
CHINGARANDE ANNA--Economics Department (Faculty of Commerce Bindura University of Science Education, P Bag 1020 Bindura, Zimbabwe)

ABSTRACT

This paper examines the impact of monetary and fiscal policies on economic activity in Zimbabwe by employing a modified St Louis equation for the period 1981:4 to 1998:3. The main objective is to determine the relative effectiveness of monetary and fiscal policies on the economic growth process in Zimbabwe using the new econometric techniques of time series, cointegration and error correction approach.

Secondary data was collected from various publications like, Government of Zimbabwe (1987) : Annual Economic Review of Zimbabwe, Central Statistical Office (1998) National Accounts 1985-97 and Reserve Bank of Zimbabwe (various issues) monthly and quarterly bulletins. Quarterly data was used to make a total of 68 observations. LIMDEP Version 6.0 and PC GIVE Version 8 packages were used for data analysis.

The regression results suggest that the monetary influence is relatively stronger and more predictable than fiscal policy in determining economic activity. These results suggest that monetary policy can be relied on as a successful macroeconomic stabilization tool in Zimbabwe. Fiscal policy should be streamlined as it is found to have an insignificant impact on economic activity in Zimbabwe.

The impulse dummies which are included in the model in order to reduce the impact of outliers in the scaled residuals were also found to be significant. These impulse dummies are for the period when Zimbabwe experienced severe drought and also a bumper harvest. Exports had an insignificant impact on economic activity.

The estimated equations are found to exhibit structural stability implying their usefulness for the purpose of forecasting and policy analysis. Money supply is found to be consistent with economic theory, having monetary base as the most important variable.
KEY WORDS: Monetary policy, Fiscal policy, Economic activity.

INTRODUCTION

Macroeconomic policy can be divided into two broad categories, namely monetary and fiscal policies. Ubogu (1985, 30) defines monetary policy as an “attempt by monetary authorities of a country to influence the level of aggregate economic activity by controlling the quantity and direction of money supply and credit availability. Thus, monetary policy is designed to ensure that the supply of money is adequate to support desirable and sustainable economic growth”. He defines fiscal policy on the other hand as the discretionary action taken by the government to vary certain fiscal aggregates such as total government expenditure on goods and services, transfer payments and tax revenues at any given level of output. Consequently, through the budgetary manipulation, fiscal policy exerts its influence on aggregate demand via its impact on output, employment, savings, investment and other fiscal variables.

The general practice of the government is to aspire towards the achievement and maintenance of full employment, balance of payments equilibrium, accelerated economic growth and development, equitable distribution of wealth and income, price stability and exchange rate stability. These broad goals can be pursued through the application of either fiscal or monetary policies or the simultaneous utilization of the two as mutually complementary economic policies. The fact that both monetary and fiscal policies, individually or jointly affect the level of economic activity has remained undisputed among economists, but the degree and relative superiority of one of these policy measures over the other in influencing economic activity has been a subject of prolonged and heated controversy among economists and policy makers alike. It is interrogate this dilemma that this study was carried.

Macroeconomics has been in existence for many centuries. During the eighteenth and nineteenth centuries some monetarists uncovered the basic quantity theory of money which is still the basic modern day theory of money. During the twentieth century macroeconomics development was due to three essential reasons which are:

a) Statisticians started collecting and systematizing data;
b) Careful identification of business cycles as a recurrent phenomenon; and

c) The Great Depression of the 1930s

The Classical economists through Say’s Law could not correct the Great Depression. The central assertion of the Classical was that market economies fully self regulate and they guarantee low levels of unemployment and high levels of production.

Keynes’ pioneering work in 1936 swept away the time long belief in the supremacy of monetary over fiscal measures. This marked the beginning of the “Keynesian Revolution” with its emphasis on fiscalism. Consequently, fiscal policy was then regarded as a relatively more potent and reliable policy instrument for economic stabilization. For the first twenty five years after the Second World War Keynes’ ideas gained popularity because they gave justification to large governments. In the 1970s confidence in the Keynesian economics began wane due to stagflation that is the coexistence of high inflation, low employment and declining output. It is like Keynesian policies were causing instability.

The belief in the relative supremacy of fiscal measures over monetary tools soon met with strong reaction and opposition from Milton Friedman and other renowned economists. This group led by Friedman launched the “Monetarist Counter Revolution” and challenged the Fiscalists to an empirical test to ascertain the relative importance of fiscal and monetary actions in economic stabilization. To meet this challenge Friedman and Schwartz carried out comparative statistical tests to see whether the Keynesian Income Expenditure model predicted better for the United States. The summary of their findings were that;

a) Changes in the behavior of money stock have closely been associated with changes in economic activity, money income and prices;

b) The interrelation between monetary and economic changes has been highly stable; and

c) Monetary changes have often had an independent origin and they have not been simply a reflection of changes in economic activity (Meigs 1971)
Monetarists believe that monetary impulse is the most important factor accounting for variations in output, employment and prices. Milton Friedman (1974. p.27) remarked “I regard the description of our position as money is all that matters for changes in nominal income and for the short run changes in real income as an exaggeration but the one that gives the right flavor of our conclusions.” Most of the monetarists believe that pure fiscal policies, like increasing government expenditure, financed by taxes, cannot influence real output. These findings signaled the revival and re-emergence of monetarism, professing the relative efficacy of monetary policy. Since the advent of the “Monetarist Counter Revolution”, a lot of theoretical and empirical test has been shown in the monetary versus fiscal policy debate. Neo-Keynesians, on the contrary, argue that even pure fiscal measures work. According to this school, a necessary condition for the ineffectiveness of pure fiscal policies is zero elasticity of demand for money with respect to interest rates. A few economists even go to the extent of asserting that money does not matter.

ZIMBABWE’S MACROECONOMIC PERFORMANCE

At independence in 1980, Zimbabwe initiated development planning as an instrument for achieving rapid socio-economic development. The first two development plans, the Transitional National Development Plan (1981-1983) and the First Five Year National Development Plan (1985-1990) were formulated in an economic and social environment in which government controls were the order of the day, and overprotection of the economy as well as monopolistic practices prevailed for both monetary and fiscal policies. The ultimate goal of development planning was to raise the living standards of people. The implementation of development plans was faced by many hurdles and planned targets were not achieved. In the public sector, the government used the Public Sector Investment Programme (PSIP) as an instrument for implementing development plans, and in the private sector, economic policies and incentives were used. For the first ten years after independence, the economy experienced many set backs as well as advances (see Table 1 on macroeconomic indicators).

Since 1983, investment especially in the productive sectors of the economy has been continuously declining. Rural development and land reform, economic expansion and
employment creation which are priority areas in development planning were not achieved to the desired extent. Budget deficits and balance of payments equilibria have been persistent and the overall economic growth fell far short of planned targets. Budget deficits were caused by high expenditure for the development of social infrastructure, subsidies to parastatals as well as high defence expenditure because of South African destabilization policy (see Table 1).

With the advice of the World Bank and the International Monetary Fund (IMF), Zimbabwe adopted the Economic Structural Adjustment Programme (ESAP) in order to address some of her problems. ESAP was implemented in conjunction with the second Five Year National Development Plan. The deregulation and reform of the economy was to be underpinned by appropriate monetary and fiscal policies. Adjustments in fiscal policy were to allow an increase in resources for the productive sector. A more active use of monetary policy combined with increased use of indirect policy instruments was supposed to mobilize and channel savings into the most productive uses while reducing the rate of inflation.

Fiscal policy’s main target was to reduce the deficit of the central government from 5% of Gross Domestic Product (GDP) by the end of the fiscal year 1994/95. This compared with the deficit of 10.6% during the fiscal year 1990/91. This was to be achieved mainly through the containment of recurrent expenditure by virtual elimination of subsidies to public enterprises (3.7% of GDP during the fiscal year 1990/91), a reduction in civil service wage bill (from 16.5% of GDP during the fiscal year 1990/91 to 12.9% during the fiscal year 1990/91), increased cost recovery and general expenditure restraints.

During the reform programme, monetary policy’s major aim was to reduce inflation to less than 10% by 1995. After recognizing that direct control methods used to control credit and money supply during the 1980s need to be changed in a more market oriented economic environment, the government moved to indirect methods of control. Despite the implementation of reforms, Zimbabwe did not perform as planned. Throughout the ESAP period, budget deficits exceeded targets as shown in Table 1. On the revenue side, reductions in tax rates were expected to result in increased investment and growth, so that lower rates over a broader base would not result in
lower tax revenue. However, with GDP growth averaging only 0.5% per annum, and a reduction in revenue gathering capacity, revenues fell below planned targets. Equally important was the inadequate control of expenditures, this being largely to droughts, continuing parastatal losses and slower planned civil service reform.

The financing of the resulting deficits, largely through domestic borrowing, crowded out the private sector in domestic capital markets, fuelled inflation and resulted in high interest rates. These in turn meant an enormous increase in government’s interest bill, so that by 1995/96 interest charges consumed 37 cents out of every dollar collected in revenue and interest payments exceeded the combined expenditure of health and education ministries. Not only was the programme target of a fiscal deficit of 5% of GDP by the end of the fiscal year 1994/95 missed by a wide margin (the out-turn was 13.5% of GDP), but persistent budgetary under-performance during ESAP brought the country to the brink of a debt trap. This is evidenced by Table 1 below.

Table 1: Zimbabwe’s Macroeconomic Performance

<table>
<thead>
<tr>
<th>Year</th>
<th>Fiscal Deficit as % of GDP</th>
<th>Annual Inflation Rate</th>
<th>Real Money Supply (M2) Growth</th>
<th>Real GDP Growth Rate (%)</th>
<th>Real Government Expenditure Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>10.3</td>
<td>7.2</td>
<td>2.48</td>
<td>10.7</td>
<td>11.1</td>
</tr>
<tr>
<td>1981</td>
<td>7.8</td>
<td>12.8</td>
<td>1.52</td>
<td>9.7</td>
<td>22.3</td>
</tr>
<tr>
<td>1982</td>
<td>9.9</td>
<td>14.6</td>
<td>6.20</td>
<td>1.5</td>
<td>30.94</td>
</tr>
<tr>
<td>1983</td>
<td>11.9</td>
<td>19.8</td>
<td>-9.84</td>
<td>-3.6</td>
<td>33.67</td>
</tr>
<tr>
<td>1984</td>
<td>11.9</td>
<td>16.4</td>
<td>3.7</td>
<td>2.3</td>
<td>16.92</td>
</tr>
<tr>
<td>1985</td>
<td>9.5</td>
<td>9.2</td>
<td>-9.54</td>
<td>7.3</td>
<td>11.26</td>
</tr>
<tr>
<td>1986</td>
<td>12.1</td>
<td>14.2</td>
<td>6.7</td>
<td>2.2</td>
<td>13.15</td>
</tr>
<tr>
<td>1987</td>
<td>10.4</td>
<td>11.9</td>
<td>-1.61</td>
<td>-0.5</td>
<td>22.55</td>
</tr>
<tr>
<td>1988</td>
<td>7.8</td>
<td>7.1</td>
<td>11.15</td>
<td>5.9</td>
<td>15.48</td>
</tr>
<tr>
<td>1989</td>
<td>7.8</td>
<td>11.6</td>
<td>14.59</td>
<td>3.6</td>
<td>16.98</td>
</tr>
<tr>
<td>1990</td>
<td>10.6</td>
<td>15.5</td>
<td>6.45</td>
<td>7.2</td>
<td>17.72</td>
</tr>
<tr>
<td>1991</td>
<td>12.9</td>
<td>23.3</td>
<td>-0.04</td>
<td>3.2</td>
<td>29.63</td>
</tr>
<tr>
<td>1992</td>
<td>18.4</td>
<td>42.1</td>
<td>14.64</td>
<td>-5.5</td>
<td>32.52</td>
</tr>
<tr>
<td>1993</td>
<td>13.8</td>
<td>27.6</td>
<td>25.17</td>
<td>2.0</td>
<td>21.09</td>
</tr>
<tr>
<td>1994</td>
<td>14.5</td>
<td>22.3</td>
<td>44.19</td>
<td>5.3</td>
<td>17.92</td>
</tr>
<tr>
<td>1995</td>
<td>11.5</td>
<td>22.5</td>
<td>10.23</td>
<td>-1.1</td>
<td>37.97</td>
</tr>
<tr>
<td>1996</td>
<td>10.1</td>
<td>21.7</td>
<td>-2.24</td>
<td>7.0</td>
<td>19.3</td>
</tr>
<tr>
<td>1997</td>
<td>5.8</td>
<td>18.9</td>
<td>22.93</td>
<td>2.0</td>
<td>46.5</td>
</tr>
<tr>
<td>Year</td>
<td>Inflation Rate</td>
<td>GDP Growth</td>
<td>Budget Deficit</td>
<td>Interest Rate</td>
<td>Money Supply Growth</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>1998</td>
<td>5.5</td>
<td>31.8</td>
<td>12.70</td>
<td>1.6</td>
<td>25.5</td>
</tr>
</tbody>
</table>

**Sources**

c) Reserve Bank of Zimbabwe (various issues) monthly and quarterly bulletins.

Significant progress was made in the reform of monetary, i.e as far as replacing direct control methods with indirect methods only. During the first phase of the reform programme (1991-95), Zimbabwe failed to achieve the target inflation rate of a single digit by 1995. In 1993 the Reserve Bank of Zimbabwe implemented a tight monetary policy. Monetary policy was used effectively to bring down the rate of inflation and this was to be complemented by reductions in the budget deficit. However, the 1990s have been characterized by high levels of interest rates, money supply growth and inflation.

The restoration of macroeconomic stability was not achieved and this threatens to undermine the credibility of the government’s reform programme. It is against this background that the government embarked on the second phase of the economic reforms, the Zimbabwe Programme for Economic and Social Transformation (ZIMPREST 1996-2000). ZIMPREST incorporates a far reaching programme for fiscal restructuring and public sector revitalization. The objectives of ZIMPREST as far as fiscal rationalization is concerned were to restore revenues, manage expenditure, divest assets and liabilities and manage deficit financing. Reorientation of the government was to be achieved through restructuring of government for service delivery and complete public enterprise reforms. Monetary reforms to be carried out during ZIMPREST were to put in place a modern system of supervision and prudential regulation of the banking system and to incorporate the shift of market based instruments of monetary policy.

The set targets of ZIMPREST for both fiscal and monetary policies were not met as the budget deficit, inflation and interest rates were unmanageable (see Table 1). However the major concern of policy makers was to restore confidence, create macroeconomic stability and sustain long term economic growth.

**RESEARCH QUESTIONS**
This paper sought to provide answers to the following questions:

1) Which macroeconomic policy is relatively effective on economic activity in Zimbabwe?
2) How can macroeconomic stability be attained in Zimbabwe?

HYPOTHESES

The following hypotheses are tested in this paper:

HO : Monetary and fiscal policies do not influence economic activity in Zimbabwe.

H1 : a) Monetary policy is relatively more effective than fiscal policy in influencing economic activity in Zimbabwe; and

       b) Monetary policy is only effective as long as the fiscal policy is complementing the objectives set by monetary policy.

Main Text

Literature Review

Policy makers have an objective function which they want to maximize or minimize depending on the nature of the objective function. There is wide agreement about the major goals of macroeconomic policy: full employment, balance of payments equilibrium, stable prices and accelerated economic growth and development. There is less agreement that these goals are mutually compatible or, among those who regard them as incompatible, about the terms at which they can and should be substituted for the other. There is least agreement about the role that various instruments of policy can and should play in achieving the several goals.

THEORETICAL LITERATURE VIEW

There are various theoretical approaches to economic policy which are: the Classicals, the Neo-Classicals, the Keynesians, the Monetarists, the new Classical economists, the new Keynesians, Real Business Cycle economists and the Credit View economists.
The Classical economists believe that it is the forces of supply and demand which are essential in determining the level of economic activity. The Classical quantity theory of money, associated with early economists such as Fischer and Say, assume that money supply is exogenously determined, so that the causation between money and price is only in one direction. This theory mainly looks at the relationship between the money in circulation, spending, output, employment and prices. Classical economists argue that, these variables do not mainly depend on the quantity of money in circulation. Therefore money does not play any role in the determination of output, employment and income which are major activities in the economy. Classical theory therefore indicates that money is neutral.

Fischer’s argument considered as an improvement of the Say’s Law developed an equation of exchange which can be expressed as: $MV=PQ$, where $M$ is money supply, $V$ is velocity of money, $P$ is the price level and $Q$ is real output. Assuming $V$ and $Q$ are fixed then variations in money supply are transmitted into price level. Therefore an increase in money supply causes inflation without affecting output. From the equation Fischer concludes that money is neutral because its growth affects nominal variables such as price and interest rates and not real ones. Say’s and Fischer’s model propose the use of alternative actions (mainly fiscal) to achieve economic growth.

The Cambridge School of Thought based its argument on the principle of cash balance approach. According to this theory, money supply is equal to the fraction of income in cash form together with the price level ($P$) and real output ($Q$). Therefore the money supply model is expressed as: $M=kPQ$. According to this theory, if money increases people will accumulate excess balances, spend more and consequently increase the price level because its output is fixed in the classical theory. Therefore this theory argues that money is neutral because money is used as a medium of exchange.

The Neo-Classicals examined the role of money in economic activity. The Solow's model uses a production function approach to examine the role of money. In this model output is considered as a function of capital stock, labour force and technology. The model concludes that in the long run output growth depends on capital available per worker. Therefore an increase in saving mobilization increases capital available per
worker and hence the production and output in the economy. Solow’s model indicates that money is not relevant in economic growth because output does not depend on monetary growth but capital available per worker, hence money is neutral.

The Keynesians suggested that a change in money supply may change the level of output via change in interest rates. Keynes argued that the classical mechanism might fail to guarantee full employment equilibrium because of several reasons. For one thing wages and prices may not be flexible; for another, income, rather than the interest rate, may determine savings and if the (speculative) demand for money (which Keynes called the liquidity preference schedule) is infinitely elastic with respect to changes in interest rates (i.e. the liquidity trap), then no extra investment would be forthcoming from a further rise in savings and the economy would end up in an unemployment equilibrium.

Keynes in the 1930s in the theory of “public finance” argued that government expenditure and revenue should be used as instruments to reduce cyclical variations in economic activity. Allocation of resources is based on the work of Adam Smith (1776) whereby it is argued that society requires some commodities which cannot be provided by the private sector. To improve on the social welfare, government through fiscal policy needs to provide these commodities. In this process economic growth is affected.

The simple Keynesian model was dominant in macroeconomics for the three decades after the publication of the General Theory. Subsequent events shook confidence and disrupted the consensus. The stagflation of the 1970s was even more damaging to the old synthesis and consensus in macroeconomic analysis and policy. The inflations, and the severe recessions that followed when central banks tried to control the inflations, were widely blamed on Keynesians economics. Its protagonists had not contemplated stagflation which is a situation of high inflation, high unemployment and low output at the same time.

Within the economics profession there have been three counter-revolutionary movements, Monetarism, New Classical macroeconomics and New Keynesians economics.
The “monetarist” school, headed by Milton Friedman, contends that the Classical rather than the Keynesian theory would be valid as long as money can affect real variables in the short run, but only nominal magnitudes in the long run. Friedman stated a “modern” quantity theory which has its roots in the “ancient” quantity theory but it is broader than its predecessor. Stated in a very simple way, the ‘modern” quantity theory states that a change in money supply will change the price level as long as the demand for money is stable; such a change also affects the real value of national income and economic activity but only in the short run. As long as the demand for money is stable it is possible to predict the effects of the changes of money supply on total expenditure and income.

The monetarists argue that if the economy operates less than the full employment level, then an increase in money supply will lead to a rise in output and employment because of a rise in expenditure, but in the short run only. After a time, the economy will return to a less-than-full-employment situation which must be caused by other “real” factors. The monetarists believe that changes in money supply cannot affect real variables in the long run. At near-full-employment point or beyond it, an increase in money supply will raise prices. Before full employment, income rises with a rise in money supply and expenditure. The rise in income will, then, crucially depend upon the ratio of income to money supply because at that point output can no longer be increased. People will now raise their demand for money rather than spend it and the supply of and demand for money would once again be equal to one another.

Friedman opposed fine tuning and all activist policy and advocated an outcome-blind monetary rule: just keep the money supply growing at a steady non-inflationary rate, irrespective of what is happening month by month in the economy. In this regime, he alleged, unemployment would gravitate to its “natural rate”, a rate that government policy is helpless to reduce. Monetary policy that attempts to aim at unnaturally low unemployment may succeed temporarily but its main and lasting effect is simply to cause inflation. As for fiscal policy, which Keynes had stressed, Friedman dismissed it as of no macroeconomic importance.

New Classical macroeconomics is a revival of the old classical orthodoxy that Keynes challenged more than half a century ago. For about a decade from the mid 1970s, the
bulk of theoretical macroeconomic attention was directed towards the work of the New Classical School of economists. The pioneers of this school of thought were Robert Lucas, Neil Wallace and Thomas Sargent.

For the New Classical economists the economy is made up of actors who consistently pursue the maximization of some clearly defined objective function. The actors trade with one another in well organized markets. Trade takes place at market clearing prices such that all who wish to trade at going prices are able to do so. This far, the framework would be recognized by a Classical economist. Novelty arises from the fact that the New Classical Economist will not locate these actors in static world, but rather in a stochastic environment. The world is one in which there are recurrent shocks to the system—bad harvests, earthquakes, sunspots, policy shifts, exogenous taste changes, wars etc. In other words, while actors are rationally trying to respond to the price signals of the market, these signals are “noisy”. The fact that they are noisy has important implications. The New Classical world is often characterized as being "perfect" in the sense of full information and costless adjustment.

The rational expectations hypothesis simply amounts to the assumption that, in forming their expectations of what prices (and perhaps other variables) will be, the actors do the best they can. The rational expectation is mathematical expectation given the information available at the time the expectation is formed: \( \hat{P}_t = E( p_l | I_{t-1} ) \), where \( E \) is the expectation operator, \( \hat{P}_t \) is the typical actors subjective expectation of the price level in period \( t \), formed on the basis of all information available up to and including period \( t-1 \), \( I_{t-1} \).

This means that, given the information available at the time the forecast is made, no better forecast could be made on the basis of the same information. This means that a 'rational' forecast will on average be correct and that no other forecasting technique will beat it. These abstract ideas do, however, have powerful implications on macroeconomic policy. It is these implications which have attracted so much attention to the New Classical economics. Most famous is the result that systematic aggregate demand policies could have no real effect. This means that neither fiscal nor monetary policies will have any impact on real variable of the economy. Short term effect on the
economy will depend crucially upon whether the policy change was anticipated or unanticipated. Only unanticipated aggregate demand policies will have real effects.

The New Keynesians noticed that fluctuations in aggregate demand seem to have real effects, and asked what models of aggregate supply are consistent with this. The research agenda of the New Keynesians was to construct rigorous models of rational maximizing agents where it is optimal to act in such a way that the economy has Keynesian features. This broadly defined agenda has many paths and several themes which are wage contracts, efficiency wages and menu costs and near rationality.

Real Business Cycle Economists construct a classical model of the business cycle. It is based on the idea that technical change is the most important type of economic disturbance behind these fluctuations. It builds on the ideas of Joseph Schumpeter who held that capitalism is characterized by waves of creative destruction in which the continuous introduction of new technologies constantly drives existing firms out of business.

The Real Business Cycle’s view of cyclical fluctuations arising from random shocks to technology is associated with economists like John Long, Charles Plosser and Edward Prescott. In studying the dynamics of capital accumulation in the Ramsey model, there are the assumptions of certainty and perfect foresight but practically there is the presence of uncertainty. The economy is constantly affected by the presence of uncertainty, for example, the introduction of new technologies, changes in tastes for new goods and changes in government policies. Most of these changes are not perfectly predicted by individual firms. The presence of uncertainty affects the behavior of agents. The shocks themselves lead agents to constantly revise their optimal plans.

The two main assumptions of the Real Business Cycle models are that technical change is the most important source of economic shocks and that these shocks are propagated in perfectly competitive markets. This group of economists rejects the idea that the main source of shocks is found in demand shocks or policy shocks such as changes in money supply. This automatically renders fiscal and monetary policies ineffective. If a positive shock hits the economy, productivity of labour goes up and firms
increase their demand for labour, output increases as well as employment. Negative shocks produce recessions, for example, bad weather, natural disasters and terms of trade decline.

Proponents of the credit view argue that relatively large fluctuations in aggregate spending such as inventory investment and business fixed investment, cannot be explained satisfactorily by minor changes in real interest rates. Accordingly, the credit view analyses in greater detail the way in which monetary policy can influence interaction between borrowers and lenders in financial markets and the resulting consequences for economic activity. The credit view encompasses two distinct channels: a bank lending channel and a balance sheet channel. Proponents of the credit view argue that a bank lending channel exists because banks actively reshuffle their portfolio of assets following a change in the stance of monetary policy (Bernanke and Blinder 1988, 1992). In particular, a tightening of monetary conditions entails a reduction in the supply of bank loans relative to other sources of credit such as commercial bills. Bank lending declines primarily because banks cannot offset completely the drain of reserves by issuing managed liabilities such as certificates of deposit. With access to short term capital market restricted primarily to large firms, small firms which depend on bank loans for the financing of investment spending are deprived of their primary source of financial capital. As small firms account for a major portion of aggregate output, aggregate economic activity declines.

Supporters of the credit view maintain further that monetary policy has non-neutral effects on the balance sheets of firms (Bernanke and Gertler 1989). A monetary contraction causes the net worth of firms to decline for two reasons. First, a tighter monetary policy causes interest rates to rise, the servicing of outstanding debt becomes more expensive and firms asset prices. As a consequence, the value of marketable collateral declines. These adverse developments lead to more stringent conditions under which external finance becomes available. In practice, the external cost of finance rises which ultimately causes interest-sensitive expenditures such as investment to decline.

**EMPIRICAL LITERATURE REVIEW**
Considerable volume of empirical work has been carried out by many economists to establish which of the instruments, monetary or fiscal, is more potent in affecting economic activity of a nation.

Shahid Ali, Somia Irum and Asghar Ali carried a study to investigate the relative effectiveness of both types of policies in the context of modern time series econometrics in case of South Asian countries Pakistan, India, Sri Lanka and Bangladesh during the period from 1990 to 2007, using autoregressive distributed lag (ARDL) approach in order to test the Monetarist and Keynesian claims and to find out that whether the effective policy instruments have a significant relationship with economic growth. To capture the impact of policy variables on economic growth (measured by GDP growth rate), the empirical equation was modelled as below:

\[ Y_{it} = \alpha + \beta_0 FB + \beta_1 M2_{it} + \mu \]

Where, \( Y \) = GDP growth rate, \( FB \) = Fiscal Balance and \( M2 \) = Broad Money

Following Legrenzi et al (2002) nominal values were used in order to avoid the difficulty of identifying an appropriate deflator for the series of variables. Data used for this analysis is of 17 years from 1990 to 2007 for four south Asian countries, namely Pakistan, India, Bangladesh and Sri Lanka and collected from different sources as World Development indicators (2007) and International financial Statistics (2007). Im, Pesaran, and Shin and Levin, Lin, and Chu tests were used to investigate the order of integration. For long run and short run relationship they utilized the advance modern econometrics techniques like Autoregressive distributed lag model ARDL, a co integration (panel) test and ECM (Error Correction Method) respectively. The results clearly demonstrated that there is long run relationship among the variables under consideration. Money supply appeared as a significant variable in both short run as well as in long run, while Fiscal balance is insignificant in short run as well as in long run. The results show that monetary policy is a powerful tool than fiscal policy in order to enhance economic growth in case of south Asian economies. The feedback coefficient was negative and significant suggesting that about 72% disequilibrium in the previous period was corrected in current year.
Waliullah and Dr. Fazli Rabbi (2011) examined the long run and short run causal relationship among income, money supply and price level in Pakistan, a subject which has been widely investigated in the past in both developed and developing countries, including Pakistan. They empirically analyzed the long-run relationship amongst money, price level and GDP in the context of Pakistani economy. Time-series econometric techniques such as unit roots, ARDL and ECM were employed to quarterly data for the year 1972:1 to 2005: IV. ARDL has numerous advantages over the traditional approaches of causality and cointegration through recently developed econometric technique ARDL (Auto Regressive Distributed Lagged Model). The results suggested that there is a stable long run relationship among the three variables, on which the analysis is based. As a policy guideline they suggested that monetary authority in Pakistan should devise strategies to ensure long run price stability through balanced expansion in the money supply as this type of monetary policy would help to provide a stable economic environment (Eichenbaum, 1997). This stability in the economic environment will aid economic agents in their decision making. Therefore, it is fair to conclude that monetary policy, as approximated by changes in the M1, will have important implications for changes in Pakistan's nominal income in the long run. Based on the results they further concluded that in the short run the monetary policy is relatively effective and that the money supply is exogenous and cause a significant movement in the price level and hence GDP. The policy implications stemming from the analysis clearly suggested that monetary policy plays an active role in influencing the level of economic activity in Pakistan. In a nutshell, an increase in money supply increases economic activity in Pakistan, which in turn increases money demand to finance a higher level of economic activity.

The relationship between monetary and fiscal policy in the process of macroeconomic stabilization have been examined by Lambertini and Rovelli (2003). By analyzing the Stackelberg equilibrium, they identified three cases each assigning the initiative to treasury, government and central bank respectively in conduct of policy measures. The study concluded that the preferable and probable outcome is the one in which the fiscal authority appear as the leader in macro-economic policy game.
In an empirical investigation of a group of emerging market countries Zoli (2005) found that there is fiscal dominance in case of Brazil and Argentina. They explored that, fiscal policy actions appeared to have contributed to movements in the exchange rates more than unanticipated monetary policy maneuvers, establishing the fact that fiscal policy does affect monetary variables. Agha and Khan (2006) also concluded that inflation is a fiscal phenomenon, showing that fiscal policy significantly influences monetary policy conduct, and for better performance of the economy there needs to be coordination in the policy makers. However, the consolidated budget deficit does not have a long-run component unlike the inflation rate, suggesting that changes in the consolidated budget deficit have no permanent effect on the inflation rate (Akcay et al.: 2001).

D. Senbet (2011) in his study on “The Relative Impact of Fiscal versus Monetary Actions on Output: A Vector Autoregressive (VAR) Approach” takes the St. Louis equation seriously. The main concern was that, the economic activity is represented by nominal output and to his surprise; the impact of monetary or fiscal policies on prices has not been given any attention. All such models with nominal output as the dependent variable could not address the question of how policy induced changes are split between a change in real output and a change in prices. The paper investigated the relative impact of monetary and fiscal policies on the U.S. real economic activity, using quarterly data between 1959:I and 2010:II. Granger causality tests and Vector Autoregressive (VAR) models were employed. The VAR methodology also helps in resolving the issue of endogeneity between policies and output. The results from both models indicate that monetary policy is relatively better than fiscal policy in affecting the real output. No other study attempted to investigate the relative impact of monetary and fiscal policy actions on real output in the St. Louis framework as well as the econometric approach used in this paper to address the issue.

Muhammad Nasir et.al (2010) investigated the presence of coordination among the fiscal and monetary policies in Pakistan, using annual data from 1975 to 2006. The empirical results, using Vector Autoregression (VAR), suggested that there is evidence
of weak or very little coordination among the policies. The results were interpreted using Impulse Response Function (IRF). It has been observed in the analysis that there is evidence of weak responses of variables to shocks induced in various variables. The variables converge to their long run path after the long gap of twenty two to twenty four years, showing that there is very weak response of policy makers to each other policies. Hence, one may conclude that there is weak coordination among the policy makers.

The models developed show some interrelation between economic growth and monetary as well as fiscal policy. To date there are still disagreements on the potency of fiscal policy or monetary policy in affecting economic activity.

METHODOLOGY

In this paper the modified St Louis Equation model was employed to examine the effects of monetary and fiscal policies on economic activity in Zimbabwe. The modified St Louis Equation model proposed by Batten and Hafer (1983) is of the form:

\[ Y^*_t = C_0 + \sum_{i=0}^{j1} m_i M^*_{t-i} + \sum_{i=0}^{j2} f_i F^*_{t-i} + \sum_{i=0}^{j3} e_i E^*_{t-i} + U_t \]

Where \( Y, M, F \) and \( E \) represent real Gross National Product (real GNP), real money supply (M2), real government expenditure and real exports respectively. Each of the above variables is in logarithms captured by \( * \). Logarithms help to solve the problem of heteroscedasticity. \( c_i, m_i, f_i \) and \( e_i \) are the coefficients to be estimated and \( U_t \) is the error term.

However, even though this single equation approach has been frequently employed to analyse the macro effects of monetary and fiscal policy actions, the approach has been subjected to much criticism. Hence in order to remove some of the weaknesses inherent in the original St Louis Equation and also make the equation more representative of an open economy, the following modifications are suggested.

As the original St Louis Equation was formulated to test the relative effectiveness, of monetary and fiscal actions, it does not incorporate all of the exogenous forces that
affect GNP. Batten and Hafer (1983) have argued that if the missing exogenous variables are policy variables or closely correlated with the variables representing monetary and fiscal actions, their omission may lead to a serious statistical problem. This would be more for a country like Zimbabwe with a large degree of openness. Exports and imports account for a large proportion of GNP. Monetary and fiscal actions obviously affect the foreign trade sector leading to a high degree of correlation between external and domestic influences on economic activity in Zimbabwe. As a result, a variable representing these external influences should be included in analyzing the comparative effectiveness of monetary and fiscal actions on economic activity in Zimbabwe. All coefficients are expected to have a positive sign.

With the available data a number of regressions were carried out, as well as tests to determine the significance of variables used in the model. Stationarity of every variable was inspected using unit roots test mainly the ADF test. The error correlation model for each variable which was cointegrated with the dependent variable was also run. Diagnostic tests for autocorrelation, normality, functional, specification and heteroscedasticity were carried out to ensure that estimation results are Best Linear Based Unbiased Estimators (BLUE). LIMDEP Version 6.0 and PC GIVE Version 8 packages were used for data analysis.

This paper uses time series data. With the available data, a number of regressions were carried out, as well as tests to determine the significance of variables used in the model. Stationarity of every variable was inspected using unit roots test mainly the Augmented Dickey Fuller (ADF) test because it is more reliable, accurate and efficient. The error correction model for each variable which is cointegrated with the dependent variable was also run. The Engle Granger (EG) test was adopted to check the order of integration and also to test for cointegration because it is simple and has been shown to produce better and reliable results. The ad hoc choice of the lag length is problematic because tests on statistical significance of the coefficients are sensitive to lag selection. $R^2$ and the Akaike Information Criterion (AIC) proposed by Greene (1993) were used on the choice of the lag length. The method allows each variable to enter the equation with a different number of lags. The structural stability or parameter stability test of an
Equation was tested by employing the Chow (1960) test. This test examines the possibility that the estimated equation has undergone a single point shift. Diagnostic tests for autocorrelation, normality, functional specification and heteroscedasticity were carried out to ensure that estimation results are BLUE.

**Data Sources and Time Domain**

Time series data from Central Statistical Office (CSO) Quarterly Digest of Statistics, Reserve Bank of Zimbabwe Quarterly Economic and Statistical Review and IMF Statistics for the period 1981:4 – 1998:3 were used. The choice of the time domain was influenced by the desire to have a large sample size so that the estimates are unbiased, consistent and also the desire to determine the effects of the monetary and fiscal policies during the period when there were major policy drifts because of sanctions imposed on Zimbabwe.

**a) Measure of economic activity**

As a proxy variable representing economic activity for the years, Gross National Product (GNP) was used. This has been shown to be a better proxy for economic growth especially in a small open economy because unlike the Gross Domestic Product (GDP), GNP accounts for the impact other economies has on the specific economy. Nominal figures for GNP were converted into real using the consumer price index (CPI) based on 1990 constant price level because monetary and fiscal policies target inflation and in Zimbabwe all changes that happen to inflation rates are captured by CPI. In Zimbabwe though we have the producer price index (PPI), we do not use it to calculate inflation. The GDP deflator which captures both the CPI and the PPI series go back to 1985, hence there is data unavailability for the period under consideration whereas data for CPI is readily available. Real GNP is regressed on exogenous variables identified below. Data for real GNP is available only in annual series and quarterly data on real GNP is not available. To circumvent this problem, the Lisman and Sandee (1964) interpolation techniques were used to generate the relevant data.

**b) Measure of Fiscal Actions**
Fiscal policy has two sides which are revenue generation and spending. The variables often used to measure the impact of fiscal actions on economic activity include government expenditure on goods and services, changes in government tax rates, government revenue, budget deficit and surpluses. Due to data inefficiency and inconsistency for the tax rate and budget figures, these variables were not used. Real government expenditure was used because of the central role that government plays in public expenditure decision more than in revenue collection and other instruments of fiscal policy. In Zimbabwe government expenditure exceeds government revenue by far. Government revenue cannot be considered as a proxy for fiscal policy because Zimbabwe did not operate a cash budget during the period under consideration. Data on government expenditure was deflated using the Consumer Price Index (CPI) to get real figures.

c) Measure of Monetary Actions

Money supply (M2 component) was used as a proxy for monetary policy actions since it reflects more accurately changes in economic activities. M2 is defined as M1 plus savings deposits under 30 day deposits with the banking system where M1 is notes and coins in circulation plus demand deposits with the banking system. Data for M2 is available for the period under study whereas other definitions of money M3 and M4 were fairly recent which means that if they were to be used, then there was going to be disjointed data especially for the 1980s when there were controls. Data on money supply was deflated using the Consumer Price Index (CPI) to get real figures.

d) Measure of External Influences on the economy

Due to openness of the economy and heavy dependence on foreign trade, with high commodity trade ratio (imports plus exports as a proportion of GDP), the foreign sector performance is captured on the model. The original growth model assumes that the domestic economy being analysed is relatively closed to the rest of the world. While this may characterize a developed economy, it is not true for countries whose foreign sector accounts for a large proportion of their GNP. In addition because monetary and fiscal actions obviously affect the foreign sector, the correlation between external and
domestic influences on GNP rises as the economy becomes more open. In this study, real value for exports is used to capture the foreign sector (studies by Chowdhury and Kamau also used real exports to capture external influences on GNP). Although import figures could have been used, it is considered inefficient because substantial volume of imports is not reported in accounting. Therefore, import figures may be biased. Availability of foreign exchange could also be used to capture availability of foreign influences but the problem is the most appropriate proxy to capture availability of foreign exchange. This is further compounded by lack of quarterly data for say foreign reserves which can be used as a proxy. Therefore real exports are considered exogenous in the model.

RESULTS

Stationarity Tests

The results obtained from the ADF test on each variable show that real GNP, money supply, and exports are integrated of order one (i.e. non-stationary / random walk) at 1% level of significance and government expenditure is stationary in levels (integrated of order zero).

ST LOUIS GROWTH MODEL

The model estimated is equation

\[ Y_t^* = C_0 + \sum_{i=0}^{1} m_i M_{t-i} + \sum_{i=0}^{2} f_i F_{t-i}^* + \sum_{i=0}^{3} e_i E_{t-i}^* + U_t \]

Where \( Y, M, F \) and \( E \) represent real Gross National Product (real GNP), real money supply (M2), real government expenditure. \( c_i, m_i, f_i \) and \( e_i \) are the coefficients to be estimated and \( U_t \) is the error term.

Based on the AIC, the optimal lag length is found to be one for real GNP, four for real government expenditure, three for money supply and five for real exports. When estimated the general model is found to suffer from the problem of normality, reset and autocorrelation. Therefore the solution is to add some impulse dummies to the model, increase the lag length of some of the variables and also to remove all variables which
are insignificant in the model until a parsimonious model is obtained. The impulse dummies added are for the years 1984, 1985 and 1992.

Co integration Test

The test used to check on co integration is the Engle-Granger (1987) test. Co integration is performed on GNP, government expenditure, money supply and exports. Co integration results are presented in Table 2 below.

Table 2: Co integration results

<table>
<thead>
<tr>
<th>Variable</th>
<th>EG-Statistic</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNP and Govt Exp</td>
<td>-1.8892</td>
<td>not co integrated</td>
</tr>
<tr>
<td>GNP and Ms</td>
<td>-2.1870</td>
<td>not co integrated</td>
</tr>
<tr>
<td>GNP and Exports</td>
<td>-3.3446*</td>
<td>co integrated</td>
</tr>
</tbody>
</table>

Critical Values: 1%=−3.525; 5%=−2.903

**indicates cointegration at 1%

*indicates co integration at 5%

The co integrating error term obtained by regressing GNP and exports is found to be stationary at 5% level of significance using the Engle-Granger test statistic.

Long Run Model

Table 3: Modelling GNP by OLS; Sample 1981:4 to 1998:3

Static Long Run Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>t-Value</th>
<th>t-prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.89</td>
<td>3.45</td>
<td>0.16876</td>
<td>0.6828</td>
</tr>
<tr>
<td>LR-GOV.E</td>
<td>2.969</td>
<td>2.073</td>
<td>2.8846</td>
<td>0.0644</td>
</tr>
<tr>
<td>LRMS</td>
<td>0.2837</td>
<td>0.496</td>
<td>5.3448</td>
<td>0.0076</td>
</tr>
<tr>
<td>LR-EXPO</td>
<td>-1.127</td>
<td>1.43</td>
<td>-2.2442</td>
<td>0.1398</td>
</tr>
<tr>
<td>i1985p1</td>
<td>-28.38</td>
<td>21.89</td>
<td>-250.28</td>
<td>0.0000</td>
</tr>
<tr>
<td>i1985p2</td>
<td>24.98</td>
<td>20.21</td>
<td>55.456</td>
<td>0.0000</td>
</tr>
<tr>
<td>i1985p9</td>
<td>-3.711</td>
<td>3.233</td>
<td>-5.7804</td>
<td>0.0196</td>
</tr>
</tbody>
</table>
Centered Seasonals included

\text{Adjusted } R^2 = 0.934712 \quad F\text{-Statistic} = 330.09 \ (0.0000)

\text{DW} = 1.06 \quad \text{RSS} = 0.067336

Discussion of results in this model is limited because statistical tests are invalid. In such a model only parameter coefficients and the explanatory power are discussed. The adjusted \( R^2 \) is 0.934712, indicating high explanatory power of the exogenous variables in the model. The monetary variable has an elasticity of 0.2837 with the expected positive sign. The fiscal policy variable has a positive sign with an elasticity of 2.969. The monetary variable is more elastic compared to the fiscal variable. The export variable has a negative has a negative elasticity of 1.127. Since the model suffers from the problem of normality, impulse dummies to capture outliers in the scaled residuals are included in the model. The 1985 period 1 impulse dummy has an elasticity of -28.38, the 1985 period 2 impulse dummy has an elasticity of 24.98 and the 1984 period 9 impulse dummy has a negative elasticity of 3.711.

**Short Run Dynamic (Error-Correction) Model**

Since there is only one co integrating vector in this model, the short run model can be expressed as follows:

\[ \Delta GNP = f(\text{Govt. Expt, } \Delta MS, \Delta \text{Exports, ECM}_{\text{Exports}}) \]

**Table 4: Modelling \( \Delta GNP \) by OLS : Sample 1981:4 to 1998:3**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std-Error</th>
<th>t-Value</th>
<th>t-probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.21</td>
<td>1.658</td>
<td>2.95</td>
<td>0.0911</td>
</tr>
<tr>
<td>LR-GOV.E</td>
<td>-0.3835</td>
<td>0.57310</td>
<td>-2.6953</td>
<td>0.1060</td>
</tr>
<tr>
<td>DLRMS</td>
<td>0.797</td>
<td>1.137</td>
<td>6.1659</td>
<td>0.0159</td>
</tr>
<tr>
<td>DLR-EXP</td>
<td>0.2612</td>
<td>0.4704</td>
<td>1.2098</td>
<td>0.2758</td>
</tr>
<tr>
<td>ECM_{LR-EXP}</td>
<td>-0.1308</td>
<td>0.3133</td>
<td>-3.657</td>
<td>0.04854</td>
</tr>
<tr>
<td>i1985p1</td>
<td>-7.993</td>
<td>10.88</td>
<td>-170.24</td>
<td>0.0000</td>
</tr>
<tr>
<td>i1985p2</td>
<td>4.778</td>
<td>5.867</td>
<td>23.495</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

\text{Adjusted } R^2 = 0.835369111 \quad \text{F\text{-Statistic} = 43.792}

\text{DW} = 1.12 \quad \text{RSS} = 0.103318121
The model has an adjusted $R^2 = 0.835369111$ showing satisfactory high power of exogenous variables in explaining variables in growth. The $R^2$ implies that about 84% of variations in real GNP is captured by the exogenous variables in the model. The F-Statistic is high implying a good fit of data in the model and the overall significance of the explanatory variables. Residuals are normally distributed according to the normality test. AR-1 indicates no presence of autocorrelation, while according to the ARCH test statistic there is no heteroscedasticity in the model. The constant variable is not significant and has the expected positive sign with a value of 1.121. The monetary variable has the expected positive signs with an elasticity of 0.797 and is significant at 5%. The fiscal policy variable is insignificant and has a negative elasticity of 0.3835. The export variable representing the foreign sector is also very significant. These results demonstrate that the monetary variable has the highest elasticity compared to fiscal and export.

The lagged co integrating error term ($ECM_{LR-EXP}$) has the expected negative sign indicating adjustment towards the long run equilibrium. This variable has a value of 0.1308 demonstrating a slow adjustment speed of 13% between the short run and long run variables and it is significant at 5%. There is no long run relationship between short and long run variables of money supply and government expenditure. This shows that an increase or a decrease of money supply only affects economic activity in the short run period and does not have any effect in the long run. Since government expenditure is stationery in levels, it does not explain any changes in the dependent variable and there is therefore no cointegrating error term.

The impulse dummy for 1985 period 1 has a negative impact on gross national product with an elasticity of 7.993 and the impulse dummy for 1985 period 2 has a positive impact on economic activity with an elasticity of 4.778. Both dummies are very significant. These dummies are capturing the outliers in the scaled residuals.
Further Analysis of the Results

Certain propositions with respect to monetary and fiscal influences were tested in earlier studies in this field. Two most commonly tested propositions were regarding the strength and the predictability of monetary and fiscal actions. Following Keran (1970) and Darrat (1984), it was tested whether monetary and fiscal actions are 1) more predictable, and 2) stronger. The relative predictability of monetary and fiscal impacts on income can be judged by the relative size of the t-statistics of the corresponding sum coefficient. Table 4 shows that the t-statistics for the monetary policy are larger than those of the fiscal policy. This suggests that the actual and the estimated relationship between GNP and the monetary policy variable is likely to have the same sign as the relationship between GNP and the fiscal policy variable. This test confirms the evidence described in the regression results whereby monetary policy is more significant than fiscal policy.

Parameter Stability Test

The Chow test is carried out to check on the structural stability of the error correction model. The test examines the possibility that the estimated equation has undergone a single point shift. The sample period is divided into two sub-periods i.e 1981:4 – 1989:4 and 1990:1 – 1998:3. The model for the two sub-samples was regressed separately and the one involving the whole sample. Regressions for these different models were then compared as shown in Table 5 below.

Table 5: Chow Test Results summary

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.2084</td>
<td>0.307</td>
<td>1.121</td>
</tr>
<tr>
<td>DLR-GOV.EXP</td>
<td>-0.08116</td>
<td>-0.1022</td>
<td>-0.3835</td>
</tr>
<tr>
<td>DLRMS</td>
<td>0.3252</td>
<td>0.2072</td>
<td>0.797</td>
</tr>
<tr>
<td>DLREXPO</td>
<td>0.2402</td>
<td>0.08324</td>
<td>0.2612</td>
</tr>
<tr>
<td>ECM_{DLREXPO}</td>
<td>-0.03011</td>
<td>-0.07351</td>
<td>-0.1308</td>
</tr>
<tr>
<td>i1985p1</td>
<td>-1.688</td>
<td></td>
<td>-7.993</td>
</tr>
<tr>
<td>i1985p2</td>
<td>1.842</td>
<td></td>
<td>4.778</td>
</tr>
<tr>
<td>RSS</td>
<td>0.038619176</td>
<td>0.056675352</td>
<td>0.103318121</td>
</tr>
</tbody>
</table>
The hypotheses to be are: Ho: Parameters in the two sub models are the same;

H1: Parameters in the two sub models are different.

The computed F-Statistic $[F^c(10,48)] = 0.838\, 86$, while critical value $F^*(10,48) = 2.08$ at 5% level and 2.80 at 1% level. Therefore the null hypothesis is accepted since the computed F-Statistic does not exceed the F-Critical. These results indicate that the parameters have a structural stability. Parameter stability demonstrates that results obtained in a model have important policy implications because they are based on a stable model. The introduction of ESAP in Zimbabwe has not changed the structure of monetary, fiscal policies and GNP link.

ECONOMIC INTERPRETATION OF THE RESULTS

The results interpreted here are those contained in Table 4. With much interest in the monetary and fiscal policy variables, monetary policy is stronger and significant at 1.6%. This suggests that monetary influence has a greater impact on changes in real income than fiscal influence in Zimbabwe. It can also be seen that monetary changes may be used to alter economic activity much easier than fiscal policy. It can be deduced that monetary expansion is transmitted to real variables such as income and not to nominal variables, and hence money is neutral in this model. The relative predictability test and relative strength test suggests that monetary policy has more impact on real income than fiscal policy.

Fiscal policy action is insignificant and has a negative impact on economic activity. The expectation is that an increase in government revenue would also boost government expenditure and the general demand in the economy and hence increase economic output. This might mean that some other factor was chewing into government revenue thus reducing the actual and real portion of the revenue contributing towards GNP. Corruption, misappropriation and financial profligacy could be the possible identities of this chewing factor. Fiscal policy is supposed to be important in allocating resources and thereby ensuring efficient production in the economy. It is however shown that the
impact of fiscal policy on economic activity is very insignificant in Zimbabwe. This is consistent with the bureaucratic theory of public expenditure.

Fiscal policy in Zimbabwe is focusing on wrong macroeconomic fundamentals and this result in an insignificant impact on national output. The Department of Taxes and the Customs Department have often been accused of being incompetent and under-performing during the period under review. This incompetence coupled with the high taxation not only scared away potential investors but also impacted negatively on economic activity.

The export variable has a positive impact on economic activity and the variable is insignificant. Whereas the volume of exports increased, the magnitude of returns in real terms might not have been significant. Unchecked currency depreciation fuelled galloping inflation which in turn reduced the profit margins of the exporters. Thus reasonable losses in US$ terms translated into profits in Zimbabwe dollar terms giving a paradoxical impression about the level and direction of primary products and have not been competitive especially in terms of quality hence they are facing deteriorating terms of trade. Export volumes have also been very low with notable exceptions coming from commodities such as agricultural products and minerals. However these commodities were often affected by the vagaries and volatility of commodity markets.

The inclusion of impulse dummies in order to capture outliers in the scaled residuals also improved the explanatory power of the model. In 1983/84 Zimbabwe experienced a severe drought which had a significant negative impact on the economy and this drought had a hysteresis effect on economic activity even up to 1985, that is why the coefficient for 1985 period 1 is negative. Each time Zimbabwe experiences drought, economic activity comes to a halt with the agricultural sector being the hardest hit. Industries close down, workers are laid off into the streets and unemployment increases. In 1985/86 Zimbabwe had sufficient rainfall which resulted in a bumper harvest. Since Zimbabwe is an agro-based economy, economic activity boosted in 1985 period 2.

**CONCLUSIONS**
The purpose of this paper has been to determine the relative effectiveness of monetary and fiscal policies on economic activity in Zimbabwe. A modified St Louis type reduced form equation for the period 1981:4 to 1998:3 was employed. From the analysis presented, monetary policy is found to be the significant and strong variable in the model. The monetary policy variable has stronger coefficients compared to fiscal policy which is insignificant in affecting economic activity. This drives home the current realization that the government should play a more neutral role in economic activity and economic liberalization.

The null hypothesis (HO) that monetary and fiscal policies do not influence economic activity in Zimbabwe is rejected. The alternative hypothesis (H1) that monetary policy is relatively more effective than fiscal policy in influencing economic activity in Zimbabwe is accepted. This is so because it has been shown that money growth results in real output growth in Zimbabwe. The other alternative hypothesis (H1) that monetary policy is only effective as long as fiscal policy is complementing the objectives set by monetary policy is not accepted because from the regression results, even if fiscal policy is insignificant to economic activity in Zimbabwe, still monetary policy has a positive impact on economic growth.

The growth model displays parameter stability across the most significant shift of the Economic Structural Adjustment Programme (ESAP) adopted in 1991 as evidenced in Table 5. Based on this test, results of the growth model are likely to be reliable as they are based on a stable model. As regards monetary policy, its impact on economic activity is significant. The analysis has indicated that it is consistent with the literature of the monetarist economists. The relationship between fiscal policy and economic activity is insignificant possibly because of the bureaucracy and inefficiency of the government.

**POLICY RECOMMENDATIONS**

Money growth has a strong and permanent impact on real income growth in Zimbabwe. Since money growth exerts a positive statistically significant influence on the growth of real income, a 1% change in money exerts a less than 1% change in income growth. On the basis of a stable money-GNP link, the scope of monetary policy as a
stabilization tool on economic activity should be greatly recommended. This makes it easier for authorities to ascertain the liquidity needs of the economy and thereby create greater certainty in the amount of credit and money to be supplied to achieve the macroeconomic objectives. Financial intermediaries enhance development through their role in the saving-investment process.

Monetary policy should be used as a short term tool for macroeconomic stabilization in Zimbabwe because from the results of the model there is no co integration between money supply and GNP. This means that money supply will only affect economic activity in the short run not in the long run. From these findings the following recommendations are apparent.

a) An effective monetary policy to curb excessive growth rate in money stock should target the monetary base components especially the domestic credit. In controlling domestic credit the monetary authorities should monitor closely the amount of government borrowing from the banking sector and impose an effective limit. The Central Bank should work out some rational criteria for granting credit to government and to the private sector as the government borrows mainly for recurrent expenditure;

b) For consistent economic growth, policy makers should ensure that monetary actions do not adversely affect exports and private investment performance. Policy makers should recognize that the implementation of monetary policy as a stabilization tool will have simultaneous effects on output, inflation and balance of payments. Monetary policy should only be pursued with the aim of maintain low inflation and low real interest rates.

c) Fiscal policy’s impact has been shown to be insignificant and is not permanent on economic activity in Zimbabwe. However fiscal policy may lead to a deterioration in economic performance since it may result in crowding out of private investment. There is also need to alter the composition of government spending. This can be done through reduction in the budget deficit, improved government revenue generation process, improved performance of public enterprises, improving efficiency in the public sector and streamlining of the size
of public sector investment. Growth in government expenditure may be the main cause of economic problems encountered such as high inflation rate, low real interest rates, high foreign debt and the depreciation of the Zimbabwe dollar against all the major countries. These problems had adverse effects on economic activity. The research findings support the need for structural adjustment programmes which call for the narrowing of the public sector as the economy grows. This will result in the crowding in of the private sector participation in economic activity;

d) Exports are an important variable in explaining real GNP growth but for the Zimbabwean case, the impact of exports is statistically insignificant. The inclusion of the export variable in the model is an important modification in explaining economic activity in an open economy like Zimbabwe. Economic policies that enhance export performance should be encouraged for example the setting up of export process zones (EPZ), Export Credit Guarantee Companies which will act as a safeguard to financial institutions which give loans to small and medium scale entrepreneurs, value addition of export products and attractive packaging of export products in terms branding and trademarks. All this is done in order to make exports more competitive on the international market; and

e) The impulse dummies are significant in explaining economic activity in Zimbabwe and since these dummies are capturing the periods when there is either a drought or a bumper harvest, Zimbabwe should have a long term plan for drought mitigation since drought is a recurrent exogenous shock affecting economic activity.

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