposits, insurance etc. have bolstered economic growth through domestic savings, capital accumulation, technological

innovation, income distribution and growth etc. and they are all expected to lead to financial inclusion

3. How are monetary policies transmitted through bank lending channel and financial intermediation in some developing countries?

Given the underdeveloped financial markets and interbank markets in some developing countries, changes in policy rate used by the central banks have shown limited effect on the other interest rates and the economy generally. The role of banking especially bank lending channel is important in understanding how monetary policy is transmitted in these economies

1.4: Data: Data for this study is secondary data gotten from the International Monetary Fund (IMF), International Financial Statistics (IFS) and the World Development Indicator data bases. It is for a 40 -year period (1980 to 2020) for 33 countries.

The First group countries are: Australia, Canada, Denmark, Iceland, Mexico, Norway, South Africa, Sweden, Switzerland, United Kingdom and United States.

The Second group countries are: Congo Republic, Cote d'Ivoire, Dominican Republic, Guatemala, Haiti, Honduras, Korea Republic, Malaysia, Malta, Philippines and Paraguay.

The Third group countries are: Benin, Burkina Faso, Cameroon, Ethiopia, India, Indonesia, Nepal, Nigeria, Pakistan, Rwanda and Thailand.

2.0: LITERATURE REVIEW

2.1: MONEY AND ECONOMIC GROWTH

Economic growth is a progressive phenomenon, and it deals with change in real economic variable over time. The foundation concern in monetary growth theory,

common to both forced and prior savings schools, is if money has any effect on real variables in a growing economy in the steady state or in the transition towards the steady state. Although answers to the question remains inconclusive, such questions can be found in the literature on neutrality and super neutrality on money.

A. Neutrality of Money

One well known proposition in the monetary economics is that money is neutral to the real economy because it is neutral to the determination of relative prices, employment and output. Hossain and Chowdhury (1996) opine that money is a building block of the classical quantity theory which posits that a change in the quantity of nominal money causes a proportionate change in the price level, while real variables e.g employment, output and the real interest rate remain unaffected.

Fisher (1930) appealed to a concept of money illusion to account for short- run non-neutrality of money arising from fluctuations in real interest rates. He asserts that “the erratic behavior of real interest is evidently a trick played on the money market by the money illusion when contracts are made in unstable money” (Fisher, *ibid*: 415). Studies show that the existence of the money illusion is convertible with violation of the homogeneity postulate

The short run non-neutrality of money is a noticeable feature of the Keynesian monetary theory (Meltzer, 1988). This follows from the argument that since under the conditions of underemployment, the price level does not rise commensurately to the increase in the quantity of money. Hence, the resulting increase in the real quantity of money lowers the interest rate and therefore increases investment and real output. Keynes(1936) acknowledged the classical view that the demand for labor depends on real wages and therefore employment can be increased by lowering the real wage rate.

Monetary economists acknowledge that in the short run, money influences the real economy. As Friedman (1992: 260) asserts, “In the short run, which may be as long as three to ten years, monetary changes affect primarily output. Over decades, on the other hand, the rate of monetary growth affects primarily prices”. Nevertheless, his

acceptance of the short-run non neutrality of money comes from expectational errors or imperfect information and not based on money illusion.

“Over short periods, an unanticipated increase in inflation reduces real wage as viewed by employers, reducing them to offer higher nominal wages, which workers erroneously view as higher real wages. This discrepancy simultaneously encourages employers to offer more employment and workers to accept more employment and workers to accept more employment, thereby reducing unemployment, which produces the inverse relation encapsulated in the Philips curve” (Friedman, 1992:258).

Notwithstanding such a plausible explanation of the short run effects of inflation on the real output, there is no convincing justification of Friedman’s view that workers hold incorrect expectations for a significant period. Gordon (1993) argues that it is doubtful that employers have an information advantage over workers to such an extent over a considerable period that can generate a business cycle in output or employment.

B. Super neutrality of money

Super neutrality of money desires that the real interest rate, capital-intensity, per capital output and consumption are independent of inflation and rate of money growth. One essential question regarding the super neutrality of money is whether a change in the growth rate of nominal money affects the growth paths of real economic variables in the steady state with the exceptions of the real balances, the steady state value of which may fall with the rise in inflation after the increase in the growth rate of nominal money. (Danthine, 1992).

Money growth may affect economic growth through its effect on the real interest rate and on capital accumulation (Orphanides and Solow, 1990). Metzler (1951) argues that the real interest is a monetary phenomenon and that an increase in the growth rate of nominal money can affect capital accumulation. He opined that the Central Bank could affect the real interest rate through money market operations such as purchasing securities, reducing the value of private wealth, which increases the propensity to save and cause the system to attain a new equilibrium level at a permanently lower interest rate and a permanently higher rate of capital accumulation (Metzler, 1951: 112).

The purported link between monetary expansion, inflation and growth through the effects of capital intensity has been more formally developed by James Tobin. It is alleged that modern literature on money and growth started with Tobin (1965) who made a case against monetary super neutrality.

2.2: **THEORETICAL BACKGROUND**

Monetary facts tend to change over time due to changes in monetary and financial regimes. Two regime changes that are distinct over the post war period are the significant global disinflation and the financial liberalization since the mid-1980s. Gertler and Hofmann (2018) assert that the global median inflation rate dropped from 13 percent to 7 percent in the mid-1980s and then below 5% in the mid-1990s. Financial liberalization, measured by the quantitative indicator of Abiad et al (2010) increased globally in the 1980s.

“Financial liberalization may weaken the empirical link between money growth and inflation while it may strengthen that between credit growth and credit risk. Financial innovations such as new financial services or products introduced in the wake of financial liberalization were identified as important shifters of the demand for money balances since the 1970s (see Ireland, 1995). The associated shifts in the money velocity have likely driven a wedge between money growth and inflation, weakening the empirical link between the two variables. At the same time, greater financial liberalization has come along with greater financial instability. Bordo et al (2001) show that frequency of financial crises has increased considerably in the post-Bretton Woods period. The coincidence with the trend toward more liberal financial systems over the same period suggests that there might be a link between financial liberalization, credit boom-bust cycles and financial crisis” Gertler and Hofmann, (2018).

Furthermore, financial liberalization has also affected the content of financial institutions' asset and liabilities in a way that has given way to a weaker money growth inflation link and stronger credit growth financial crisis nexus. On the liability front, we see that there has been a growing reliance of banks on non-monetary sources of funds e.g. wholesale funding. Schularick and Taylor (2012) opine that the trend is reflected in a growing

divergence over time between expansion of credit and money aggregates for a group of core advanced economies and this development has possibly also affected the monetary facts. Given the increasing divergence between credit and money, money has over time become less accurate gauge of financial conditions in the economy and thus on inflation pressures. Gerter and Hofmann (2018) observe that non-monetary sources of funding are less stable than monetary sources of funding, which might have increased the likelihood that credit booms usher in financial distress.

Given the bank asset, we observe that an increasing share of bank credit has gone into the real estate sector mirroring a mix of factors which includes deregulation and innovation in housing finance systems, government housing policies promoting homeownership and international bank regulation which attaches low risk weights to mortgages. Jorda et al (2014) reported a steep trend increase in the share of real estate lending in total bank lending since the mid-1980s, an occurrence he called the Great Mortgaging. Following this development, one could argue that before the mid-1980s, there was proportionally more credit and money flowing to the real economy as opposed to the real estate sector which could then produce general price inflation. On the contrary, Gertler and Hofmann (2018) opine that since mid-1980s, credit growth and money growth have been predominated by residential lending, which causes house price inflation leading to housing busts and financial distress but has little effect on general price level.

A. Financial Inclusion

The literature on measuring financial inclusion is relatively new and evolving rapidly. (Honohan, 2008; Sarma, 2012, 2015; Demirguc-Kunt and Klapper, 2012; Sharma, 2016; Kim et al, 2018; Makina and walk, 2019). Honohan (2008) measured financial inclusion using econometric methods by estimating the proportion of the adult population/household with bank accounts. The study presents a one-time measure of financial inclusion across countries for as many as 160 countries, these estimates can

be considered as an aspect of financial inclusion we call financial penetration. Studies such as the ones done by Kempson (2006); Diniz et al, (2012); Karpowicz (2016); show that solely having bank accounts may not be adequate to bear meaning for financial inclusion if there are some restrictions that deter people from sufficiently using the accounts such as remoteness of the bank, cost of transaction, bank branches and psychological obstacles.

Kempson et al (2004) define “underbanked” or “marginally banked” people as those who do not sufficiently utilize their bank account, in spite of having a bank account. Erlando, Riyanto and Masakazu (2020) show that in many countries a significant proportion of the ‘banked population’ was using informal non-bank financial services, rather than the banking facilities. The “underbanked’ or marginally banked’ tend to be considered as financially excluded households.

Financial inclusion manifest in financial penetration among public, easy access to credit, and the utilization of financial services carried out by the community as they support and grow their business or work. Consequently, the growth aspects are adjusted using indicators that portray the economic structure such as GDP, unemployment, inflation, investment, infrastructure, population and labor. Studies by Kempson et al (2001) is determined using the percentage of the poor population compared to the total population, and the Gini index to determine the inequality of income distribution.

METHODOLOGY

3.1: DATA

The data used is secondary data and it captures the effect of monetary policy on economic growth for 33 major advanced and developing economies over a period of 40 years (1980 – 2020). The data series used for this study are Deposit interest rate, GDP growth rate, Nominal GDP, Broad money (M2) and inflation. The data for these variables were gotten from IMF International Financial Statistics (IFS), World Development Indicators, World bank national accounts data, OECD National Account, World Bank Development Research Group. The 40-year period captures the various

transformation, growth of monetary aggregates, poverty and well-being Index, and the economic growth that have happened in these 33 countries. The 33 countries are grouped into First group, Second group and Third group, with 11 countries in each group.

The First group countries are: Australia, Canada, Denmark, Iceland, Mexico, Norway, South Africa, Sweden, Switzerland, United Kingdom and United States.

The Second group countries are: Congo Republic, Cote d'Ivoire, Dominican Republic, Guatemala, Haiti, Honduras, Korea Republic, Malaysia, Malta, Philippines and Paraguay.

The Third group countries are: Benin, Burkina Faso, Cameroon, Ethiopia, India, Indonesia, Nepal, Nigeria, Pakistan, Rwanda and Thailand.

The average values of the variables across the 33 countries for each of the 40-year period were used to represent the value of each variable in plotting the charts. The excel charts show how they vary across countries and across time.

The charts and data portray that there is considerable cross-country variation in inflation rates, with a significant number of high inflation observation reflected in Congo Democratic Republic, in fact it was an outlier; other 32 countries were single digits and, in the teens, (double digits). The high inflation observation reflects the hyperinflation that occurred.

The variation in real GDP growth rates is much smaller, with very similar mean and median growth rates and a much lower standard deviation. The average growth rate of real GDP across all the 33 countries for the 40-year period is 3.46%.

The broad money GDP ratio shows an exponential growth as it continued to grow during the period. The panel data variables of this research capture three large blocks namely: financial inclusion; economic growth; poverty and inequality.

3.2: EMPIRICAL APPROACH

The money growth-inflation nexus represents a relationship between two continuous variables with many cross-sectional and time series observations. The analysis of

money-inflation link follows the paper by McCallum and Nelson (2011) which allowed lead lag relationship between money growth and inflation. The estimator is a maximum likelihood panel estimator constraining long-run coefficients to be the same and allowing short run coefficients and error variances to differ across cross sectional units.

3.3: ESTIMATION TECHNIQUE

This research uses panel data in the estimation and the regression analysis would be done using STATA software. The analysis would capture the fixed effect and correct for heterogeneity which can affect the variable used in determining the effects of monetary policy on economic growth in these 33 countries.

To examine and estimate the economic growth based on the monetary policy, we employ several measures of economic activity and well-being. Our econometric research strategy is to use log linear specification for the dependent variable and then introduce richer specification with more detailed structure and/or non-linearity. We consider the effects of deposit interest rate, inflation, nominal GDP and Broad money on real GDP growth.

Our model is:

$$Grt_{it} = B_0 + B_1Dir_{it} + B_2Inf_{it} + B_3lnGDP_{it} + B_4lnBM_{it} + \mu_{it}$$

$$Grt_{it} = B_0 + B_1Dir_{it} + B_2Inf_{it} + B_3lnGDP_{it} + B_4lnBM_{it} + \gamma_t + \alpha_i + \mu_{it}$$

where:

Grt_{it} stands for the GDP growth rate. This is the dependent variable while deposit interest rates, nominal GDP, inflation and broad money are the explanatory variables.

B_0 is the intercept

Dir_{it} – stands for the deposit interest rate

$lnGDP_{it}$ – stands for the linearized form of the nominal GDP

Inf_{it} – stands for inflation

$lnBM_{it}$ – stands for the log broad money

μ_{it} – stands for mean error term

γ_t – times which is the time dependent and do not vary across countries but varies across trend in GDP growth rate across time.

α_i – Country dependent

$$i = 1, 2, 3 \dots\dots\dots 33(N)$$

Where 1 is the first country and N or 33 is the 33rd country

$$\alpha_i + \mu_{it} = \eta_{it}$$

$$\text{Cov}(\eta_{it}, \text{Dir}_{it}, \text{Inf}_{it}, \text{InGDP}_{it}, \text{BM}_{it}) = 0$$

We assume the OLS is consistent and has to hold for all i and all t.

$$\forall_i, \forall_t$$

$$\text{Cov}(\alpha_i + \mu_{it}, \text{Dir}_{it}, \text{Inf}_{it}, \text{InGDP}_{it}, \text{InBM}_{it}) = \text{Cov}(\alpha_i, \text{Dir}_{it}, \text{Inf}_{it}, \text{InGDP}_{it}, \text{InBM}_{it}) = 0$$

We assume that these variables are not correlated at this stage.

However, if we observe that the variables are correlated, then we conclude that we have unobserved heterogeneity and we shall remove it using fixed effect.

The fixed effect model is:

$$Y_{it} = B_1 + B_2X_{2it} + B_3X_{3it} + B_4X_{4it} + \alpha_i + \mu_{it}$$

Where α_i is the time variant fixed effect or individual effect

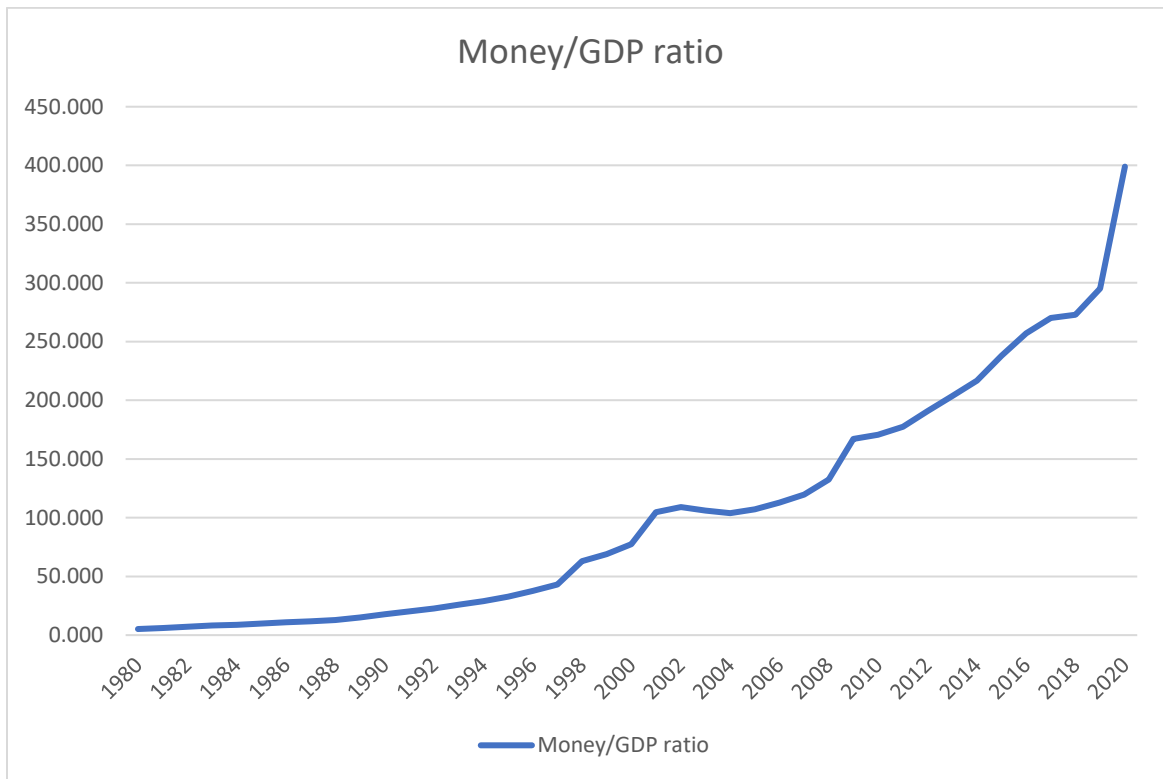
$$Y_{it} = B_1 + B_2X_{2it} + B_3X_{3it} + B_4X_{4it} + \alpha_i + \delta_t + \epsilon_{it}$$

δ_t is the time specific intercept which captures changing macroeconomic factors that do not affect growth rate

$$\text{Grt}_{it} = B_1 + B_2\text{Dir}_{it} + B_3\text{Inf}_{it} + B_4\text{InGDP}_{it} + B_5\text{InBM}_{it} + \alpha_i + \delta_t + \epsilon_{it}$$

ANALYSIS AND INTERPRETATION OF RESULTS

4.1: Money/GDP Ratio



There is a consistent increase in the money/GDP ratio over the 40-year period. The money supply indicator captured in the study is the Broad money (M2). The supply of currency and other liquid instruments have profound effects on real economic activity and the price level of commodities in the economy of these 33 countries over time. The nominal GDP, which measure the total value of finished goods and services produced within each period in each country tends to rise with money supply, but not in all cases. The relationship between monetary growth and GDP gives us an indicator of the overall economic health of a country. This relationship depends on if we view the economy on long or short term.

Further, the money supply impacts GDP (economy) through lower interest rates. The relationship between money supply and the deposit interest rate tends to be negative. The higher the money supply, the lower the deposit interest rate over the period. Based on the law of demand, increase in money supply lowers the price of borrowing and this drives up lending and consumption resulting in increase in output of the economy especially increase in spending and GDP. From the chart above, we can conclude that the 40-year period have witnessed an astronomical increase in money/GDP ratio because money supply and GDP have been growing.

According to data obtained from the World Development Indicators, the top 5 economies with highest growth rate are Ethiopia, Korea republic, Malaysia, India, and Indonesia. The least 5 countries are Haiti, Congo Democratic Republic, Switzerland, Denmark, and the United Kingdom

4.2: Panel Data Regression

reg GDPgrowth deposit inflation logbroadmoney logGDPcurrent

Variable	Coefficient	P-value
Deposit	.0858561	0.000
	.0245574***	
Inflation	-.0732391	0.000
	.0148479***	
Logbroad Money	-.0476292	0.587
	.0876458	
Log GDP	.1439001	0.091
	.084995	
Constant	.6798852	0.595
R-squared	0.0263	
Adjusted R-squared	0.0234	
Number of Observation	1,336	

$$Y_{it} = B_1 + B_2X_{2it} + B_3X_{3it} + B_4X_{4it} + B_5X_{5it} + \alpha_i + \delta_t + \mu_{it}$$

$$\text{GrtGDP}_{it} = B_0 + B_10.0858_{it} + B_2-0.0732_{it} + B_3-0.04762_{it} + B_40.1439_{it} + \epsilon_{it}$$

Were

B_1 , B_2 , B_3 and B_4 are the coefficients for deposit interest rate, inflation, log broad-money and log nominal GDP

α_i is the fixed effect or individual effect

δ_t is the time specific intercept which captures differences in outcome of GDP growth rate that vary across time, but not across individual country.

4.3: GDP Growth Rate

Although the country's GDP is not a perfect representation of the economic productivity and overall economic health of the country, the GDP growth rate is one of the best indicators of economic growth over time. Economic theory posits that large countries with large economic output tend to grow at a lower rate compared to smaller countries with less economic output who grow at a faster rate.

Generally, GDP growth rate portrays rising economic productivity and increase in value of money in circulation. This is so because we can exchange each unit of currency for more valuable goods and services. Technological advancement tends to drive GDP growth through innovations observed in the technology sector in recent decades and these do not shrink the money supply.

Furthermore, from our study for the 40-year period, the countries of Korea Rep and Ethiopia recorded the highest average GDP growth with 5.930 and 5.905 percent respectively. Certain internal growth factors and dynamics must have propelled this growth. Our regression is statistically significant because the Prob > F value is 0.0000. We have a low R square of 0.0263. This implies that only 2.63 percent of the variation in GDP growth rate is explained by deposit interest rate, inflation, log broadmoney and log GDPcurrent, while 97.37 percent of the variation is left unexplained.

4.4: Deposit Interest rate

The deposit interest rate is statistically significant and positive with a regression coefficient of 0.085. This suggests that if the Deposit interest rate grows by 1 percent, then we get an increase in GDP growth rate of 8.58 percent while holding inflation, logbroadmoney and logGDP current constant. The positive value is in consonance with economic theory.

Also, given that deposit interest rates paid by financial institutions to deposit account holders, deposit accounts are attractive for investors as a safe vehicle because they earn small amount of fixed interest and take advantage of insurance. This advantage is enjoyed in retirement accounts, mutual funds, stocks, bonds, notes e.tc and financial institutions encourage long-term deposits for clients to benefit from extended interest and offers more liquidity to the institutions. When financial institutions attract high value clients, they attain higher interest rates, such larger accounts generate larger returns over time which offers more stability and opportunities for economic growth compared to more volatile, high risk-financial products.

4.5: Inflation

The fall in general price levels often expressed as percentage means that a unit of currency effectively buys more than it did in prior periods for the 33 countries examined. Higher production leads to lower unemployment rate, increasing demand for goods and increase wages leads to high demand and more spending by consumers which lead to higher GDP and inflation.

From our regression, inflation is statistically significant and has negative relationship with GDP growth. It has a coefficient of -0.0732 which suggests that if the inflation grows by 1 percent, then the GDP growth rate falls by 7.32 percent, holding deposit interest rates, log broad money and log GDP current to be constant. This is in consonance with economic theory because higher economic growth leads to lower inflation. Also, most of the countries have relatively low inflation except for Congo Democratic Republic, whose inflation was extremely high and an outlier.

4.6: Log broad Money

The Logbroad money coefficient of -0.04763 has a negative relationship with GDP growth and not statistically significant. Thus, we fail to reject the Null Hypothesis. This means that if the logbroad money grows by 1 percent, the GDP growth rate will fall or reduce by 4.76 percent while holding deposit interest rates, inflation, and logGDP current at constant levels. An increase in GDP growth leads to a decrease in broadmoney supply (M2).

Monetary policy involves the action of Central Banks to increase or decrease the money supply. Central Banks across countries influence the size of money supply in order to achieve their macroeconomic goals of price stability, sustainable economic growth and high employment. The money supply grows when the Central Bank choose to print more money, lower their liquidity ratio, influx of funds from abroad if a Central Bank buys up its currency from foreign exchange in order to build up its foreign reserves. When the liquidity ratio is lowered, the government is willing to lend a larger proportion of their funds to consumers, businesses and investors. When government buys securities and bonds from investors, those people holding bonds then have more money to spend leading to increase in money supply.

4.7: Log GDP current

The value of the logGDP current (nominal GDP) is not statistically significant, but it has a positive relationship with the GDP growth rate for the period of study. The coefficient of 0.1439 suggests that if the log nominal GDP grows at the rate of 1 percent, then the GDP growth rate increases at 14.39 percent holding deposit interest rate, logbroadmoney, and inflation constant. Hence, we fail to reject the Null Hypothesis for logGDP current.

The nominal GDP tells us the current market prices of all the good and services produced in these countries. The United State has highest nominal GDP which outstrips ALL countries with a large margin and next is United Kingdom and Switzerland. Because it is measured in current prices, the growing nominal GDP from year to year might portray a rise in prices as opposed to growth in the amount of goods and services produced. The nominal GDP growth might amplify the growth if inflation is present,

hence Economists use base year prices of goods to act as a reference point when comparing GDP from one year to another.

CONCLUSION

This paper contributes to the analysis of the effects of monetary policy on economic growth of developing countries and developed economies. This study incorporates the structure of financing, the money supply, fixed effects of the variables, financial development, money/GDP ratio and economic growth through evidence from 33 countries in the 40-year period. The panel data regression shows that some variables (inflation and deposit interest rates) were significant while some other variables (logbroad money and logGDPcurrent) were not significant in making a strong impact on economic growth.

Furthermore, we observe that the international financial markets are highly integrated and financial institutions that issue debt securities can deploy domestic savings from high income economies to other countries easily, there by reducing local funding of investment. On the other hand, given the increased globalization of corporate activities, it can pose as a potential explanation for the negative sign of impact of non-financial corporations. Using a global panel and in line with that estimated for OECD countries by Cournede and Denk (2015), we assert that a large bank credit penetration relative to GDP (especially with heavy financing of household) might be more harmful to economic growth in high income countries that previously thought.

In addition, our results suggest that the mutually expansion relationship between financial development and economic growth is stronger in the early stage of economic development and this relationship declines as sustained economic growth takes hold. Thus, low-income countries with relatively well-developed financial sector are more likely to match their middle- and high-income counterparts while poor and low-income countries with relatively under-developed financial sector are less likely to meet up. This

finding provides a tenable explanation for divergence and convergence that have been observed in the rates of economic growth between rich and poor countries.

Aghion et al (2004) find out that financial constraints created by under-developed financial markets may prevent poor countries from taking full advantage of technology transfers available and therefore cause them to diverge from growth rate at the world frontier. The presence of new technologies, research and development (R & D), investment technology and other necessary inputs in the process of technology transfer can drive growth and this is evident in the effects of financial development on the intensity of technology transfers.

Finally, from the perspective of policy, our results point to several alternatives connected with the financial deepness and its structure that would promote economic growth. Growth can be promoted by directing more credit towards non-financial corporations and reduce bank credit to GDP levels in many countries.

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