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EXCHANGE RATE INSTABILITY IN GHANA:
THE CAUSES AND REMEDIES

Exchange Rate Instability In Ghana: The Causes And Remedies

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Abstract

Exchange rate instability and depreciation have plagued Ghana's economy during most of the flexible exchange rate period that began in the early 1980s. This paper examines the causes of the instability in the period 1992-2015. The paper identifies undisciplined fiscal and monetary policies and poor external outcomes—including terms-of-trade weakness and failure to attract the necessary capital flows to support external balance—as the major factors that caused exchange rate instability and weakness in the period. On the contrary, prudent fiscal and monetary policies, as well as more favorable external outcomes, have tended to support stability in the exchange rate. The paper recommends policies to ensure exchange rate stability as a means of fostering macroeconomic stability and economic growth.

Executive Summary

After decades of fixing the exchange rate, Ghana initiated reforms in the early 1980s towards a flexible exchange rate system. This eventually led to the establishment of an inter-bank foreign exchange market and a retail foreign exchange bureaux market for the trading of the cedi and foreign currencies. The prevalent characteristic of the cedi's exchange rate since that time has been instability and depreciation against the major foreign currencies, especially the dollar. The cedi depreciated by a total rate of 99.0% between 1992 and 2015, and by more than 10% year-on-year in 60% of the 288 months within the period. A depreciating currency can be economically beneficial, as it improves the nation's competitiveness and boosts exports. Nevertheless, currency instability is also costly, and in Ghana over the years, it has fueled inflation, debt distress and general economic instability that has undermined the country's overall economic performance.

This paper determines the causes of exchange rate instability in Ghana, which often manifests as rapid depreciation, by examining the policy factors and conditions that have driven exchange rate trends during the period 1992-2015. The theoretical literature on exchange rates provides the framework for identifying the factors that influenced exchange rates in the study period. These include the nature of fiscal and monetary policies, balance of payments developments, relative national incomes, prices and interest rates, and economic agents' expectations or sentiments.

Generally, exchange rate trends in Ghana during 1992-2015 can be depicted as follows: for much of the first decade since 1992, the exchange rate was volatile and depreciated at a fast pace. This period was succeeded by half a decade (2003-2007) of relative stability, which was interrupted in 2008-2009, when the exchange rate fell steeply. Then followed four years (2010-2013) in which the cedi was largely stable, albeit with episodes of sharp depreciation in the first half of 2012 and the last quarter of 2013. From the last quarter of 2013 to the end of 2015, the exchange rate experienced a high level of instability and depreciation that had not been witnessed since 1999-2000.

The paper finds that whenever fiscal and monetary policies have been relatively loose, the exchange rate has tended to experience large depreciations. Thus, undisciplined fiscal and monetary policies have been an important driver of exchange rate instability in Ghana. For instance, between 1992 and 1997, government spending and money creation increased rapidly, triggering high inflation and rapid currency depreciation. In other periods of exchange rate instability, such as 2002, 2008-2009 and 2013-2015, the underpinning policy conditions also reflected loose fiscal and monetary management.

On the contrary, more stable exchange rates have been recorded during periods of relative fiscal and monetary discipline. The periods 2003-2005 and 2010-2011 exemplify this nexus between relatively restrained fiscal and monetary policies and a stable exchange rate. For instance, budget deficits and rates of monetary growth were much smaller in 2003-2005 and 2010-2011 than in the 1990s and 2013-2015, which witnessed high currency instability and depreciation.

Unfavorable external developments, including adverse terms of trade, have also played a role in the instability of the exchange rate. The principal source of foreign exchange income for the economy is the export of primary commodities—cocoa, gold, timber, and now oil—that have volatile prices in the international markets where they are traded. Because of this price volatility,

foreign exchange earned from exports has been prone to the vagaries of the international commodity markets, meaning export revenue tends to be depressed when commodity prices are low. The most prominent episode of this problem was the terms-of-trade shock of 1999-2000 that impacted both the demand and supply ends of the foreign exchange market, leading to record instability and rapid depreciation. Other, less severe episodes of terms-of-trade weakness have also created or fueled depreciatory pressure in the foreign exchange market.

Commodity dependence and lack of export diversification have caused chronic trade and current account deficits in Ghana. Faced with this problem, the economy's ability to attract capital flows from abroad is critical for the maintenance of a stable exchange rate. This was an important factor in the broad stability of the exchange rate during 2001-2007 and 2010-2011. Capital flows into the economy were robust, producing net external surpluses in most years and keeping the foreign exchange market well-supplied to support stability.

Yet, at other times, the economy has failed to attract the required capital and financial flows to achieve external balance. This was typically when the domestic policy environment was poor and external investor confidence in the economy was weak. For instance, with the return to significantly unbalanced fiscal policies after 2011, external investor confidence deteriorated, especially as concerns heightened over Ghana's public debt sustainability. The slump in confidence resulted in sharp declines in financial inflows in 2014 and 2015, a period that also saw rapid exchange rate depreciation. In general, policies which improve the fiscal health of the country and engender price stability elicit greater confidence that consequently supports exchange rate stability, whereas weak fiscal and monetary policies that generate poor macroeconomic outcomes reduce confidence and fuel exchange rate instability.

Based on the findings of the study, the paper makes the following policy recommendations to ensure durable exchange rate stability:

- The government needs to implement disciplined fiscal and monetary policies. This entails running low budget deficits and eschewing excessive monetary expansion.

- Vulnerability to adverse terms of trade and other unfavorable external developments should be minimized through the diversification of export products. This requires government investment and incentives to improve economic infrastructure, reduce business costs and regulatory barriers, and develop new export growth poles.

- The government should build and sustain external confidence in the economy, which is critical for the attraction of strong international capital and financial flows, by implementing firm fiscal and monetary policies, financial sector reforms, and incentives to attract foreign investment.

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1. Introduction

From the beginning of the 1980s, Ghana adopted a phased exchange rate liberalization program, whereby market forces were allowed to increasingly have a bigger say in determining the foreign exchange value of the nation's currency, the cedi. This culminated in the creation, for the first time, of an inter-bank foreign exchange market in the country in 1992, while the previously underground currency market (parallel market) was formalized into the foreign exchange bureaux market. The exchange rate of the cedi has since been determined mainly by the transactions (demand and supply) that take place in the two markets.

Since the liberalization, the value of the cedi has been quite unstable against other currencies, with much of the instability marked by depreciation. This issue has been of major concern to policymakers. Although a depreciating currency is not without its benefits, which include strengthening the incentives for exports and discouraging imports, it tends to impose huge short-term costs on the economy. These include the immediate pass-through impact on domestic inflation—which erodes real incomes, economic growth and confidence—and increases in the domestic-currency value of foreign debt and debt service expenditure. To minimize these costs, governments over the years have endeavored to create the conditions for a stable exchange rate. Nevertheless, exchange rate stability continues to be largely elusive. A natural question that arises is, why has this been the case? This paper seeks to provide some answers.

Reserving a quantitative empirical analysis of the causes of exchange rate instability to a future investigation, this study will present the trends in exchange rates and examine the policy factors and conditions responsible for exchange rate instability in Ghana. Although the reforms which eventually led to the cedi being floated began in the early 1980s, the core analysis in this study covers 1992-2015. The year 1992 is a good starting point because it is the year in which the inter-bank market was launched, in the final phase of the exchange rate liberalization process. In addition, 1992 was the year of transition, after 11 years of military rule, to a new democratic dispensation, which produced fresh complications for economic management.

The paper proceeds after the introduction as follows. Section 2 reviews the main theories of exchange rate determination, while Section 3 traces the journey towards the current flexible exchange rate system in Ghana. Section 4 analyzes exchange rate movements from 1992-2015, and the major causes and impacts of the fluctuations. Section 5 summarizes the findings from the previous section, while concluding thoughts and recommendations are offered in Section 6.

2. Theoretical Review

The factors which determine or influence exchange rate movements have long interested economists. This interest intensified after the world's leading economies, led by the United States, broke with fixed exchange rates in the 1970s, ushering in the era of flexible (floating) exchange rates. Flexible exchange rates are exchange rates that are free to vary in response to changes in the relative supplies and demands of currencies in foreign exchange markets. In contrast, fixed or pegged exchange rates are set by government fiat and change only when the government wills it.

To explain what causes exchange rate changes under the flexible system, economists have advanced—and tested—several alternative theories. These exchange rate theories or models can be organized under three major schools of thought (Eiteman et al, 2013). The first is made up of theories that link exchange rates to a country's balance of payments transactions. The second is the group of theories known as international parity conditions, and the third school of thought is the asset-market approach to exchange rate determination. The latter consists of the monetary and portfolio-balance explanations of exchange rates.[1]

The balance of payments view of exchange rates, also known as the traditional flow theory, says that a country's exchange rate is determined by the interactions between the supply and demand for foreign exchange in its economy, which in turn are the product of transactions on its balance of payments. The transactions on a country's balance of payments are divided into trade in goods and services (current account activities), and financial flows (capital account activities). The equilibrium exchange rate is the exchange rate when the balance of payments is in equilibrium—that is, when the net inflow (outflow) of foreign exchange arising from current account transactions is balanced by the net outflow (inflow) resulting from capital account transactions. This implies that the exchange rate changes when the balance of payments is in disequilibrium, and the change is needed to restore equilibrium to the balance of payments.

For instance, an increase in imports, which may be induced by, say, a rise in domestic real income or domestic prices, leads to higher demand for foreign exchange that causes the exchange rate to depreciate in order to re-establish equilibrium—unless there are offsetting capital inflows which increase the supply of foreign exchange at the same time. Higher export prices, or better terms of trade (higher ratio of export to import prices), boost the supply of foreign exchange, which, all things equal, should make the currency stronger. Higher interest rates abroad, or lower confidence in the domestic economy among investors, may also cause capital flight, which weakens the home country's exchange rate.

According to what is known as the monetarist view of the balance of payments, the origin of the balance of payments disequilibria that cause exchange rate movements is a shift in domestic money demand or supply. This line of argument states that excess money supply creates a parallel excess demand for imports or encourages capital outflows, which lead to exchange rate depreciation. As in other areas of economics, the monetarist view stresses the role of money demand and supply in determining external balances and currency movements.

Although it is employed as a traditional tool for exchange rate analysis, the balance of payments view does not always explain observed exchange rate movements. At the theoretical level, it has been criticized for failing to link balance of payments equilibrium to asset market equilibrium, since economists believe that shifts between domestic and foreign assets in investors' portfolios also have a great deal of influence on exchange rates (Pearce, 1983).

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[1] Although a division of the asset-market approach, the monetary theory of exchange rates is sometimes treated as a stand-alone branch of exchange rate economics. In that case, the asset-market approach only references the portfolio-balance approach.

The second branch of exchange rate theories, international parity conditions, explains exchange rate changes on the basis of countries' relative price or interest rate levels. The purchasing power parity (PPP) theory of exchange rates is the lead theory in this branch. Its basic idea is that the nominal exchange rate between two countries' currencies should always equal the ratio of the general price levels or indices of the two countries. This means that the exchange rate adjusts in the face of changes to price levels or inflation rates between countries. The adjustment which occurs is of a magnitude that is sufficient to restore parity between the exchange rate and ratio of price levels or indices. The theory predicts that if a country's inflation is higher than its trading partners', the demand for its goods should fall while demand for foreign goods increases, which should cause the home currency to depreciate—and vice versa. Stretching further the argument, this also implies that countries which experience relatively high and increasing inflation for a long time should expect to see a continuous deterioration in the foreign exchange value of their currencies.

While intuitively appealing, the problem with the purchasing power parity theory is that most exchange rate shifts, especially in the short run, do not conform to its dictates. In fact, it is now more or less agreed among economists that PPP, even if it works at all, is more of a long-run than short-run phenomenon (Isard, 1978; Rogoff, 1996). Among the theory's demerits is the embedded assumption that only trade in goods and services and their relative prices across borders determine exchange rates, ignoring financial exchanges (capital flows) between countries that also affect their exchange rates. Nevertheless, the theory, which has been found to hold better for countries with relatively high rates of inflation and underdeveloped capital markets (Eiteman et al, 2013), is widely relied upon by many economists to explain exchange rate behavior. It is also a baseline for other exchange rate theories.

The interest rate parity theory of exchange rates builds on the idea that differential interest rates between countries, assuming no capital flow restrictions, would generally influence the direction of capital flows between the countries. The basis of the theory, which also establishes its equilibrium condition, is that, if investors see foreign and domestic financial assets as perfect substitutes, then they would be indifferent about where to invest, provided the expected returns after accounting for exchange rate changes are equal for both foreign and domestic assets.[2] Thus, according to the theory, if the rate of interest is higher or rises (lower or falls) in one country, which makes domestic-currency assets more (less) attractive to investors relative to foreign-currency assets, the exchange rate of the home country should be expected to depreciate (appreciate) in equal amount to the interest rate differential in order to equalize the relative final returns on domestic and foreign assets. Put simply, interest differentials determine exchange rate changes. The theory's major limitation is that it excludes the effects of current account transactions on exchange rates—just as PPP also ignores capital flows between countries—and therefore cannot adequately explain movements in exchange rates.

In the asset-market approach to exchange rate determination, the relative price of two currencies is explained using a monetary model that basically says exchange rates are a monetary phenomenon,[3] or an extended version (the portfolio-balance model) that says changes in the proportions

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[2] This assumes, in addition to unfettered capital flows between countries, that there are no transaction costs and political risks to investment.

[3] The monetary model has several variants. See Frenkel (1976), Dornbusch (1976) and Frankel (1979) for three of such which were developed in the 1970s.

of investors' wealth held in money and other financial assets determine exchange rates (and interest rates, too). The monetary model's main conclusion is that higher (lower) supply of domestic money relative to foreign money causes the domestic currency to depreciate (appreciate). This is because higher domestic money supply raises domestic prices, which, through purchasing power parity, drives down the exchange rate.[4] The model also asserts that domestic and foreign real incomes and interest rates affect exchange rates. An increase in domestic real income leads to exchange rate appreciation since it causes excess money demand, which reduces prices in the face of a fixed money supply and calls for a stronger exchange rate to restore purchasing power parity. A rise in domestic interest rates produces the opposite effect by lowering money demand, increasing prices, and weakening the exchange rate. Changes in foreign variables have symmetric effects. The monetary model is thought to be more suited to highly inflationary economies (Mussa, 1984), but its assumption of purchasing power parity is seen as a major flaw given PPP's failure to hold in most instances.

An extension to the monetary model is the portfolio-balance model, which holds that, besides the demand and supply of money, changes in individuals' holdings of financial assets, represented by domestic and foreign bonds, also influence the exchange rate. According to the model, and working with the assumption that investors' portfolios consist of money, domestic bonds and foreign bonds only, an increase in the domestic monetary base (through, say, monetary financing of the government deficit) increases the wealth of domestic investors, who would want to spread the new wealth within their portfolios by demanding more domestic and foreign bonds. This puts downward pressure on domestic interest rates and upward pressure on the demand for foreign currency, required to purchase foreign bonds, triggering a depreciation of the exchange rate. In this model, a current account surplus suggests a rise in net domestic holdings of foreign bonds, which increases the wealth of domestic investors. To attain a new portfolio equilibrium, individuals redistribute their additional wealth by demanding more domestic assets. This leads to an appreciation of the domestic currency and a fall in domestic interest rates. An increase in domestic government bonds (through, say, bond-financing of the government deficit) has an ambiguous impact on the exchange rate, however. On the one hand, the increase in investors' wealth leads to higher demand for foreign assets, resulting in an exchange rate depreciation. On the other hand, interest rates rise due to the increased domestic debt issuance, making foreign bonds less attractive and generating an exchange rate appreciation. If the former effect is greater than the latter, a net depreciation of the exchange rate results.

The portfolio-balance model combines aspects of both the flow model and the monetary model in exchange rate determination. It consequently enables countries' current account imbalances and relative monetary growth rates to affect their exchange rates within a single theoretical framework. The reservations expressed about the model, however, include the fact that it ignores the underlying determinants of trade and the role of purchasing power parity (Pearce, 1983).

A corollary to the asset approach (monetary and portfolio-balance views) to exchange rate determination is the critical role of expectations about relevant future variables and factors in determining current exchange rates. As with the demand for any other asset, the demand for domestic and foreign money (currency) depends on their expected returns. It is thus natural to expect that current exchange rates somehow reflect or are influenced by people's expectations regarding future variables, policies or events that affect the relative rewards for holding this or that currency (Frenkel, 1976). What this means is that expectations about future money supply,

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[4]The monetary model works on the assumption that purchasing power parity prevails.

interest rates, real income and other relevant variables, together with the policies which determine them, are important determinants of short-run exchange rates. So if domestic monetary expansion is anticipated, which will stir up inflation and dampen the real return on domestic money, the current exchange rate could depreciate because individuals reduce their money demand, which increases prices. A product of individuals acting on their expectations is the phenomenon of speculation, whereby people buy and sell foreign exchange in anticipation of future profit, which activity can move current exchange rates regardless of the state of the fundamental determinant factors discussed in the above theories.

None of the theories presented here gives an adequate explanation of all observed changes in exchange rates. Indeed, some of the theories contradict each other in how they expect exchange rates to respond to certain factors.[5] Nonetheless, each may be more relevant than others in shedding light on particular episodes of exchange rate changes. The theories have also helped to establish certain empirical facts about exchange rate behavior in specific contexts, which is useful because it helps researchers to narrow their focus to a particular theory or theories when they want to account for changes in exchange rates in certain specific periods or environments.[6]

3. History of Ghana's Exchange Rate Regime

3.1 The Era of Fixed Exchange Rates before 1983

Before the launch of liberal economic reforms in 1983, Ghana had operated a fixed exchange rate system, punctuated by intermittent devaluations to bring the exchange rate somewhat into line with economic fundamentals. The currency in use before independence, known as the British West African pound, had circulated at equal value to the British pound sterling in the Gold Coast and other British West African colonies since its introduction in 1912.[7] After independence in 1957, Ghana established a central bank, the Bank of Ghana, and a year later introduced its own currency, the Ghana pound, which replaced the colonial currency. The Ghana pound exchanged at par with its predecessor, thus maintaining the parity between the sterling and local currency.

The sustainability of the parity required well-suited domestic macroeconomic policies, in particular the exercise of fiscal and monetary discipline by the government. Since this was generally lacking in the 1960s, the parity became increasingly untenable. In 1965, the country introduced a new currency, the cedi, which was not fixed at parity to the sterling but at a new rate of 2.4 cedis per pound.[8] During this time, the country's external payments position was deteriorating because of falling world prices of cocoa, the mainstay of both external and domestic revenues. In response, the government, rather than let the exchange rate be adjusted to absorb some of the external shock, enacted foreign exchange controls with the view to easing the pressure on the external accounts. With inflation rising and the exchange rate fixed, the currency became overvalued, making imports cheaper relative to domestic goods and deepening the external payments problem. In 1967, a "new cedi" came into circulation and was shortly after devalued by 30% against the dollar.[9] A second devaluation was carried out in December 1971, by as much as 45% against the dollar. This was later on undone partially through a 42% revaluation in 1972.

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[5] An example is the response of exchange rates to changes in real income in the flow and monetary theories.

[6] One of these empirical facts is that highly inflationary economies tend to experience depreciation of their currencies.

[7] Gold Coast is the colonial name of Ghana; the other colonies were Nigeria, Sierra Leone, The Gambia, British Togo and British Cameroon.

[8] One cedi also exchanged for 1.1660 United States dollars (Jebuni, Sowa and Tutu, 1991)

[9] Exchange rate devaluation, revaluation, depreciation and appreciation are measured in this paper in foreign currency terms; that is, the percentage change in the amount of foreign currency (the dollar) per unit of the local currency.

The fixed exchange rate policy remained in place throughout the 1970s despite its inconsistency with domestic macroeconomic policies and the shift in the major advanced countries to a system of floating exchange rates (Harrigan and Oduro, 2000). After a single devaluation in 1978, the exchange rate was not adjusted again until 1983.[10] Meanwhile, the fixed exchange rate policy spawned a number of adverse consequences: not only did the official rate become substantially overvalued, an active parallel market for foreign exchange flourished amid rationing and controls. The economic effects were devastating, with a collapse in investment and GDP from 1973-1983, a period which has been described as the "Dark Years" of the Ghanaian economy (Killick, 2010).

3.2 The Transition to a Flexible Exchange Rate Regime, 1983-1992

In line with the paradigm shift in economic management in 1983, under the banner of the Economic Recovery Program (ERP), Ghana's exchange rate underwent progressive liberalization to, first of all, correct its hefty overvaluation, and then allow its value to be determined by market forces. Other objectives of the liberalization were to achieve a convergence of official and parallel (black market) exchange rates and eventually absorb the parallel market into the legal market.

The liberalization was implemented in three phases (Asuming - Brempong,1998). The first phase involved a series of devaluations between 1983 and 1986, which had the cumulative effect of reducing the cedi's value against the dollar by 97%, from 2.75 cedis per dollar to 90 cedis per dollar. The devaluations were meant to realign the exchange rate to a more appropriate and competitive level, and limit the size of the parallel market premium.

In the second phase, which began in September 1986, a foreign exchange retail auction market was created and the country started to operate a dual exchange rate system, whereby the official fixed rate applied to certain transactions and the weekly auction rate to others. Eventually, in February 1987, the official and auction rates were merged, and the latter was used for all transactions.

The third phase took off in February 1988 and saw the legalization of the parallel market through the licensing of private foreign exchange bureaux. The main purpose of the bureaux was to make it easier for people to buy and sell small quantities of foreign exchange, thereby formalizing transactions which otherwise would have taken place in the parallel market. A second goal was to unify the parallel and auction rates (Harrigan and Oduro, 2000). The existence of the bureaux and the weekly auction market effectively created two spot foreign exchange markets (Maehle et al, 2013).

In April 1990, the retail auction market was replaced by a wholesale auction system, which had the participation of the bureaux. This helped to virtually unify the two spot market rates. Then in March 1992, an interbank market, where the Bank of Ghana and banks traded foreign exchange among each other, was formed and the auctions were discontinued. The interbank market, where the forces of demand and supply are at play, has since that time been the main foreign exchange market in Ghana.

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[10] The context for the devaluation was a short-lived experiment with a flexible exchange rate system from June to August 1978.

4. Exchange Rate Trends in Ghana and Underlying Factors

This section reviews trends in the exchange rate between 1992 and 2015 and examines the causes in terms of the underlying policy factors and external conditions. In particular, we focus on the stance of fiscal and monetary policies as well as developments in the balance of payments, all of which, our theoretical review showed, have either direct or indirect effects on exchange rates. To begin with, in sub-section 4.1, we use simple, graphical trend analyses to demonstrate the cedi's preponderant feature of instability during the study period. In sub-section 4.2, we break the study period into sub-periods and analyze exchange rate trends within them. The sub-periods have been determined to enable two kinds of examination: (i) to isolate periods of exchange rate instability and examine the underlying causes, and (ii) to isolate periods of relative stability and examine the underlying causes.

4.1 How Stable or Unstable Has the Exchange Rate Been?

It is important to note at the outset that absolute exchange rate stability is practically out of the question in a flexible currency regime such as Ghana's. Hence the concept of stability of the cedi is meaningful in a relative sense. This means we can describe the cedi exchange rate as being stable within a given period if it exhibits a very low rate of change in the period, or as being unstable if it exhibits a high rate of change in the period. The closer the rate of change to zero, the more stable the exchange rate can be said to be.

Given this preamble, we now assess the extent to which the exchange rate has been stable or unstable during the study period. Figure 1 plots the dollars-per-cedi and cedis-per-dollar exchange rates between 1992 and 2015. Both curves tell the same story: there has been a persistent long-term depreciation of the cedi against the dollar over the period, as the exchange rate increased from GH₵0.039 per dollar to GH₵3.7990 per dollar in the period or, equivalently, the cedi lost value from US$25.6410 per cedi to US$0.2635 per cedi. This gives a 99.0% depreciation of the cedi between 1992 and 2015.

Figure 1: Dollar-Cedi Exchange Rates, 1992-2015
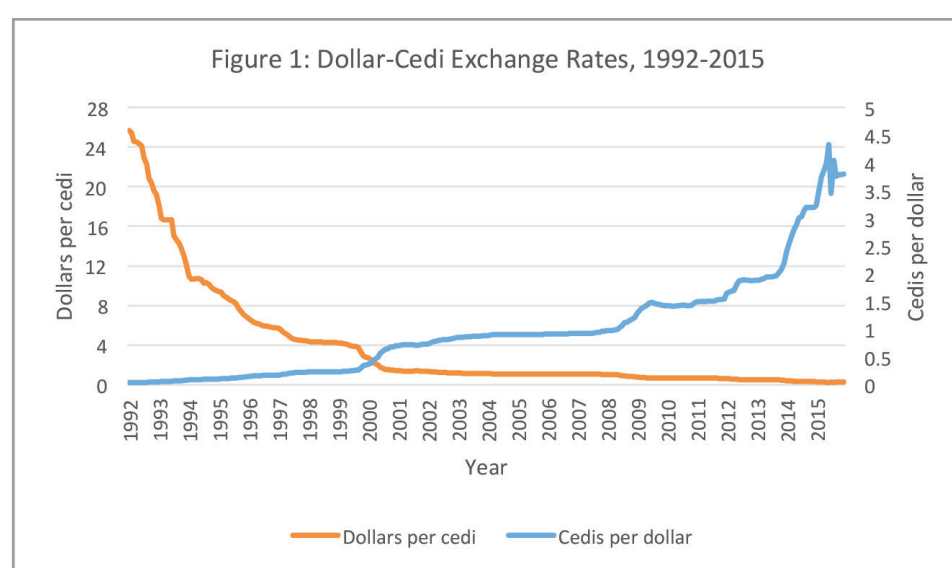
Source: Bank of Ghana data

Figure 2 illustrates the year-on-year rate of change of the value of the cedi, in dollar terms, over 1991-2015, calculated using monthly exchange rate data. The curve lies below the 0% line virtually over the entire period, showing that the cedi depreciated practically throughout the time. The rise and fall in the curve shows the unevenness of the depreciation, with a rise in the curve indicating lower depreciation and a fall indicating higher or steeper depreciation. An analysis of the data used to construct the figure (see Appendix for data) finds that the year-on-year rate of change in the value of the cedi was negative (that is, the cedi depreciated) in 282 of the 288 months within the study period (1992-2015). Furthermore, in 74% of the 288 months, the rate of depreciation (year-on-year) exceeded 5%, and in approximately 60% of the 288 months, the rate of depreciation exceeded 10%. The annual data supplied in Table 1 also reveal that, in 15 (63%) of the 24 years making up 1992-2015, the exchange rate depreciated by more than 10%. These statistics together show that, in most of the period of this study, the cedi has exhibited high instability in the form of high depreciation, whereas stability has been a rarer feature of exchange rate trends.

Figure 2: Rate of Change in Value of Cedi, 1991-2015
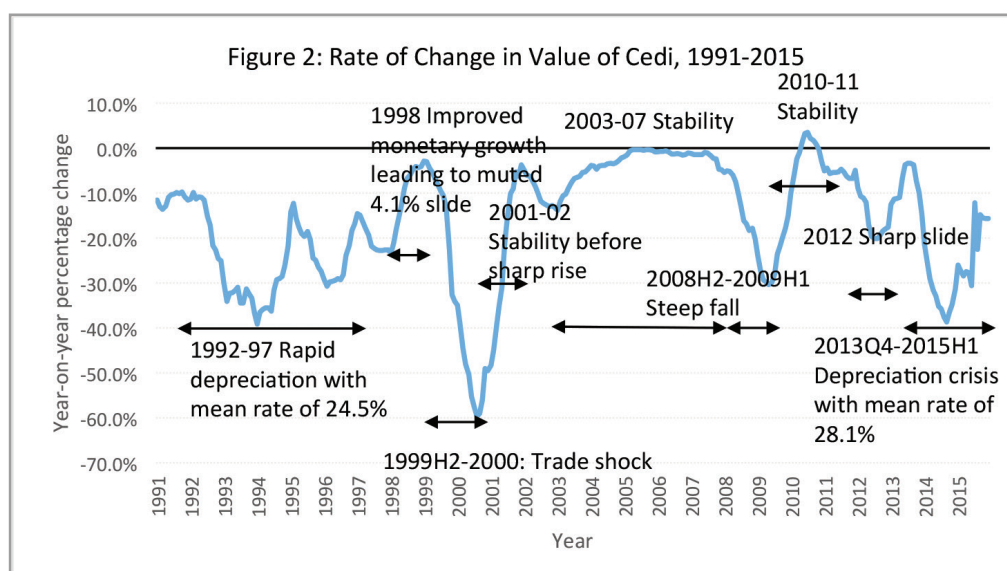
Source: Bank of Ghana data

Table 1: Annual Percentage Change in Value of Cedi, 1992-2015

Year	Percentage Change in Cedi-Dollar Exchange Rate	Year	Percentage Change in Cedi-Dollar Exchange Rate
1992	-25.0%	2004	-2.2%
1993	-36.7%	2005	-0.9%
1994	-21.8%	2006	-1.1%
1995	-27.3%	2007	-4.8%
1996	-16.9%	2008	-20.1%
1997	-22.7%	2009	-15.0%
1998	-4.1%	2010	-3.1%
1999	-34.0%	2011	-4.9%
2000	-49.5%	2012	-17.5%
2001	-3.7%	2013	-14.5%
2002	-13.2%	2014	-31.3%
2003	-4.7%	2015	-15.7%

Source: Bank of Ghana data

4.2 A Review of Factors behind Exchange Rate Trends

4.2.1 Large Depreciations amid Fiscal and Monetary Excesses, 1992-1997

The cedi experienced acute and prolonged instability from 1992-1997 (Figure 3). From the beginning to the end of the period, the exchange rate moved from GH₵0.039 per dollar to GH₵0.2250 per dollar. There were very rapid rates of cedi depreciation in each of those years, averaging 24.5% per annum. The biggest depreciation in a calendar year of 36.7% occurred in 1993 and the lowest of 16.9% in 1996. The chief culprit was loss of fiscal and monetary control in the run-up to the epoch-making 1992 elections, and failure to rein in the excesses thereafter. The ensuing economic imbalances drove down the value of the cedi and sparked an inflationary spiral which blighted Ghana's economic performance during much of the 1990s.

Figure 3: Rate of Change in Value of Cedi, 1992-1997
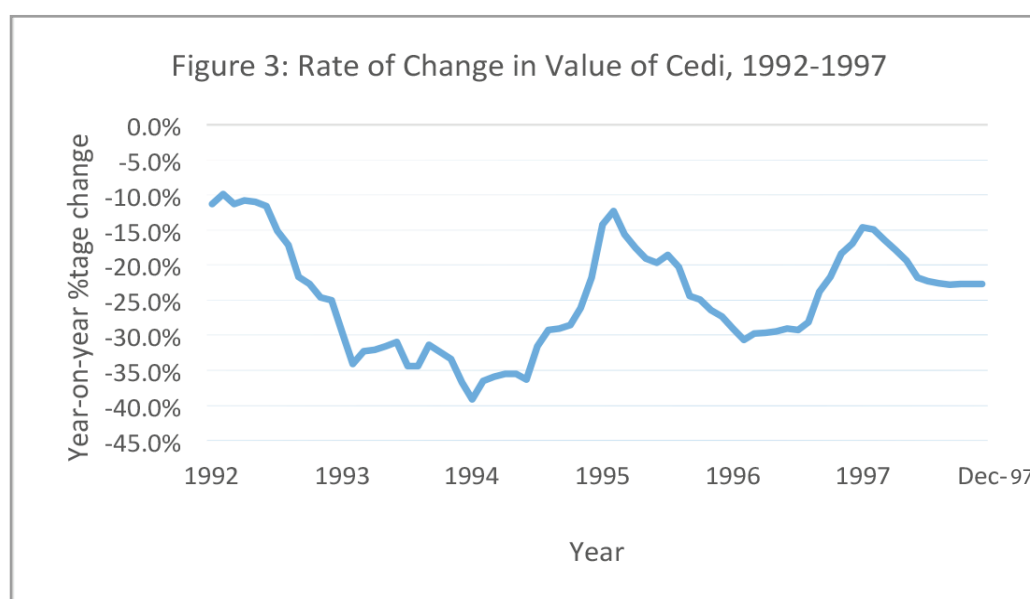
Source: Bank of Ghana data

At the beginning of 1992, generally in the first six months but particularly in the first two months, the exchange rate was stable. However, it depreciated rapidly in the second half of the year, with its year-on-year fall increasing from 11.6% in June to 25.0% in December. The depreciatory trend continued in 1993, reaching 34.1% in year-on-year terms in February. It subsequently eased to 30.9% in June before worsening again to 36.7% in December. The sharp surge in exchange rate instability in 1992-1993 can be blamed on both domestic and external factors. Domestically, there was a marked deterioration in fiscal and monetary conditions, while externally, commodity prices and the country's terms of trade declined, which stymied export receipts.

The cause of the fiscal deterioration in 1992 was a weak revenue outturn coupled with a substantial rise in government expenditure in an election year. This caused the budget deficit to spike to 8.2% of GDP from 1.3% in 1991. Considerable domestic financing of the deficit boosted money supply to a growth rate of 53% in the year, twice the rate of 26.1% recorded the year before. The resulting loose liquidity conditions heightened demand pressures, paving the way, given stagnant export revenue, for the current account deficit to widen to 5.9% of GDP from 3.8% in 1991. With a reduced surplus also on the financial account, the balance of payments fell into a deficit of US$104.2 million, which was the first time the overall external balance was negative since 1986.

The government's efforts to regain fiscal control in 1993 were mostly unavailing, causing the budget deficit to remain high at 7.4% of GDP. Although monetary growth rates came down from a peak of 67.5% in January 1993 to 34.6% in December 1993, the average growth rate of 46.7% in the year was too high to abate the pressures on the exchange rate. Meanwhile, continuing weak commodity prices cut the country's terms of trade by 6.2%, on top of a 6.8% decline in 1992.[11] The impact was low export receipts growth that, together with the large fiscal and monetary imbalances, contributed to an enlarged current account deficit of 9.4% of GDP. Pressured by these imbalances, the cedi depreciated by 36.7% in 1993 and by 32.8% on average year-on-year basis. The rate of inflation quickly accelerated from 13.3% at the end of 1992 to 27.7% at the end of 1993.

From 1994-1997, commodity prices picked up and the terms of trade strengthened, recording an average annual index growth rate of 6.3%. This helped to narrow the current account deficit to 4.7% in 1994 and 2.2% in 1995, before it resumed a rising trend in 1996 as fiscal control was lost again. Notwithstanding the improved external environment, the currency depreciated rapidly in 1994-1997, the principal reason being the continuing poor domestic economic performance, with a persistently expansionary monetary policy and significant levels of inflation, which reached alarming rates in 1995 and 1996.

In 1994, because of the terms-of-trade improvement that reduced the current account deficit and enabled the balance of payments to achieve a surplus, the exchange rate depreciation was slower than in 1993. From a peak year-on-year depreciation of 39.1% in January, the rate of depreciation softened to 36.3% in June and further to 21.8% in December. Around this time the fiscal picture had started to look better, with a reduction in the budget deficit to 3.8% of GDP in 1994. However, excess liquidity within the economy, the result of increased credit to the private sector despite a presumably tight monetary policy, made exchange rate stability elusive.

The cedi depreciated more briskly in 1995, by 27.3%, with money supply expanding at an annual rate of 40.7% and inflation climbing to 70.8% in December, the highest since 1983. From a real exchange rate equilibrium perspective, it could be argued that the high inflation played a part in perpetuating the nominal depreciation of the cedi, as this would have been necessary to offset the widening inflation differentials between Ghana and its trade partners.

Money supply growth rates remained in the 40% range in 1996 and 1997. In 1996, which was an election year, there was a major setback to the fiscal consolidation that had taken place in 1994-1995, as the budget deficit shot up from 4.0% of GDP in 1995 to 8.4% in 1996. This was blameable on the government's failure to hold down expenditure in the face of underperforming revenues. Thus, although the terms of trade held up well in 1996, the aggregate-demand effect of the large fiscal deficit increased imports, producing bigger trade and current account deficits compared with 1995. Accentuating the imbalances was a sharp decline in the surplus on the capital and financial account of the balance of payments, from US$459.1 million in 1995 to US$285.5 million in 1996, a major cause of which was a steep fall in net private capital inflows from US$261.2 million to US$70.0 million. Against this unpromising backdrop, the currency depreciated sharply in the early part of the year, before it moderated towards the end. Owing to this moderation, the overall rate of depreciation in 1996 was 16.9%, which was lower than the

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[11] Calculated from the World Bank's Net Barter Terms of Trade Index Series (1990=100)

27.3% registered in 1995. On average year-on-year basis, however, the cedi depreciated by 26.3% in 1996 compared with 20.0% in 1995.

The moderation in the currency's depreciation from the second half of 1996 was reversed in February 1997. During that month, the cedi depreciated by 14.9% year-on-year, and this increased consistently to 22.8% in September, before closing the year at 22.7% depreciation. As in 1996, external sector performance deteriorated, with all the deficits—trade, current account, and balance of payments—expanding. The growth in the deficits was principally on account of a decrease in cocoa and gold export earnings amid higher spending on imports, which pushed up the current account deficit to 5.9% of GDP from 4.4% in 1996. The balance of payments recorded a larger deficit, relative to 1996, of US$142 million, slashing the stock of external reserves by US$284.5 million to US$594.1 million, equivalent to 2.4 months of imports. In addition to the poor external balances, rapid fiscal and monetary expansion continued to undermine the exchange rate in 1997. There was a widening of the fiscal deficit to 10.1% of GDP and money supply rose by 40.8%, despite a number of measures that were taken by the central bank to curb liquidity growth and consolidate the disinflationary process which had begun from 1996.

Table 2: Main Fiscal, Monetary and External Sector Aggregates, 1992-1997

Indicator	1992	1993	1994	1995	1996	1997
Fiscal balance (% of GDP)	-8.2%	-7.4%	-3.8%	-4.0%	-8.4%	-10.1%
Money supply growth (%)	53.0%	34.6%	53.1%	40.7%	42.8%	40.8%
Current account balance (% of GDP)	-5.9%	-9.4%	-4.7%	-2.2%	-4.4%	-5.9%
Overall BOP balance (US$m)	-104.2	33.8	253.1	182.8	-103.8	-142.0
Stock of external reserves (US$m)	369.7	462.5	631.5	746.7	878.6	594.1
Terms of trade index (1990=100)	95.1	89.2	94.2	106.7	108.6	114.0

Source: Ministry of Finance, Bank of Ghana, World Bank and IMF data

4.2.2 A Stabilizing Phase under Improved Monetary Management, 1998

Conscious of the damage to real living standards wrought by the depreciation of the currency and high rate of inflation, the government made exchange rate stability a top macroeconomic priority. To this end, the central bank undertook a number of initiatives to limit liquidity expansion in the economy, which bore fruits in 1998.

Figure 4: Rate of Change in Value of Cedi, 1996-1998
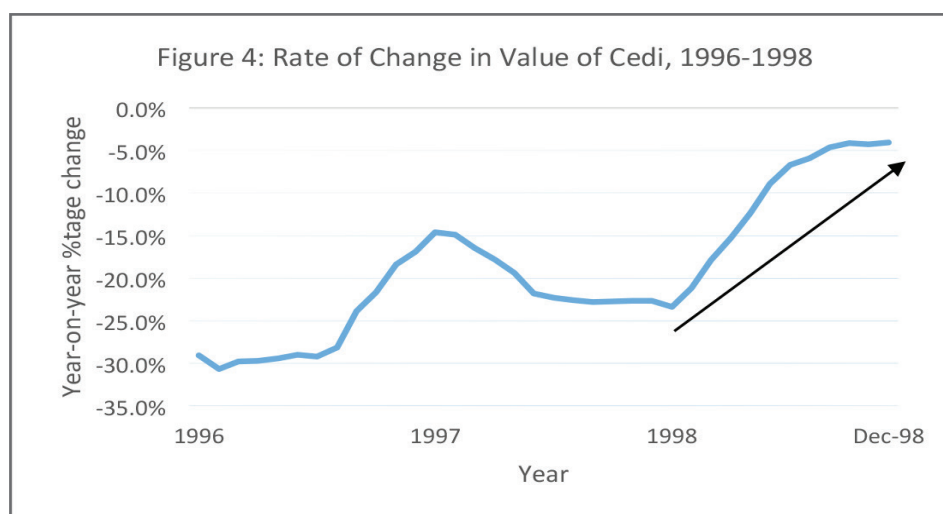
Source: Bank of Ghana data

After more than six years of being in free fall due primarily to unrestrained fiscal and monetary policies, the exchange rate stabilized in 1998. Compared with 1997, when the rate of depreciation for the year was 22.7%, the cedi lost only 4.1% against the dollar in 1998. This was at the time the lowest depreciation of the exchange rate in a calendar year since the country embraced the flexible exchange rate system. The average rate of depreciation, which stood at 10.7% in the year, was also the lowest since 1991.

So what were the reasons for the stability? First, both fiscal and external sector outcomes improved in 1998, with the budget deficit falling for the first time since 1994 and the balance of payments registering its first surplus since 1995. However, the driving force of the currency's stability seemed to be monetary discipline, since the unique characteristic of 1998 in comparison with the earlier 1990s was that year's reasonably measured growth rate of money supply. This discipline in the monetary sector had much to do with a new strategy of monetary-cum-exchange rate management, the "cut-and-fill" approach, adopted by the Bank of Ghana. The strategy was designed to eliminate the traditional money supply hump that occurred in the last quarter of each year, when the central bank sold cedis to the Ghana Cocoa Board (COCOBOD) for its annual cocoa purchases. The injection of this cedi liquidity, reinforced by year-end aggregate demand pressures, tended to cause an upsurge (a hump) in money supply in the last quarter of the year.

The cut-and-fill approach was used to level this hump in 1998. It involved the central bank selling foreign exchange to banks before the onset of the cocoa season in October ("cutting" cedi liquidity), and subsequently selling cedis ("filling" the cedi liquidity dent) to COCOBOD at the beginning of the cocoa season. This buying and selling leveled the hump and facilitated better control of monetary growth, which came down substantially to 17.6% in 1998 from 40.8% in 1997. There were two principal effects of the cut-and-fill approach on foreign exchange demand and supply.

First, the reduced growth rate of money dampened foreign exchange demand pressures, thereby limiting the cedi's depreciation. Second, the central bank's huge sale of dollars to banks before the opening of the cocoa season implied active intervention in the market, which propped up the cedi. The downside, however, was that the strategy squeezed the external reserves, to the extent that the stock contracted by 8.6% to US$543.1 million in 1998 despite a US$21.2 million surplus on the balance of payments. Meanwhile, monetary restraint and the stability of the cedi helped to knock down end-year inflation from 20.5% in 1997 to 15.7% in 1998.

### 4.2.3 Exchange Rate Collapse after Terms of Trade Shock, 1999-2000

In 1999 and 2000, the economy was buffeted by a major terms-of-trade shock, with cocoa and gold prices collapsing while oil prices escalated (Table 3). There was a drop in the average world price of cocoa by 32.3% in 1999, while the average price of gold declined by 5.2% and Brent crude oil climbed by 39.2%. Cocoa plunged deeper by 20.4% in 2000, with gold stagnant and oil soaring by 59.9%. Ghana's terms of trade, as measured by the World Bank, declined by about 20% over 1999-2000, and the IMF estimated that the external shock cost the country US$900 million in lost foreign exchange (IMF, 2001). Consequently, the current account deficit expanded in 1999 to 12.5% of GDP from 7.0% in 1998. The overall external position also worsened, with the balance of payments swinging from a surplus of US$21.2 million in 1998 to a deficit of US$68.3 million in 1999, while gross reserves dropped to only four weeks of import cover by end-1999. In 2000, although the current account gap contracted to 7.0% of GDP, the balance of payments deficit worsened to US$116.9 million as private capital flows shrank due to increased economic uncertainty. Reserves coverage further dropped to three weeks of imports.

Table 3: Average International Prices of Cocoa, Gold and Oil, 1998-2000

Commodity	1998	1999	2000
Cocoa (US$ per metric ton)	1,676.00	1,135.05	903.91
Increase over previous year	*3.5%*	*-32.3%*	*-20.4%*
Gold (US$ per ounce)	294.14	278.87	279.17
Increase over previous year	*-11.1%*	*-5.2%*	*0.1%*
Oil (Brent Crude, US$ per barrel)	12.72	17.70	28.31
Increase over previous year	*-33.5%*	*39.2%*	*59.9%*

Source: IMF

The impact of the terms-of-trade reversal on the exchange rate was catastrophic: standing at GH₵0.2358 cedis to the dollar in January 1999 (representing a 2.9% year-on-year depreciation), the exchange rate weakened to GH₵0.3557 per dollar in December 1999, equivalent to a 34.0% annual depreciation, and plunged more precipitously to GH₵0.7048 in December 2000. The year-on-year rate of depreciation attained a peak of 59.6% in August 2000, before slowing down to 49.5% in December (Figure 5). Because 1999 had actually begun on a stable note for the cedi, the average depreciation for that year was 12.8% compared with the end-year rate of 34.0%. However, in 2000, the average depreciation was 50.3%, higher than at year-end, since the situation was worse in the first nine months of the year than in the last quarter.

Figure 5: Rate of Change in Value of Cedi, 1998-2000
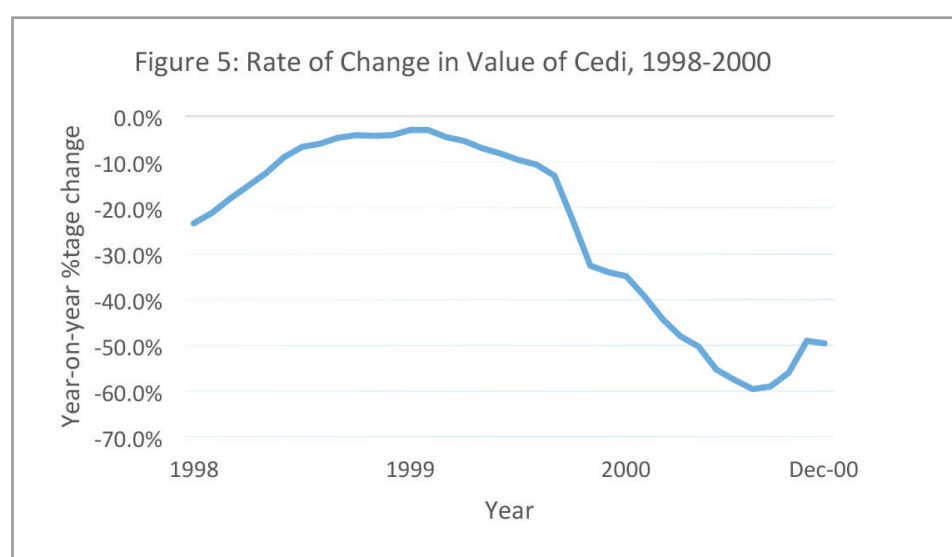
Source: Bank of Ghana data

Two factors aggravated the terms-of-trade effect in 1999-2000. These were the inability of the government to adjust domestic macroeconomic policies quickly and strongly enough to mitigate the impact on the economy, and donors' failure to meet commitments to the budget in full, a situation which intensified pressure on the monetary sector to finance the large fiscal deficit. From 7.4% of GDP in 1998, the budget deficit increased to 7.7% and 8.6% in 1999 and 2000 respectively. On account both of a high level of public sector financing and rapid private sector credit expansion, money supply, which had been held in check in 1998 and to some extent in 1999, accelerated in 2000 to a growth rate of 46.5%, reminiscent of the early to mid-1990s.

A debate that raged among policymakers as the trade shock wreaked instability on the foreign exchange market was whether, and to what extent, the Bank of Ghana should intervene in the market to staunch the currency's depreciation. Reports at the time indicated that the central bank favored intervention to calm the crisis, as it was concerned about its wider implications on inflation and confidence in the financial system. Other advisors of the government, including the International Monetary Fund (IMF), posited that the cedi had been significantly overvalued prior to the crisis and thus advocated non-intervention to enable the currency restore some of its lost competitiveness. In the end, the argument against intervention carried the day, which played a part in the unprecedented slide of the cedi vis-à-vis what may have happened had the central bank actively managed the situation (see Koomson, 2000).

The effect of the depreciation and liquidity build-up in the economy was to bring the disinflation which had been occurring since 1996 to an abrupt end in May 1999. In that month, inflation touched a trough of 9.4% and started to quicken thereafter, reaching 40.5% in December 2000. The macroeconomic instability and imbalances lowered economic growth from 4.7% in 1998 to 4.4% in 1999 and 3.7% in 2000.

4.2.4 Return to Stability before another Sharp Fall, 2001-2002

After the terms-of-trade-induced collapse in 1999-2000, the cedi stabilized in 2001.[12] In January, its year-on-year slide decreased slightly to 48.2%, and the trend continued throughout the remaining months to, eventually, 3.7% year-on-year depreciation in December. This was, hitherto, the cedi's lowest depreciation rate in a calendar year since the floating era began. The factors responsible for this were both domestic and external.

Figure 6: Rate of Change in Value of Cedi, 2000-2002
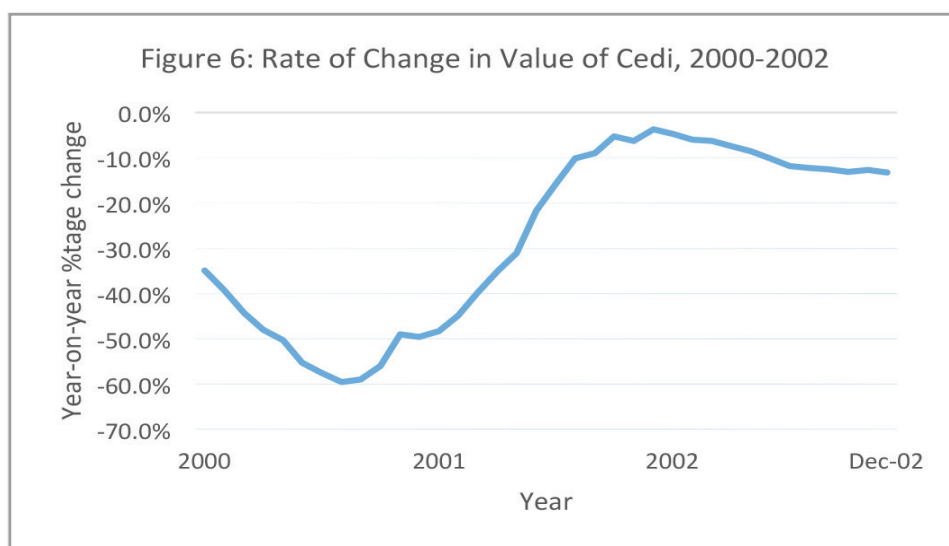
Source: Bank of Ghana data

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[12] The rate of depreciation actually started to decelerate after peaking in August 2000.

On the external front, a slight recovery in the terms of trade relieved some of the heavy pressure the exchange rate had come under in 1999-2000. Another helpful development was the immediate substantial increase in donors' financial assistance to the government after the country joined the Heavily Indebted Poor Countries (HIPC) initiative. This had a salutary effect on both the fiscal position and the current account, which stabilized in 2001. A third dynamic was the revival of international investor confidence in the economy, spurring an increase in net capital inflows, which helped the balance of payments to recover from the huge deficit (-US$116.9 million) in 2000 to a small surplus (US$8.6 million) in 2001. International reserves also picked up from US$233.4 million (0.8 months of imports) in 2000 to US$364.8 million (1.3 months of imports) in 2001.

On the domestic front, the swift implementation of corrective policies by the newly-elected government tamed the imbalances of the previous year and contributed greatly to the stability the currency enjoyed in 2001. To put the macroeconomy on the mend, the government outlined an agenda to restore stability by reining in excessive spending and money creation and securing debt relief. A series of bold measures were taken, including tax hikes, expenditure freezes and application for debt relief, which, augmented by a generous disbursement of donor grants, brought down the high fiscal deficit of 8.6% of GDP in 2000 to 4.4% in 2001.

Unlike the previous year, the government did not resort to the central bank to finance the deficit.[13] On the contrary, it returned funds to the Bank of Ghana through a net repayment of its liabilities. This contributed to lower reserve money growth of 31.3% in 2001 compared with 52.6% in 2000. Although total money supply growth was not sufficiently tamed—it stood at what was still a high rate of 41.4% in 2001—the cause of its growth in 2001 was not expansionary domestic credit to the public sector, as was the case in 2000, but rather a sharp increase (by nearly 500%) in net foreign assets on account of substantial inflows of foreign currency. The domestic-currency component of money supply grew by only 15%, which made it less inflationary and less detrimental to cedi stability than the year before.

The stability of the exchange rate was therefore one of the macroeconomic dividends of the tighter fiscal and monetary policies pursued in 2001, which also caused inflation to decline from 40.5% in December 2000 to 21.3% in December 2001, and GDP growth to jump to more than 4%. These developments helped to restore business confidence (IMF, 2002), providing extra impetus to the stability of the exchange rate and broader macroeconomy.

In 2002, the trend of stability from 2001 suffered an upset. Although in contrast to the previous year, the cedi depreciated at a slower average year-on-year rate,[14] there were successive increases in the year-on-year rates of depreciation from 4.8% in January to 13.1% in October. Following a slowdown to 12.7% in November, the cedi weakened again in December, pushing up the annual depreciation rate to 13.2%. This slump occurred despite a sharp surge in the terms of trade to above its pre-crisis peak in 1998, which helped to consolidate the recovery in the external sector, with a large contraction in the current account deficit to 0.5% of GDP, a bigger balance of payments surplus (US$39.8 million), and an improvement in the reserves cushion to 2.3 months of imports. Thus, as in much of the 1990s, domestic factors seemed once again to be behind the weakness of the exchange rate.

[13] The financing was mainly from foreign sources and non-banks.

[14] The average depreciation was 9.9% in 2002, the lowest under the floating regime up until that time, compared with 22.5% in 2001.

The evidence supports this conclusion because money supply quickened to a growth rate of 50% in 2002, in part due to central bank financing of the budget deficit, which boosted its net claims on the government by 38.1% and increased reserve money by 42.6%. This was after the fiscal position had worsened to a deficit of 5.3% of GDP, accompanied by a shortfall in grants which prompted almost the entire deficit to be financed by domestic borrowing.

4.2.5 Exchange Rate Stability through Firm Macroeconomic Policies and Supportive External Environment, 2003-2005

The three years after 2002 were characterized by a strengthening of the macroeconomic environment through the implementation of firm fiscal and monetary policies, aided by debt relief granted by the IMF and World Bank, stronger terms of trade, and growth in official and private financial inflows from abroad. Fiscal consolidation was strong and sustained in those three years, with the budget deficit falling to much leaner ratios of 3.3%, 3.2% and 2.0% of GDP in 2003-2005 respectively. The lower deficits, combined with the availability of ample foreign financing, curtailed government borrowing from the central bank. This was further supported by the anchoring of fiscal policy on continuous domestic-debt reduction, with the effect that there were net transfers to the private sector in 2003 and 2005 to reduce the government's indebtedness. With fiscal prudence came a reduction in the pace of monetary expansion. In 2003, broad money grew by 37.8%, the first time since 1999 that it registered a growth rate of less than 40%. In 2004, money supply growth decelerated to 26.0%, and in 2005 it slowed down further to just 14.0%, with the reserve money component rising by 11.2%. Over the three-year period, average money supply growth was 25.9%, compared with 46% in the previous three years and 44.2% during 1992-1997.

Table 4: Main Fiscal, Monetary and External Sector Aggregates, 2000-2005

Indicator	2000	2001	2002	2003	2004	2005
Fiscal balance (% of GDP)	-8.6%	-4.4%	-5.3%	-3.3%	-3.2%	-2.0%
Money supply growth (%)	46.5%	41.4%	50.0%	37.8%	26.0%	14.0%
Current account balance (% of GDP)	-7.0%	-7.3%	-0.5%	3.6%	-3.6%	-7.2%
Overall BOP balance (US$m)	-116.9	8.6	39.8	558.3	-10.5	84.3
Stock of external reserves (US$m)	233.4	364.8	640.4	1,425.6	1,732.9	1,894.8
Terms of trade index (1990=100)	100	109.0	137.3	132.9	124.7	124.8

Source: Ministry of Finance, Bank of Ghana, World Bank and IMF data

Figure 7: Rate of Change in Value of Cedi, 2003-2005
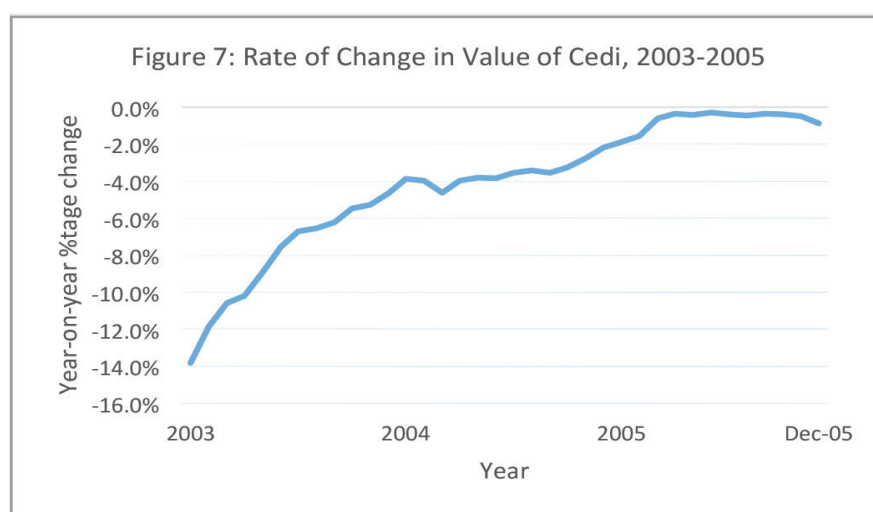
Source: Bank of Ghana data

The exchange rate responded quite well to these trends, exhibiting levels of stability not hitherto witnessed in the floating era. The year-on-year rate of depreciation trended downward in 2003, from 13.8% in January to 4.7% in December. In 2004, the depreciation stood at 4.6% in March, then moderated to 3.8% in June and 3.5% in September. By December, the cedi was only 2.2% weaker than a year earlier. In 2005, the exchange rate, which stood at GH₵0.9051 cedis per dollar at the end of 2004, barely shifted, with a full-year rate of depreciation of 0.9% and an average depreciation of 0.7%—the best so far in the country's history. The effect on price growth was notable: after an initial spike to 29.8% in 2003, triggered by a hefty increase in administered petrol prices, the average annual rate of inflation dropped to 18.2% in 2004 and 15.5% in 2005.[15]

Generally congenial external circumstances also helped the cedi to find stability in 2003-2005. In particular, there was no major upset to the terms of trade, even though it fell cumulatively by 9.1% from 2003-2005. In addition, there were substantial foreign exchange inflows into the country, driven by debt relief and investor confidence arising from the stability of the macroeconomy. The inflows included large increases in official transfers (from US$131.9 million in 2000 to US$575.7 million in 2005),[16] private remittances (from US$499.0 million in 2000 to US$1.5 billion in 2005), and net private capital (from US$176.8 million in 2000 to US$559.3 million in 2005), as a result of which Ghana recorded a historic first current account surplus in 2003, while the large deficits in 2004 and 2005 were able to be contained. The inflows enabled the central bank to accumulate reserves at a rapid pace, building up the stock from US$640.4 million (2.3 months of imports) in 2002 to US$1.9 billion (3.4 months of imports) in 2005.

Table 5: Private Remittances and Other Foreign Exchange Flows (US$m), 2000-2005

| Type of Flow	2000	2001	2002	2003	2004	2005
Private remittances (net)	499.0	709.7	680.0	1,017.2	1,287.1	1,549.8
Official transfers (net)	131.9	249.3	220.2	382.0	543.9	575.7
Private capital (gross)	183.5	154.6	116.3	227.9	370.2	600.3
Private capital (net)	176.8	137.3	105.7	199.9	332.0	559.3
o/w Foreign direct investment (FDI)	114.9	89.3	58.9	110.0	139.3	145.0

Source: Bank of Ghana

4.2.6 Continued Exchange Rate Stability despite Fiscal Deterioration, 2006-2007

The cedi witnessed stability for two more years after 2005. Standing at GH₵0.9131 to the dollar in December 2005, the currency was little changed by December 2006, exchanging at GH₵0.9235 per dollar. This represented a negligible decline of 1.1%. Over the next six months, the currency crawled to GH₵0.9285 to the dollar, before a much quicker slide to GH₵0.9704 in December 2007, equivalent to an annual depreciation of 4.8%. While this was the highest rate of depreciation in five years, it was very much a stable run by historical standards. This time, however, the stability was not accompanied by the same prudent fiscal policies which had pertained in 2003-2005, and monetary growth rates were going up again.

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[15] It must be mentioned, however, that these rates were still much higher than the government's single-digit inflation target during the period.

[16] In fiscal terms, official transfers are budgetary grants received from donors. The value of these grants averaged 5.4% of GDP per annum in 2003-2005, compared with 3.1% in 2000-2002 and 2.7% of GDP from 1993-2000.

After three years of improvement, the fiscal deficit deteriorated substantially in 2006, from 2.0% to 4.8% of GDP, and the power sector experienced shortages in generation from September of that year, piling pressure on the budget to generate resources to plug the energy deficit if economic growth was to be preserved. This partly contributed to a small increase in the deficit to 4.9% of GDP in 2007. Why the cedi, unlike in the 1990s, remained stable despite the weakening fiscal position in 2006-2007 can be explained to a large extent by three differentiating factors. The first of these is the record volume of capital flows into Ghana in 2006-2007, which was a continuation of the trend from 2003-2005. Gross capital flows increased from US$600 million in 2005 to US$1.1 billion in 2006 and US$1.9 billion in 2007. In GDP terms, this represented a rise from 5.6% in 2005 to 7.5% in 2007. To put this in perspective, the average ratio for the 1990s was less than 4%.
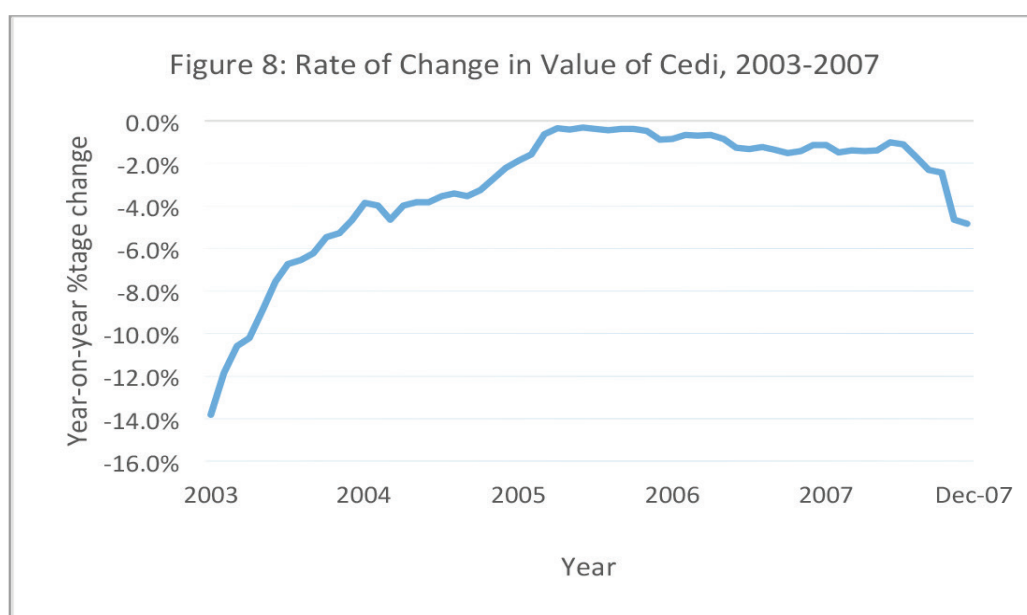
Source: Bank of Ghana data

A major component of the capital flows was rapidly-rising foreign direct investment, which jumped almost six-fold to US$855 million between 2005 and 2007. The liberalization of capital controls in 2006,[17] as well as the placement of a US$750 million Eurobond by the government in 2007, also drew foreign exchange inflows from previously untapped sources. The benefit of these flows to the country's external finances was that, although substantial current account deficits were racked up in 2006-2007 (5.1% and 8.6% of GDP in the respective years), they were more than adequately financed by the financial inflows, such that the balance of payments posted surpluses in excess of US$400 million in each of the two years. The central bank used the surpluses to augment its reserves by more than US$900 million to US$2.8 billion at the end of 2007, although the import coverage of the reserves could only be stabilized at 3.4 months, rather than increased, on account of an escalating import bill.

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[17] The domestic debt market was opened for the first time to foreign portfolio investors in 2006, but with activity restricted to securities whose maturity was three years or longer and a required holding period of one year.

Table 6: Private Remittances and Other Foreign Exchange Flows (US$m), 2005-2007

Type of Flow	2005	2006	2007
Private remittances (net)	1,549.8	1,644.6	1,833.8
Official transfers (net)	575.7	603.7	209.4
Private capital (gross)	600.3	1,080.1	1,859.0
Private capital (net)	559.3	1,019.4	1,061.5
o/w Foreign direct investment (FDI)	145.0	636.0	855.4

Source: Bank of Ghana

The second factor which contrasts with the 1990s is that the macroeconomic stability which had prevailed in 2003-2005 built enough positive momentum in the economy, helping to anchor the expectations of economic agents and maintain their confidence even as the fiscal position worsened in 2006-2007. In essence, economic agents did not think initially that the deterioration was permanent and thus did not significantly alter their expectations.

The third factor is that even though money supply growth picked up in 2006-2007, to an average of 34.6% from the low 2004-2005 levels, the excesses of the 1990s—when growth rates were rampantly in the high 40s and 50s—were avoided. Together with the fact that financing for the high 2006-2007 budget deficits was met without recourse to the central bank, this also somewhat explains the inflation moderation which occurred in those two years.[18]

4.2.7 Significant Weakening during another Macroeconomic Crisis, 2008-2009

In 2008, the stability of the cedi in the previous five years unraveled as global food and energy price shocks combined with fiscally-powered demand pressures to create very large and destabilizing domestic and external deficits. The fiscal deficit for the year, which, including revenues from divestiture, had been targeted at 2.2% of GDP, increased considerably to 6.6% of GDP. Money supply expanded by 44.1%, a six-year high, on the back of extensive central bank financing of the government and other unplanned domestic borrowing.[19] Externally, spikes in global food and oil prices during 2007-2008 meant that the demand for foreign exchange to import these essential commodities shot up dramatically, while the expansionary fiscal and monetary policies fueled demand for other imported goods and services. Although the country's export prices continued to be favorable, which contributed to higher export earnings, the high-tempo demand for imports raised the merchandize trade deficit to a staggering 17.5% of GDP, while the current account deficit worsened to 12.4% of GDP, the highest in nine years. Unlike the previous two years, the current account deficit could not be covered despite resilient capital flows, leading to a sizeable balance of payments deficit of US$941 million and reserves depletion by US$800 million, cutting the stock to US$2.0 billion, representing 1.9 months of imports.

[18] Central bank net claims on government fell by nearly half between 2005 and 2007, and average annual inflation decreased from 15.5% to 10.7% in the period.
[19] Central bank net claims on government soared by an incredible 467.8% in 2008.

Table 7: Main Fiscal, Monetary and External Sector Aggregates, 2006-2009

Indicator	2006	2007	2008	2009
Fiscal balance (% of GDP)	-4.8%	-4.9%	-6.6%	-5.8%
Money supply growth (%)	39.1%	32.2%	44.1%	26.9%
Current account balance (% of GDP)	-5.1%	-8.6%	-12.4%	-6.2%
Overall BOP balance (US$m)	415.1	413.1	-940.8	1,158.8
Stock of external reserves (US$m)	2,269.8	2,836.7	2,036.2	3,164.8
Terms of trade index (1990=100)	126.5	135.1	157.1	174.0

Source: Ministry of Finance, Bank of Ghana, World Bank and IMF data

A macroeconomic crisis quickly set off in the course of 2008, with the exchange rate depreciating sharply in the second half of the year and inflation intensifying from 12.8% in January to 18.1% in December. During the year, the cedi moved from a 5.4% year-on-year depreciation in January to 10.1% in June and 20.1% in December. In nominal terms, the exchange rate moved from GH₵0.9704 cedis per dollar at end-2007 to GH₵1.2141 per dollar at end-2008.

Figure 9: Rate of Change in Value of Cedi, 2008-2009
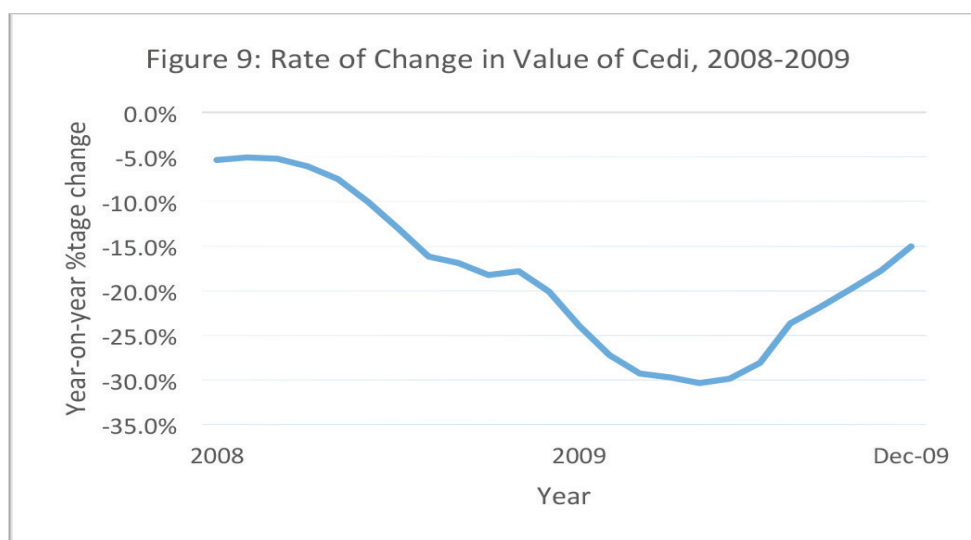
Source: Bank of Ghana data

The destabilization pressures continued into 2009, with the cedi incurring further losses of 18.3% from January to July, the peak month of the depreciation. Recognizing the need to cool down the overheated economy, the newly-sworn-in administration announced a firm budget in March 2009 to deal with the large twin deficits and restore macroeconomic stability. Government expenditure was tightly managed, with curbs imposed on non-essential outlays such as travel and work-shops. At the end of the year, the budget deficit, excluding divestiture income, was slashed by 3.1 percentage points to 5.8% of GDP. Money supply was also restricted through strengthened open market operations and a monetary policy rate hike of 150 basis points in February 2009. Monetary expansion eventually came down from 44.1% in 2008 to 26.9% in 2009.

The policy corrections reversed the "conditions of considerable over-heating" which the Bank of Ghana said had characterized the economy in 2008 (Bank of Ghana, 2008). Augmented by declining oil and food prices, the fiscal consolidation helped to soften external sector pressures through a significant reduction in import demand and the trade and current account deficits. Despite the stinging recession most advanced economies fell into in 2009, Ghana's exports grew

on the back of favorable terms of trade, while FDI and other capital flows remained healthy, boosting the balance of payments to a surplus of US$1.2 billion from the previous year's shortfall. The surplus was used to shore up the foreign reserves, which grew to US$3.2 billion (3.5 months of imports) in 2009 from US$2.0 billion (1.9 months of imports) in 2008.

The macroeconomic measures and significant reduction of external imbalances stemmed the cedi's depreciation after July 2009, and in the last five months of the year the exchange rate appreciated by 4.0% to GH₵1.4287 per dollar, trimming its losses for the year to 15.0%. Inflation followed suit with a decline from its peak of 20.7% in June to 16.0% in December.

4.2.8 Restoration of Stability through Disciplined Policies and Increased Confidence, 2010-2011

The exchange rate was broadly stable in 2010-2011, advancing from GH₵1.4287 per dollar to GH₵1.5505 (8.5% depreciation) during the two-year period. After the year-on-year depreciation had peaked at 30.4% in May 2009, it dropped to 15% in December and swung to a year-on-year appreciation of 3.2% in June 2010. The cedi subsequently faced depreciatory pressure in the last quarter of the year, which caused it to slide to a 3.1% year-on-year depreciation in December 2010. In the first quarter of 2011, the year-on-year depreciation reached 5.7%, then eased to 5.3% in the second quarter, went up again to 6.3% in September, before finishing the year at 4.9%.
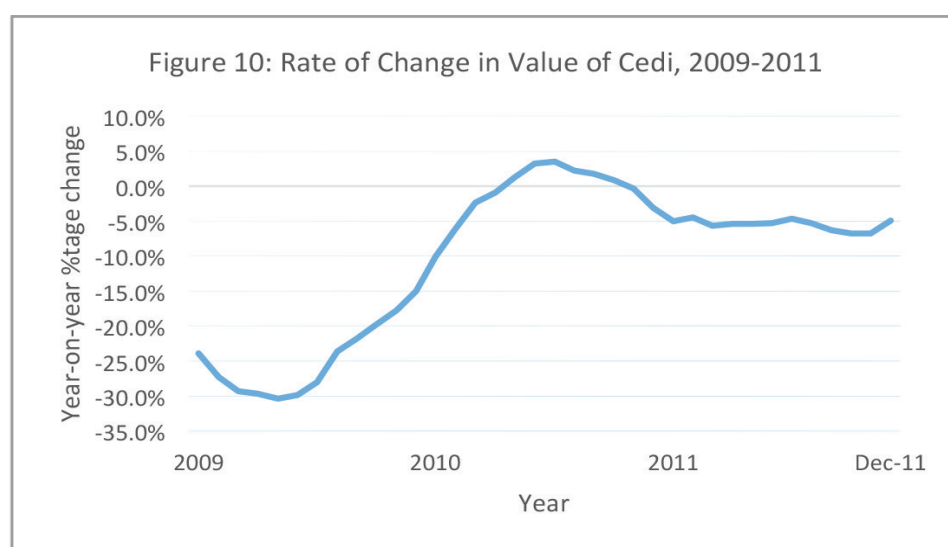
Source: Bank of Ghana data

This relative stability occurred within the context of a stable macroeconomy, underpinned by a prolonged period of disinflation and low inflationary expectations,[20] which bolstered economic confidence. Economic growth was firm at 7.9% in 2010 and leaped to 14.0% in 2011, after Ghana had become a commercial oil producer and exporter. The prevailing economic stability and the euphoria over the start of oil production fueled positive investor sentiments, drawing in increased FDI and portfolio investments that enabled the realization of balance of payments surpluses and increases in international reserves in both 2010 and 2011.

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[20] The rate of consumer price inflation was in single digits for 31 consecutive months, starting from June 2010 to December 2012.

Although the budget came under pressure in 2010, causing a slight increase in the deficit, the strong fiscal consolidation begun in 2009 continued in 2011 with a strong revenue outturn in both the oil and non-oil sectors, buttressed by a major upward revision to the country's GDP data from 2006, which narrowed the deficit ratios to 5.8% of GDP in 2009, 6.5% in 2010 and 4.0% in 2011.

After being sharply tightened in the first half of 2009, monetary policy was carefully loosened from late 2009 to enable GDP growth, which had fallen initially due to the fiscal adjustment and global economic recession, to recover. Money supply growth consequently inched up to 33.5% in 2010, but was well within reasonable historical limits and devoid of central bank deficit financing. Additional policy easing was embarked upon in 2011 amid buoyant economic growth and declining inflation and inflation expectations. In the second and third quarters of 2011, liquidity growth exceeded 40% as aggregate demand, already lifted appreciably by oil and oil-linked economic activities, was further bolstered by the soft monetary policy stance. Despite money supply growth decelerating to 33.2% in the fourth quarter, easy liquidity conditions persisted, creating challenges for exchange rate management in 2012 (IMF, 2012).

Table 8: Main Fiscal, Monetary and External Sector Aggregates, 2010-2011

Indicator	2010	2011
Fiscal balance (% of GDP)	-6.5%	-4.0%
Money supply growth (%)	33.5%	33.2%
Current account balance (% of GDP)	-8.6%	-9.0%
Overall BOP balance (US$m)	1,462.7	546.5
Stock of external reserves (US$m)	4,724.9	5,382.8
Terms of trade index (1990=100)	184.2	184.2

Source: Ministry of Finance, Bank of Ghana, World Bank and IMF data

4.2.9 A Period of Instability and a Moderation, 2012-2013

In 2012, the cedi suffered a major jolt in trading during the first two quarters of the year, losing 8.2% and 9.8% of its value in the respective periods. In year-on-year terms, the exchange rate slid from a depreciation of 4.9% as at December 2011 to 19.6% in June 2012. In year-to-date terms, the rate of depreciation within the six-month period was 17.2%. This was the currency's weakest performance since the same period of 2009. But unlike 2009, this time the government's fiscal position was much healthier and seemed not to be a significant factor behind the depreciation. Monetary policy, on the other hand, could not be absolved of blame, as the elevated money supply growth rates, averaging 41.5% in the second and third quarters of 2011, appeared to have created a liquidity overhang, which, given weak sterilization and low yields on cedi assets, had been channeled into the foreign exchange market, exacerbating seasonal foreign currency demand pressures (Ministry of Finance 2012; IMF 2012).

Figure 11: Rate of Change in Value of Cedi, 2009-2013
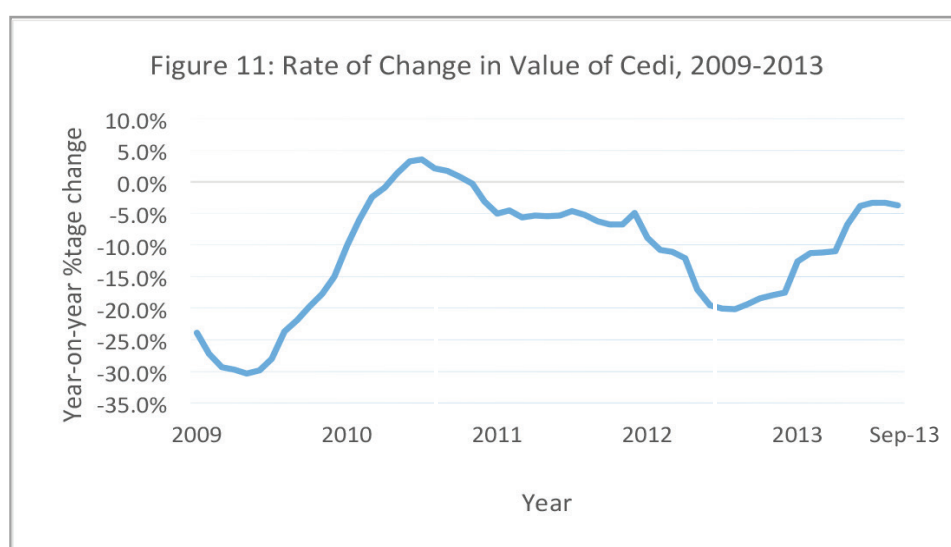
Source: Bank of Ghana data

The demand pressures had actually built up from the last three months of 2011, when the current account deficit climbed to a then quarterly record of US$1.9 billion, 18.6% larger than the total deficit for the first three quarters of the year.[21] Sufficient net capital inflows had limited the immediate impact on the exchange rate, but in early 2012 inflows were weak due to the euro zone crisis and its contagion effects (Bank of Ghana, April 2012). This brought down the currency and foreign reserves sharply.

Another factor that appeared to have contributed to this episode of depreciation was that investors became concerned about the government's ability to maintain fiscal discipline in the lead-up to the 2012 elections, given Ghana's history of fiscal slippages in election years during the Fourth Republic. This seemed to have shifted preferences away from cedi to dollar assets and contributed to the weakening of the domestic currency. The Bank of Ghana actually reported at the time that there was a high rate of redemption of domestic debt securities by foreign investors (Bank of Ghana, February 2012).

As the currency fell, monetary policy quickly reversed to a tight stance, and the policy rate was hiked by 2.5 percentage points to 15% in the first four months of 2012. Additional measures were taken to improve foreign exchange supply and withdraw excess cedi liquidity from the economy. These included a fresh requirement for banks to hold mandatory reserves for foreign currency deposits in cedis rather than dollars; a reduction in banks' net open forex position limits,[22] from 15% to 10% on single currency and from 30% to 20% on aggregate exposures; the reintroduction of Bank of Ghana bills at 30- to 60-day tenors to mop up excess liquidity; and a requirement for banks to provide 100% cover for all vostro accounts, to be held by the central bank.[23]

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[21] For the whole of 2011, the current account gap was 9.0% of GDP, up from 8.6% in 2010 and 6.2% in 2009.

[22] The net open forex position is the difference between a bank's assets and liabilities in a foreign currency (single exposure) or all foreign currencies (aggregate exposure).

[23] A vostro account is an account held by a local bank for a foreign correspondent.

Aided by a pick-up in foreign capital flows, the measures, which brought down liquidity growth in 2012 to 24.3%, succeeded in halting the depreciation in the second half of the year, with the year-on-year losses being whittled down to 17.5% in December from a peak of 20.1% in July-August. Over the course of the year, the exchange rate moved from GH₵1.5505 to GH₵1.8800 per dollar.

After recovering in the second half of 2012, the exchange rate maintained broad stability in the first three quarters of 2013. The rate of depreciation slowed down continuously from 17.5% year-on-year in December 2012 to 3.7% in September 2013. Developments in the value of the currency from the last quarter of 2013, however, marked the beginning of a protracted massive depreciation lasting until the first half of 2015.

4.2.10 Fresh Depreciation in the Wake of New Imbalances and Heightened Economic Uncertainty, 2014-2015

From the last quarter of 2013 to the first half of 2015—a period of 21 months—the exchange rate suffered a great deal of instability and depreciation that had not occurred on the same scale since 1999-2000. After the year-on-year depreciation had declined from 20.1% in August 2012 to 3.7% in August 2013, it accelerated to 14.5% in December. In the run-up to this plunge, the current account deficit had jumped to its highest ever level on a quarterly basis in July-September 2013, touching US$2.2 billion or 5.6% of GDP. This large deficit over a short period put enormous pressure on the exchange rate, and by the end of 2013, the cedi had weakened to GH₵2.2000 from GH₵1.8800 per dollar in 2012.

The value of the cedi declined more rapidly from January-September 2014, with the rate of exchange hitting GH₵3.1973 per dollar at the end of the period. This meant a loss of 31.2% over the nine-month period, or 38.7% in year-on-year terms. The speed and size of the fall, especially in the first quarter of the year, stirred up concern among policymakers and moved the central bank to react, with unusual heavy-handedness, by introducing a string of foreign exchange controls in February 2014. This action was taken in addition to conventional interest-rate tightening and was based on the belief that the depreciation had exceeded levels justified by fundamentals.

Figure 12: Rate of Change in Value of Cedi, 2013-2015
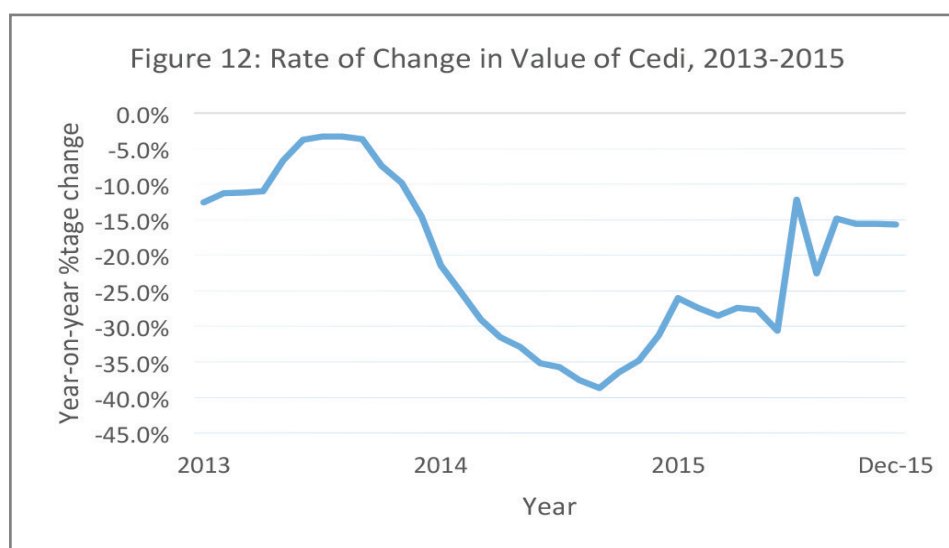
Source: Bank of Ghana data

Among other restrictions, the central bank limited over-the-counter withdrawals from foreign currency accounts held in the banking system to US$1,000 per transaction and banned the use of cheques on these accounts. Banks were also ordered to stop advancing foreign currency loans to non-foreign-currency-earning customers, while exporters were obliged to sell their foreign exchange earnings immediately upon receipt to their banks, at a fixed spread on the interbank exchange rate. The measures met a huge backlash from the public, and the central bank, citing unintended consequences of the policies, reversed almost all of them in June-August 2014. Meanwhile, the exchange rate stabilized in the last quarter of 2014, ending the year at GH₵3.2001 per dollar, on the back of increased dollar liquidity from a newly-issued Eurobond and the annual international cocoa credit facility. Nonetheless, the cedi's overall decline in 2014 of 31.3% was the worst since 2000.

The relative stability that prevailed in the last three months of 2014 proved to be short-lived, and the currency returned to depreciation in the first half of 2015, losing 26.1% of its value. In year-on-year terms, the depreciation was 30.6%, and in those six months, the dollar went from buying GH₵3.2001 on January 2 to GH₵4.3364 on June 30. After hitting this fresh low, the cedi rallied suddenly to GH₵3.4648 per dollar on July 31, recouping most of the losses it had suffered in the first half of the year. Two factors appeared to have been behind this sudden reversal of fortune. The first was the central bank's announcement of its intention to inject US$20 million daily into the foreign exchange market to satisfy the elevated demand for dollars and quell speculation. Although this never actually happened, the "announcement effect" of the move appeared to have shifted expectations in the direction of an imminent appreciation of the cedi, which tempered speculative dollar demand. The second factor was the pronouncement by a visiting IMF mission on June 30 that the country's three-month-old fiscal consolidation program with the Fund was on track. Having tried since 2013 without success to convince markets of its commitment to fiscal rectitude, the government finally gained a modicum of credibility for its policies following the IMF mission's commendation of its performance in the first review of the program.

In August, however, the cedi retreated again to GH₵3.9231 per dollar, but strengthened a little in September before stabilizing between GH₵3.7113-3.7950 for the rest of the year. The stability in the last four months of the year, which was underpinned by inflows from a 15-year Eurobond issued in October and the annual foreign loan for cocoa purchases, brought much relief to the market. By end-December 2015, the currency's year-on-year depreciation was 15.7%, compared with 30.6% at the end of June, while the average depreciation rate for the year was 22.0%.

The major factors at the core of the currency's rampant fall in 2014-2015 were a marked deterioration in the fiscal and external positions, weakened economic confidence as a result of slowing GDP growth, and deteriorating public debt dynamics. After three years of tight fiscal policies, sizeable fiscal imbalances reemerged in 2012 and persisted in 2013-2015. In 2012, the budget deficit climbed to 11.5% of GDP from 4.0% in 2011. Double-digit deficits were also recorded in 2013 (10.1% of GDP) and 2014 (10.2% of GDP). The central bank's role in financing these deficits was not insignificant, resulting in a 254.5% jump in its net claims on government from 2012 to 2014, compared with a 34.2% increase in the previous three-year period (2009-2011). The high deficit financing by the Bank of Ghana also complicated monetary policy implementation, such that by 2014 money supply had returned to an expansionary path despite several rounds of   interest-rate tightening since the beginning of 2012.[24]

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[24] Money supply growth fell in 2012 (24.3%) and 2013 (19.1%), but surged in 2014 (36.8%), the highest increase since 2008.

A consequence of the fiscal expansion was mounting public debt. At the end of 2012, the stock of public debt stood at GH₵35.1 billion or 48.4% of GDP. The debt escalated to almost GH₵80.0 billion at end-2014, representing 70.3% of GDP, and ramped up to GH₵100.2 billion at end-December 2015, equivalent to 72.2% of GDP. With this rapid debt build-up, interest payments went out of the roof, climbing from GH₵2.4 billion in 2012 to GH₵9.1 billion in 2015. In GDP terms, the interest burden more than doubled from 3.2% in 2012 to 6.5% in 2015. Taken as a share of total government domestic revenue, interest payments rose from 15.7% in 2012 to 30.9% in 2015.

These adverse debt dynamics fueled negative sentiments on Ghana's creditworthiness and caused the country's credit ratings to be downgraded. The weakened sentiments undermined the value of the cedi as investors, particularly those based offshore, became more cautious about buying cedi-denominated assets.

A sign of this was the diminishing share of Ghana's domestic public debt held by foreign investors. This had risen consistently from 7.9% in 2009 to 26.8% in 2012, but started dipping in 2013, eventually reaching 17.3% in both 2014 and 2015. As foreign investors poured less money into cedi assets, the exchange rate did not benefit from the level of inflows it had received previously from this source, contributing to its fall.

On the country's external position, this deteriorated from 2012 on account of wide current account deficits for which the available financing was inadequate, leading to balance of payments shortfalls, stagnant gross foreign reserves and dwindling net foreign reserves. Mirroring the size of the fiscal deficit, the current account deficit increased from 9.0% of GDP in 2011 to 11.8% in 2012 and 11.7% in 2013. In nominal terms, the deficit rose from US$3.5 billion in 2011 to US$4.9 billion in 2012 and US$5.7 billion in 2013. Despite strong foreign direct investment (FDI), total financial and capital inflows were insufficient to plug the shortfalls, yielding consecutive balance of payments deficits in 2012 and 2013. In 2014 and 2015, the current account gap narrowed to US$3.7 billion (9.5% of GDP) and US$2.8 billion (7.6% of GDP) respectively, owing to a steep import contraction compelled by the cedi's depreciation. However, the capital and financial account surplus also fell from US$5.7 billion in 2013 to US$3.8 billion in 2014 and US$2.7 billion 2015 as net official and private capital flows contracted, resulting in two additional years of balance of payments deficits, albeit lower than in 2012 and 2013.

The deficits hindered the central bank's ability to build upon its stock of gross reserves, which stagnated around 2011 levels. More concerning however was the situation with the stock of net foreign reserves, which measures the gross reserves excluding short-term foreign liabilities and is essentially the limit to which the central bank can utilize its reserve buffers to manage exchange rate fluctuations. The declining level of this indicator exposed the increase in the economy's vulnerability to external financial shocks. On a quarterly average basis, the net reserves came down from US$3.9 billion in 2011 to US$2.8 billion in 2012. In 2013 it increased slightly to US$2.9 billion, but fell to US$2.6 billion in 2014 and again to US$2.1 billion in 2015. In terms of import cover, this represented a decline from 2.3 months to 1.3 months between 2012 and 2015. The depletion in average net foreign reserves held by the central bank meant less firepower for the central bank to intervene in the foreign exchange market to mitigate the currency's slide.

Table 9: Main Fiscal, Monetary and External Sector Aggregates, 2012-2015

Indicator	2012	2013	2014	2015
Fiscal balance (% of GDP)	-11.5%	-10.1%	-10.2%	-6.3%
Money supply growth (%)	24.3%	19.1%	36.8%	26.1%
Current account balance (% of GDP)	-11.8%	-11.7%	-9.5%	-7.6%
Overall BOP balance (US$m)	-669.2	-874.2	-85.2	-105.8
Stock of external reserves (US$m)	5,349.0	5,632.1	5,461.0	5,884.7
Terms of trade index (1990=100)	177.2	174.5	180.5	174.5

Source: Ministry of Finance, Bank of Ghana, World Bank and IMF data

The sharp exchange rate depreciation in 2014-15 was detrimental to the economy, as it stoked inflation, which climbed from an average of 9.1% in 2012 to 17.1% in 2015, increased business risks, contributed to rising domestic interest rates and public debt-service payments, and damaged confidence and economic growth.

5. Summary of Key Findings

One conclusion that emerges from the discussion above is that Ghana's experience with flexible exchange rates has been more rough (volatile/unstable) than smooth (stable), a situation that has undermined economic performance at various times. For much of the first decade since 1992, the exchange rate was volatile and depreciated at a fast pace. This period was succeeded by half a decade (2003-2007) of relative stability. However, this was interrupted in 2008-2009, when the exchange rate fell steeply. Then followed four years (2010-2013) in which the cedi was largely stable, albeit with episodes of sharp depreciation in the first half of 2012 and the last quarter of 2013. From the last quarter of 2013 to the end of 2015, the exchange rate experienced a high level of instability and depreciation that had not been witnessed since 1999-2000.

Looking broadly at the policy conditions which attended the periods of exchange rate instability examined above, expansionary fiscal and monetary policies come up prominently. As argued in the previous section, the rapid exchange rate depreciation that characterized most of the 1990s[25] was largely the result of excessive fiscal and monetary expansion, with the latter fueled by the former. One of the main channels by which excessive government spending and money creation reduce the value of the domestic currency is that excess liquidity is generated, which, in an open economy with a large import bias, is easily funneled into the foreign exchange market through rising import demand. In contrast, exchange rate stability has often gone hand in hand with fiscal and monetary discipline. Thus the policy conditions in the 1990s can be clearly differentiated from 2003-2005 and 2010-2011, when relatively restrained fiscal and monetary policies provided a firm anchor for the exchange rate. Indeed, whereas in 1992-1998 the average annual budget deficit was 7.0% of GDP and money supply expanded at an average annual growth rate of 40.4%, the deficit posted an average of 2.8% of GDP in 2003-2005, with money supply growth averaging 25.9% per annum. Similarly, in 2010-2011, the stability of the exchange rate took place in the context of relatively lower deficits (5.3% of GDP on average) and rates of money creation (33.3% per annum) compared with the 1990s.

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[25] 1998 was an exceptional year in which tight monetary management produced a stable currency.

The importance of disciplined fiscal and monetary policies for a stable exchange rate was again underlined following the re-emergence of excessive fiscal policies during 2012-2015, which caused the exchange rate to undergo rapid depreciation, especially as the fiscal pressures led to huge deficits being recorded on the external current account together with consecutive balance of payments deficits. In a situation reminiscent of the 1990s, the fiscal deficits in 2012-2015 were unsustainably large, registering an average of 9.6% of GDP, with the central bank printing money to partly finance these deficits, except for 2015. Though overall growth in money supply was tightly managed by the central bank during the period, the effectiveness of monetary policy was substantially undermined by the central bank's financing of the government.

Poor external fortunes, including adverse terms-of-trade developments, have also played a role in the instability of the exchange rate. The principal source of foreign exchange income for the economy is the export of primary commodities—cocoa, gold, timber, and now oil—that have volatile prices in the international markets where they are traded. Because of this price volatility, foreign exchange earned from exports has been prone to the vagaries of the international commodity markets, meaning export revenue tends to be depressed when commodity prices are low.

During 1992-2000, the terms of trade saw a deterioration in 1992-1993 and 1999-2000, but registered consistent increases during 1994-1998. In 1992-1993, the fall in the terms of trade contributed to wider trade and current account deficits, and exacerbated the effects of weak fiscal and monetary policies on the exchange rate. From 1994-1998, however, the terms of trade improved considerably, with the economy's key exports of cocoa and gold enjoying mostly favorable prices. Nonetheless, the overall external performance during the period was mixed and the exchange rate still experienced high instability. This was due mainly to the poor fiscal and monetary outcomes which prevailed in this period, with the exception of 1998, and which appeared to dominate other forces affecting exchange rate movements. In 1999-2000, there were large and sharp downswings in the terms of trade because of plummeting cocoa and gold prices, and rising oil prices. The effect was lower export revenue and increased trade and current account deficits that ushered in a bout of significant currency depreciation as foreign exchange demand far outstripped supply.

For much of the period from 2001-2007, the external sector of the economy performed well, with the balance of payments in surplus in six of those seven years. Although the terms of trade were strong, what underpinned the external surpluses were the substantial foreign financial and capital inflows into the economy from official donors and private investors. These were critical for the maintenance of a stable exchange rate, especially since large current account deficits were being recorded on account of strong domestic aggregate demand. Similarly, in 2010-2011, there were ample financial inflows from abroad which more than offset widening current account deficits, yielding net external surpluses and keeping the foreign exchange market well supplied to support a stable currency.

An important driver of capital and financial flows to Ghana is confidence in the economy and its prospects among foreign donors and investors. In general, policies which improve the fiscal health of the country and engender price stability elicit greater economic confidence, whereas weak fiscal and monetary policies that generate unfavorable macroeconomic outcomes diminish confidence. If confidence is strong, consumption and investment are stimulated and domestic investors are more likely to put their savings in domestic as opposed to foreign assets, which supports the value of the domestic currency. Foreign investors are also encouraged to invest in

financial and capital assets in the economy, which brings with it foreign exchange that helps to stabilize the value of the domestic currency. In 2001-2007 and 2010-2011, confidence, induced by relatively improved macroeconomic management, was a factor behind the robust capital flows into the economy, which helped to strengthen the country's external position and supported the stability of the currency. With the return to highly unbalanced fiscal policies after 2011, however, external confidence, although it initially held firm, started to wane eventually, especially as concerns heightened during 2014-2015 over Ghana's public debt sustainability. The slump in confidence resulted in sharp declines in financial inflows in 2014 and 2015, a period that also saw rapid exchange rate depreciation.

6. Conclusion and Policy Recommendations

This paper has examined exchange rate instability in Ghana and its causes, in the wake of the liberalization of the foreign exchange market under the Economic Reform Program which began in 1983. The paper reviewed exchange rate trends in Ghana since 1992, the year of formation of the interbank foreign exchange market, and identified the policy factors and external developments which underlay the observed movements in the exchange rate for different sub-periods during 1992-2015. It was shown that, for the most part, the exchange rate was unstable and depreciated, while being relatively stable for some of the period.

Firstly, the paper found that whenever fiscal and monetary policies have been relatively loose, the exchange rate has tended to experience large depreciations. Thus, undisciplined fiscal and monetary policies have been an important driver of exchange rate instability in Ghana. Notable in this regard is the period from 1992 to 1997, when government spending and money creation increased rapidly, triggering inflation and currency depreciation. Although in 1999-2000, it was mostly the external shock that brought down the cedi, the situation was not helped by the fact that expansionary fiscal and monetary policies were being pursued at the same time by the government. More recently, in 2013-2015, the currency has fallen in value by a significant magnitude, in large part because fiscal policy has been especially unrestrained, with double-digit budget deficits incurred for three straight years (2012-2014).

Secondly, the exchange rate has been subject to intermittent shocks to the country's terms of trade and overall net external position. The most prominent episode was the trade shock of 1999-2000 that impacted both the demand and supply ends of the foreign exchange market, leading to currency instability and depreciation. Other, less severe, episodes of terms-of-trade weakness have also created or fueled depreciatory pressure in the foreign exchange market.

Thirdly, in the face of external vulnerability arising from commodity dependence and lack of export dynamism, which lead to chronic trade and current account deficits, Ghana's ability to attract capital flows from abroad is critical for the maintenance of a stable exchange rate. Yet this has not always occurred on a sufficient scale, largely because the domestic policy environment has not always been conducive to the attraction of the required capital and financial flows to achieve external balance.

Based on the findings of the study, the paper makes the following recommendations to ensure a stable exchange rate:

- The government needs to implement disciplined fiscal and monetary policies. This entails running low budget deficits and eschewing excessive monetary expansion.

- Vulnerability to adverse terms-of-trade and other unfavorable external developments should be minimized through the diversification of export products. This requires government investment and incentives to improve economic infrastructure, reduce business costs and regulatory barriers, and develop new export growth poles.

- The government should build and sustain external confidence in the economy, which is critical for the attraction of large capital and financial flows from investors, by implementing firm fiscal and monetary policies, financial sector reforms, and incentives to attract foreign investment.

Appendix

Dollar-Cedi Interbank Exchange Rates and Year-on-Year Percentage Change Rates*

Year	Month	US$:GH₵	% chg	Year	Month	USD:GH₵	% chg	Year	Month	USD:GH₵	% chg
1991	Jan	0.0346	-11.6%	1994	Jan	0.0912	-39.1%	1997	Jan	0.1754	-14.6%
	Feb	0.0354	-13.0%		Feb	0.0938	-36.5%		Feb	0.1812	-14.9%
	Mar	0.0361	-13.6%		Mar	0.0937	-35.9%		Mar	0.1893	-16.4%
	Apr	0.0364	-12.9%		Apr	0.0932	-35.5%		Apr	0.1956	-17.8%
	May	0.0366	-10.9%		May	0.0932	-35.5%		May	0.2023	-19.4%
	Jun	0.0367	-10.4%		Jun	0.0943	-36.3%		Jun	0.2116	-21.8%
	Jul	0.037	-10.3%		Jul	0.0972	-31.6%		Jul	0.2169	-22.3%
	Aug	0.0373	-9.9%		Aug	0.0969	-29.2%		Aug	0.2187	-22.6%
	Sep	0.0376	-10.1%		Sep	0.0985	-29.0%		Sep	0.2216	-22.8%
	Oct	0.0379	-9.8%		Oct	0.1014	-28.5%		Oct	0.2231	-22.7%
	Nov	0.0386	-10.9%		Nov	0.104	-26.2%		Nov	0.2239	-22.6%
	Dec	0.039	-11.5%		Dec	0.1051	-21.8%		Dec	0.225	-22.7%
1992	Jan	0.039	-11.3%	1995	Jan	0.1063	-14.2%	1998	Jan	0.2289	-23.4%
	Feb	0.0393	-9.9%		Feb	0.1069	-12.3%		Feb	0.2298	-21.1%
	Mar	0.0407	-11.3%		Mar	0.1111	-15.7%		Mar	0.2306	-17.9%
	Apr	0.0408	-10.8%		Apr	0.113	-17.5%		Apr	0.2307	-15.2%
	May	0.0411	-10.9%		May	0.1151	-19.0%		May	0.2308	-12.3%
	Jun	0.0415	-11.6%		Jun	0.1174	-19.7%		Jun	0.2323	-8.9%
	Jul	0.0436	-15.1%		Jul	0.1193	-18.5%		Jul	0.2325	-6.7%
	Aug	0.045	-17.1%		Aug	0.1216	-20.3%		Aug	0.2325	-5.9%
	Sep	0.048	-21.7%		Sep	0.1303	-24.4%		Sep	0.2324	-4.6%
	Oct	0.049	-22.7%		Oct	0.1351	-24.9%		Oct	0.2327	-4.1%
	Nov	0.0512	-24.6%		Nov	0.1414	-26.4%		Nov	0.2339	-4.3%
	Dec	0.052	-25.0%		Dec	0.1446	-27.3%		Dec	0.2346	-4.1%
1993	Jan	0.0555	-29.7%	1996	Jan	0.1498	-29.0%	1999	Jan	0.2358	-2.9%
	Feb	0.0596	-34.1%		Feb	0.1542	-30.7%		Feb	0.237	-3.0%
	Mar	0.0601	-32.3%		Mar	0.1582	-29.8%		Mar	0.2416	-4.6%
	Apr	0.0601	-32.1%		Apr	0.1607	-29.7%		Apr	0.244	-5.5%
	May	0.0601	-31.6%		May	0.1631	-29.4%		May	0.2481	-7.0%
	Jun	0.0601	-30.9%		Jun	0.1654	-29.0%		Jun	0.253	-8.2%
	Jul	0.0665	-34.4%		Jul	0.1686	-29.2%		Jul	0.2571	-9.6%
	Aug	0.0686	-34.4%		Aug	0.1693	-28.2%		Aug	0.2599	-10.5%
	Sep	0.0699	-31.3%		Sep	0.1711	-23.8%		Sep	0.267	-13.0%
	Oct	0.0725	-32.4%		Oct	0.1724	-21.6%		Oct	0.2997	-22.4%
	Nov	0.0768	-33.3%		Nov	0.1732	-18.4%		Nov	0.3475	-32.7%
	Dec	0.0822	-36.7%		Dec	0.174	-16.9%		Dec	0.3557	-34.0%

Year	Month	US$:GH¢	% chg	Year	Month	USD:GH¢	% chg	Year	Month	USD:GH¢	% chg
2000	Jan	0.3626	-35.0%	2003	Jan	0.8537	-13.8%	2006	Jan	0.9129	-0.9%
	Feb	0.3911	-39.4%		Feb	0.856	-11.9%		Feb	0.9119	-0.7%
	Mar	0.4344	-44.4%		Mar	0.86	-10.6%		Mar	0.9139	-0.7%
	Apr	0.4693	-48.0%		Apr	0.869	-10.2%		Apr	0.9141	-0.7%
	May	0.4991	-50.3%		May	0.8684	-8.9%		May	0.9145	-0.9%
	Jun	0.5664	-55.3%		Jun	0.87	-7.6%		Jun	0.9191	-1.3%
	Jul	0.6056	-57.5%		Jul	0.8722	-6.7%		Jul	0.9198	-1.3%
	Aug	0.6436	-59.6%		Aug	0.8736	-6.5%		Aug	0.9198	-1.2%
	Sep	0.6515	-59.0%		Sep	0.8732	-6.2%		Sep	0.921	-1.3%
	Oct	0.6817	-56.0%		Oct	0.8754	-5.5%		Oct	0.9224	-1.5%
	Nov	0.682	-49.0%		Nov	0.8805	-5.3%		Nov	0.9229	-1.4%
	Dec	0.7048	-49.5%		Dec	0.8852	-4.7%		Dec	0.9235	-1.1%
2001	Jan	0.7006	-48.2%	2004	Jan	0.888	-3.9%	2007	Jan	0.9235	-1.1%
	Feb	0.709	-44.8%		Feb	0.8915	-4.0%		Feb	0.9256	-1.5%
	Mar	0.7205	-39.7%		Mar	0.9018	-4.6%		Mar	0.9269	-1.4%
	Apr	0.7228	-35.1%		Apr	0.9049	-4.0%		Apr	0.9274	-1.4%
	May	0.7236	-31.0%		May	0.9029	-3.8%		May	0.9274	-1.4%
	Jun	0.7227	-21.6%		Jun	0.9047	-3.8%		Jun	0.9285	-1.0%
	Jul	0.7177	-15.6%		Jul	0.9042	-3.5%		Jul	0.93	-1.1%
	Aug	0.7159	-10.1%		Aug	0.9046	-3.4%		Aug	0.9355	-1.7%
	Sep	0.7157	-9.0%		Sep	0.9052	-3.5%		Sep	0.9428	-2.3%
	Oct	0.7195	-5.3%		Oct	0.9049	-3.3%		Oct	0.9455	-2.4%
	Nov	0.7278	-6.3%		Nov	0.9055	-2.8%		Nov	0.968	-4.7%
	Dec	0.7322	-3.7%		Dec	0.9051	-2.2%		Dec	0.9704	-4.8%
2002	Jan	0.7357	-4.8%	2005	Jan	0.905	-1.9%	2008	Jan	0.9759	-5.4%
	Feb	0.7545	-6.0%		Feb	0.9058	-1.6%		Feb	0.9751	-5.1%
	Mar	0.769	-6.3%		Mar	0.9075	-0.6%		Mar	0.978	-5.2%
	Apr	0.7803	-7.4%		Apr	0.9081	-0.4%		Apr	0.9872	-6.1%
	May	0.791	-8.5%		May	0.9066	-0.4%		May	1.0024	-7.5%
	Jun	0.8043	-10.1%		Jun	0.9075	-0.3%		Jun	1.0325	-10.1%
	Jul	0.8136	-11.8%		Jul	0.9077	-0.4%		Jul	1.0692	-13.0%
	Aug	0.8164	-12.3%		Aug	0.9086	-0.4%		Aug	1.1161	-16.2%
	Sep	0.8188	-12.6%		Sep	0.9086	-0.4%		Sep	1.1345	-16.9%
	Oct	0.8275	-13.1%		Oct	0.9084	-0.4%		Oct	1.1565	-18.2%
	Nov	0.8339	-12.7%		Nov	0.9099	-0.5%		Nov	1.1777	-17.8%
	Dec	0.8439	-13.2%		Dec	0.9131	-0.9%		Dec	1.2141	-20.1%

Year	Month	US$:GH₵	% chg	Year	Month	USD:GH₵	% chg	Year	Month	USD:GH₵	% chg
2009	Jan	1.2828	-23.9%	2012	Jan	1.6475	-8.9%	2015	Jan	3.2401	-26.0%
	Feb	1.3402	-27.2%		Feb	1.6735	-10.7%		Feb	3.4745	-27.4%
	Mar	1.3832	-29.3%		Mar	1.6888	-11.1%		Mar	3.7472	-28.5%
	Apr	1.4042	-29.7%		Apr	1.703	-12.1%		Apr	3.8493	-27.4%
	May	1.4396	-30.4%		May	1.8103	-17.0%		May	3.9976	-27.7%
	Jun	1.4725	-29.9%		Jun	1.8735	-19.6%		Jun	4.3274	-30.6%
	Jul	1.4858	-28.0%		Jul	1.8843	-20.1%		Jul	3.4546	-12.2%
	Aug	1.4619	-23.7%		Aug	1.8907	-20.1%		Aug	4.0456	-22.6%
	Sep	1.4514	-21.8%		Sep	1.8887	-19.4%		Sep	3.7545	-14.8%
	Oct	1.4416	-19.8%		Oct	1.8789	-18.4%		Oct	3.7854	-15.6%
	Nov	1.4322	-17.8%		Nov	1.8772	-17.9%		Nov	3.7861	-15.6%
	Dec	1.4287	-15.0%		Dec	1.88	-17.5%		Dec	3.7944	-15.7%
2010	Jan	1.4257	-10.0%	2013	Jan	1.884	-12.6%				
	Feb	1.4266	-6.1%		Feb	1.8864	-11.3%				
	Mar	1.4168	-2.4%		Mar	1.901	-11.2%				
	Apr	1.417	-0.9%		Apr	1.9126	-11.0%				
	May	1.4206	1.3%		May	1.9408	-6.7%				
	Jun	1.4267	3.2%		Jun	1.9469	-3.8%				
	Jul	1.4353	3.5%		Jul	1.9494	-3.3%				
	Aug	1.4307	2.2%		Aug	1.9559	-3.3%				
	Sep	1.4269	1.7%		Sep	1.9608	-3.7%				
	Oct	1.4293	0.9%		Oct	2.0291	-7.4%				
	Nov	1.4367	-0.3%		Nov	2.0822	-9.8%				
	Dec	1.4738	-3.1%		Dec	2.2	-14.5%				
2011	Jan	1.5013	-5.0%	2014	Jan	2.3975	-21.4%				
	Feb	1.4937	-4.5%		Feb	2.5232	-25.2%				
	Mar	1.5021	-5.7%		Mar	2.68	-29.1%				
	Apr	1.4972	-5.4%		Apr	2.7939	-31.5%				
	May	1.5018	-5.4%		May	2.892	-32.9%				
	Jun	1.5064	-5.3%		Jun	3.0016	-35.1%				
	Jul	1.5055	-4.7%		Jul	3.0337	-35.7%				
	Aug	1.5104	-5.3%		Aug	3.1333	-37.6%				
	Sep	1.5224	-6.3%		Sep	3.1973	-38.7%				
	Oct	1.5328	-6.8%		Oct	3.1955	-36.5%				
	Nov	1.5412	-6.8%		Nov	3.1955	-34.8%				
	Dec	1.5505	-4.9%		Dec	3.2001	-31.3%				

Source: Bank of Ghana *The percentage change rate is measured using the reciprocal of the dollar-cedi exchange rates to give the rate of depreciation or appreciation of the cedi over 12-monthly periods (year-on-year).

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