Intrahousehold Resource Allocation in Kenya

By

Miriam Omolo
Institute of Economic Affairs, Kenya

AERC Research Paper 220
African Economic Research Consortium, Nairobi
January 2011

THIS RESEARCH STUDY was supported by a grant from the African Economic Research Consortium. The findings, opinions and recommendations are those of the author, however, and do not necessarily reflect the view of the Consortium, its individual members or the AERC Secretariat.

Published by: African Economic Research Consortium
P.O. Box 62882 - City Square
Nairobi 00200, Kenya

Printed by: Regal Press (K) Ltd
P.O. Box 46166 - GPO
Nairobi 00100, Kenya

ISBN: 9966-778-92-6

Contents

List of tables

Abstract

The paper examines intrahousehold resource allocation in Kenya and if there exists gender bias. The assumption of a unitary household model is relaxed and a collective household model is used. Demographic separability tests are then carried out to identify 'adult goods' i.e. goods that have pure income effect with the addition of a child in the household. The Deaton Model (1997) is then used to examine the behaviour of budget share of adult goods with total expenditure and lastly tests are carried out using the outlay equivalent ratios to establish if there is gender bias within the households. The Kenya Welfare Monitoring Survey Data for 1997 was analysed; alcohol failed to pass the demographic separability test in urban areas, the study however does not find any gender bias using the Deaton (1997) model. The study concludes that there is a need for further research in this area using individual data.

JEL Classification: C14, D13, J15

Key words: Intrahousehold resource allocation, demographic separability, outlay equivalent ration

Acknowledgements

I am grateful to the African Economic Research Consortium (AERC) for supporting this study under its thematic grant scheme, and to its staff for the very efficient way they facilitated the research. Earlier drafts of this study benefited from comments and suggestions made during the AERC's biannual research workshops and I would, therefore, like to gratefully acknowledge the resource persons, the researchers and other participants who contributed to shaping this paper. The findings, interpretations, views, conclusions and policy recommendations are mine and any flaws in the study remain my responsibility.

1. Introduction

The household is the most important unit for planning and analysis given its function as consumer, producer, investor and risk manager. The internal dynamics of the household should be a critical element for any development policy since understanding its functioning will assist in evaluating the likelihood of an expected development policy outcome. The household as an institution affects the welfare of an individual given the complex economic and social interactions that take place within its framework. The process by which households allocate resources and responsibilities to its members is commonly referred to as "intrahousehold allocation". The manner in which responsibilities and goods are allocated within the household may leave certain members more vulnerable than others and as a result, the intended benefits from a development policy project may be lost between the household and the targeted individual.

Intrahousehold allocation is affected by several factors; key among them are gender bias and culture. Gender is one of the criteria that structure most societies around the globe. Swapna and Ratna (2003) define gender as the rules, norms and practices by which biologically associated differences between the male and female are translated into socially construed differences between men and women, boys and girls which give them unequal value, opportunities and life chances. Social scientists note that gender is a socially constructed phenomenon and depending on the context, it may manifest itself along different dimensions in several ways. Gender bias, by its nature, is a principle that is unobserved and unobservable, what can be captured is its overt manifestations. Culture, which is the way of life or norms within a society also affect the manner in which resources are allocated in the society. For example in certain societies, boys are perceived to be able to translate investment in education to gainful employment compared with girls, and as a result, decisions within the household may favour taking a boy to school. Lorge et al. (1990) classify intrahousehold allocation into four key areas: Time - time available for different members for participation in the project; household tasks - some tasks are more transferable than others; access to goods for production and consumption and control over income. This study focuses

on the consumption aspect of intrahousehold allocation.

The gender gap in Kenya can be attributed to societal norms and culture, where boys are still considered better than girls as they can translate investments in education and health into returns via the labour market much faster than girls. The gender bias in Kenya compared with a country like India is covert. In Kenya, one can tell whether bias exists by observing the allocation of resources to males and females while in India there is antenatal selection and termination of pregnancy especially if the unborn child is female, and even after birth, the child mortality rate of girls is 40%-50% higher than boys (Khanna et al., 2003). Infant mortality rate for males in Kenya stood at approximately 40 deaths per 1,000 compared with 38 deaths per 1,000 for females (WDI, 2007). Access to resources and intrahousehold decision making play a significant role in intrahousehold resource allocation outcomes as evidenced in Marinda (2006).

A wide body of economic literature has assumed a unitary household, where the household members have homogeneous preferences. In contrast, the existence of societal norms and other factors that make parents to allocate more resources to one child over the other when there are no productivity gains but only the utility derived from the particular action, calls for the need to relax the unitary household model and examine collective models as proposed by Chiappori (1992). Collective models assume households reach a Pareto optimal outcome, where household members' preferences are taken to be heterogeneous. This model shows that there is an explicit or implicit "sharing rule" by which resources are shared within the household and this rule can be captured by the expenditure data (Doss, 1996).

Examination of intrahousehold resource allocation is quite challenging for several reasons. First, obtaining individual data for analysis is not easy since most data is collected at household level. Second, policy makers and analysts are yet to fully understand that given that gender is a socially constructed phenomenon; its outcomes are as a result of inter-personal relationships which have powerful socioeconomic implications. Lastly, the unobservable nature of gender bias, which greatly affects intrahousehold resource allocation complicates the method of analysis since in most cases proxies are used. Economists have attempted to examine intrahousehold resource allocation in consumption by first relaxing the assumption of a unitary household and adopting other models such as the collective models, which focus on the individuality of members and differences in preferences such as theorized by Chiappori (1992) and Browning et al. (1994). Deaton (1989, 1997) further developed the outlay equivalence approach to examine intra household resource allocation and in particular to determine whether there is gender bias within the household. Deaton defines "outlay equivalents" as the additional total expenditure that would generate the same change in expenditure of the good in question as does the presence of an additional person of each demographic type. In his work, he examines intrahousehold resource allocation by establishing if gender bias in favour of male children exists. The intuition is that with an additional child, there will be increased spending on goods for children, given inflexible total consumption and the budget constraint, an additional child will reduce spending on adult goods. The reduction in spending on adult goods for a female child

is then compared with that of the male counterpart in order to determine how much of adult goods is compressed in order to obtain the goods for children. Other economists, Lachaud (1998), Gibson and Rozelle (2000) have also used this approach to examine gender bias within the household and have come up with varied results.

In this paper, I use the outlay equivalence approach by Deaton (1997) in order to examine intrahousehold resource allocation and establish if there exists a gender bias in favour of boys in the Kenyan households. Further, the outlay equivalence approach tells which adults access particular goods. The rest of the paper is organized as follows: Section 2 reviews the theoretical foundation of intrahousehold resource allocation and empirical evidence; Section 3 will explain the methodology for the study while Section 4 will give the results, and finally conclusions will be given in Section 5.

Statement of the problem

Uneven division of resources between men and women and boys and girls inside the household is the topic of much recent research. Unequal allocations cause poverty to be understated when measures that are used assume that every household member is treated equally. Welfare and living standards are characteristics of individuals, not households, therefore assuming a unitary household is restrictive. In economic analysis, the household is the end income recipient and the unit for observing consumption. This is based on the assumption of a unitary household where household members have similar utility functions. However, social and cultural factors play a crucial role in determining the household bargaining process and the resulting resource allocation. Assuming a unitary household would result in overstating of welfare, especially in cases where household resource allocation will result in one demographic group or sex getting less than their counterpart, for example, women getting less than men, or children and the old being worse off than other household members.

Kenya is a modern society and, like any developing country, it strives to achieve the Millennium Development Goals. However, given that certain cohorts in its society still remain traditional and favour resource ownership and control by males (Marinda et al., 2006), gender bias continues to manifest itself at different levels. The household, which is the unit for observing consumption, has remained a strong breeding ground for gender bias manifestations. Marinda (2006), found that the intrahousehold resource ownership and control affected the health outcomes of household members in West Pokot district in rural Kenya. This raises the concern of how resources are allocated within the households in Kenya against the background that gender bias still exists. The situation is worsened by the fact that laws on property rights still favour male ownership in terms of access and control. It is for this reason that the study intends to examine intrahousehold resource allocation and whether gender bias exists.

Objectives of the study

achieve certain development policy outcomes.

Theoretical foundation

Unitary household models have been widely assumed in economic theory, where household members' preferences are treated as though they were an individual's. However, there are other models that assume that household members bargain with each other over resources. These particular models as illustrated by Doss (1996) provide a richer structure for household behaviour and dynamics. The collective model by its design disaggregates the utility function but assumes that the household reaches a Pareto efficient outcome (Doss, 1996). This framework assists in examining intrahousehold resource allocation using expenditure data. It has the following assumptions:

(i) Some goods are private.

(ii) Individuals have utility of other household members in their own utility functions.

(iii) Each member's sub-utility function is separable for private consumption.

(iv) One private good is assignable so it is possible to determine who consumes the good.

Chiappori (1992) and Browning et al. (1994) developed a methodology consistent with these assumptions. Take the case of two individuals A and B whose private consumption are denoted as Q^A and Q^B respectively. Suppose that there is a vector of public goods z available to each of them so that their utilities are $U^A(Q^A, z)$ and $U^B(Q^B, z)$, Chiappori (1992) and Browning et al. (1994) while silent on the dynamics of resource allocation between the two people assume that the final allocation of resources will be efficient, so that nobody can be made better off without making the other worse off. Therefore, member A's utility function will be:

2. Literature review

This study employs the Deaton's (1997) outlay equivalence approach to analyse potential discrimination in resource allocation within households. Specifically, this study seeks to:

(1) Identify goods that are demographically separable from children. These goods could be called adult goods i.e. goods that are not consumed by children.

(2) Examine the relationship between adult goods and total expenditure.

(3) Test for gender bias in the intrahousehold allocation of consumption.

Hypothesis

The hypothesis to be tested in this study is that there exists gender bias in favour of male children in the household.

Significance of the study

The household is the focal point of most of economic decision making given that it functions as the producer, consumer, investor and risk manager. Most analyses have assumed unitary household models where a household acts as a single entity with a common set of preferences. However, altruism and self-interest have made economists recognize that households could be sites for conflicts or cooperation. Standard household models are likely to offer misleading conclusions in an analysis where preferences of individual household members are competing. It is therefore important to examine whether gender bias exists in Kenyan households. Such a study would be important for policy makers as the household has been used as a target to

examining the LHS of the household demand equations. However, some goods are assignable as explained by Chiappori (1992) and Browning et al. (1994) so that the consumption of each person may be separately observed. Assignability means that we can observe the derivatives of each of the goods with respect to different kinds of income. These are obtained by differentiating each of the two terms on the RHS of (5) with respect to y^A and y and then computing the ratios.

$$\frac{\partial Q_i^{\,A} / \partial y^A}{\partial Q_i^{\,A} / \partial y} = \frac{\partial \theta^A / \partial y^A}{\partial \theta^A / \partial y} \quad , \quad \frac{\partial Q_i^{\,B} / \partial y^A}{\partial Q_i^{\,B} / \partial y} = \frac{-\partial \theta^A / \partial y^A}{1 + \partial \theta^A / \partial y} \tag{7}$$

Similarly, the sharing rule with respect to y and y^B for goods can also be obtained. Equation 7 can allow us to map allocation changes to the distribution of earnings between household members. This technique can also be used to investigate the allocative effects of changes in variables other than the earnings of individual family members. Deaton (1997) uses this approach to examine intrahousehold resource allocation between boys and girls. The intuition here is that the needs that come with additional members act to reduce the income available to each member. He views the household to consist of two members: children and adults; and that, while decision making is done by the adults, the total resources are shared between both adults and children.

Empirical evidence

Several authors have examined the intrahousehold relationship and the decision making process. Some studies have shown that the difference in expenditure between husband and wife corresponds to gender-specific responsibilities. Given that they are in structurally different situations, they have parallel perceptions of their financial obligations and allocative priorities within the household. Aggarwal (1997) supports this with the view that there is a difference between what a person actually contributes, needs or is able to do and perceptions of his/her contribution. Women's work in certain cases is labelled "unskilled" compared to their male counterparts' because of their gender. Contributions can also depend on the monetary value attached to the work. More women participate in unpaid family work, thus their contribution is considered minimal. Women in West African countries do activities centralized around reproduction and continued maintenance of the physical well-being of household members such as food processing and preparation, gathering fuel and water, maintaining cleanliness, purchasing foods and medicines and caring for the sick and elderly. Such activities have no monetary /economic values attached to them, and in some cases are considered unskilled labour. Hoddinot and Haddad (1995) found that women's share of income significantly affected the budget share of food. This further underpins women's role in acquiring food for the household.

Quisumbing and Maluccio (2000) find that since women are not able to smoothen their long-term consumption using land, they insure their long-term needs by investing in the health and education of their children in the hope that they will take care of them in old age. Haddad et al. (1994) note that households might decide to allocate resources,

$$\text{Max } U^A (Q, ž) \text{ s.t. } P^A.Q=è^A (p, p_z, y) \quad (1)$$

ž – optimal choice of public good
p – price vector for all goods
p^A – price of goods consumed by A
p_z – price vector of public goods
$è^A (p, p_z, y)$ – the sharing rule

The sharing rule, which gives the division of total expenditure on public goods between A and B will determine what individual A or B gets. It is conditional on the price of private goods, public goods and household resources y. The optimal solution for Equation 1 is a set of demand functions:

$$_i^A=g_i (è^A (p, p_z, y), p^A, ž) \quad (2)$$

These demand functions will satisfy the properties related to well-behaved demand functions (Deaton, 1997). The demand function for B will be similar. However, its sharing rule will satisfy the condition:

$$è^B (p, p_z, y) = y-p_z. ž-p^A.Q^A \quad (3)$$

Once the sharing rule is set, individual demand will be characterized by Equations 2 and 3. It is possible to test for efficiency of the two equations above. Suppose that the household has two members A and B with three sources of income: one accrues to A, another to B and O is received jointly. The sharing rule will depend on the incomes y^O, y^B and y^A. So that total income y will be:

$$y=y^O+y^A+y^B \quad (4)$$

The sharing rule will depend on these incomes so that the household demand for good i will be :

$$Qi=g_i^A[è^A(y^A, y^B, y)\} + gi^B[y-è^A(y^A, y^B, y)\} \quad (5)$$

Differentiating (5) with respect to y^A and y^B:

$$\frac{\partial Q_i / \partial y^A}{\partial Q_i / \partial y^B} = \frac{\partial \theta^A / \partial y^B}{\partial \theta^A / \partial y^B} \quad (6)$$

Equation 6 is a condition which holds under dictatorial preferences. With pooled household income, ownership of income should make no difference so (6) should be unity. Two tests can be undertaken here: efficiency and income pooling. Bourguignon et al. (1993) rejected income pooling using French consumption data but could not reject weaker restriction (i.e. Equation 6 equals unity). Deaton (1997) notes that the ratios of Equation 6 are observable from data while the RHS is econometrically identified, so that the equation can tell us how the allocation to A is differentially affected by increments to the earnings of A and B respectively. The demand Equations 5 contains the sharing rules and two sets of demand functions which cannot be recovered by

Further, Deaton and Muellbaeur (1980) developed the outlay equivalence ratio approach used to investigate gender bias within the household. Using the identified adult goods, the Almost Ideal Demand system is then used to derive the coefficients to be used in obtaining the outlay equivalent ratios (pi-ratios) for the different child categories. If the male child has a bigger negative pi-ratio compared with the female counterpart or vice versa, and further testing the significance of the results, then one can conclude that there exists or does not exist gender bias. Looking at the work of Deaton (1989), where he examined the presence of discrimination within the household in Cote d'Ivoire, he found that the response of expenditures on adult goods to additional children showed no evidence of a bias in favour of male children. He found that among the adults, adult males got more than adult females in all the array of adult goods used in the analysis apart from clothing and shoes, which the women consumed more. Deaton (1989) equally applied the methodology on households in Papua New Guinea (PNG), and found that adding a 7-14 year-old boy to the household reduces expenditure on adult goods by as much as would a nine-tenths reduction in total outlay per member, but similarly aged girls had no effect on adult goods expenditure. The hypothesis that gender bias was inversely related to the importance of female labour in agricultural production was not supported. There was no evidence of bias against girls in the urban or rural sectors. Deaton (1997) further examined discrimination between boys and girls in rural Maharashtra in India, using tobacco and pan, and alcohol as the adult goods. He found that in all cases, children had negative pi-ratios indicating that additional children acted as reduction in income for each category. Alcohol had significant pi-ratios for children category 10-14. For the younger children aged less than five, the boys had larger negative pi-ratios, which were significantly different from the female counterparts, showing discrimination against girls relative to boys.

Nhate et al. (2005) uniquely used the Deaton approach to examine discrimination of orphans within households in Mozambique. They analysed the potential discrimination in resource allocation within households against children who are not the biological descendants of the household head for poor and non-poor households. They found significant discrimination for younger children (0-10) in rural households and older children (11-15) in urban households. There was no evidence of discrimination in the non-poor household's category. They attributed this finding to the resource constraints associated with poor households forcing favouritism to influence resource allocation. However, the findings could not establish how non-biological children contributed to these results. Lachaud (1998) used the Deaton approach to examine gender bias in Burkinabé households. He found that boys are more favoured than girls in the Burkinabé household. Secondly, irrespective of the age category of the adult cohort, the males had bigger negative pi-ratios that the female counterparts. This he attributed to the gender aspect of schooling, precarious female labour market and the organization of the Burkinabé social system. Table 1 provides a summary of African studies that have been conducted using the Deaton methodology and their findings.

Demographic separability

for example healthcare and education to the boy because compared with the girl, the boy can translate good health and education into more income via the wage market.

It is important to review the methodologies that have been used in examining gender bias. The first step as outlined by Deaton (1997) is to obtain the right data set for analysis. The data cleaning process involves dropping households that do not have children (Deaton et al., 1989). The main reason for dropping households without children is that the marginal effects of adding a child for a household without children would be quite different from a household that already has children and this would bias results. Secondly, true adult goods are identified using the Deaton (1997) methodology i.e. the test of demographic separability, where, given total expenditure on adult goods, children should not influence the distribution of spending across adult goods. In the case of Nhate et al. (2005), six goods passed the demographic separability test: alcohol, tobacco, adult cloth, transportation, meals and soft drinks away from home and personal care. Deaton (1997), while examining boy versus girl in rural Maharashtra, found tobacco and pan, and alcohol as the safe adult goods while Lachaud (1998) who found tobacco and cigarettes, and alcohol to be the true adult goods in Burkina Faso. Gibson and Rozelle (2000) found adult clothing, alcohol, Betel nut, gambling, meals out and tobacco to qualify as adult goods. The overall share of adult goods observed vary in developing countries, Deaton (1997) found that adult goods in rural India represent 12% of total expenditure, while in Mozambique Nhate et al. (2005) found that adult goods represent 15% of total expenditure. Gibson and Rozelle (2000) found that these goods represent 12% of total expenditure. .

Table 1: Summary of African Studies

Study:	Methodology:	Findings
1) Deaton A. (1989) examined boy-girl discrimination in household expenditure data from Cote d'Ivoire	The Almost Ideal Demand System using living standard measurement survey data.	-No evidence of a bias in favour of male children.
2) Nhate et al(2005) examined favouritism between biological and non-biological descendants of household heads to rpoor and non-poor households.	The Almost Ideal Demand System	-Evidence of discrimination in poor households -No evidence of discrimination in non-poor households
3) Lachaud J.P. (1998) examined intrahousehold inequality in Burkina Faso households.		-Evidence of gender bias in favor of boys, especially in northern regions and the West, and in a lesser extent, to Ouagadougou and Bobo-Dioulasso.

3. Methodology

Model formulation

Following the work of Deaton et al. (1989), the general formula for an Engel curve, for good *i*, is:

$$(p_i q_i) = f_i(x, a, z, u) \tag{10}$$

Where $p_i q_i$ is expenditure on good *i*, *x* is household total expenditure, or "outlay," *a* is a vector that characterizes the demographic composition of the household, *z* is a vector of other household characteristics, and *u* is a term that represents unobservable taste variation. *a* is taken to be the number of people in each of 10 categories defined by sex and age. The marginal propensity to spend on good *i* is "$(p_i q_i)/"x$, and if *n*, is the number of people of type *r* in the household, "$(p_i q_i)/"n_r$ is the effect of an additional such person on the expenditure on *i*. The ratio of "$(p_i q_i)/"n_r$, to "$(p_i q_i)/"x$ is the outlay equivalent of demographic category *r* on good *i;* it is the total derivative of *x* with respect to n_r with expenditure on *i* held constant. It is convenient to express this as a ratio of total outlay per capita, i.e.

$$\pi_{ir} = \frac{\partial(p_i q_i)/\partial n_r}{\partial(p_i q_i)/\partial x} \cdot \frac{n}{x} \tag{11}$$

Given any estimated functional form for the Engel curve, these outlay equivalent ratios can be calculated for each good and each demographic category. If good *i* is an adult good, and *r* is a child category, the presence of an additional child should exert only income effects on the demand for the good, so that the derivative " $(p_i q_i)/"n_r$ should be proportional to the derivative "$(p_i q_i)/"x$, and the π_{ir} ratios should be independent of *i* for any given child *r*, should satisfy the condition

Some commodities are more closely connected than others with specific age groups in the household baby clothes are worn by babies, while alcoholic drinks are consumed by adults. Considering an example of beer, what effect would we expect on the consumption of beer on the birth of an additional child into the household? With more mouths to feed from the same total income, beer, like other goods would take a budget cut. The effect of a child on beer consumption is essentially an income effect. Therefore beer is said to be demographically separable from children or from child demographic characteristics.

Taking a demographic group D, for example children or teenagers. Corresponding to group D is a commodity group G, G (D) is demographically separable from D if it is true that changes in the demographic structure within D exerts only income effects on the goods in G. For G to be separable from D, we require that, for all g in G and all d in D,

$$\frac{\partial q_g}{\partial a_d} = \theta_d \frac{\partial q_g}{\partial x} \tag{8}$$

Where the factor of proportionality θ_d is independent of the commodity *g*. The two derivatives are observable, so that testing the restriction requires a group with at least two goods in order to compute the ratios of the derivatives for different goods. Deaton et al. (1989) further give an example, for d$\in$D, there might be two groups G_1 and G_2 with associated constants θ_{1d} and θ_{2d} in (8). In this case, an additional child causes a relocation of resources between two groups of goods but changes the patterns in the groups only insofar as the group total expenditures are affected. Deaton et al. (1989: 183) further prove that demographic effects can be modelled as income effects for unrelated separable goods.

The linear model (9) will be used to analyse the demographic separability of goods:

$$p_i q_i = \alpha_{0i} + \alpha_{1i} X_G + \sum c_j n_j + d_i . z + \varepsilon_i \tag{9}$$

Where

$p_i q_i$ - Expenditure on the candidate adult good.
X_G - Total expenditure on adult good.
n_j - Number of members in each demographic category.
z - A vector of other explanatory variables included in the model.
ε_i - Error term.

Given total expenditure on adult goods, children should not influence the distribution of spending across adult goods. If a good is truly adult, children will not have any effect in Equation 9. The coefficient c_j , should be insignificantly different from zero, both individually and jointly, for demographic groups related to children in order for demographic Separability to hold.

$$H_o : \pi_{ir} = \sum_j \pi_{jr} / \upsilon \tag{16}$$

Estimation technique: Gender and expenditure

After identifying the adult goods, we estimate Equation 13 to obtain the coefficients that will be substituted in Equation 14. The hypothesis (16) is then tested. The list of potential adult goods to be used is: adult clothing, adult footwear, cigarettes, personal care, alcohol, meals taken out and entertainment. The true goods to be used will depend on the demographic separability test. Ten demographic types will be distinguished: The number of males and female in the following age groups, 0-4 years, 5-9 years, 10-14 years, 15-55 years, and over 55 years. Other variables to be included will be log of household size (Lhsize), log of per capita household expenditure (Lpce) "total outlay", education level of household head, occupation, location (province), age and age squared of household heads.

Data

Welfare Monitoring Survey III (WMSIII) data was used in this analysis. The WMS is a comprehensive survey carried out by the government in 1997. It contains information on education, health social amenities, crop production, child nutrition, income, food and non-food expenditure from a sample of over 11,000 households with more than 60,000 individuals. WMSIII utilized the current National Sample Survey and Evaluation Programme (NASSEP III) created after the 1989 population census. The frame is multi-purpose in nature and follows a two-stage stratified cluster design.

Data was collected on 235 separate items of household expenditure. In this study we shall use a fraction of these items. This large array of data will allow us to pick goods associated with a particular age group. Expenditure was reported on a recall basis of seven days, one month and a year, depending on the frequency of consumption of a particular good. All expenditures were converted to monthly expenditures. Major purchases such as motor vehicles and homes were not included in the data.

Households with single persons or without children were excluded from the analysis. As stated earlier, 10 demographic categories were used. Other variables included were regional dummies for the eight provinces, education and occupation as well as age and age squared of the household head. A total of 25 other variables were included in the regression.

Table 2 gives the descriptive statistics of the candidate adult goods along with the means for the other Engel curve regressors, all disaggregated by location: National, rural and urban. At the national level, adult goods consumed by most households are adult clothing, cigarettes and alcohol, while in the urban households adults consume adult clothing, personal care and meals out. The rural households on the other hand

$$\pi_{ir} = -\theta_r \tag{12}$$

If (12) is satisfied in the data, it means that adult goods are indeed not consumed by children. In addition, we want to check that adult goods are actually consumed by adults, so that (12) is *not* true when *r* refers to an adult. Note that the presence of an additional adult, like that of an additional child, will have a depressing effect on all expenditures, but this negative effect will be offset in those cases when the adult concerned consumes the adult good. It is therefore possible to use the adult ‘s to see which adults, men or women, old or young, get access to adult goods. Note finally that when (12) is satisfied, as it is expected to be for children and adult goods, the size of the coefficient provides information about the magnitude of the income effect of child category *r* on adult good expenditures. If there is sex bias against girls, these pi-coefficients should reveal it.

Deaton et al (1989) chose a flexible functional form for the Engel curve (10):

$$w_i = \frac{p_i q_i}{x} = \alpha_i + \beta_i \ln(x/n) + \eta_i \ln n + \sum_{j=1}^{j-1} \gamma_j (n_j/n) + \delta_i \cdot z + u_i \tag{13}$$

Equation 13 is based on Working (1943) Engel curve that relates the share of expenditure of each good to the logarithm of total outlay. The demographic structure of the household is incorporated through the *J-1*ratios (n_j/n), where *n* is the total number of household members; note that the *Jth* (or any other) category can be omitted and that the results will be invariant to the choice. The logarithm of household size is included to allow for the possibility that the pattern of expenditures is not invariant to changes in the size of the household, even when household structure and household per capita outlay are held constant. The vector z contains a number of dummy variables that allow for possible effects of location, region, nationality, and farm versus non-farm households. For an Engel curve of the form (13), the equivalence ratios take the form:

$$\pi_{ir} = \frac{(\eta_i - \beta_i) + \gamma_{ir} - \sum^{j-1} \gamma_j (n_j/n)}{\beta_i + w_i} \tag{14}$$

For r=1……j-1, while the formula is as (14) but with no term. Estimates of the ratios are obtained by replacing the parameters with their estimates and replacing the (n_j/n) ratios by their values at the sample mean of the data.

To calculate the standard error of the ‘s the delta method is used. Ignoring terms of smaller order, the asymptotic Taylor expansion series is used (Deaton, 1989b):

$$(\hat{\pi}_{ir} - \pi_{ir}) = (\beta_i + w_i)^{-1} \left\{ (\hat{\eta}_i - \eta_i) - (1 + \pi_{ir}) (\hat{\beta}_i - \beta_i) + (\hat{\gamma}_{ir} - \gamma_{ir}) - \sum_j (\hat{\gamma}_j - \gamma_j)(n_j/n) \right\} \tag{15}$$

Having calculated the ‘s, test the hypothesis that they are equal, so that each equals the mean:

The candidate adult goods were alcohol, cigarettes, meals out, entertainment, personal care adult clothing and adult footwear. At the national level, five goods satisfied the conditions for demographic separability i.e. age and gender of children play no part in explaining the allocation of expenditures within adult goods: Alcohol, cigarettes, meals out, entertainment and adult clothing. Under the rural sample, the following goods qualified: alcohol, cigarettes, meals out and entertainment. In the urban sample, cigarettes, entertainment, personal care, adult clothing and adult footwear passed the test of demographic separability. The difference in composition of a basket of adult goods by location is an indicator of the different consumption patterns and lifestyles by households. It is highly likely that children in urban areas consume alcohol, given that it did not pass the demographic separability test.

Comparing these results with similar studies, Gibson and Rozelle (2000) used the instrumental variable (IV) estimator to carry out demographic separability tests using data for PNG, in order to determine the true adult goods. They had five candidate adult goods: adult clothing, alcohol, Betel nut, gambling, meals out and tobacco. The hypothesis that age and gender of children play no part in explaining the allocation of expenditures within adult goods was accepted for all the above goods. Nhate et al. (2005) identified adult goods for poor households and the following six candidate adult goods satisfied the hypothesis of demographic separability: alcohol, tobacco, adult cloth, transportation, meals out and soft drinks away from home and personal care. However, for the non- poor households, only alcohol, meals out and soft drinks away from home and personal care passed the test of demographic separability. Subramanian and Deaton (1991) found tobacco and pan and alcohol to be the only adult goods that passed the demographic separability test for households in rural Maharashtra.

4. Results

consume adult clothing, cigarettes and alcohol. The mean budget share for all adult goods is 5% while the urban is 9%. The rural households only use 4% of their budget on adult goods. Therefore more adult goods are consumed in the urban areas as compared to the rural areas.

Overall the budget shares of adult goods observed in Kenya are lower than those observed in other developing countries. In Mozambique, Nhate et al. (2005) found that these goods represent 13% of total expenditure. In PNG, Gibson and Rozelle (2004) found that adult goods represent 12% of total expenditure. The average household size in Kenya is 5.59, the rural households have a higher household size compared with the urban household (5.13 and 4.9 respectively). The urban household head has a lower average age than his rural counterpart (38.24 and 46.07 respectively). Using educational level ranking, the urban household head had a higher average education level than the rural household head. The employment statistics show that majority of the unemployed live in the rural area. Most of the urbanites are employed in the sales/ services sector, while the rural folks are in the agricultural sector.

Demographic separability: Identification of adult goods

In establishing demographic separability, the hypothesis that age and gender of children do not play any part in explaining the allocation of expenditures within adult goods was tested and results presented in Table 3. The results are divided into three subsets: national, rural and urban. For this analysis, the national data will be the focus, while comparisons will be made with the other sub samples. The instrumental variable (IV) model was used for the expenditure items. All adult goods were instrumented against total expenditure as these two variables tend to move in the same direction, as adult goods expenditure share rises, total expenditure also rises.

luxury good as its consumption increases with income and equals 1.

The demographic variables for the age-groups are best understood by using the pi-ratios as will be explained shortly. Furthermore, the result on Table 3 have yielded very low r-squared. Two factors can be attributed to this. First, while a high proportion of households consume adult goods under examination as shown on Table 2, the mean proportion of adult good expenditure to total expenditure is very low. Secondly, adult goods such as cigarettes and alcohol encounter under-reporting at data collection stage. These two factors are likely to affect the results obtained for the analysis.

Measuring discrimination

Tables 5 and 6 give the pi-ratios and the standard errors of the analysis conducted at national, rural and urban levels respectively. If adult goods are properly defined, i.e. if children do not consume them directly, the coefficients ought to be negative. Using the national sample, four out of the 24 child categories have positive pi-ratios compared with Deaton (1989) where only three out of the 32 pi-ratios had positive signs. However, the crucial variable is the all adult variable in determining gender bias.

From the national sample, by first examining the all-adult in Table 5 (i.e. all adult goods combined), the male 0-4 has a positive pi-ratio, the plausible explanation is that generally, the arrival of a newborn child is associated with a lot of changes of lifestyles which can take a heavy toll on parents. This could result in increased consumption of an adult good such as cigarettes or alcohol as a sign of stress or celebration. In addition, there appears to be a bias in favour of the male child age 5-9, as he has a bigger pi-ratio compared with the female child, the male 10-14 is equally favoured compared with his female counterpart. It is fundamental to note that one can only draw firm conclusions whether the differences are significant by comparing the pi- coefficients by gender or by commodity (Deaton, 1989). In this study, we compared the differences by gender, where the null hypothesis tested was that a male age-group (i.e. 0-4, 5-9, 10-14, 15-55 and 55+) equalled its female counterpart, using a 5% significance level as shown in Table 7. At the national level, the male 5-9 seems to be favoured compared with the female counterpart as shown in Table 5. The f-test of equality in Table 7 shows that children 5-9 are significantly different from each other, hence the null hypothesis of equality is rejected[2]. For children 10-14, Table 5 shows that male children receive more than the female but the test of equality shows that the difference is not significant. Going further to disaggregate the adult goods into cigarettes, adult clothing and alcohol, as shown in Table 5, for cigarettes, the male 5-9 and female 10-14 seem to be favoured. However, the test of equality in Table 7 indicates that the differences are not significant. For adult clothing, it is female 0-4, 10-14 and male 5-9 while for alcohol, it is male 5-9 and 10-14 who are favoured. Similarly, the tests of gender equality for these categories show that the gender differences are not significant.

Moving to the rural sample and using the same approach for the national sample, for the all adult good (Table 5), there is a bias in favour of the male 5-9, however, the difference is not significant (Table 7). On cigarettes, all the female age categories have positive ratios. For alcohol, the female 0-4 and 5-9 appear to be favoured compared with the male counterparts. The test of gender equality however, shows that the difference

For this study, certain adult goods were dropped from the analysis for various reasons: At national and rural level, entertainment and meals out were dropped to avoid sample bias since a small percentage of households consumed these goods. In the urban sample, entertainment and adult footwear were also dropped for similar reasons. Personal care was also dropped since it was felt that items such as salons and barbers are also visited by children.

Total expenditure and adult goods

Demand changes in commodities consumed by some members of households give us an idea of how households respond to demographic changes. Engel curve like Equation 13 was estimated on expenditure for each of the three categories of adult goods and all adult. Of the 10 age categories used in the analysis, age male 55+ formed the base category. Other variables included were age and age squared of household head, education of household head and location (the eight provinces of Kenya). The results of the OLS regressions are given in Table 3. The dependent variable in each case was the budget share of the adult good in question.

The coefficient on the logarithm of per capita household expenditure (Lpce) varies with different adult goods: the budget share of cigarette falls with the log of total expenditure outlay at national, rural and urban levels. However, the coefficients are not significant. A unit increase in the log of per capita expenditure will lead to a decrease in the budget share of cigarettes by 0.0003 in absolute terms, for all households. However, for rural households, a unit increase in the log of per capita expenditure will lead to a decrease in the budget share of cigarettes by 0.0001, while the rural households will have a 0.0011 decrease. For adult clothing, a unit increase in Lpce will significantly increase the adult clothing budget share by 0.01 at national level, and for the urban households, the budget share of adult clothing will increase by 0.0153. This change is significant at 5%. The budget share of alcohol increases with a unit increase in Lpce: At national level, the alcohol budget share will increase by 0.007 compared with the rural level where it will increase by 0.007. In both cases these increases are significant at 5%.

Another important factor is the elasticities[1] of the budget shares of the various adult goods, which can be derived from Table 3. Following the work of Deaton (1997), the â-coefficients determine whether goods are necessities or luxuries, so that when $\hat{a}_i > 0$, the share of the budget increases with total outlay, its total expenditure elasticity is greater than unity and vice versa when $\hat{a}_i < 0$. At national level, the all-adult goods has a budget share that increases with total outlay, so that the expenditure elasticity is 1.0168, all adult is a luxury good. Adult clothing and alcohol have elasticities of 1.0101 and 1.0071 respectively making them luxury goods. In the rural areas alcohol budget share increases with total expenditure outlay and has an elasticity of 1.007 while in the urban area, adult clothing budget share is also increasing with total expenditure and has an elasticity of 1.0153. Cigarette budget share is increasing with total expenditure outlay for all the three sub groups. The elasticities are 0.9997, 0.9999 and 0.9989 for national, rural and urban, respectively. It should be noted that the elasticities border on luxury and necessity goods. These results bring out two aspects of cigarettes, first, its addictive nature makes it a necessity good while if the figure is rounded off, it is a

(15-55) has access to all the adult goods except adult clothing, while the adult female (15-55) has access to adult clothing only. This implies that the adult female has less access to most of the adult goods. In the rural sample, for the all adult variable, female 15-55 and male >55 have positive pi-ratios while in the urban sample only male 15-55 has a positive pi-ratio. The null hypothesis of gender equality in Table 7 is rejected at 5% significance level for most of the adult categories at both national and rural level. There is no sufficient data to accept the alternative hypothesis of no gender equality and further research is required in examining gender discrimination among adults in order to make conclusive decisions.

Deaton (1987) examined gender discrimination in Cote d'Ivoire using six adult goods: adult clothing, adult fabric (*pagne*), adult shoes, alcohol, tobacco, eating out and entertainment. He found that there was no real difference in the overall treatment of boys and girls. Deaton (1997) further examines discrimination in rural Maharashtra, using tobacco and pan, and alcohol, the two youngest age groups for children 0-4 and 5-9, had larger negative pi-ratios for boys as compared to girls. The difference was only significant for the 0-5 age group, which was taken as evidence for discrimination against girls relative to boys.

It should be noted that the results obtained from a study tend to be sensitive to different methodologies used. Kingdon (2003: 20), while examining the reliability of household consumption-based (Engel Curve) methodology in detecting gender bias, she used data sets that had educational expenditure information at individual level and by aggregation at household level. She found that the discriminatory mechanism is via differential enrolment rates for boys and girls. This is therefore a two-stage process, the decision to enrol a child in school (that is to incur expenditure) and then the actual spending. Educational expenditure conditional on enrolment is equal for boys and girls. The Engel curve however models a single equation for this two-stage process. The household level equation fails to pick the bias in one-third of the cases. Thus, a method that integrates/jointly models these two processes dilutes the powerful gender differentiation that exists in many cases. Similarly, in this case, the decision to purchase and how much to purchase is a two-stage process. Such a procedure means that the model represents the expectation of purchases conditional on the right hand side variables, with no distinction made between the effects of demographics and outlay on the decision to buy the good, and on the decision about how much to buy if a purchase is to be made. The significance of gender bias could be understated due to the methodology used. Individual level data would yield better results; unfortunately, most developing countries do not have individual consumption data.

The study has examined intrahousehold resource allocation within the Kenyan households and if there exists gender bias. The main objectives of the study were to identify goods that are demographically separable from children, examine the relationship between adult goods and total expenditure and test for gender bias in the intrahousehold allocation of consumption. The study used the Deaton (1987) approach to undertake the analysis. The interesting finding is that while goods like alcohol and cigarettes are considered to be adult goods, evidence from the analysis shows that alcohol is not an adult good in the urban areas. The study does not find any bias in favour of male or female using the Kenyan data and using the Deaton model.

is not significant.

In the urban sample, using all-adult good, it appears that the male 5-9 and the female 10-14 are more favoured while results in Table 7 indicate that the differences are not significant. For specific adult goods: cigarettes, female 5-9 and 10-14 are favoured as compared with their counterparts. However, for adult clothing male 5-9 and female 10-14 are favoured. Similarly, the test of gender equality is not rejected at 5% implying that the children of age categories under study are equal.

Columns 8-10 of Table 5 give the outlay equivalent ratios for adults. Economic theory does not give a definite sign for these ratios; however, if adults have access to adult goods, their pi-ratios should be positive. At the national level, the adult male

5. Conclusion

This study on Kenya like others — Nhate et al. (2005) on Mozambique, Lachaud (1998) on Benin, Deaton (1987) — does not find evidence of gender bias.

While these results imply that there is no bias in favour of males or females, there are concerns that world development reports show evidence of high school enrolment rates for boys versus girls in different parts of Africa among other indicators. It would be important to further disaggregate the data by province or district to see if the results would be different. Secondly, there is need for research using different methodologies and unit of analysis as found by Kingdon (2003), she found that household level equations tend to fail to pick up gender bias in about one-third of the cases where the individual level equations showed significant bias. This requires the use of individual level data for carrying out analysis.

Aggarwal, B. 1997. "Bargaining" and gender relations within and beyond the household". IFPRI FCND Discussion Paper No. 27.

Bourguignon, F., M. Browning, P. Chiappori and V.Lechene. 1993. "Intra-Household Allocation of Consumption: A Model and Preliminary Evidence," *Annales d'Economie et de Statistique*.

Browning, M., F. Bourguignon, P. Chiappori and V. Lechene. 1994. " Incomes and Outcomes: A Structural Model of Intrahousehold Allocation," *Journal of Political Economy*, 102: 1067-96.

Chiappori P. 1992. "Collective Labour Supply and Welfare." *Journal of Political Economy,* 100 (3): 437-437.

Deaton, A. and J. Muellbaeur. 1980. "An Almost Ideal Demand System". *American Economic Review* 70: 312-326.

Notes

[1] Elasticity $\hat{a}_i = 1 + \hat{a}_i$ Deaton (1987)
[2] While the null hypothesis is rejected, there is no sufficient evidence to support the alternative hypothesis

References

Nhate, V., C. Arndt, M. Burslund and K. Van den Broeck K. 2005. "Orphans and discrimination in Mozambique: An Outlay Equivalence Analysis".

Quisumbing, R.A. and J.A. Maluccio. 2000. "Intrahousehold Allocation and Gender Relations: New Empirical Evidence from Four Developing Countries". IFPRI, FCND Discussion Paper No. 84.

Stata Corporation. 2003. Stata Programming Release 8. Stata Corporation.

Subramanian, S. and A. Deaton. 1991. "Gender Effects in Indian Consumption Patterns,"

Sarvekshana, 14(4): 1-12.

Swapna, M. and R. M. Sudarshan, eds. 2003. "Tracking Gender Equity under Economic Reforms: Continuity and Change in South Asia". International Development Research Centre info@idrc.ca /www.idrc.ca.

World Development Indicators (2007) CD-Rom.

Working, H. 1943. "Statistical Laws of Family Expenditure," *Journal of the American Statistical Associaton,* 38:43-56.

Adult Clothing	0.729	0.466	0.897	
0.901	0.778	0.479	0.305	
Adult footwear	0.662	0.155	0.602	0.706
0.889	0.526	0.627		

*significant at 5%

** Significant at 10%

Table 4: OLS estimates of parameters and t-values

		National	
Safe adult goods	**Cigarette**	**Adult clothing**	**Alcohol**

Deaton, A. 1987. "Allocation of Goods within the households: Adults, Children and Gender." The World Bank LSMS Working Paper no. 39

Deaton, A. 1989. "Looking for boy-girl discrimination in household expenditure data." *The World Bank Economic Review* 3 (1): 1-15

Deaton, A. 1997. *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy.* Johns Hopkins, Baltimore.

Deaton, A., J. Ruiz-Castillo and D. Thomas. 1989. "The influence of household composition on household expenditure patterns: Theory and Spanish evidence." *Journal of Political Economy*, 97(1):179-200.

Doss, C.R. 1996. "Testing Among Models of Intrahousehold Resource Allocation." *World Development* , 24(10): 1597-1609.

Gibson, J. and S. Rozelle. 2000. "Is it better to be a boy? A disaggregated Outlay Equivalent Analysis of Gender Bias in Papua New Guinea". Working Paper no. 00-023. Department of Agricultural Resource Economics, University of California Davis.

Haddad, L. 1994. "Strengthening Food Policy through Intra-Household Analysis". *Food Policy,* 19(4): 347-356.

Hoddinot, J. and L. Haddad. 1995. "Does female income share influence household expenditure pattern? Evidence from Cote d'Ivoire". *Oxford Bulletin of Economic Statistics,* 57: 77-96

Hoddinot, J., L. Haddad and H. Alderman. 1994. "Intrahousehold Resource Allocation: An Introduction." World Bank Policy Research Working Paper No. 1255

Khanna, R., A. Kumar, J.F. Vaghela, V. Sreenivas and J.M. Puliyel. 2003. "Community based retrospective study of sex in infant mortality in India". *British Medical Journal,* 327 (7407)

Kingdon, G..G. 2003. "Where has all the bias gone? Detecting gender-bias in the household allocation of educational expenditure". Department of Economics, University of Oxford.

Lachaud, J.P. 1998. "Inégalité intra-ménage et genre au Burkina Faso: un test économétrique". Documents de travail 27, Groupe d'Economie du Développement de l'Université Montesquieu Bordeaux IV.

Lorge, R.B. and N.Schlossman. 1990. *Intra-Household Resource Allocation: Issues and Methods for Development Policy and Planning.* United Nations University Press..

Marinda, P. A. 2006. "Child–mother nutrition and health status in rural Kenya: the role of intra-household resource allocation and education". *International Journal of Consumer Studies*, 30(4) pp. 327- 336.

Marinda, P., A.Bangura, F.Heidhues. 2006. "Technical Efficiency Analysis in Male-Managed Farms: A Study of Maize Production in West Pokot District, Kenya". *Institute of Agricultural Economics and Social Sciences in the Tropics and Sub-tropics,* 490A.

Supplementary tables

Table 2: Description of Data

Variable	National (N=[illegible])	Urban (N=[illegible])	Rural (N=[illegible])
Proportion of households consuming			
Cigarette	17.97	16.92	13.92
Entertainment	2.59	8.59	1.65
Personal Care	9.65	24.66	8.44
Adult clothing	22.00	31.09	20.08
Adult footwear	4.59	7.91	4.49
Medical	12.28	24.95	10.41
Alcohol	19.58	14.20	19.31
Mean budget share of adult goods			
Cigarette	0.005 (0.001)	0.009 (0.002)	0.004 (0.000)
Entertainment	0.001 (0.000)	0.002 (0.000)	0.001 (0.000)
Personal Care	0.002 (0.000)	0.006 (0.000)	0.001 (0.000)
Adult clothing	0.016 (0.001)	0.027 (0.002)	0.014 (0.001)
Adult footwear	0.002 (0.000)	0.006 (0.001)	0.002 (0.000)
Medical	0.010 (0.001)	0.029 (0.004)	0.007 (0.001)
Alcohol	0.012 (0.001)	0.013 (0.002)	0.011 (0.001)
All adults	0.050 (0.002)	0.092 (0.005)	0.040 (0.001)
Mean share of [illegible]			
Male 0-4 years	0.068 (0.002)	0.070 (0.004)	0.068 (0.002)
Female 0-4 years	0.068 (0.002)	0.074 (0.004)	0.068 (0.002)
Male 5-9 years	0.077 (0.001)	0.056 (0.004)	0.081 (0.001)
Female 5-9 years	0.076 (0.002)	0.055 (0.005)	0.080 (0.002)
Male 10-14 years	0.073 (0.002)	0.049 (0.004)	0.077 (0.002)
Female 10-14 years	0.073 (0.002)	0.049 (0.005)	0.084 (0.002)
Male 15-55 years	0.241 (0.004)	0.327 (0.010)	0.220 (0.002)
Female 15-55 years	0.259 (0.002)	0.295 (0.009)	0.244 (0.002)
Male 55+	0.029 (0.001)	0.019 (0.002)	0.032 (0.001)
Female 55+	0.032 (0.001)	0.007 (0.001)	0.038 (0.001)
Proportion of people in			
No Job	0.21	0.05	0.24
Agriculture	0.42	0.093	0.51
Forestry	0.006	0.006	0.006
Fishing	0.005	0.002	0.005
Sales/Services	0.27	0.70	0.13
Manufacturing	0.03	0.08	0.019
Mining	0.002	0.007	0.002
Transport	0.03	0.053	0.013
Construction	0.03	0.057	0.020
Mean Household size	5.59	4.3	5.73
Mean age of household head	44.68 (0.28)	38.24 (0.59)	46.07 (0.24)
Education level of household head	9.5 (0.25)	13.5 (0.67)	8.6 (0.23)

Source: authors own computation from WMS 1997
Standard errors in parenthesis

Table 3 Demographic Separability test: p-values

Condition for adult goods	Male 0-4	Female 0-4	Male 5-9	Female 5-9	Male 10-14	Female 10-14	Joint test of excluding all children groups
				Pooled			
				National			
Alcohol	0.677	0.366	0.539	0.425	0.531	0.335	0.751
Cigarettes	0.169	0.126	0.061	0.314	0.548	0.038	0.314
Health care	0.763	0.541	0.524	0.963	0.334	0.128	0.314
Entertainment	0.1116	0.754	0.363	0.168	0.271	0.232	0.243
Personal Care	0.015*	0.012*	0.132	0.009**	0.117	0.010*	0.199
Adult Clothing	0.447	0.166	0.491	0.517	0.757	0.544	0.561
Adult footwear	0.019	0.317	0.217	0.009**	0.218	0.376	0.426
				Rural			
Alcohol	0.368	0.356	0.428	0.476	0.598	0.517	0.758
Cigarettes	0.106	0.166	0.152	0.375	0.192	0.426	0.391
Health care	0.296	0.674	0.546	0.547	1.000	0.458	0.311
Entertainment	0.244	0.712	0.346	0.321	0.525	0.566	0.725
Personal Care	0.006	0.012	0.014*	0.019	0.001*	0.021*	0.125
Adult Clothing	0.077**	0.314	0.414	0.367	0.549	0.333	0.426
Adult footwear	0.566	0.518	0.231	0.079**	0.244	0.112	0.009*
				Urban			
Alcohol	0.931	0.696	0.557	0.261	0.061**	0.162**	0.314
Cigarettes	0.643	0.435	0.304	0.999	0.129	0.718	0.579
Health care	0.598	0.321	0.966	0.766	0.306	0.047*	0.399
Entertainment	0.336	0.329	0.629	0.646	0.191	0.169	0.463
Personal Care	0.318	0.306	0.567	0.152	0.197	0.999	0.372
Adult Clothing	0.729	0.466	0.397	0.961	0.778	0.479	0.366
Adult footwear	0.662	0.156	0.662	0.766	0.119	0.526	0.627

* significant at 5%
** significant at 10%

Table 4 OLS estimates of parameters and p-values

	National			
Some adult goods	Cigarettes	Adult clothing	Alcohol	All adult
Lpce	-0.0003 (0.47)	0.0101 (0.00)*	0.0071 (0.00)*	0.0169 (0.00)*
Lhsize	-0.0011 (0.12)	0.0047 (0.01)*	0.0049 (0.02)**	0.0079 (0.01)*
M0-4	-0.0003 (0.80)	0.0116 (0.27)	-0.0169 (0.04)**	-0.0081 (0.78)
F0-4	0.0008 (0.81)	0.0038 (0.22)	-0.0231 (0.00)*	-0.0125 (0.47)
M5-9	-0.0034 (0.04)**	-0.0074 (0.30)	-0.0272 (0.00)*	-0.0420 (0.00)*
F5-9	-0.0047 (0.45)	0.0049 (0.57)	-0.0202 (0.01)*	-0.0205 (0.14)
M10-14	-0.0060 (0.17)	-0.0015 (0.37)	-0.0238 (0.00)*	-0.0279 (0.12)
F10-14	-0.0061 (0.42)	-0.0021 (0.79)	-0.0232 (0.01)*	-0.0314 (0.07)***
M15-55	0.0001 (0.97)	0.0091 (0.12)	-0.0079 (0.22)	0.0019 (0.84)
F15-55	-0.0110 (0.01)*	0.0138 (0.01)*	-0.0049 (0.00)*	-0.0272 (0.02)**
F55+	-0.0035 (0.02)**	0.0053 (0.29)	-0.0256 (0.00)*	-0.0238 (0.00)*
Constant	0.0219 (0.02)**	-0.0530 (0.00)*	-0.0303 (0.12)	-0.0662 (0.00)*
R-squared	0.0433	0.0474	0.0352	0.0791

	Rural		
Some adult goods	Cigarettes	Alcohol	All adult
Lpce	-0.0001 (0.91)	0.0070 (0.00)*	0.0036 (0.00)*
Lhsize	-0.0004 (0.57)	0.0030 (0.07)***	0.0032 (0.03)**
M0-4	-0.0062 (0.12)	-0.0198 (0.01)*	0.0129 (0.24)
F0-4	-0.0047 (0.25)	-0.0225 (0.00)*	0.0059 (0.43)
M5-9	-0.0035 (0.02)**	-0.0228 (0.00)*	-0.0127 (0.03)**
F5-9	-0.0103 (0.01)*	-0.0247 (0.00)*	-0.0033 (0.75)
M10-14	-0.0079 (0.06)***	-0.0229 (0.00)*	-0.0088 (0.23)
F10-14	-0.0118 (0.00)*	-0.0234 (0.00)*	-0.0148 (0.01)*
M15-55	0.0008 (0.52)	-0.0180 (0.01)*	0.0147 (0.01)*
F15-55	-0.0122 (0.00)*	-0.0422 (0.00)*	0.0210 (0.77)
F55+	-0.0097 (0.00)*	-0.0200 (0.00)*	-0.0033 (0.48)
Constant	0.0120 (0.00)*	-0.0239 (0.03)**	-0.0217 (0.30)
R-squared	0.0187	0.0299	0.0495

	Urban		
Some adult goods	Cigarettes	Adult clothing	All adult
Lpce	-0.0011 (0.49)	0.0159 (0.00)*	0.0142 (0.00)*
Lhsize	-0.0023 (0.31)	0.0033 (0.42)	0.0059 (0.42)
M0-4	0.0075 (0.33)	-0.0540 (0.23)	-0.0484 (0.80)
F0-4	0.0233 (0.53)	-0.0409 (0.22)	-0.0005 (1.00)
M5-9	-0.0170 (0.48)	-0.0549 (0.28)	-0.0719 (0.24)
F5-9	0.0163 (0.74)	-0.0369 (0.97)	-0.0201 (0.30)
M10-14	-0.0051 (0.87)	-0.0094 (0.38)	-0.0144 (0.38)
F10-14	0.0125 (0.75)	-0.0190 (0.75)	0.0065 (0.94)
M15-55	-0.0012 (1.00)	-0.0350 (0.27)	-0.0362 (0.43)
F15-55	-0.0031 (0.30)	-0.0090 (0.31)	-0.0181 (0.77)
F55+	-0.0023 (0.79)	-0.0208 (0.84)	-0.0238 (0.88)
Constant	2.82 (0.49)	-9.79 (0.51)	-9.79 (0.51)
R-squared	0.0947	0.0533	0.0684

Source: Authors computation from Kenya WMS 1997

*significant at 1%, **significant at 5%, ***significant at 10%

Table 5 Outlay Equivalent ratios (% change) for the adult goods

Adult goods	Male 0–4	Female 0–4	Male 5–9	Female 5–9	Male 10–14	Female 10–14	Male 15–59	Female 15–59	Male >59	Female >59
					National					
Cigarettes	0.33	1.73	-0.79	-0.18	-0.33	-0.82	0.83	-1.34	0.86	-0.85
Adult clothing	-0.04	-0.24	-0.78	-0.33	-0.53	-0.56	-0.13	0.23	-0.31	-0.17
Alcohol	0.14	-0.44	-0.46	-0.15	-0.56	-0.12	0.54	-0.06	0.54	-0.38
All adult	0.04	-0.11	-0.66	-0.24	-0.52	-0.37	0.22	-0.34	0.38	-0.31
					Rural					
Cigarettes	-0.15	3.12	-1.46	1.28	-0.34	1.31	-0.26	-1.21	0.43	-2.03
Alcohol	-0.16	-0.27	-0.15	-0.51	-1.75	0.56	0.66	-0.48	-1.44	-0.66
All adult	-0.03	0.21	-1.24	0.66	0.07	0.56	-0.29	0.07	0.52	-0.66
					Urban					
Cigarettes	0.28	0.99	-0.16	-0.71	-0.19	-1.09	1.61	-1.47	1.22	-0.09
Adult clothing	0.19	-0.26	-0.33	-0.29	-0.71	-0.75	0.62	0.09	-0.53	-0.29
All adult	0.19	-0.06	-0.75	-0.37	-0.62	-0.06	0.29	-0.17	-0.24	-0.19

Source: Author computations from Kenya WMS 1997

Table 4: Standard Errors

Adult goods	Male 0–4	Female 0–4	Male 5–9	Female 5–9	Male 10–14	Female 10–14	Male 15–55	Female 15–55	Male >55	Female >55
	Standard Errors									
	National									
Cigarettes	0.73	1.36	0.74	0.57	0.56	0.42	0.75	0.29	0.93	0.45
Adult clothing	0.27	0.26	0.18	0.26	0.22	0.26	0.15	0.21	0.25	0.26
Alcohol	0.24	0.25	0.19	0.22	0.23	0.22	0.15	0.16	0.34	0.26
All adult	0.23	0.21	0.13	0.13	0.14	0.17	0.15	0.14	0.26	0.16
	Rural									
Cigarettes	2.66	3.79	2.26	1.62	2.41	2.36	1.29	0.63	4.86	1.62
Alcohol	0.56	0.46	0.53	0.56	0.63	0.77	0.23	0.29	1.29	0.66
All adult	0.63	0.33	0.42	0.46	0.57	0.72	0.38	0.42	1.26	0.56
	Urban									
Cigarettes	0.49	0.36	0.42	0.41	0.44	0.39	0.32	0.36	0.75	0.57
Adult clothing	0.31	0.22	0.17	0.22	0.18	0.26	0.16	0.16	0.25	0.22
All adult	0.23	0.23	0.16	0.19	0.17	0.18	0.13	0.15	0.24	0.21

Source: Authors' computations from Kenya WMS II 1994

Table 7 F-tests of gender equality (p-values in parentheses)

	Children (0-4)	Children (5-9)	Children (10-14)	Prime adults (15-64)	Old (65+)	All
National						
Degrees of freedom	1	1	1	1	1	2
Cigarettes	1.46 (0.23)	0.31 (0.57)	0.00 (1.00)	14.27 (0.00)*	5.79 (0.02)*	7.78 (0.00)*
Adult clothing	0.14 (0.71)	2.41 (0.12)	0.01 (0.94)	2.53 (0.11)	1.11 (0.29)	2.56 (0.08)
Alcohol	2.21 (0.14)	1.16 (0.28)	1.04 (0.31)	40.04 (0.00)*	16.45 (0.01)*	6.56 (0.00)*
All adult	0.46 (0.50)	4.70 (0.03)*	0.36 (0.55)	12.00 (0.00)*	8.27 (0.00)*	5.61 (0.00)*
Rural						
Degrees of freedom						
Cigarettes	0.39 (0.54)	0.58 (0.44)	2.16 (0.14)	59.25 (0.00)*	14.54 (0.00)*	10.65 (0.00)*
Alcohol	2.11 (0.08)	2.08 (0.15)	0.56 (0.46)	34.51 (0.00)*	24.09 (0.00)*	6.16 (0.00)*
All adult	0.71 (0.40)	2.61 (0.10)	0.41 (0.49)	6.19 (0.01)*	0.54 (0.46)	5.31 (0.00)*
Urban						
Degrees of freedom						
Cigarettes	0.21 (0.64)	0.56 (0.34)	0.34 (0.56)	0.86 (0.35)	0.08 (0.78)	1.51 (0.14)
Adult clothing	0.21 (0.64)	0.31 (0.58)	0.00 (0.94)	2.41 (0.12)	0.22 (0.63)	0.33 (0.59)
All adult	2.33 (0.09)*	1.33 (0.14)	0.24 (0.63)	1.32 (0.25)	0.24 (0.63)	1.16 (0.32)

* significant at 5%

Other recent publications in the AERC Research Papers Series:

Determinants of Private Investment Behaviour in Ghana, by Yaw Asante, Research Paper 100.
An Analysis of the Implementation and Stability of Nigerian Agricultural Policies, 1970–1993, by P. Kassey Garba, Research Paper 101.
Poverty, Growth and Inequality in Nigeria: A Case Study, by Ben E. Aigbokhan, Research Paper 102.
Effect of Export Earnings Fluctuations on Capital Formation, by Godwin Akpokodje, Research Paper 103.
Nigeria: Towards an Optimal Macroeconomic Management of Public Capital, by Melvin D. Ayogu, Research Paper 104.
International Stock Market Linkages in South Africa, by K.R. Jefferis, C.C. Okeahalam and T.T. Matome, Research Paper 105.
An Empirical Analysis of Interest Rate Spread in Kenya, by Rose W. Ngugi, Research Paper 106.
The Parallel Foreign Exchange Market and Macroeconomic Performance in Ethiopia, by Derrese Degefa, Reseach Paper 107.
Market Structure, Liberalization and Performance in the Malawi Banking Industry, by Ephraim W. Chirwa, Research Paper 108.
Liberalization of the Foreign Exchange Market in Kenya and the Short-Term Capital Flows Problem, by Njuguna S. Ndung'u, Research Paper 109.
External Aid Inflows and the Real Exchange Rate in Ghana, by Harry A. Sackey, Research Paper 110.
Formal and Informal Institutions' Lending Policies and Access to Credit by Small-Scale Enterprises in Kenya: An Empirical Assessment, by Rosemary Atieno, Research Paper 111.
Financial Sector Reform, Macroeconomic Instability and the Order of Economic Liberalization: The Evidence from Nigeria, by Sylvanus I. Ikhinda and Abayomi A. Alawode, Research Paper 112.
The Second Economy and Tax Yield in Malawi, by C. Chipeta, Research Paper 113.
Promoting Export Diversification in Cameroon: Toward Which Products? by Lydie T. Bamou, Research Paper 114.
Asset Pricing and Information Efficiency of the Ghana Stock Market, by Kofi A. Osei, Research Paper 115.
An Examination of the Sources of Economic Growth in Cameroon, by Aloysius Ajab Amin, Research Paper 116.
Trade Liberalization and Technology Acquisition in the Manufacturing Sector: Evidence from Nigeria, by Ayonrinde Folasade, Research Paper 117.
Total Factor Productivity in Kenya: The Links with Trade Policy, by Joseph Onjala, Research Paper 118.
Kenya Airways: A Case Study of Privatization, by Samuel Oyieke, Research Paper 119.
Determinants of Agricultural Exports: The Case of Cameroon, by Daniel Gbetnkon and Sunday A. Khan, Research Paper 120.
Macroeconomic Modelling and Economic Policy Making: A Survey of Experiences in Africa, by Charles Soludo, Research Paper 121.
Determinants of Regional Poverty in Uganda, by Francis Okurut, Jonathan Odwee and Asaf Adebua, Research Paper 122.
Exchange Rate Policy and the Parallel Market for Foreign Currency in Burundi, by Janvier D. Nkurunziza, Research Paper 123.
Structural Adjustment, Poverty and Economic Growth: *An Analysis for Kenya*, by Jane Kabubo-Mariara and Tabitha W. Kiriti, Research Paper 124.
Liberalization and Implicit Government Finances in Sierra Leone, by Victor A.B. Davis, Research Paper 125.
Productivity, Market Structure and Trade Liberalization in Nigeria, by Adeola F. Adenikinju and Louis N. Chete, Research Paper 126.
Productivity Growth in Nigerian Manufacturing and Its Correlation to Trade Policy Regimes/Indexes (1962–1985), by Louis N. Chete and Adeola F. Adenikinju, Research Paper 127.
Financial Liberalization and Its Implications for the Domestic Financial System: The Case of Uganda, by Louis A. Kasekende and Michael Atingi-Ego, Research Paper 128.
Public Enterprise Reform in Nigeria: Evidence from the Telecommunications Industry, by Afeikhena Jerome, Research Paper 129.
Food Security and Child Nutrition Status among Urban Poor Households in Uganda: Implications for Poverty Alleviation, by Sarah Nakabo-Sswanyana, Research Paper 130.
Tax Reforms and Revenue Mobilization in Kenya, by Moses Kinyanjui Muriithi and Eliud Dismas Moyi,

Trade Reform and Efficiency in Cameroon's Manufacturing Industries, by Ousmanou Njikam, Research Paper 133.
Efficiency of Microenterprises in the Nigerian Economy, by Igbekele A. Ajibefun and Adebiyi G. Daramola, Research Paper 134.
The Impact of Foreign Aid on Public Expenditure: The Case of Kenya, by James Njeru, Research Paper 135.
The Effects of Trade Liberalization on Productive Efficiency: Some Evidence from the Electoral Industry in Cameroon, by Ousmanou Njikam, Research Paper 136.
How Tied Aid Affects the Cost of Aid-Funded Projects in Ghana, by Barfour Osei, Research Paper 137.
Exchange Rate Regimes and Inflation in Tanzania, by Longinus Rutasitara, Research Paper 138.
Private Returns to Higher Education in Nigeria, by O.B. Okuwa, Research Paper 139.
Uganda's Equilibrium Real Exchange Rate and Its Implications for Non-Traditional Export Performance, by Michael Atingi-Ego and Rachel Kaggwa Sebudde, Research Paper 140.
Dynamic Inter-Links among the Exchange Rate, Price Level and Terms of Trade in a Managed Floating Exchange Rate System: The Case of Ghana, by Vijay K. Bhasin, Research Paper 141.
Financial Deepening, Economic Growth and Development: Evidence from Selected Sub-Saharan African Countries, by John E. Udo Ndebbio, Research Paper 142.
The Determinants of Inflation in South Africa: An Econometric Analysis, by Oludele A. Akinboade, Franz K. Siebrits and Elizabeth W. Niedermeier, Research Paper 143.
The Cost of Aid Tying to Ghana, by Barfour Osei, Research Paper 144.
A Positive and Normative Analysis of Bank Supervision in Nigeria, by A. Soyibo, S.O. Alashi and M.K. Ahmad, Research Paper 145.
The Determinants of the Real Exchange Rate in Zambia, by Kombe O. Mungule, Research Paper 146.
An Evaluation of the Viability of a Single Monetary Zone in ECOWAS, by Olawale Ogunkola, Research Paper 147.
Analysis of the Cost of Infrastructure Failures in a Developing Economy: The Case of Electricity Sector in Nigeria, by Adeola Adenikinju, Research Paper 148.
Corporate Governance Mechanisms and Firm Financial Performance in Nigeria, by Ahmadu Sanda, Aminu S. Mikailu and Tukur Garba, Research Paper 149.
Female Labour Force Participation in Ghana: The Effects of Education, by Harry A. Sackey, Research Paper 150.
The Integration of Nigeria's Rural and Urban Foodstuffs Market, by Rosemary Okoh and P.C. Egbon, Research Paper 151.
Determinants of Technical Efficiency Differentials amongst Small- and Medium-Scale Farmers in Uganda: A Case of Tobacco Growers, by Marios Obwona, Research Paper 152.
Land Conservation in Kenya: The Role of Property Rights, by Jane Kabubo-Mariara, Research Paper 153.
Technical Efficiency Differentials in Rice Production Technologies in Nigeria, by Olorunfemi Ogundele, and Victor Okoruwa, Research Paper 154.
The Determinants of Health Care Demand in Uganda: The Case Study of Lira District, Northern Uganda, by Jonathan Odwee, Francis Okurut and Asaf Adebua, Research Paper 155.
Incidence and Determinants of Child Labour in Nigeria: Implications for Poverty Alleviation, by Benjamin C. Okpukpara and Ngozi Odurukwe, Research Paper 156.
Female Participation in the Labour Market: The Case of the Informal Sector in Kenya, by Rosemary Atieno, Research Paper 157.
The Impact of Migrant Remittances on Household Welfare in Ghana, by Peter Quartey, Research Paper 158.
Food Production in Zambia: The Impact of Selected Structural Adjustment Policies, by Muacinga C.H. Simatele, Research Paper 159.
Poverty, Inequality and Welfare Effects of Trade Liberalization in Côte d'Ivoire: A Computable General Equilibrium Model Analysis, by Bédia F. Aka, Research Paper 160.
The Distribution of Expenditure Tax Burden before and after Tax Reform: The Case of Cameroon, by Tabi Atemnkeng Johennes, Atabongawung Joseph Nju and Afeani Azia Theresia, Research Paper 161.
Macroeconomic and Distributional Consequences of Energy Supply Shocks in Nigeria, by Adeola F. Adenikinju and Niyi Falobi, Research Paper 162.
Analysis of Factors Affecting the Technical Efficiency of Arabica Coffee Producers in Cameroon, by Amadou Nchare, Research Paper 163.
Fiscal Policy and Poverty Alleviation: Some Policy Options for Nigeria, by Benneth O. Obi, Research

Extent and Determinants of Child Labour in Uganda, by Tom Mwebaze, Research Paper 167.

Oil Wealth and Economic Growth in Oil Exporting African Countries, by Olomola Philip Akanni, Research Paper 168.

Implications of Rainfall Shocks for Household Income and Consumption in Uganda, by John Bosco Asiimwe, Research Paper 169.

Relative Price Variability and Inflation: Evidence from the Agricultural Sector in Nigeria, by Obasi O. Ukoha, Research Paper 170.

A Modelling of Ghana's Inflation: 1960–2003, by Mathew Kofi Ocran, Research Paper 171.

The Determinants of School and Attainment in Ghana: A Gender Perspective, by Harry A. Sackey, Research Paper 172.

Private Returns to Education in Ghana: Implications for Investments in Schooling and Migration, by Harry A. Sackey, Research Paper 173.

Oil Wealth and Economic Growth in Oil Exporting African Countries, by Olomola Philip Akanni, Research Paper 174.

Private Investment Behaviour and Trade Policy Practice in Nigeria, by Dipo T. Busari and Phillip C. Omoke, Research Paper 175.

Determinants of the Capital Structure of Ghanaian Firms, by Joshua Abor, Research Paper 176.

Privatization and Enterprise Performance in Nigeria: Case Study of Some Privatized Enterprises, by Afeikhena Jerome, Research Paper 177.

Sources of Technical Efficiency among Smallholder Maize Farmers in Southern Malawi, by Ephraim W. Chirwa, Research Paper 178.

Technical Efficiency of Farmers Growing Rice in Northern Ghana, by Seidu Al-hassan, Research Paper 179.

Empirical Analysis of Tariff Line-Level Trade, Tariff Revenue and Welfare Effects of Reciprocity under an Economic Partnership Agreement with the EU: Evidence from Malawi and Tanzania, by Evious K. Zgovu and Josaphat P. Kweka, Research Paper 180.

Effect of Import Liberalization on Tariff Revenue in Ghana, by William Gabriel Brafu-Insaidoo and Camara Kwasi Obeng, Research Paper 181.

Distribution Impact of Public Spending in Cameroon: The Case of Health Care, by Bernadette Dia Kamgnia, Research Paper 182.

Social Welfare and Demand for Health Care in the Urban Areas of Côte d'Ivoire, by Arsène Kouadio, Vincent Monsan and Mamadou Gbongue, Research Paper 183.

Modelling the Inflation Process in Nigeria, by Olusanya E. Olubusoye and Rasheed Oyaromade, Research Paper 184.

Determinants of Expected Poverty Among Rural Households in Nigeria, by O.A. Oni and S.A. Yusuf, Research Paper 185.

Exchange Rate Volatility and Non-Traditional Exports Performance: Zambia, 1965–1999, by Anthony Musonda, Research Paper 186.

Macroeconomic Fluctuations in the West African Monetary Union: A Dynamic Structural Factor Model Approach, by Romain Houssa, Research Paper 187.

Price Reactions to Dividend Announcements on the Nigerian Stock Market, by Olatundun Janet Adelegan, Research Paper 188.

Does Corporate Leadership Matter? Evidence from Nigeria, by Olatundun Janet Adelegan, Research Paper 189.

Determinants of Child Labour and Schooling in the Native Cocoa Households of Côte d'Ivoire, by Guy Blaise Nkamleu, Research Paper 190.

Poverty and the Anthropometric Status of Children: A Comparative Analysis of Rural and Urban Household in Togo, by Kodjo Abalo, Research Paper 191.

Measuring Bank Efficiency in Developing Countries: The Case of the West African Economic and Monetary Union (WAEMU), by Sandrine Kablan, Research Paper 192.

Economic Liberalization, Monetary and Money Demand in Rwanda: 1980–2005, by Musoni J. Rutayisire, Research Paper 193.

Determinants of Employment in the Formal and Informal Sectors of the Urban Areas of Kenya, by Wambui R. Wamuthenya, Research Paper 194.

An Empirical Analysis of the Determinants of Food Imports in Congo, by Lυonard Nkouka Safoulanitou and Mathias Marie Adrien Ndinga, Research Paper 195.

Determinants of a Firm's Level of Exports: Evidence from Manufacturing Firms in Uganda, by Aggrey Niringiye and Richard Tuyiragize, Research Paper 196.

Supply Response, Risk and Institutional Change in Nigerian Agriculture, by Joshua Olusegun Ajetomobi, Research Paper 197.

Multidimensional Spatial Poverty Comparisons in Cameroon, by Aloysius Mom Njong, Research Paper 198.

Earnings and Employment Sector Choice in Kenya, by Robert Kivuti Nyaga, Research Paper 199.

Convergence and Economic Integration in Africa: the Case of the Franc Zone Countries, by Latif A.G. Dramani, Research Paper 200.

Analysis of Health Care Utilization in Côte d'Ivoire, by Alimatou Cisse, Research Paper 201.

Financial Sector Liberalization and Productivity Change in Uganda's Commercial Banking Sector, by Kenneth Alpha Egesa, Research Paper 202.

Competition and performace in Uganda's Banking System, by Adam Mugume, Research Paper 203.

Parallel Market Exchange Premiums and Customs and Excise Revenue in Nigeria, by Olumide S. Ayodele and Frances N. Obafemi, Research Paper 204.

Fiscal Reforms and Income Inequality in Senegal and Burkina Faso: A Comparative Study, by Mbaye Diene, Research Paper 205.

Factors Influencing Technical Efficiencies among Selected Wheat Farmers in Uasin Gishu District, Kenya, by James Njeru, Research Paper 206.

Exact Configuration of Poverty, Inequality and Polarization Trends in the Distribution of well-being in Cameroon, by Francis Menjo Baye, Research Paper 207.

Child Labour and Poverty Linkages: A Micro Analysis from Rural Malawian Data, by Levision S. Chiwaula, Research Paper 208.

The Determinants of Private Investment in Benin: A Panel Data Analysis, by Sosthène Ulrich Gnansounou, Research Paper 209.

Contingent Valuation in Community-Based Project Planning: The Case of Lake Bamendjim Fishery Restocking in Cameroon, by William M. Fonta et al., Research Paper 210.

Multidimensional Poverty in Cameroon: Determinants and Spatial Distribution, by Paul Ningaye et al., Research Paper 211.

What Drives Private Saving in Nigeria*,* by Tochukwu E. Nwachukwu and Peter Odigie, Research Paper 212.

Board Independence and Firm Financial Performance: Evidence from Nigeria, by Ahmadu U. Sanda et al., Research Paper 213.

Quality and Demand for Health Care in Rural Uganda: Evidence from 2002/03 Household Survey, by Darlison Kaija and Paul Okiira Okwi, Research Paper 214.

Capital Flight and its Determinants in the Franc Zone, by Ameth Saloum Ndiaye, Research Paper 215.

The Efficacy of Foreign Exchange Market Intervention in Malawi, by Kisukyabo Simwaka and Leslie Mkandawire, Research Paper 216.

The Determinants of Child Schooling in Nigeria, by Olanrewaju Olaniyan, Research Paper 217.

Influence of the Fiscal System on Income Distribution in Regions and Small Areas: Microsimulated CGE Model for Côte d'Ivoire, by Bédia F. Aka and Souleymane S. Diallo, Research Paper 218.

Asset Price Developments in an Emerging Stock Market:The Case of Mauritius, by Sunil K. Bundoo, Research Paper 219.