Effect of Small Denominations of Kenyan Currency on the Economy

Nyanamba, Steve Ondieki
Kisii University

Abstract: **For a long time, money has been used as a medium of exchange in most parts of the world. Most countries have developed their money in a currency which is distinct from that of the rest of the world. Most countries' denominations range from small denominations to large denominations. The main objective of the study was to determine the effect of small denominations of the Kenya currency on the economy. The study used survey research design. The target population of the study was all the consumers, retailers and Supermarkets in Kisii County and Homabay County from which a sample of 225 was drawn from the two Counties under study. Data were collected through a structured questionnaire. Data were analyzed using descriptive and inferential statistics. The results were presented in tables and figures. The findings from the study revealed that majority (78%) of the supermarket shoppers own debit cards; 61% of the shoppers were not given the actual change as per the value purchases and that lack of small denominations of currency has led to purchase of goods not budgeted for; it has led to increase in prices of some goods and that lack of small denominations has led to selling of goods in bundles. The study recommended that the government should ensure continuous and adequate circulation of small denomination of currency for this will curb unnecessary increase of prices hence leading to inflation, besides controlling unnecessary purchase of goods not budgeted for.**

I. INTRODUCTION

For a long time, money has been used as a medium of exchange in most parts of the world. Most countries have developed their money in a currency which is distinct from that of the rest of the world. Most countries' denominations range from small denominations to large denominations. Amromin and Chakravorti (2009) define large denominations as those that are commonly dispensed by a country's automated teller machines (ATMs) and small denominations as those which are less than those dispensed from ATMs. These denominations aid in payment of goods and services for cash. Cleland (2011) warned that, for cash to be convenient, and to function as an efficient means of exchange, a suitable denominational mix should be available to the public. The study protests that, although the public prefer smallest denomination to make payments, and to receive in change, most ATMs only dispense larger denominations of currency hence making it a bit difficult for lower denomination to enter into circulation.

Amromin and Chakravorti (2009) argue that, while payment card usage has increased dramatically, the stock of outstanding currency has not declined as rapidly. This means that as much as the world shifts to plastic money, cash will still be in use in most parts of the world, at least in the near future. The study further showed that demand for small-denomination currency decreases with greater debit card usage and with greater retail market consolidation.

Bonura (1992) cited in Ennis (2006) documented that in early Argentina, the problem of lack of small-denomination coins resulted in the use of unofficial means of payment in everyday transactions. The study noted that, when faced with lack of change, the buyer could make payments in two possible ways, one of which was to pay using small metal discs with the initials of the issuer printed on them (known as contrase˜nas) which were previously issued by the particular merchant participating in the transaction, in which case the transaction would terminate with the payment. The other way was for the buyer to pay in high-denomination silver coins. In this case, the change resulting from the transaction would be provided in contrase˜nas issued by the seller. However, the use of contrase˜nas had its own side effects as explained by the study in the sense that it resulted in widespread fraud and falsification.

Another ancient way people used to solve the problem of lack of small change was by developing even simpler credit arrangements, where customers would build up a debit at the community store until it was possible to settle the payment using higher denomination coins that were more readily available (Schmit, 2003). However, this form of arrangement had a major limitation in the sense that the use of this kind of informal credit was limited to cases where the owner of the store was relatively certain that the customer had reasons to secure a permanent relationship with the store.

Besides payment by cash, some of the businesses have also embraced payment by debit cards. Amromin and Chakravorti (2009) observed that, as much as payment by debit card is on a tremendous increase in various countries, the stock of outstanding currency has not declined as rapidly. This means that most consumers still appreciate payment by cash. To make payment effective, there is need to have smaller denominations so as to ease issue of change. The findings of the study by Amromin and Sujit (2008) observed that the demand for small denomination currency decreases with greater debit card usage and with greater retail market consolidation, while the demand for high denomination notes decreases when interest rates rise, but is generally unaffected by changes in debit card usage. To give more praise on the small denominations, Rogoff (2014) stressed that, the central banks would have the practical capacity to lower interest rates to significantly more negative levels if only small bills remain in circulation, than if large bills continue to circulate, since hoarding costs are much greater for any large sum. This means that investors can be able to borrow at lower rates when small denominations of currency constitute a greater percentage of the total volume of money in circulation.

A study by Amromin and Chakravorti (2009) realized that the tremendous increase in both debit card terminals and financial institution branch infrastructure significantly affect the demand for small-denomination currency, and that, more extensive financial institutions networks are associated with greater demand for small denomination currency because financial institutions are the main distributors of small denomination notes and coins. Drehmann, Goodhart and Krueger (2002) lamented that problem of inability to offer change had been so acute in some European countries to the extent that, at some point, some retailers in the Euro-zone were requesting the European Central Bank (ECB) to hold back on the issue of large Euro-notes, in order to reduce initial problems of verification and making change.

Drehmann, Goodhart and Krueger (2002) argued that there are essentially two, largely separate, markets for currency; these are, first, a market for large value notes which are known to facilitate 'bad behaviour', and, secondly, a market for small denominations which are normally used in the every-day consumption payments' purposes. This means that small denominations play a vital role in a country's economy because they enable most of the purchases to take place (Drehmann, Goodhart & Krueger, 2002). In Africa, these denominations manage most of the payments in the rural economy relative to the large denominations owing to the low economic status of the rural residents.

Various studies have proved that people are more willing to spend money when the money is presented as several smaller denomination bills than when it was presented as one large denomination bill (Raghubir & Srivastava 2009; Mishra, Mishra & Nayakankuppam, 2006); and therefore, consumers opt to receive money in larger denominations under conditions where they wish to save and exercise self-control in spending. Similar findings were documented by Drehmann, Goodhart and Krueger (2002) who found out that, large bills, which account for over half the stock of outstanding currency in many Organization for Economic Cooperation and Development (OECD) nations, are mainly held for hoarding and bad behaviour motives. In support to this claim, Srivastava (2009) showed that, having money in a large denomination develops positive effect toward the money, which leads people to overvalue the whole, thereby making them less likely to spend it compared to an equivalent amount in smaller parts. This means that, circulation of money in large denomination relative to small denominations within a country reduces the overall circulation of money within the country since people will prefer to save the large denomination as opposed to spending. However, circulation of money within a country is vital for its economic growth since it boosts the country's GDP besides discouraging underground holdings of currency (Rogoff, Giavazzi & Schneider, 1998). However, Drehmann, Goodhart and Krueger (2002) disagrees with this opinion on large denominations by asserting that large bills, which account for over half the stock of outstanding currency in many nations, are mainly held for hoarding and bad behaviour motives.

To discredit the importance of small denominations of currency, a study by Amromin and Sujit (2008) discontented that, besides cash serving as a universally accessible store of wealth in addition to being a payment medium, it has been accused of being attractive for facilitating illicit transactions, as well as for storing ill-gotten (or, at least, untaxed) wealth. To support this claim, Bernard and Hains (2001) on small-denomination paper currency, and focusing on supply-reduction drug policy in the United States, observed that the street-level sales of illegal drugs resulted into small-denomination paper currency in the form of dollar bills (primarily $1, $5, $10, and $20 bills) and that this led to a rise in the total circulation of small denominations of currencies relative to total currency in circulation. Further still, European Commission (2013) observed that, the costs of production and issuance of the small denomination are generally high. However, the study warned that, withdrawal of these small denominations of currency could bring on board disastrous consequences, for instance inflation or perceived inflation, amid the general public's fear that a potential cessation of issuance of the coins combined with a withdrawal of the coins from circulation could raise consumer prices.

The most predominant mode of payment in Kenya is by cash. Virtually all the transactions in the rural areas in Kenya are done by cash, owing to their small volumes of purchases; while those in big towns have the option to pay by debit cards or mobile money payments especially in supermarkets although majority of the town residents still pay in cash. Bounie and François (2006) observed that transaction size, type of good purchased and the type of establishment where the purchase is made are key factors for the consumer choice of a payment instrument.

This paper is pegged on the denomination effect which argues that, the likelihood of spending is affected by whether an equivalent sum of money is represented by a single large denomination (for instance, Sh. 500 or sh. 1,000 notes) or by many smaller denominations (for instance, 50 cents, 1 shilling, 5 shillings, 10 shillings, 20 shillings and 40 shillings) (Raghubir & Srivastava, 2009). According to the study, the denomination effect occurs due to the lower perceived fungibility of larger denominations allowing them to be used as a strategic device to control and regulate spending. For the purpose of this study, small denomination of currency will be taken to mean 1 shilling and 5 shillings denominations of the Kenyan Currency.

II. STATEMENT OF THE PROBLEM

Kenya's smallest denominations are usually in form of coins (50 cents, 1 shilling, 5 shillings, 10 shillings, 20 shillings and 40 shillings). Although they all still are valid legal tender, most retailers have shown dislike for the 50-cent and 1 shilling coins claiming that they are no longer in use in Kenya, and this has in turn made buyers believe that these coins are valueless. With this trend, it is likely that these denominations will soon be phased out, just like the 5-cent and 10-cent coins which are no longer in circulation although they are still legal tenders. Although previous studies (clerand, 2011; Mishra, Mishra & Nayakankuppam, 2011) have documented the importance of small denominations in making purchases, hence spurring the economy, it has been observed that the small denominations are diminishing in their availability as days go by, making issue of change difficult. Some studies have indicated that lack of small denominations for use as change has made some traders result in some informal ways of giving change (Ennis, 2006; Schmit, 2003). Therefore this study seeks to determine the effects of small denominations of the Kenya currency on the economy.

III. RESEARCH DESIGN

The study used survey research design. The target population of the study was all the consumers, retailers and Supermarkets in Kisii County and Homabay County. From this population, a sample of 225 was drawn from the two Counties under study. This sample consisted of 100 respondents drawn from retailers and supermarkets consumers, 10 retailers and 3 supermarkets tellers from each of the counties under study using simple random sampling. Data were collected through a structured questionnaire after pre-testing it for reliability and validity; and analyzed through descriptive and inferential statistics. The results were presented in tables and figures.

IV. FINDINGS

The researcher intended obtaining data from 226 respondents. Out of these, 225 respondents filled and returned the questionnaires for analysis. This translated to 99.6% response rate and this was considered sufficient to analyze and draw conclusion upon.

4.1 Respondents' Ownership of Debit Cards

The study sought to establish whether respondents have Debit Cards. The findings were as presented in table 1.

Table 1: Ownership of Debit Cards by the Consumers

Category		Number of Clients
Supermarket Consumers	Yes	78
	No	22
Shop Consumers	Yes	27
	No	73

The finding of the study revealed that majority (78%) of the supermarket shoppers own debit cards while a few (27%) of the shop consumers do not own debit cards. This means that not all the supermarket shoppers can take advantage of paying for purchases by debit cards, hence the reason why cash is still a predominant mode of payment among most of consumers. Amromin and Chakravorti (2009) asserted that demand for small-denomination currency decreases with greater debit card usage. The fact that a good number of respondents do not possess debit cards indicates that small denomination currency is still relevant in Kenya's economy.

4.2 Frequency of use of Debit Card to Make Payments

Of those that owned debit cards, the study sought to know the frequency with which they used them to make payments. The findings were as presented in figure 1.

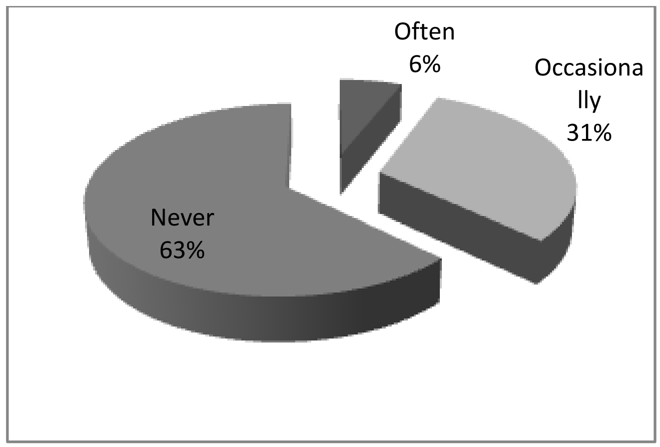

Figure 1: Frequency of Use of Debit Cards to make Payments

The study disclosed that 63% never use their debit cards to make payments, 31% of the respondents felt they occasionally use their debit cards to make payments while only 6% of respondents claimed they use their debit cards often to make payments. These findings are consistent with that of Nyanamba, Anyoka and Nyakeyo (2014) which discovered that most buyers in Kenya do not use ATM cards to make payments even in supermarkets.

4.3 Availability of Change

The study sought to establish whether the respondents were given all the change after making purchases, as required. The study revealed that 61% of the respondents were not given the actual change as per the value purchases while only 39% of the respondents were given change as per value of the purchases. This in essence means that the consumers bought goods at an inflated total cost.

4.4 Frequency of Obtaining the Correct Change

Respondents were asked to indicate how frequent they received all they received their change whenever they made purchases. The results were as shown in figure 2 below:

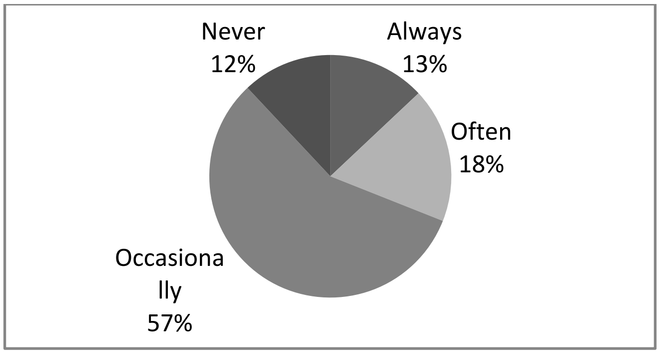

Figure 2: Respondent's Frequency of O btaining Correct Change

The findings indicated that 57% of the respondents obtained "occasionally" obtained their correct change, 18% of the respondents obtained their change often, 13% of the respondents obtained their correct change "always" while only 12% of the respondents "never obtained their change. This means that 69% of the respondents rarely received their correct change whenever they made purchases. This means that majority of the respondents either occasionally or never gets change whenever they make payments, and this confirms Bonura (1992) cited in Ennis (2006) who observed that the problem of lack of small-denomination coins resulted in the use of informal means of payment in everyday transactions.

4.5 Effect of Small Denominations to the Economy

The study sought to establish the effects of the small denominations on the economy. The findings were as presented in table 2.

Table 2: Effect of Small Denominations to the Economy

	Strongly agree 5	Agree 4	Undecided 3	Disagree 2	Strongly Disagree	Σf_i	$\Sigma f_i x_i$	$\frac{\Sigma f_i x_i}{\Sigma f_i}$
Has led to purchase of goods not budgeted for	77	113	25	7	3	225	929	4.13
Lack of coins have led to increase in prices of some goods	83	99	28	13	2	225	923	4.10
Lack of small denominations has led to selling of goods in bundles	93	67	45	19	1	225	907	4.03
Use of credit cards can solve problem of lack of change	33	44	56	87	5	225	688	3.06

The results indicated that the respondents showed agreement with the claim that lack of small denominations of currency has led to purchase of goods not budgeted for and also increase in prices of some goods (weights 4.13 and 4.03 respectively on five point likert scale). Further still, the respondents agreed that lack of small denominations has led to selling of goods in bundles (weight of 4.03 on five point likert scale). However, the respondents were undecided on whether use of debit cards can solve problem of lack of change (weight 3.06 on five point likert scale). This means that lack of small denominations of currency has led to purchase of goods not budgeted for, increase in prices of some goods and also increase in prices of some goods, selling of goods in bundles. An Analysis of Variance (ANOVA) test was run (table 3 below) to determine the effect of small denomination of currency on the economy. The calculated p-value (0.011) obtained was found to be less than the critical p-value (0.05) and this led to the conclusion that small denomination of currency has a statistically significant influence on the economy of a country.

Table 3: Test Statistics for the Objective

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	826.67	4	206.67	17.34	.011
Within Groups	2622.4	220	11.92		
Total	3449.07	224			

V. SUMMARY

The findings from the study revealed that majority (78%) of the supermarket shoppers own debit cards; 61% of the shoppers were not given the actual change as per the value purchases and that lack of small denominations of currency has led to purchase of goods not budgeted for; it has led to increase in prices of some goods and that lack of small denominations has led to selling of goods in bundles, for instance retailers have been forced to sell goods in bundles (for example, 3 sweets for five shillings; 5 tomatoes for ten shillings, among other goods) due to insufficient denominations in which they can sell one unit. This has made the consumer end up buying more goods than s/he needed hence expanding the initial budget on the goods. It was also evident from the study that small denomination of currency has a statistically significant influence on the economy of a country.

VI. RECOMMENDATIONS

From the above findings, the study recommended that the government should ensure continuous and adequate circulation of small denomination of currency for this will curb unnecessary increase of prices hence leading to inflation, besides controlling unnecessary purchase of goods not budgeted for.

REFERENCES

[1] Amromin, G., & Chakravorti, S. (2009), Whither Loose Change? The Diminishing Demand for Small-Denomination Currency. Journal of Money, Credit and Banking, 41(2-3), 315– 335.

[2] Bernard, T.J., & Hains, E. (2001). Small-Denomination Paper Currency as the Focus of Supply-Reduction Drug Policy. Criminal Justice Policy Review, 12(1), 3-25.

[3] Bounie, D., & Abel F. (2006). Cash, Check or Bank Card?: The Effects of Transaction Characteristics on the Use of Payment Instruments. Telecom Paris Working Papers in Economics and Social Sciences ESS-06-05.

[4] Cleland, V. (2011, March). Challenges in Note Circulation–Availability and Quality of Low Denomination Notes. In Speech at the International Commercial Cash Operations Seminar, Europe, the Middle East and Africa: The Currency Cycle Conference, Barcelona (Vol. 21).

[5] Drehmann, M., Goodhart, C., & Krueger, M. (2002). The challenges facing currency usage: will thetraditional transaction medium be able to resist competition from the new technologies? Economic Policy, 17(34), 193-227

[6] European Commission (EC, 2013). Communication From The Commission To The European Parliament And The Council. Issues related to the continued issuance of the 1 and 2 euro cent coins**.** Brussels, 14.5.2013 COM(2013) 281 final

[7] Gene, A., & Sujit, C. (2008). Whither Loose Change? The Diminishing Demand for Small Denomination Currency. Working Paper, Federal Reserve Bank of Chicago

[8] Mishra, H., Mishra, A., & Nayakankuppam, D. (2006). Money: A bias for the whole. Journal of Consumer Research, 32, 541–549.

[9] Nyanamba, S.O., Anyoka, J., & Nyakeyo, L. O. (2014). Use Of Automated Teller Machine Debit Cards To Make Payments In Supermarkets In Kisii Town: Challenges And Economic Impact. Interdisciplinary Journal of Contemporary Research In Business, 5(11), 337-346.

[10] Raghubir, P., & Srivastava, J. (2009). The Denomination Effect. Journal of Consumer Research, 36(4), 701-713.

[11] Rogoff, K., Giavazzi, F., & Schneider, F. (1998). Blessing or Curse? Foreign and Underground Demand for Euro Notes. Economic Policy, 139(6), 261-303.

[12] Rogoff, K. S. (2014). Costs and benefits to phasing out paper currency (No. w20126). National Bureau of Economic Research.

[13] Schmit, R. (2003). Enlaces conflictivos: comercio, fiscalidad y medios de pago en Entre Ríos durante la primera mitad del siglo XIX. In La desintegración de la economía colonial: Comercio y moneda en el interior del espacio colonial (1800-1860) (pp. 251-276).