

10

South Sudanese Pound Managed Under Floating Exchange Regime: Prospects and Challenges

Andrew Ssemwanga

Introduction

South Sudan voted overwhelmingly for secession from Sudan and became a new independent African nation on 9 July 2011. South Sudan has already enacted key laws to ensure the smooth running of the country, e.g. Transitional Constitution, a Central Bank law and others. A managed float exchange rate regime to ensure macroeconomic stability has been adopted and a new currency in the name of the South Sudanese Pound (SSP) is already in circulation. South Sudan is faced with a lot of social and economic problems that include limited access to basic education, healthcare, food, water, high inflation, sovereign debt, low level of national revenue and others. Most of the problems have been *exacerbated* by suspending oil production during January 2012. The Government of South Sudan has come up with a number of measures to address the shortfall in oil revenue and also the over-dependence on oil revenue by establishing a Non-Oil Revenue Action Plan as well as instituting austerity measures that relate to Government expenditure.

Basing on studies carried out by the IMF and World Bank as reported by Simwaka (2010), a number of Sub-Sahara African countries performed well in terms of GDP and exports for the period 2002 to 2008. These include Kenya and Nigeria which were using a managed float exchange regime for the whole period. However, their annual average percentage changes in consumer prices were rather high. Results from Dynamic Stochastic General Equilibrium

Model (DSGE) which were done by Vencatachellum (2007) show that for a median net oil exporting country, a doubling in the price of oil would increase its gross domestic product while a rate of inflation would increase and there would be an appreciation of exchange rate. A number of studies carried out to show the effectiveness of monetary policy and fiscal policy on economic activity show mixed results. Some indicate that monetary policy is more effective than a fiscal policy as in the cases of Ajayi (1974), Eliot (1975), Ajsafe and Folorunso (2002), while others indicate the opposite, as in the cases of Andersen and Jordan (1986) and Chowdhury (1986).

In the following paragraphs, the author discusses possible challenges and prospects that the managed float exchange regime could have for the economy of South Sudan and provides possible policy recommendations that could help the infant economy to overcome them. The author has consulted different materials, e.g., textbooks, reports, research papers and numerous websites.

Facts on South Sudan

South Sudan voted overwhelmingly for secession from Sudan with about 99 per cent of voters in favour of it. The referendum was held from 9 to 15 January 2011 (Goitom 2011). Subsequently, on 9 July 2011, a new independent African nation, South Sudan, was born. It became the 54th African nation and 193rd member of the United Nations (Richmond 2011). The referendum was the result of a Comprehensive Peace Agreement which was signed between the Government of Sudan and the Sudan People's Liberation Movement (SPLM) in 2005. South Sudan covers an area of 644,329 sq km (Southern Sudan Bureau of Standards, 2010). The Gross Domestic Product (GDP) of South Sudan in 2010 was 30.5 billion South Sudanese Pounds (SSP). The biggest chunk of GDP was from the oil sector under which oil exports amounted to 71 per cent of the value of GDP in 2010 (Ngai 2012). The Gross National Income in 2010 was 19 billion Sudanese Pounds which was equivalent to USD 8 billion. The GNI per capita was 2,267 Sudanese Pounds or USD 984 (Republic of South Sudan, National Bureau of Statistics 2010). The Consumer Price Index (CPI) has been high and rising throughout 2011, reaching a peak of 79 per cent in November 2011 (Ngai 2012). As a result of stopping of oil production, South Sudan will have a high rate of inflation. For example, inflation went to 50.9 per cent from 21.3 per cent from February to March 2012 according to South Sudan's Statistics Office (Ferrie 2012).

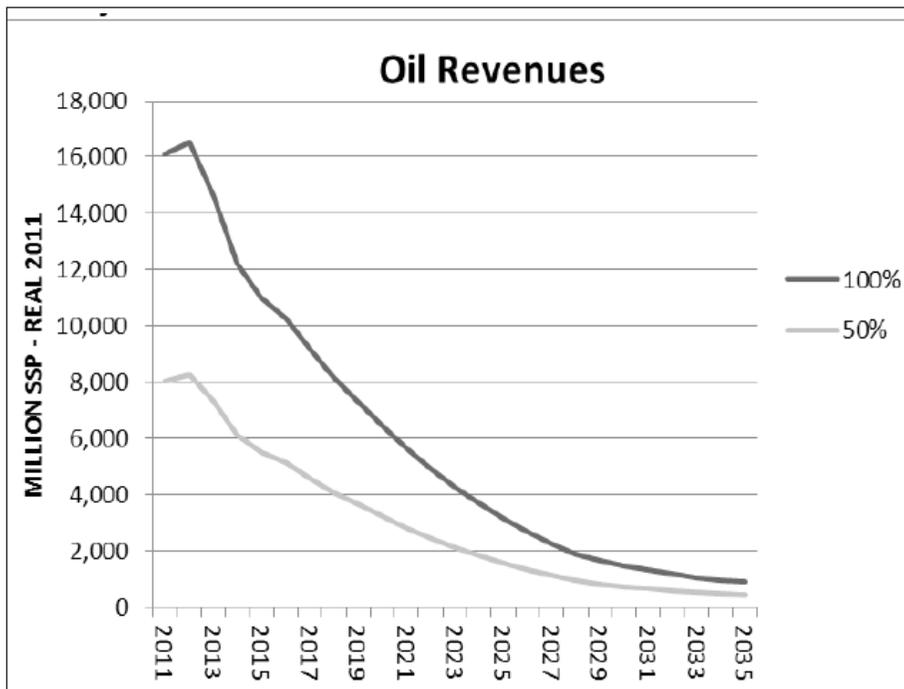
The South Sudan CPI increased by 79.5 per cent from May 2011 to May 2012 (Republic of South Sudan, National Bureau of Statistics 2010). The

price of the South Sudan Pound (exchange rate) which is under a managed float exchange mechanism by the Central Bank of Southern Sudan was at a rate of 2.95 SSP per United States dollar by the end of March 2012 (Ngai 2012). In 2010, trade amounted to over 100 percent of the value of GDP. Export and import shares were 72 and 40 per cent of the value of GDP respectively (South Sudan, National Bureau of Statistics, 2010). Exports consist of timber from teaks, mvuba and other trees. According to a report from Human Rights Watch, millions of South Sudanese do not have access to basic education, healthcare, food and water; while the Government estimates that 47 per cent are undernourished and the maternal mortality of 2,054 per 100,000 live births is regarded as the highest in the world (Sudan Tribune 2012). There are currently some 162,500 people who have fled conflict and related food shortages in Sudan and have taken refuge in neighbouring South Sudan (New Times of Rwanda 2012). The whole region has less than 60km of paved road (Guardian 2012). The good news is that during April 2012, China reached an agreement with South Sudan for a US\$ 12 billion deal to construct roads, bridges, telecoms networks and to develop agriculture and hydro-electric power (BBC News Africa 2012).

South Sudan faces a highly volatile economic situation due to its overdependence on oil exports for foreign exchange. Oil accounted for 98 per cent of South Sudan's Government revenue for its budget of 2011 (Mpyisi, 2010). Both South Sudan and Sudan were sharing oil revenue on an equal basis, i.e., 50 per cent for each side from 2005 to 2011. After South Sudan became independent in July 2011, southern and northern negotiators were not immediately able to reach an understanding on how to share the revenue from the southern oilfields. While Sudan believes that South Sudan should pay between US \$ 32 and US \$ 36 per barrel, South Sudan does not agree to this as it would mean paying over ten times the international average price of a barrel of oil (Woolf 2012). South Sudan believes that the cost should be closer to US \$ 1 to US \$ 2 per barrel to transport the oil through the pipelines (Sudan Tribune 2012) and (El-Sadany et al. 2012). During January 2012, South Sudan suspended oil production (Sudan Tribune 2012) after Sudan had seized South Sudanese's oil worth a lot of million dollars (US \$ 815) because Sudan claimed that South Sudan had failed to pay oil transit fees which had accumulated over months (Woolf 2012). South Sudan plans to lay a new pipeline that could take oil from Juba to the Indian Ocean port of Lamu in Kenya through Uganda (Woolf 2012). However, the plan might take a long time to implement as an investor for the project has not yet been identified (RT 2012). In Chart 1, there are projections of oil revenues for South Sudan

from 2011 to 2035 (Ministry of Finance and Economic Planning, Republic of South Sudan (2011)). The picture is not rosy as oil revenues will start decreasing from 2013. The upper line shows the total oil revenues for South Sudan before any transfers/payments to the North. The lower line indicates the total revenues to South Sudan with the continuation of the CPA wealth sharing agreement. Possibly, the future will lie between the two lines.

Chart 1: Projected oil Revenues for South Sudan



Source: Ministry of Finance and Economic Planning, Republic of South Sudan (2011)

Monetary Issues in South Sudan

During July 2011, the President of South Sudan signed a Central Bank law to formally establish the Bank of Southern Sudan as the Central Bank of South Sudan. The Central Bank Law empowers, among other things, the Central Bank of South Sudan to monitor all issues related to monetary policy,

e.g. prices, exchange rate, interest rate, money supply etc. to ensure that there is macroeconomic stability in the country (Central Banking Newsdesk 2012). The Bank of South Sudan which is now the Central Bank of South Sudan is a key player in the monetary policy of Southern Sudan. It is located in the city of Juba, the capital of South Sudan. The Bank of South Sudan (BoSS) which became the central bank of South Sudan was originally established in 2005 as a branch of the Bank of Sudan until 9 July 2011 when South Sudan seceded to become an independent republic. It is headed by a Governor. The Bank is the only institution that is constitutionally mandated to issue the South Sudanese Pound (The New Sudan Vision 2011). On 9 July 2011, the Bank of South Sudan (BoSS) took over monetary management from the Central Bank of Sudan (CBoS) for the South; issuing the currency, monitoring money supply and regulating financial institutions. BoSS has replaced all the SDG notes it is responsible for with the notes of the new currency, the South Sudanese Pound (SSP) at par rate, i.e., 1 SDG = 1 SSP. During the time of enacting the Central Bank Law, it was announced by the South Sudan's Central Bank Governor that the Central Bank planned to operate a managed float exchange regime and that the exchange rate would be set depending on the price of oil and the value of regional currencies (Central Banking Newsdesk 2012).

Fiscal Issues in South Sudan: Expenditures and Revenues

The South Sudan Development Plan (SSDP) (2011-13) outlines government's response to core development and state building challenges in the next three years, and outlines priority programmes for achieving these objectives. It emphasizes channelling resources towards development, basic education and health service delivery and development of a vibrant agricultural sector. The SSDP will follow the requirements of an interim Poverty Reduction Strategy Paper (iPRSP) and will build on the existing GoSS policy positions (Vision 2040 and GoSS Growth Strategy) and the various existing sector plans and the 2010 Action Plan to address core government functions (Kameir 2011).

Total amount of revenue which was collected from January to the end of September 2010 was Sudanese Pound (SDG) 4.47 billion. Of this amount, oil revenue accounted for SDG 4.37 billion (97.6%), whilst non-oil revenue accounted for SDG 106 million (2.4% of total revenue). Revenue estimates in the supplementary budget for that period were SDG 4.22 billion due to changes in the price of oil. Actual expenditures to the end of September amounted to SDG 4.11 billion. Budgeted expenditure for the period was SDG 3.83 billion. This means that a small amount of savings was made during the period between

actual revenue and actual expenditure, i.e. SDG0.36 (Athorbei 2011). The total available resources which had been budgeted for 2011 amounted to SDG 5,719 million. Oil revenues for 2011 were estimated at SDG 5,608 million, and accounted for 98 per cent of the estimated resource envelope. Non-oil revenues were estimated at SDG 111 million. An amount of SDG 40 million was estimated to come from Personal Income Tax and a sum of SDG 71 million from other Government of Southern Sudan revenues. Total allocations for 2011 amounted to SDG 5,719 million. Those allocations were equal to total expected revenues. In 2011, a sum of \$719 million had been expected from development partners. Actual spending from January 2011 to June 2011 was SDG 4.4 billion. Between July 2011 and January 2012, a sum of South Sudanese Pound (SSP) 5.95 billion was spent. On 17 February 2012, the Council of Ministers approved an initial set of austerity measures to maximise the use of existing public resources by immediately reducing government spending in an attempt to compensate for the loss of oil revenue as a result of stopping oil production (Ngai 2012). Operating and capital budgets had been cut by 50 per cent for most agencies and State transfers were to be cut by 10 per cent (Ngai 2012).

Non-oil Revenue Action Plan

The Government of South Sudan, through the Ministry of Finance and Economic Planning, has formulated a non-oil revenue action plan that aims at reducing revenue volatility as a result of surges in oil prices on international markets. The plan entails a short-term measure in form of an oil-revenue stabilisation fund and widening the base for more stable sources of revenue. The latter involves the establishment of a non-distortionary tax regime that is private-sector driven. The plan also envisages a medium to long term solution to oil revenue volatility by establishing a strong and broad-based non-oil economic growth (Athorbei 2011). For the purpose of increasing government revenues, the Government of South Sudan enacted the Taxation Act 2009 which requires that all businesses operating in South Sudan register as taxpayers. The largest source of non-oil revenue would be customs revenue. The Government of South Sudan plans to establish a National Revenue Authority in the future (Athorbei 2011). The Government of South Sudan plans to secure external funding through loans on concessional terms. Such loans would be geared towards stimulating economic growth in form of roads and other infrastructure. The Government would not print money to meet expenditure (Ngai 2012).

Exchange Rates in Theory

A Fixed Exchange Rate Regime

Exchange rate regimes range from fixed (hard peg) regimes at one end and floating (fully flexible) regimes at the other (Simwaka 2010). Under a fixed exchange regime, a country fixes its exchange rate to another currency, for instance, the US dollar or a basket of other currencies. Under this policy, a monetary authority does not actively buy or sell currency to maintain the rate. Instead, the rate is enforced by non-convertibility measures, e.g., capital controls, import/export licenses, etc. The monetary authority is normally a currency board and every unit of local/native currency must be backed by a unit of foreign currency. This ensures that the local monetary base does not inflate without being backed by hard currency. If anyone holding a foreign currency wishes to exchange it for a local currency, a currency board must redeem foreign currency at the currency's fixed price. In the absence of a currency board, a central bank could carry out the same function but the central bank's monetary liabilities would no longer need to be fully backed by foreign assets. The principal justifications behind a currency board are threefold:

- (a) To import monetary credibility of the anchor nation;
- (b) To maintain a fixed exchange rate with the anchor nation;
- (c) To establish credibility with the exchange rate.

Currency boards are suitable for small open economies that would find independent monetary policy difficult to sustain (Kasekende and Brownbridge 2010). The virtue of this system is that questions of currency stability no longer apply. Fixed rates provide a non-inflationary anchor for monetary policy and are characterised by lower inflation (Edwards 1996). In some instances, a fixed rate of exchange provides a higher degree of certainty for exporters and importers so that there is less speculation in a market (Tutor2u 2012). In addition, domestic firms and their employees exercise strict financial discipline when an economy is using fixed exchange rate because they have to keep operational costs low in order to compete favourably in international markets (Tutor2u 2012). The biggest disadvantage of a fixed exchange monetary policy is that it allows only limited room for independent monetary policy because the need to defend the fixed exchange rate becomes the overriding objective and other monetary domestic objectives are put aside (Kasekende and Brownbridge 2010). Another disadvantage is that this option involves the loss of monetary autonomy (Williamson 1998). The policy also limits the use of other monetary policy instruments such as interest rate

which would be appropriate in a given circumstance to manage, for example, inflation (Goodfriend 2004). Evidence has shown that some economies in Latin America which were using the fixed exchange monetary policy ended up with depleted foreign exchange reserves during financial crisis in their respective countries (Edwards et al. 1999). Argentina abandoned its currency board in January 2002 after a severe recession. There are, of course, some success stories of economies that use currency boards, e.g. Hong Kong, Bulgaria, etc. The success of these economies is based on fiscal discipline and sound structural policies which are necessary to deliver good inflation and growth outcomes. Otherwise, currency pegs quickly become unsustainable (Williamson 1998).

Freely Floating Exchange Rate Regime

Under a freely floating exchange rate regime, authorities in a given country allow an exchange rate to fluctuate according to market forces of demand and supply of foreign and domestic currencies. The demand and supply of foreign and domestic currencies is determined, to a large degree, by foreign trade and international capital flows (Harrigan 2006). One of the advantages of a floating exchange rate is the possibility of providing an automatic adjustment in an economy with a large balance of payments deficit. This happens because a net outflow of currency that takes place in that economy puts pressure on exchange rate and results into a depreciation of the native currency. As a result of a depreciation in exchange rate, the relative price of exports in overseas markets falls which makes exports more competitive in international markets and, at the same time, the price of imports in the home market goes up. Imports become more expensive. This situation could reduce the overall deficit in the balance of trade if price elasticity of demand for exports and price elasticity of demand for imports are sufficiently high (Tutor2u 2012). In addition, a floating exchange rate provides the monetary authority flexibility on the use of other monetary instruments, i.e., interest rate to move towards a desired rate or range of exchange rate (Tutor2u 2012). One of the disadvantages of a floating exchange rate is that it does not provide greater certainty for exporters and importers and that could lead to speculation (tutor2u 2012). A floating rate regime might be too weak to control inflation that could be caused by various shocks (Kasekende and Brownbridge 2010).

Intermediate Foreign Exchange Regimes

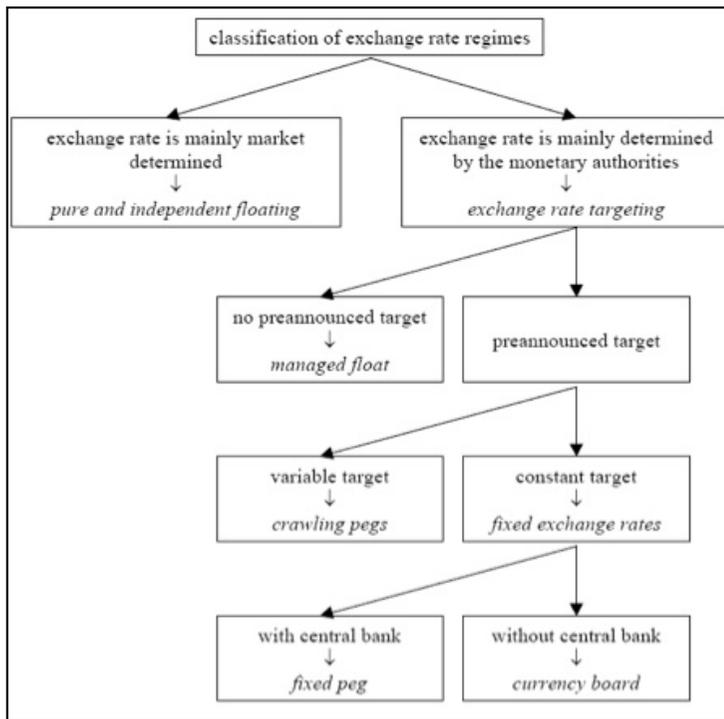
Harrigan (2006) has indicated that between the two extremes, i.e., pure fixed exchange rate and pure floating exchange rate, there are a number of intermediate types of exchange rate.

As you move away from a pure fixed exchange rate, there is an adjustable peg which involves a fixed exchange rate but adjustable in exceptional situations. There is a crawling peg which is towards a pure floating exchange rate, but contains a fixed exchange rate and is periodically adjusted in line with a set of indicators, e.g., inflation. A crawling band is a fixed exchange rate regime that allows an exchange rate to fluctuate within a narrow band from a fixed central rate and the narrow band is periodically adjusted to take into account certain economic parameters, e.g., inflation. A managed float exchange rate is a situation where authorities do not have any particular exchange rate or pre-announced path but there is periodic intervention to bring an exchange rate to the desired level. A wide band exchange rate regime allows an exchange rate to float freely over a period of time within a predetermined broad band. According to Bofinger and Wollmershäuser (2003), as shown in Figure 1, exchange rate regimes are best identified using the IMF's International Financial Statistics classification of exchange regimes. The IMF's classification of exchange regimes provides eight categories of exchange rates:

- a) Exchange rate arrangements with no separate legal tender (dollarisation, membership in a currency union);
- b) Currency board arrangements;
- c) Other conventional fixed peg arrangements (formal or de facto peg with a narrow margin of at most ± 1 per cent around a central rate);
- d) Pegged rates within horizontal bands (formal or de facto peg with margins that are wider than ± 1 per cent around a central rate);
- e) Crawling pegs (the currency is adjusted periodically in small amounts at a fixed, preannounced rate or in response to changes in selective quantitative indicators);
- f) Crawling bands (the currency is maintained within certain fluctuation margins around a central rate that is adjusted periodically in small amounts at a fixed, pre-announced rate or in response to changes in selective quantitative indicators);
- g) Managed floating (no pre-announced path for the exchange rate; the monetary authority influences the movement of the exchange rate through active intervention in the foreign exchange market without specifying, or pre-committing to, a pre-announced path for the exchange rate);
- h) Independent floating (the exchange rate is market determined, with any foreign exchange market intervention aimed at moderating the rate of change and preventing undue fluctuations in the exchange rate rather than establishing a level for it).

Bofinger and Wollmershäuser (2003) decided to add on another category which is the pure floating under which an exchange rate is market determined with no foreign exchange market intervention at all; changes in foreign exchange reserves are due to technical factors only. In Figure 1, Bofinger and Wollmershäuser (2003) portray the different categories of exchange rate regimes that have been highlighted in the preceding paragraphs.

Figure 1: Exchange Rate Regimes



Source: Bofinger and Wollmershäuser (2003)

Choice of an exchange rate regime

The standard theory which underlies a choice of an exchange rate regime is mainly based on the theory of optimal currency areas of Mundell (1961) and Poole (1970). These models of choosing an exchange rate regime normally evaluate such regimes by how effective they are in reducing the variance of domestic output in an economy with sticky prices (Simwaka 2010). The argument by Mundell

(1961) is that an economy cannot simultaneously maintain a fixed exchange rate, free capital movement and an independent monetary policy. An economy could choose two of them for control purposes and the other one would be left to market forces. As the author has already mentioned in the previous paragraphs, each exchange regime has its own advantages and disadvantages. However, in recent times, other considerations have been included in deciding on what type of monetary policy to use, such as price-setting behaviour; the prevalence of foreign debt; the adequacy of reserve levels; and, the credibility of giving monetary policy an exchange rate anchor (Devereux 1998 and 1999).

In a number of theoretical literatures, developing countries are being encouraged to use pegs or exchange rate anchors when their economies face high propensity to inflation with a view to controlling inflation (Dornbusch 2001; Edwards 2001). Mussa et al. (2007) give a list of criteria that favour an economy to have a fixed exchange rate, i.e., low level of capital mobility; has similar trade shocks with a country with which its currency would be pegged; a flexible labour market; a high volume of foreign reserves; its fiscal policy is strong, flexible and able to stand the test of time; there is a high volume of trade between the country and the one with which its currency would be pegged and there is already enough evidence that the two countries use very much the currency that would be used for pegging. Mussa et al. (2007) argue that as economies get more integrated into global markets, it would be wise to use flexible exchange rates. Harrigan (2006) argues that the choice of a particular exchange rate regime will depend on a number of specific factors which are pertinent to a given economy. Some of the factors that are vital in choosing a particular exchange rate are: the attitude of authorities in implementing fiscal and monetary discipline; how elastic prices of imports and exports are; level of openness to global capital markets; level of maturity of domestic capital and money markets. From the above discussions, one would conclude that for low-income, small and open economies coupled with limited exposure to international capital flow and an undeveloped financial sector as well as inelasticities in tradable markets with a tendency for expansionary fiscal policy, a fixed exchange rate could be ideal for them. As Frankel (1999) has argued, there is no single exchange rate regime that is right for all countries or at all times.

A Managed Float Exchange Rate Regime

The Government of South Sudan decided to adopt a managed float exchange rate policy as has already been mentioned in the previous chapters. Therefore in the subsequent discussion, the author focuses on both the theoretical and empirical evidence which is related to a managed float exchange rate. Bofinger

and Wollmershäuser (2003) explain that a floating exchange regime is where monetary authorities do not have a pre-announced path for the exchange rate but intervene as and when it is necessary. Authorities use various policies to counter some short-term movements in the exchange rate and to maintain market liquidity by using limited exchange interventions

In this policy, a central bank manages both the money supply and exchange rate by using monetary policy tools such as open market operations, liquidity requirements, reserve requirements, interest rate and discount window lending, etc. Management of exchange rate could be against one currency or a basket of other currencies. There are quite a number of countries which use this monetary policy, e.g., Bangladesh, Sri Lanka, Tanzania, Uganda and Zambia (Kalyalya 2010). Singapore has been very successful in using the managed float rate regime. Bofinger and Wollmershäuser (2003) argue that the main advantage of managed floating is that it enables authorities to deal with various shocks provided they (authorities) are able to keep the exchange rate on a path determined by the interest rate differential. The managed float provides an opportunity to authorities to decide on the level of intervention in a market. The level of intervention would normally depend on the importance they attach to targets for output, inflation, real exchange rate and real interest rate (Simwaka 2010). The advantage of this exchange regime is that a central bank is directly managing both interest rate and exchange rate.

A central bank tries to smooth out short-term volatility in an exchange market. From time to time, a central bank intervenes by buying or selling foreign exchange for fear of letting the native currency to float freely. The monetary policy, however, suffers from failing to address directly output gaps, inflation and other external shocks (Kasekende and Brownbridge 2010). Some central banks in developing countries find the monetary policy not easy to implement as it combines two monetary policy targets and more than one monetary policy tools that require data which may not be easily available. Bofinger and Wollmershäuser (2003) mention that one of the disadvantages of the regime is that since there is no announced exchange rate path, it could necessitate providing a separate anchor for a private sector's expectations particularly in small economies. Bofinger and Wollmershäuser (2003) go on to say that a central bank could fail to defend an exchange rate path where an economy is faced with strong speculative capital outflows. In some cases, authorities could manipulate an exchange rate in order to improve international competitiveness.

Theoretical Framework for Managed Float Exchange regime

Bofinger and Wollmershäuser (2003) developed a theoretical framework that explains how a managed float exchange is used. It is based on the simultaneous application of exchange rate and interest rate as operating targets of a monetary policy. The tools of interest rate and exchange rate are used to achieve internal and external equilibrium.

Under the policy of managed floating, a central bank has to respect the Uncovered Interest Parity (UIP) condition in order to avoid high costs of sterilisation. The condition tends to maintain profits for short-term investors close to zero and hence removes the incentive for short-term capital inflows. The scenario is given in the following formula.

$$S_{t+1} - S_t = i_t - i_t^f$$

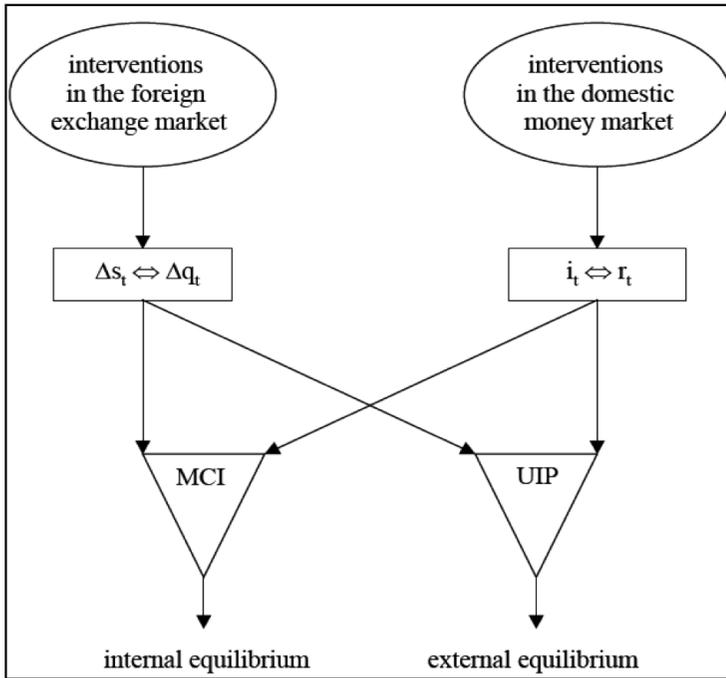
Where S_t is the nominal exchange rate (a rise is a depreciation), i_t is the domestic nominal interest rate, and i_t^f is the foreign nominal interest rate.

The internal equilibrium is characterised by minimising the central bank's loss function. In other words, combination of the interest rate and the exchange rate has to generate an optimum Monetary Condition Index (MCI).

$$MCI_t^{\text{opt}} = i_t - \psi q_t.$$

Where real exchange rate q_t , i_t is the domestic interest rate and MCI_t^{opt} is the optimum Monetary Condition Index.

Optimum MCI determines the inflation rate and the instrument variables of monetary policy (i_t and S_t) are directly controllable by the central bank and are portrayed in the form of their real counterparts r_t and q_t .

Figure 2: Monetary Policy in Small Open Economies

Source: Bofinger and Wollmershäuser (2003)

The simultaneous management of the exchange rate and the interest rate indicates that a central bank is able to target the exchange rate by means of sterilised interventions because it has two independent instruments at its disposal:

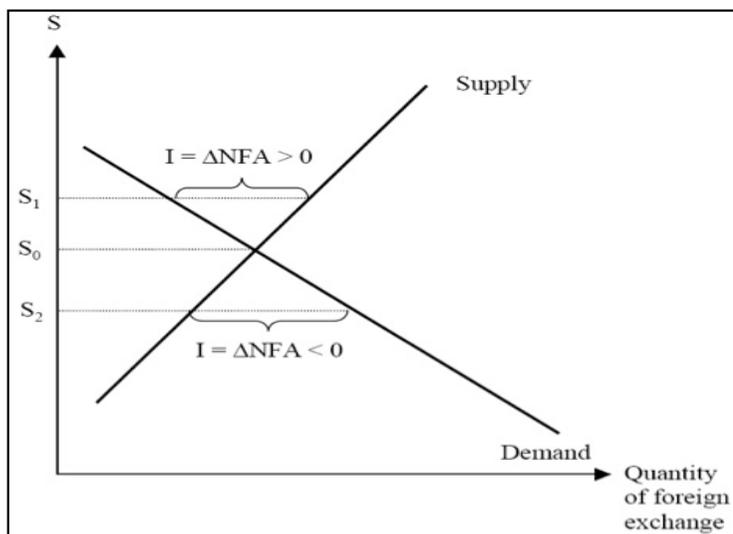
- (i) With open-market operations (or any other form of refinancing operation) a central bank exchanges short-term domestic notes, etc., against domestic central bank reserves in order to target the short-term interest rate. Due to that transaction, monetary base changes and the central bank balance sheet is extended.
- (ii) With foreign exchange market interventions, a central bank exchanges foreign sight deposits against domestic central bank reserves in order to target the exchange rate. If the intervention is sterilised, the monetary base remains constant and also the size of central bank balance sheet; but this will change the structure of the central bank's assets.

The intervention in a foreign exchange market is shown in Figure 3. On the y-axis is the price of foreign exchange in terms of the domestic currency.

Hence, there is an upward-sloping supply curve and an upward-sloping demand curve for foreign exchange. The equilibrium exchange rate is at S_0 .

In a foreign exchange market intervention, a central bank targets a higher or a lower exchange rate than the market-clearing rate. If a central bank targets a rate S_1 that is higher than the equilibrium rate, there is an excess supply of foreign exchange which it has to buy in exchange for domestic reserves/money. Due to that transaction, a central bank's net foreign assets/reserves (NFA) will grow. If a central bank wishes to target rate S_2 which is below the market-clearing rate which is mostly likely due to an excess demand for foreign exchange, it has to satisfy that demand by selling foreign assets out of its foreign exchange reserves (NFA < 0). As a result, commercial banks' reserves decline.

Figure 3: The Flow Channel of Foreign Exchange Market Interventions



Source: Bofinger and Wollmershäuser (2003)

Dynamic Stochastic General Equilibrium Model (DSGE)

The Dynamic Stochastic General Equilibrium Model (DSGE) has been used to show impact of oil prices on oil exporting economies under fixed and managed float exchange rate regimes. The author of this chapter has found this model to be useful because Southern Sudan depends heavily on exports of oil. Vencatachellum (2007) constructed a DSGE with a view to quantifying an effect of an increase in the price of oil on main macroeconomic aggregates in both oil importing and exporting African countries. For the purpose of

this chapter, the author has focused on results of the model on oil exporting countries, which South Sudan is. The model is based on a small open economy where oil exports represent roughly 88 per cent of total exports and 35 per cent of total GDP. The macroeconomic aggregates are output, consumption, investment, inflation, the real exchange rate, the government budget deficit and foreign debt. In all simulations, the oil-price shock is assumed to be persistent, with a first-order auto-correlation coefficient of 0.85 as delivered from the data. The simulations are performed both under a fixed exchange rate regime and a managed float. In each case, two different arrangements are considered, i.e., complete and zero pass-through. Results show that for a median net oil exporting country, a doubling in the price of oil would increase its gross domestic product by 4 per cent under managed-float and by 9 per cent under a fixed exchange rate regime. This is mainly due to the larger appreciation of the real exchange rate under the managed float regime. The smaller increase in consumption under the managed float implies that the budget deficit narrows less than under fixed exchange rates.

A sharp appreciation of a real exchange rate that normally follows oil price increase may hinder the competitiveness of a country's exports in international markets. It is therefore important that oil-export revenues be spent in projects that are developmental in nature. Again, a sharp appreciation of the real exchange rate could be harmful if an economy is heavily concentrated in a few industries Vencatachellum (2007). This could happen to the Southern Sudan economy because the industries are still few. For oil-exporting countries, government intervention does not seem to affect in a significant way an outcome of the economy, especially in the case of a managed floating. Rate of inflation would increase by a much greater magnitude under managed than a fixed exchange rate regime in a median net oil exporting country.

Effectiveness of Monetary Policy and Fiscal Policy on Economic Activities

Whereas monetary and fiscal policies are deployed in the pursuit of macroeconomic stabilisation in various economies in the world, there is a debate among academicians on the relative effectiveness of each policy on economic activity (Ajisafe and Folorunso 2002). This debate also extends to policy-makers when it comes to implementing those policies. A number of studies have been done to examine the relative effectiveness of monetary and fiscal policies on economic activity. Ajayi (1974), using ordinary least square (OLS) technique with the support of beta coefficients, confirmed that changes in economic activity brought about by monetary policy were greater

than those caused by fiscal policy. By examining the relative importance of money supply changes in comparison with government expenditure changes in relation to changes in nominal GNP using OLS technique, Elliot's (1975) results showed that monetary policy had a stronger impact on nominal GNP than fiscal policy. He used the following equation:

$$DY_t = c + S_{mi}DM_{t-i} + S_{ei}DE_{t-1} + ut$$

where Y represents the change in nominal GNP, M represents the change in money supply while E represents the change in high employment federal government expenditures.

The results from Ajayi (1974) and Elliot (1975) were later confirmed by Batten and Hafer (1983). However, Andersen and Jordan (1986), tested empirically the relationships between the measures of fiscal and monetary actions and total spending for United States. They used Gross National Product (GNP); money stock (MS); high employment budget surplus (R-E); high employment expenditure (E); and, high employment receipt (R). They obtained results that indicated that the influence of fiscal action on economic activity occurred faster than that of monetary action. A study that was conducted by Chowdhury (1986) in Bangladesh that considered monetary and fiscal impacts on economic activity in that country revealed that fiscal rather than monetary action had greater influence on economic activities. He also made use of the ordinary least square (OLS) technique in his empirical investigation by using the following formula:

$$Y_t = C_0 + S_{mi}M_{t-i} + S_{fi}F_{t-i} + S_{ei}E_{t-1} + ut$$

where Y, M, F, and E represent the growth rate of nominal income, money supply, government expenditures and exports respectively.

Olaloye and Ikhide (1995) carried out a study in Nigeria for the period 1986-1991 and their results showed that that fiscal policy exerts more influence on the economy than monetary policy. Ajisafe and Folorunso (2002) carried out a study for period 1970 to 1998 for the Nigerian economy with the help of econometric modelling techniques of co-integration and error correction as well as PC-GIVE computer package of econometric data analysis and estimation. They used the following empirical model:

$$Y_t = f(MP_t, FP_t)$$

where Y is a measure of economic activity in which Gross Domestic Product (GDP) is employed as a proxy, MP and FP are measures of monetary and fiscal actions of the government respectively. Both narrow money (M1) and broad money (M2) are employed as proxies for monetary policy variable while the search for fiscal policy variable is among the government revenue receipts (R), government expenditure (E) and government budget deficits (BD) which is measured as (R - E).

Considering the log-linear specification, the above equation in its explicit form becomes:

$\ln Y_t = a_0 + b_1 \ln MP_t + b_2 \ln FP_t + e_t$ where all variables are as earlier defined, \ln is natural logarithm and e_t is error term. It is known a-priori that GDP is expected to be positively related to MP and FP. Their results indicated that monetary policy rather than fiscal policy exerts greater impact on economic activity in Nigeria.

Conclusion

South Sudan is faced with multi-dimensional economic and social problems as well as others. Most of the problems have been *exacerbated* by suspending oil production during January 2012. The Government of South Sudan has come up with a number of measures to address the shortfall in oil revenue and also the over-dependence on oil revenue by establishing a Non-Oil Revenue Action Plan, as well as instituting austerity measures that relate to Government expenditure.

Findings based on the IMF and World Bank as reported by Simwaka (2010), indicate that an economy under managed float exchange regime is able to achieve good performance in terms of high GDP and exports. However, the findings indicate that under the managed float exchange regime, annual average percentage change of consumer price in both countries was high.

A Dynamic Stochastic General Equilibrium Model (DSGE) designed by Vencatachellum (2007) to show the impact of oil prices on main macro-economic aggregates of oil exporting economies under fixed and managed float exchange rate regimes shows that for a median net oil exporting country, a doubling in the price of oil would increase its gross domestic product by 4 per cent under managed-float and by 9 per cent under a fixed exchange rate regime. The results show that when there is an increase in oil prices, oil exporting countries, and more so for those using a managed float exchange, experience high inflation and an appreciation of the exchange rate. In addition, consumption goes up in those countries.

A number of studies carried out to show the effectiveness of monetary policy and fiscal policy on economic activity show mixed results. Some indicate that monetary policy is more effective in stabilising economic activity than a fiscal policy as in the cases of Ajayi (1974); Eliot (1975); Ajsafe and Folorunso (2002); while others indicate the opposite as in the cases of Andersen and Jordan (1986) and Chowdhury (1986).

The author concludes that a managed float exchange regime could perform well in South Sudan provided the authorities take appropriate measures to deal with possible inflationary and exchange rate appreciation tendencies, particularly during a time of oil price boom. The authorities in South Sudan should be aware that the effectiveness of monetary policy in stabilising their economy would also depend on effectiveness of their fiscal policy.

There is still a gap in research to identify the impact of monetary policy (without fiscal policy) on macroeconomic aggregates that relate to an entire economy in a given country or groups of countries that use a managed float exchange regime. There is also a gap in research to identify the effectiveness of monetary policy (in conjunction with fiscal policy) and fiscal policy on macroeconomic aggregates that relate to an entire economy in a given country or groups of countries that use a managed float exchange regime. Future research, using modern techniques of data collection and analysis, should be undertaken with a view to identifying how monetary policy could be complemented by fiscal authority or the other way round.

Policy Recommendations

The theoretical and practical cases discussed in this chapter pave the way for making recommendations for the management of the new currency dubbed the 'South Sudanese Pound'. The socio-economic and political setting in the Sudan and South Sudan are the most important determinants for fiscal and monetary policies, especially for the South Sudanese Pound. Four broad recommendations are advanced to address the problems discussed in this chapter:

Peaceful Co-existence with Sudan

Without a peaceful co-existence between the two countries, South Sudan will not fully achieve its national goals because the ensuing hostility and insecurity discourage long-term investments. It is therefore important that the two countries come together and resolve their differences which cover a number of issues, i.e., oil transit fees, boundaries and others.

Monetary Policy Measures

South Sudan, an oil exporting country and at the same time using a managed float exchange regime, should use oil revenue in case of increase in oil prices on the world market to construct more industries with a view to increasing output in the country. This measure will offset inflationary tendencies and

increase GDP in the country. Part of the oil revenue should be put in an oil stabilisation fund to stabilise the exchange rate. The Central Bank should be independent from government pressure to finance its fiscal deficits, i.e. by printing money or borrowing from the Central Bank. It is advisable that the Government of South Sudan finances its deficits through taxes or possible foreign aid. Authorities should strengthen the monetary policy transmission mechanism by widening competition within the financial system through promotion of more commercial banks both in urban and rural areas with a view to increasing accessibility to financial services; set up credit reference bureaux; create a capital market, development bank and others. They should provide supportive structural policies that would strengthen monetary policy, e.g., a good system of corporate governance; build capacity in econometric and structural models; institute high-quality record-keeping and financial reporting within the central bank and entire financial and banking sectors and strengthen the regulatory and monitoring framework of the central bank; establish communication channels with the public and other stakeholders to enhance feedback mechanisms that should enable the central bank to secure market signals about the effects of its monetary policy and improve on the range, reliability and timeliness of macroeconomic data.

Fiscal Policy Measures

A managed float exchange regime will work well if it is fully supported by a strong fiscal policy because both of them are complementary to each other. The Government of South Sudan should strictly implement The South Sudan Development Plan (2011-13); strengthen a Treasury Single Account where all revenues and expenditures of the Government of South Sudan are transparently consolidated and accounted for; strengthen reserve management and ensure transparency in allocations and expenditures. An appropriate parliamentary committee should regularly monitor public revenue and expenditure and report to Parliament and the public. This arrangement will ensure full accountability of public resource management. The Government of South Sudan should continuously focus on capacity-building in areas of planning, budgeting, procurement, audit; management of oil resources, monitoring and evaluation, ICT, Corporate Governance and others.

The Government of South Sudan should ensure that financing of fiscal deficits is not done by a central bank and therefore the Government should strictly institute austerity expenditure measures that aim at fiscal sustainability and low deficits. If deficits occur, they should be financed from

other sources, e.g., an Oil Revenue Stabilisation Account and a Generation Account as stipulated in the Transitional Constitution. In other instances, the Government should call upon development partners to finance some deficits. Under no circumstances, should a fiscal policy dominate a monetary policy. The Government should strictly implement the Non-Oil Revenue Action Plan by strengthening and implementing the 2009 Taxation Act. More revenue should be collected from customs, corporation tax, personal income tax and others. In this regard, the Government should streamline the tax administration in terms of collection and accountability. The Government should establish a National Revenue Authority as a matter of urgency. The Government of South Sudan, if necessary, should secure external funding in form of loans on concessional terms from African, Asian and other international development banks. In this regard, a sovereign debt which the Government shares with Sudan should be re-negotiated with a view to providing South Sudan with longer payment periods. South Sudan should concentrate on putting in place and strengthening the necessary institutional structures i.e. offices of Inspector General of Government, Auditor General, anti-corruption commission and others.

South Sudan is facing a bleak future due to the shutting down of oil production. There is an urgent need to re-negotiate for a peaceful settlement of a dispute between South Sudan and Sudan with a view to resuming the production of oil which will boost revenue in South Sudan. In connection with oil, the Government should regulate and monitor the oil sector which should be in line with a robust oil policy framework. In line with the Non-Oil Revenue Action Plan that aims at reducing revenue volatility as a result of surges in oil prices on international markets, the Government should encourage farmers to grow more food for consumption and export with a view to reducing imports of foodstuffs. The government could also encourage large private commercial farmers to invest in agriculture and also enter joint ventures with foreign firms to expand agricultural production. This will help the country to increase non-oil revenue. The main strategy in agriculture is to move towards sustainable agriculture that can both lead to food self-sufficiency and export earnings. The combination and coordination of both monetary and fiscal policy are highly recommended.

Private Sector and other Measures

The private sector should play an important role in providing vital investment in various sectors, e.g., agriculture, industry, transport, wood industry, etc. At the moment, there is a dearth of an entrepreneurial class. The Government

should train and provide appropriate opportunities to the private sector. The Government should also provide an enabling environment in form of security, friendly investment regulatory framework and infrastructure in form of road network, water, power and others. The Government should encourage and provide support to young people to create jobs with a view to earning income and preventing crime and conflicts. The Government should provide skills training, microfinance and labour-intensive capital projects. South Sudan is still a young nation and she will do well if she secures membership in organisations, particularly economic ones, with a view to learning, networking, interdependence, getting appropriate support, improving international rankings and attracting foreign investment. South Sudan should vigorously follow up its membership application to the East African Community and others. South Sudan is faced with a lot of social problems that include, among others, limited access to basic education, healthcare, food, water, etc. The international community should provide the necessary humanitarian assistance in this direction.

References

- Ajayi S.I., 1974, 'An Econometric Case Study of the Relative Importance of Monetary and Fiscal Policy in Nigeria', *The Bangladesh Economic Review*, Vol. 2, No. 2, 559-576.
- Ajsafe and Folorunso, 2002, 'The Relative Effectiveness of Fiscal and Monetary Policy in Macroeconomic Management in Nigeria', *The African Economic and Business Review*, Vol. 3, No. 1, Spring.
- Andersen and Jordan, 1986, 'Monetary and Fiscal Actions: A Test of Their Relative Importance in Economic Stabilization', *Federal Reserve Bank of St. Louis Review*, Vol. 80, 29-45.
- Athorbei, David Deng, 2011, 'Government of Southern Sudan, 2011 Budget Speech', presented to the South Sudan Legislative Assembly by H.E. David Deng Athorbei, January 2011, Ministry of Finance and Economic Planning, Government of Southern Sudan, Juba.
- Batten, D. S. and Rafer, R. W., 1983, 'The Relative Impacts of Monetary and Fiscal Actions on Economic Activity: A Cross-Country Comparison', *Federal Reserve Bank of St. Louis Review*, Vol. 65, 5-12.
- BBC, 2012, 'Agrees US\$ 8 billion with China', *BBC News Africa*, 28 April 2012, Retrieved on June 18, 2012 from <http://www.bbc.co.uk>
- Bofinger and Wollmershäuser, 2003, 'Managed Floating: Theory, Practice and ERM II', Paper prepared for the CEPR/Deutsche Bank Research Workshop 'Managed Floating

- An Alternative to the Two Corner Solutions?’ in Kronberg/Germany, 30/31 January 2003.
- Bleany, M. and Fielding, D., 2002, Exchange Rate Regimes, Inflation and Output Volatility in Developing Countries’, *Journal of Development Economics* 68 (1), 233-45.
- Central banking Newsdesk, 2012, ‘South Sudan enacts central bank law’, Retrieved on May 23 from <http://www.centralbanking.com/central-banking/news/2094427/south-sudan-enacts-central-bank-law>
- Chowdhury, A. R., 1986, ‘Monetary and Fiscal Impacts on Economic Activities in Bangladesh A Note’, *The Bangladesh Development Studies*, Vol. XIV, No. 2, 101-106.
- Devereux, M. B., 1998 and 1999, ‘Fixed vs. Floating Exchange Rates: How Price Setting Affects the Optimal Choice of Exchange Rate Regime’, NBER Working Paper No. 6867, December 1998, and ‘The Optimal Choice of Exchange Rate Regime: Price-Setting Rules and Internationalized Production’, NBER Working Paper No. 6992, March 1999.
- Dornbusch, R., 2001, ‘Fewer Monies, Better Monies’, NBER Working Paper 8324. Cambridge, MA: National Bureau of Economic Research.
- Edwards S., 1996, “The Determinants of the Choice between Fixed and Flexible Exchange-Rate Regimes,” NBER Working Paper No. 5756, September 1996.
- Edwards, S., 2001, ‘Exchange Rate Regimes, Capital Flows and Crisis Prevention’, NBER Working Paper 8529. Cambridge, MA: National Bureau of Economic Research.
- Eliot, J.W., 1975, ‘The Influence of Monetary and Fiscal Actions on Total Spending: The St. Louis Total Spending Equation Revisited’, *Journal of Money Credit and Banking*. Vol. 7, 181-192.
- Engle, R. F. and Granger, C. W. J., 1987, Co-integration.
- El-Sadany, M. and Ottaway, M., 2012, ‘Sudan: From Conflict to Conflict’, Carnegie Paper, May 2012, Retrieved June 18, 2012 from <http://carnegieendowment.org>
- Frankel, J. A., 1999, ‘No Single Currency Regime is Right for all Countries or at all Times’, *Princeton Essays in International Finance No. 215*, Princeton, NJ: Princeton University Press.
- Ferrie, J., 2012, ‘South Sudan hunts for Loans as Oil-Output Halt Dents Economy’, Retrieved on June 10, 2012 from Bloomberg Business Week, 11 May 2012, <http://www.businessweek.com>
- Ghosh, A., 1996, ‘Does Nominal Exchange rate Regime Matter?’ NEBER Working Paper 5874.
- Goitom, H., 2011, ‘South Sudan and The Law Library’, Retrieved on 10 June 2012, from <http://blogs.loc.gov/law/2011/07/south-sudan-and-the-law-library/>
- Goodfriend, 2004, ‘Understanding the Transmission of Monetary Policy’, manuscript, Federal Reserve Bank of Richmond, Presented at Joint China-IMF High Level Seminar on ‘China’s Monetary Policy Transmission Mechanism’, Beijing, May.

- Guardian*, 2012, 'Southern Sudan development hindered by World Bank', Retrieved on 17 April 2012 from <http://www.guardian.co.uk/world/2010/feb/18/southern-sudan-development-world-bank>
- Harrigan, J., 2006, 'Time to Exchange the Exchange Rate Regime: Are Hard Pegs the Best Options for Low-income', *Development Policy Review* 24 (2), 205-223
- Husain et al. 2005, 'Exchange Rate Regime Durability and Performance in Developing Versus Advanced Economies', *Journal of Monetary Economics* 52(25), 35-64.
- Kalyalya, D., 2010, 'Monetary policy in Zambia: experiences and challenges', Chapter 17 in Gill Hammond, Ravi Kanbur and Eswar Prasad, eds, *Monetary Policy Frameworks for Emerging Markets*, Edward Elgar Publishing Ltd
- Kameir, E.W., 2011, 'The Political Economy of South Sudan: A Scoping Analytical Study', Retrieved May 23, 2012 from http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/2011%20Political_Economy_South_Sudan_-_24_October_2011.pdf
- Kasekende, L. and Brownbridge, 2010, 'Post-crisis Monetary Policy Frameworks in Sub-Saharan Africa', Research paper, October 2010, African Development Bank publication, Tunis, Tunisia.
- Mendoza, E. G. and Uribe, M., 1999, 'The Business Cycles of Balance-of-Payment Crises: A Revision of Mundellian Framework', NBER Working Paper No. 7045, March.
- Ministry of Finance and Economic Planning, 2011, 'Guidelines for Draft Budget Sector Plans 2011 -2015', Ministry of Finance and Planning, Republic of South Sudan, 23 November.
- Mpyisi, K. and Okello, D., 2012, 'The Cost of Future Conflict in Sudan', *Frontier Economics*, 2010, Retrieved on 18 June 2012 from <http://www.frontier-economics.com>
- Mundell, R.A., 1961, 'A Theory of Optimum Currency Areas', *American Economic Review*, November.
- Mussa, Michael, 2007, 'IMF Surveillance over China's Exchange Rate Policy', Washington, DC: Peterson Institute for International Economics.
- National Bureau of Statistics, Republic of South Sudan, 2010, 'Fast Facts', Retrieved on 15 May 2012 from <http://ssnbs.org/>
- National Bureau of Statistics, Republic of South Sudan, 2010, "Consumer Price Index for South Sudan, May 2012", Retrieved on June 13, 2012 from <http://ssnbs.org/cpi/2012/6/1/consumer-price-index-for-south-sudan-may-2012.html>
- New Times of Rwanda* 2012, 'UN agency seeks funds for 'critical' refugee situation in South Sudan', Retrieved on June 24, 2012 from <http://www.newtimes.co.rw/news/index.php?i=15033&a=12307>
- Ngai, K.M., 2012, '2011/2012 Budget Speech to National Legislative Assembly, presented by Hon. Kosti Manibe Ngai, Minister of Finance & Economic Planning March 2012', Ministry of Finance and Economic Planning, Government of Southern Sudan, Juba.

- Olaloye, A. O. and Ikhide, S. I., 1995, 'Economic Sustainability and the Role of Fiscal and Monetary Policies in A Depressed Economy: The Case Study of Nigeria', *Sustainable Development*, Vol. 3, 89-100.
- Poole, W., 1970, 'Optimal Choice of Monetary Policy Instruments in a Simple Stochastic Macro Model', *The Quarterly Journal of Economics*, MIT Press, Vol. 84(2), . 197-216, May.
- RT, 2012, 'Chinese Money to "Settle" Sudanese Oil Divorce? RT, 23 April 2012', Retrieved on June 15, 2012 from <http://www.rt.com>
- Simwaka, Kisu, 2010, 'Choice of exchange rate regimes for African countries: Fixed or Flexible Exchange rate regimes?', Munich Personal RePEc Archive, 15 March.
- South Sudan Information. Com, 2012, 'Economy of South Sudan', Retrieved on 13 May 2012 from http://www.southsudaninfo.com/Economy_of_South_Sudan
- South Sudan Bureau of Standards, Southern Sudan, 2010, 'Release of first Gross Domestic Product (GDP) and Gross National Income (GNI) figures for South Sudan by the NBS', Retrieved on May 23, 2012 from http://ssnbs.org/storage/GDP%20Press%20release_11.08.11.pdf
- South Sudan Bureau of Standards, Southern Sudan, 2010, 'Key indicators', Retrieved on June 11, 2012 from http://ssnbs.org/storage/key-indicators-for-southern-sudan/Key%20Indicators_A5_final.pdf
- Sudan Tribune, 2012, 'Sudan Asks China for Help in Resolving Oil Dispute with South Sudan', 28 February 2012, Retrieved on 18 June, 2012 from <http://www.sudantribune.com>
- Sudan Tribune*, 2012, 'Exclusive – South Sudan Economy on the Verge of Collapse, World Bank Warns', 6 May, Retrieved on June 18, 2012 from <http://www.sudantribune.com>
- Tutor2u, 2012, 'Fixed and floating exchange rates', Retrieved on 11 May 2012 from http://tutor2u.net/economics/content/topics/exchangerates/fixed_floating.htm
- The New Sudan Vision*, 2011, 'Investor info Southern Sudan: Where forth with the new currency?' Issue#1, Retrieved on 9 May 2012 from http://www.newsudanvision.com/index.php?option=com_content&view=article&id=2339:investor-info-southern-sudan-where-forth-with-the-new-currency-i&catid=5:columns&Itemid=14
- Vencatachellum, 2007, 'The Impact of High Oil Prices on African Economies', Economic Research Working Paper No 93 (December 2007), Development Research Department African Development Bank, Tunis Belvedere, Tunisia.
- Williamson, John, 1998, 'Crawling Bands or Monitoring Bands: How to Manage Exchange Rates in a World of Capital Mobility', *International Finance*. Blackwell Publishing, Vol. 1(1), 59-79.
- Woolf, N., 2012, 'South Sudan Refuses to be Held Ransom by the North', *The Guardian*, 17 May, Retrieved on 18 June 2012 from <http://www.guardian.co.uk>

