By How Much has the Cedi Depreciated?

by

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The recent depreciation of the cedi is a topic that has engaged both the Ghanaian public and international observers of Ghana’s economy. Unfortunately, there does not seem to be a consensus the rate of cedi depreciation. In my daily perusal of the press, I have seen a wide variety numbers on the depreciation of the cedi for 2014 ranging from 27% to 41%. It is important that we measure the rate of cedi depreciation accurately because wrong numbers, especially if they exaggerate the rate of depreciation, can exacerbate the rate of depreciation of the currency. The behaviour of market participants will differ depending on whether they believe that the cedi is depreciating at the rate of 27% or 40%. Indeed an exaggerated rate of depreciation can be a self-fulfilling prophesy if the market believes the wrong numbers and responds by running away from the cedi to the dollar.

Currently, there are very reputable publications that are quoting a 40% rate of depreciation which in my opinion is wrong. Examples include the following:

*The West African nation will turn to the fund for financial assistance after its currency plunged roughly 40 per cent this year against the US dollar, making the cedi the worst performing currency in the world in 2014.* (Bloomberg, 2 August 2014)

*Ghana will turn to the International Monetary Fund for help after the West African country’s currency plunged roughly 40 per cent this year against the dollar, making the cedi the worst performing currency in the world in 2014.* (Financial Times, 2 August 2014)

*“Ghana’s cocoa sector is facing challenges. In the short-term, the most serious is the depreciation of the cedi, which has lost 41% of its value since the start of the year”.* (Business & Financial Times Supplement by Ecobank on “Ghana: Cocoa Sector is Facing Challenges”, 1 August 2014)

In currency markets, there are two ways of quoting an exchange rate. The direct quotation represents domestic currency per unit of foreign currency, i.e. it involves quoting against a fixed unit of foreign currency. The indirect quotation on the other hand quotes foreign currency against a fixed unit of domestic currency.

The following data from the Bank of Ghana website provides direct quotations with indirect quotations in brackets.

<table>
<thead>
<tr>
<th>Date</th>
<th>Buying</th>
<th>Selling</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 August 2014</td>
<td>3.0324</td>
<td>3.0350</td>
</tr>
<tr>
<td>(0.3298)</td>
<td>(0.3295)</td>
<td></td>
</tr>
<tr>
<td>31 December 2013</td>
<td>2.1603</td>
<td>2.1628</td>
</tr>
<tr>
<td>(0.4629)</td>
<td>(0.4624)</td>
<td></td>
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</tbody>
</table>
On 4th August 2014 the selling rate or the rate at which banks were selling dollars to their customers was 3.0350. This is a direct quotation because we are quoting Ghana cedis against a fixed unit of one dollar. The more valuable the domestic currency, the smaller the amount of domestic currency needed to exchange for a foreign currency unit and this gives a lower exchange rate. Under the direct quotation, appreciation and depreciation is inversely proportional to the changes in the value of the domestic currency. Thus, when the domestic currency becomes less valuable, a greater amount is needed to exchange for a foreign currency unit and the exchange rate becomes higher.

The indirect quote of 0.3295 is against one unit of the Ghana cedi. The more valuable the domestic currency, the greater the amount of foreign currency it can exchange for and the lower the exchange rate. As the domestic currency becomes less valuable, it can exchange for a smaller amount of foreign currency and the exchange rate drops. For the indirect quotation, appreciation and depreciation is directly proportional to the changes in the value of the domestic currency.

Note that we can easily go from direct to indirect quotation by simply taking the reciprocal. For example the reciprocal $1/3.0350$ gives us the indirect quotation of 0.3295.

The choice quotation method is a matter of convention. Around the world, most currencies are quoted with the dollar as the base and are therefore direct quotes. Many Commonwealth countries such as the U.K., Canada and Australia use the indirect quote. Ghana unlike most Commonwealth countries has adopted the direct quote convention which gives us cedis against one U.S. dollar.

Unfortunately the method for a correct calculation of the rate of depreciation of a currency depends on whether the quotation is direct or indirect. Traditionally when we calculate a percentage change between two time periods we use the following formula:

\[
\% \text{ Change} = \frac{\text{Ending Value} - \text{Beginning Value}}{\text{Beginning Value}} \times 100
\]

Using the formula and the direct quotation, we get the following results:

\[
\% \text{ Change} = \frac{3.0350 - 2.1628}{2.1628} \times 100 = 40.33\%
\]

Note that this percentage change is positive which counterintuitive as a representation of the depreciation of the cedi.

Using the indirect quotation, we get:

\[
\% \text{ Change} = \frac{0.3295 - 0.4624}{0.4624} \times 100 = -28.74\%
\]
Note that the change in the exchange rate for the indirect quotation is negative which intuitively makes more sense as measure of the devaluation of the Ghana cedi.

So the question is: Has the cedi depreciated by 40.33% or 28.74%? It follows that since the indirect quotation gives the amount of dollars a cedi can buy, the rate of depreciation of the cedi is directly reflected in the decrease in the amount of dollars a cedi can buy. Thus the correct measure of the cedi’s rate of depreciation since 31, December 2014 is 28.74% which is based on the indirect quote.

Looking more closely at the calculation using the direct quotation, we note that since it is a positive number it cannot be the rate of depreciation. But we also know that the direct quotation is the amount of cedis a dollar can buy. Therefore if that amount is increasing it implies an appreciating dollar. Therefore, this measure is the appreciation of the dollar, which is 40.32%.

Happily, there is an easy way to calculate the depreciation of the cedi even if we are using the direct quotation. This is done by reversing the positions of the beginning and ending values as follows:

\[
\text{% Change} = \frac{\text{Beginning Value} - \text{Ending Value}}{\text{Ending Value}} \times 100
\]

\[
\text{% Change} = \frac{2.1628 - 3.0350}{3.0350} \times 100 = -28.74\%
\]

It is obvious that some calculations by the press and market analysts are mixing up the appreciation of the dollar with the depreciation of the cedi although the two are not equivalent. Let us by all means pay attention to the rate of depreciation of the cedi but we must be on the lookout for false calculations that will worsen the plight of the cedi.