Inside Beninese Households: How Spouses Manage Their Personal Income*

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Abstract

This paper exploits original data collected in Benin, featuring both income and expenditure at the individual level. We provide evidence suggesting that husband and wife do not pool their respective income and thus do not make expenditure decisions on the basis of one common budget. As corroborated by numerous anthropological accounts on West Africa, husband and wife are secretive and individually allocate their personal income to private and public goods. We present a non-cooperative model that enables us to predict the determinants of spouses' patterns of consumption. Our empirical results confirm that spouses' financial spheres are relatively disconnected.

Keywords: Intra-household allocation, Gender, Benin
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1 Introduction

As underlined by Rangel and Thomas (2005), numerous anthropological accounts cast doubts as to the standard unitary model being an appropriate representation of the West African household decision unit. Contrary to the assumption that the household maximizes a single household utility function, husbands and wives seem to have their own budget. In this case, spending decisions are not only influenced by the level of household income but also depend on the partner who earns it. Alongside these ethnographic findings, considerable pieces of evidence from the literature on intra-household consumption decisions substantiate that the unitary model may not be valid regarding many decisions. In fact, several case studies in developing countries have shown that the household choices are affected by the identity of the earner.[1] Among the many theoretical alternatives to the unitary model, a great deal of attention has been dedicated to a model of cooperative household decision-making in which various preferences and weights or individual bargaining powers affect the outcome. This model also posits that however decisions are made, the results are Pareto-efficient. Thomas (1990), among others, gives credit to this model, using Brazilian data.[2]

However, a number of investigations pertaining to risk sharing within households implicitly reject the cooperative model. See Dercon and Krishnan (2000) who investigate whether individuals are able to smooth their consumption over time within the household, by using data on adult nutrition in Ethiopia.[3] Studies on intra-household production decisions also tend to find less support for the assumption of cooperative decision making. Notably, Udry (1996) uses agricultural data from Burkina Faso and finds that crop yields are different according to the gender of those controlling a given parcel. Since marginal productivity for an additional unit of either fertilizer or labor is not equal across all household plots, he rejects a cooperative outcome. Another strand of the literature studies the impact of new production opportunities on the household's production decisions. Several studies dealing with this have rejected the hypothesis of cooperative outcome.[4] Finaly, a study by Iversen et al. (2006) using experimental data

[1] Hoddinot and Haddad (1995) use data from Côte d'Ivoire and show that changes in gender-specific control of income translate into different expenditure outcomes. Attanasio and Lechêne (2002), using Progresa data from Mexico, confirm that wife's relative income share is a significant determinant in household's outcome. See also Doss (1999) and Hallman (2000).

[2] Similar results have been reported by Thomas and Chen (1994) for Taiwan and Thomas, Contreras and Frankenberg (2002) for Indonesia. Quisumbing and Maluccio (2003) with data on four developing countries also reject the unitary model but do not dismiss the hypothesis that households are Pareto-efficient.

[3] See also Doss (2001) who uses data on Ghana and Duflo and Udry (2003) who study resource allocation in Côte d'Ivoire.

[4] Doss and McPeak (2005) present a review of this literature and use data on nomadic pastoral setting in Kenya to test models of household decision-making. Their empirical evidence suggests that household decisions are disputed: wives' ability to market milk is contested by husbands using migration decisions.

from rural Uganda shows that spouses do not maximise surplus from cooperation and that their contribution decisions repudiate both the unitary and the cooperative model.

In this paper we give evidence of non-cooperative behaviour within West-African households by using answers to open-end questions included in our survey questionnaire. We thereby seek to highlight the determinants of spouses' individual consumption decisions in a context where both husband and wife retain sole control over their personal income. What indeed appears as striking from our field investigations in Benin, is that husband and wife are secretive with respect to income matters. They avoid sharing information about their personal earnings and thus do not make common budget. These behaviors, detailed in the following section, discredit the common budget hypothesis and cast doubts on the unitary and widely used cooperative models. Bringing in such evidence was made possible by collecting first-hand data at the individual level. Indeed, the originality of this paper lies in including in our survey detailed information on each person's income and expenditure. African datasets rarely exhibit such features since most of them record data at the aggregate household level.

As mentioned previously, our goal is to check if non-cooperative behaviour renders expenditure independent from spouse's influence. To what extent are spouses' financial spheres disconnected? In order to answer this question we put forward a non-cooperative model which helps us set up econometric specifications for testing linkage between husband and wife's financial spheres. Our data allow us to establish that intra-household secrecy to a large extent isolates individual expenditure both on private and public goods, from spouse influence.

In the following section we present field evidence that underlines the non-cooperative nature of Beninese spouse interactions. Section 3 puts forward a non-cooperative model enabling us to formulate conjectures as to what variables would be expected to drive individual allocations. Section 4 gives a description of the survey on which we based our analysis. We present descriptive statistics on spouses' characteristics and expenditure. We then proceed in section 5 to test our conjectures by using our household dataset and offer consistency checks. Section 6 concludes.

2 Spouse Interactions

During our survey, we carried out several informal interviews that highlighted that spouses were secretive with one another where financial matters were concerned. A large proportion of women and men with whom we spoke in two of the poorest neighbourhoods of Cotonou claimed that their spouse was unaware of how successful they were in their occupational activities and was therefore unable to estimate their income. Regardless of gender or age many of the respondents would state: "the less he/she knows about my activities, the better." We also frequently heard such declarations as:

"I don't want him/her to know my income otherwise he/she will ask me to meet the cost of such and such expenses." Spouses seem extremely secretive and even appear to consider it natural to share as little information as possible with their partner. Our survey included questions to this effect and were addressed to 572 respondents being over 15 years of age and in couple. When asked whether they could estimate their spouse's income; 79% of the answers were negative, 11% positive and 10% admitted to having an incomplete knowledge. Similar results were obtained for the question: "Do you think your spouse knows your income?": 76% answered no, 16% yes and 8% partially. What emerges is a vision of couples whose secretive members rarely seem to inquire about their partner's salary or activities. It is a kind of convention allowing each spouse to keep their income more or less unknown. Thus, by concealing their earnings partners avoid having to share them or creating a common budget and, in doing so, retain sole control over their personal income.

These pieces of evidence are also corroborated by the work of anthropologists. Mandel (2006) examines spatial mobility in South Benin and writes that "In African settings (...) resources are usually not pooled within households." (p.361) In his work entitled "Paths of Power: Control, Negotiation and Gender Among the Fon of Benin" Falen (2003) gives a lengthy description of how Beninese Fon[5] couples interact and confirms their secretive behaviour:

> The principle economic rule for a married couple is that finances are separate. Marriage by no means entails a complete sharing of money, property or any other wealth. On the contrary, spouses rarely share access to each other's money or belongings. The notion of a married couple's communal property or joint bank accounts is totally foreign to most Fon people. Indeed, keeping common finances would be dangerous, since money is always scarce and people are generally willing to take, borrow, beg, or in any way extract money from another. (p.164)

Guyer (1981) offers a review on the anthropological literature related to the difficulty of identifying a decision-making unit, such as the household. She reports similar evidence from other West-African societies. On Yoruba in Nigeria: "A woman's income is kept separate from that of her husband. There is no common budget for a man and his wife" (Marshall, 1964, p.189). Both Lloyd (1968) and Mandel (2003) also describe Yoruba women's economic independence.

Lawson (1972, p.95) about the Ewe in Ghana: "Household expenditure patterns in Battor certainly demonstrate that the household cannot be considered as a single unit

[5]The Fon people represents the dominant ethnic group in South and Central Benin. A fifth of all individuals in our dataset have this ethnic affiliation. Falen's account also applies to other ethnic groups and to a certain extent, to contemporary Benin.

in which effort and expenditure are directed towards optimizing welfare". Vercruijsse et al. (1974) report that women in the Fante communities in Ghana also enjoy a certain degree of financial independence. Clark (1994) studies the market women of Kumasi, Ghana and observes that they are expected to have an independent source of income and keep separate budgets even after marriage. She also notes:

> An important aspect of ideal social personhood for men, women, and children is the ability to control autonomous resources. Individuals retain full control of their personal earnings and property and, conversely, only have conditional or negotiable access to the resources of even their closest kin. Personal dignity requires that an adult woman be able to dispose of her own income, however modest, without explanation or permission from others. As a positive ideal, this is shared not only by Asantes and other Akans in other occupations, but found very widely throughout West Africa. (p.107)

The work of Hill (1975), cited in Guyer, states that: "It is abundantly clear (...) that West African husbands and wives seldom form a unified production unit (...). Of course, this is not to deny that there is much mutual dependence and complementarity within the household." (p.123) Other field studies in West-Africa by Keita (1983), Lecarme-Frassy (2000) and Einarsdottir (2004) also underline a high degree of secrecy in spousal relationships and the independence of wives as to how they manage their income. Le Cour Grandmaison (1971) adds to this:

> One must underline that women's economic independence is a very widespread custom in West-African societies. They had, and still have, a total independence in managing wealth inherited from their lineage and in the use of goods they acquired through work. Women's insertion in urban area has not changed this rule and salaried or self-employed women enjoy the same rights. (Translation by the author).

Before launching our survey we were aware of the fact that interviewing solely Beninese heads of households in order to aquire household level data would not have been appropriate and would most certainly have led to biased estimates. To take account of the fact that a household is a collection of separate and individual economies we had to survey husbands, wives and all other adult members of a household separately and in private.

3 A Non-Cooperative Model

Although we believe that a non-cooperative model better describes Beninese spouses' interactions we do not suggest that members of a couple do not consult together concerning the provision of public goods. A minimum of common management is required

in a couple with regard to the respective gender roles. Contributions to public goods in Benin are often made according to local social norms, fixing the intra-household allocation of expenses on different items according to gender. As breadwinner, the husband is supposed to provide for house-related expenses (rental fees, repair costs, electricity). In addition, it is up to him to cover the costs of housekeeping, schooling fees, apprenticeships, and the family's medical bills. The wife's role is to take care of the family, cook and pay for the water. In many cases, the husband's income is not sufficient to cover all the needs of the family which makes it necessary for the wife to spend more on the household than what had been expected from her originally.[6] In Section 4 we provide descriptive statistics related to several types of public goods expenditure which concur with these social norms.

Spouses avoid disclosing information about their income and expenses, in order to keep their earnings out of reach of their spouse and manage them with maximum latitude.[7] In addition, they try to reduce their contribution to the household's public goods since it is detrimental to their own consumption of private goods. In order to implement this strategy, both spouses hide their income and try to give their partner a blurry image of their earnings. By conveying a distorted downward idea of their income, they attemt to depart from the status-quo public good expenses, fixed by social norms, by foisting on to the other a share of their burden. Were one individual able to know that one's partner were capable of giving more towards the household, he or she would demand to contribute less or claim money for his/her own private consumption. Therefore, neither of the spouses is incited to reveal the true amount of their earnings.

We assume that husband and wife cannot enter into binding and costless enforceable agreements. Interactions within couples are the result of self-enforcing agreements corresponding to individual strategies that the husband and wife choose to carry out. In what follows we lay out a simple model of non-cooperative interaction between husband and wife, which allows us to understand how the spouse's income can influence one's pattern of expenditure.[8]

We design both spouses by the subscripts $i = h, w$. They allocate their income individually according to their own preferences and derive utility from consuming a purely private good, x_i, with price normalized to one and from the consumption of a public

[6] For additional details on marital roles see chapter 5 of Falen (2003).

[7] Hiding income can prove to be an easier task than hiding expenses. However, considering that their work takes them to different parts of the city, a large fraction of couples do not interact during working hours. The cost of meals, transportation or medicines, money transfers for relatives or colleagues, gifts for funerals and momentary luxury spending on items such as alcohol and cigarettes can therefore be concealed. Moreover, even larger expenses can be kept from one's spouse knowledge. A woman buying stocks of provisions for storage can keep them out of sight in her shop. Taxi drivers paying for regular motorcycle or car repairs or fishermen buying new equipment can keep their investments hidden.

[8] Ulph (1988) and Rasheed (1996) also present a non-cooperative household decision process with voluntary contributions to a public good.

good K which is the sum of their own public good provision k_i, with price p_i, and their spouse's public good provision k_{-i}: $K = k_i + k_{-i}$. For the time being, we make no assumption on the degree of substitutability or complementarity between x_i and K. We make the assumption that $u^i(x_i, K)$ is twice differentiable and increasing in all its arguments and concave. Moreover we assume that both private and public goods are normal. The wife receives an exogenous income, I_w, and optimizes her utility by choosing x_w and k_w under the Nash conjecture about her husband's choice such that her budget constraint ($x_w + p_w k_w = I_w$) is satisfied. The solution to this maximization problem can be described by the best-response function of the wife (and can be symmetrically expressed for the husband):[9]

$$k_w^* = argmax_{k_w} u^w(I_w - p_w k_w, k_w + k_h^*) \tag{1}$$

Individual consumptions of private and public goods are functions of prices, personal income and expected spouse's public good provision, which in turn is function itself of spouse's income. What interests us are the differences of impact from a change in I_{-i} and in I_i on k_i. So our objective is to investigate how a person's consumption reacts to changes in their own income and to changes in their partner's perceived income or expected variation in spouse's public good provision. We aim to make predictions on the difference of magnitudes between these effects. By using the implicit function theorem we find that:

$$\frac{\partial k_w}{\partial I_w} = \frac{(p_h^2 u_{11}^h - 2p_h u_{21}^h + u_{22}^h)(p_w u_{11}^w - u_{21}^w)}{\psi} \tag{2}$$

$$\frac{\partial k_w}{\partial I_h} = \frac{(p_w u_{12}^w - u_{22}^w)(p_h u_{11}^h - u_{21}^h)}{\psi} \tag{3}$$

where $\psi = (p_h^2 u_{11}^h - 2p_h u_{21}^h + u_{22}^h)(p_w^2 u_{11}^w - 2p_w u_{21}^w + u_{22}^w) - (u_{22}^w - p_w u_{12}^w)(u_{22}^h - p_h u_{12}^h)$

In case of independence or complementarity between one's private and own public good consumptions ($u_{12}^i = 0$ or $u_{12}^i > 0$), it is easy to check that the derivative of equation (2) has a positive sign and the second in equation (3) is negative. In case of substitutability ($u_{12}^i < 0$) the result are less clear-cut. If we assume similarity of spouses' utility functions and a given level of prices one can find a range of substitutability for which the same intuitive signs hold (i.e.: if prices are set to one one needs $u_{22}^i < 3u_{21}^i$ to obtain the same signs). One can rewrite the condition under which the personal income effect on k_w is greater in absolute value than the spouse's income effect:

$$\left| \frac{p_h^2 u_{11}^h - 2p_h u_{21}^h + u_{22}^h}{p_w u_{12}^w - u_{22}^w} \right| > \left| \frac{p_h u_{11}^h - u_{21}^h}{p_w u_{11}^w - u_{21}^w} \right| \tag{4}$$

[9]Here spouses are selfish, meaning that their behaviour is not dictated by altruism, and spouses' interdependence in the marriage operates only through the consumption of the public good. With a similar framework Bergstrom, Blume and Varian (1986) show that for such a game there exists a Nash equilibrium.

For similar utility functions for husband and wife and both prices p_i equal to one, this inequality holds if both private and public goods are independent or complement and also for a wide range of levels of substitutability. This inequality can still hold for various price levels or non-similar utility functions but for restricted ranges of complementarity and substitutability. On the basis of these results one can formulate a conjecture which we test empirically in Section 5.

> Conjecture: For low levels of substitutability or complementarity between one's private and public goods we can expect personal income to have a larger impact on one's consumption pattern than spouse's income. [10]

For the sake of simplicity, we sketched a one-shot game which we could have infinitely repeated to model long-term marriage relationships. It is more than plausible that this infinitely repeated stage game has multiple Nash equilibria. Social conventions regarding the respective responsibilities of husbands and wives can prompt the spouses towards a particular equilibrium. From this context, as Kreps (1990) points out, there may emerge a self-evident way to contribute to the public goods that can lead to a particular Nash equilibrium.

Secrecy among spouses prevents the household from benefitting from efficiency gains usually attainable with the repetition of the game. The Folk theorem indeed claims that cooperative outcomes are sustainable in infinitely repeated non-cooperative games as long as the agents are patient enough. In this case, however, as neither incomes nor strategies are observable, no such Pareto superior outcome can be reached. Under such conditions, detection of fraud or deviation from the cooperative agreement is rendered impossible. This explains why agents may become trapped in a Pareto inferior equilibrium, supported by social norms. The threat points of this game consist mainly of reputation damage: wives might complain to their parents-in-law (and then to their own parents) about their son being unable to provide decent living conditions to his family (see Falen 2003, Chapter 5). A husband, being by custom burdened with most of the responsibility, is in a position to compel his wife to put in a bigger share in the family budget. Should she refuse, she could ultimately face repudiation and its critical consequences.

3.1 Methodology

We are now about to estimate equation (1) for various types of expenditure in order to check our conjecture. Our setting tells us that individual consumption of private and public goods are functions of price, personal income and expected spouse's public good contribution. We can thus come up with a linear function to estimate both x_i

[10] A similar conjecture can be formulated if the maximisation in equation 1 is done with respect to x_w or if we use a quasi-linear utility function allowing for two different public goods: $u^i = v^i(x_i) + q^i(k_i, k_{-i})$.

and k_i in nominal terms that would incorporate these three variables. One may argue personal income to be found endogenous: other variables contained in the error terms such as tastes and preferences, which among other things would reflect an inclination to consume goods rather than leisure, could also be correlated with this regressor. Consequently, we use techniques dealing with endogeneity, instrumenting for personal income. Since k_{-i} is not directly observable we need to find a proxy. Taking the actual k_{-i} value in our specification would lead to an endogeneity problem: this variable being itself a function of the explained variable. A more sensible way to work in order to obtain consistent and unbiased estimators is to proxy expected spouse's public good provision by using the spouse's income, I_{-i}. This provides us with an estimation of both income effects. Despite having advocated widespread secrecy, we can still justify the presence of spouse's income in our specification. We think that in order to maximize their utility and manage the joint provision of public goods, spouses make guesses, whether accurate or not, as to their partner's income to be able to gauge k_{-i}. We can therefore rewrite our specification as follows:

$$x_{ij}, k_{ij} = \alpha_{0j} + \alpha_{1j}\, income_i + \alpha_{2j}\, income_{-i} + \sum_{r=1}^{R-1} \delta_{rj} z_r + \varepsilon_{ij} \tag{5}$$

Semiparametric estimates[11] tend to show that the relationship between expenditure and personal income is linear. However, by way of consistency check we altered our specification using the natural logarithm of personal income to allow a non-linear relationship (see Section 5.2). To control for potential price effects we use z_r which is a vector of dummy variables for household district location and ε_{ij} is the error term. Expenditure data are aggregated into five categories denoted by j. They are expressed in nominal terms and reported on a monthly basis. One of them can be considered a public good: food and other daily non-durables (charcoal, gas for cooking, petrol for lamp, etc). While two other categories have both a private and public goods component which we cannot disentangle from our data: health (medications, hospital fees, etc) and clothing. Both include personal expenditure as well as expenses towards the other members of the household, notably children. The remaining two concern private budget items: personal expenditure (alcohol, meals out, cigarettes, entertainment, etc) and savings.

In equation (1), k_i is function of the spouse's expected public good contribution. By estimating several public goods expenditure categories with respect to spouse's income, the interpretation of this coefficient becomes less clear. In a one public good setting the coefficient meaning is straightforward: income is positively linked to the provision of that good, and the sign of the marginal effect depends on the level of substitutability or

[11] We used semiparametric estimates of partial linear regressions (plreg in stata) to linearly control for $x-1$ independent variables and non-parametrically smoothe a nonlinear function of the x^{th} independent variable.

complementarity. However, with multiple public goods, when regressing on a particular k_{ij}, the marginal spouse's income effect can represent the influence of a variation of contribution in k_{-ij} or in a different public good, or both. For example, a wife can react to her husband's expected increase in medication expenditure by varying her own health expenditure or by varying her expenditure on daily food. In this case, we should interpret the $income_{-i}$ coefficient as the marginal effect from a variation in the spouse's aggregate level of public good provision. If we think that public goods contributions are somehow separate from one another then the interpretation is simplified. The coefficient of $income_{-i}$ on k_{ij} can be read as the marginal effect of an expected change in k_{-ij}. Whether categories of public goods expenses are isolated from one another has to be checked with formal tests. This would require panel data which we lack. In any case, interpretations of results presented in Section 5 should be made keeping that in mind.

We enrich our specification in (5) by adding a variable *household size* and a series of variables dem_v which represent the number of persons of demographic groups v in the household (female aged between 16-59, children aged between 6 and 15, younger than 6, older than 60, etc). The idea being that one individual may spend one's income differently according to the demographic distribution within the household. These variables are standard in this type of analysis. We also add a dummy variable *polygamous* to control for unaccounted effects that could come from households praticing polygyny (details regarding this are presented in the next section). Our new specification takes the following form:

$$\begin{aligned} x_{ij}, k_{ij} = \alpha_{0j} + \alpha_{1j}\, income_i + \alpha_{2j}\, income_{-i} + \alpha_{3j}\, polygamous_i + \\ + \alpha_{4j}\, householdsize_i + \sum_{r=1}^{R-1} \delta_{rj} z_r + \sum_{v=1}^{V-1} \lambda_{vj} dem_r + \varepsilon_{ij} \end{aligned} \tag{6}$$

4 Description of our Survey

Our data collection took place during the first three months of 2004 in the two districts of Vossa and Enagnon located on the outskirts of Cotonou (a city of about 1.1 million inhabitants). Respectively of 63 and 60.1 ha, both districts are known to the city's authorities to be the poorest. Apart from an adjacent slum called Enagnon-plage, Enagnon has been divided into plots in 1998. Vossa and Enagnon are near downtown Cotonou where a large portion of their inhabitants work and commute everyday.

Our survey covered 497 households: 110 in Vossa and 387 in Enagnon (of which 114 are located in Enagnon-plage). The selection of every household was carried out randomly. Enumerators were required, for all members older than fifteen, to fill in a form detailing expenses destined for clothing and health during the past six months

and to produce precise information regarding food and personal expenditure for the previous week.[12] Our survey also contains a series of questions related to the use of savings vehicles and the amount of money put into each of these.[13] In Cotonou, various means are available for securing savings. On the one hand, for the vast majority of poor inhabitants only informal institutions are accessible, such as itinerant bankers or money collectors, insurance groups (see LeMay-Boucher (2008)) and rotating savings and credit associations (roscas). On the other hand, less risky savings vehicles such as bank accounts are only available to wealthy individuals since formal financial institutions charge substantial fees. Whether these savings are to be used for the purchase of a private or public good is difficult to predict. However, Dagnelie and LeMay-Boucher (2008), by analyzing roscas in Cotonou establish that the "pot" is mainly used for small business investments and private consumption. It would then be fairly accurate to think of savings as an expenditure of no direct benefit to the spouse.

In order to privately tackle tricky issues related to expense or income, all members of each household were interviewed separately. Particular attention was thus put on confidentiality in order to obtain maximal accuracy and our enumerators strictly abided by those rules. Additional details on our survey methodology can be found in Appendix A. Overall, households represent 2083 individuals. Among them, only 572 are members of a couple, this remaining sample being divided into 292 women and 280 men. It is important to note that members of couples considered here are those for which both spouses were surveyed. This means that both spouses live in the same household - at least to a certain extent - and thus have regular interactions. We therefore discarded couples for which one spouse was living elsewhere.

Considering that there are polygamous households, our dataset includes more women than men (polygamy takes the sole form of polygyny in our sample). A significant share (21%) of all individuals are involved in polygyny. However, this does not translate into a wide gap in terms of gender proportions in our survey (51%/49%) nor into a significant difference of polygynous individuals across genders given that many polygynous husbands live in the presence of only one wife. Therefore, only one wife was surveyed except for a few rare households (eleven in total) for which several wives per husband were registered in our database. Polygyny could appear to be a concern with respect to the modelling of the intra-household decision process put forward previously. The fact that this brings in additional players could complicate the resolution of the game (possibility of collusions, etc). However, seeing how polygyny works in Benin, we think it should not raise any questions where our estimations are concerned. Falen (2003) describes how spouses interact while involved in daily activities. According to his ac-

[12] Information was also collected as to schooling expenditure, but high censoring rates prevented us from treating it as an additional expenditure category

[13] Savings accumulated outside of these vehicles -notably those stashed under the mattress- were not reported or computed.

count, and to our own informal interviews, a polygynous household can be considered as consisting of many separated couples. Through various ways the husband makes sure that each of his wives knows as little as possible with respect to his involvement with the other(s). Moreover, as jealousy is widespread among wives of polygynous husbands, seldom do they interact and share daily expenses or public good expenditure. Every one of them is inclined to care for her own offspring and manage her household separately. Dissension among wives is a source of concern. Falen reports: "because of co-wife jealousy, a polygynous man may invite one wife to live in his own house, while renting a house elsewhere for other wives. If he has multiple wives living in his compound, he must provide separate lodging for each one." (p.57) For polygynous households we thus consider, for regression purposes, the relationship between the husband and each one of his wives independently. For the eleven households for which we have data on several (or all) wives, we allocate the same value for spouse's income to each wife. For husbands, we attribute an average over all of his wives' incomes. Otherwise the vast majority of polygynous husbands live with only one wife making it thus impossible for us to compute an average. Hence, the previous non-cooperative model we sketched should still be adequate in describing multiple one-to-one relationships among polygynous households. In order to empirically ensure that polygyny does not affect our results, we carry out our regressions introducing a dummy for members of polygamous households (respectively 56 and 68 individuals for the husbands and wives subsamples).

Table 1 shows descriptive statistics of all types of budget expenditure, spouses characteristics and households composition. It appears that men are on average significantly older and more educated. They also have larger levels of expenditure for all types of budget expenditure except savings. Proportionately, men and women show no significant differences in their use of savings devices. These figures are in accordance with the local social norms in terms of public goods provision described earlier. Aside from these broad expenditure categories, we collected data on several other precise budget items for which the proportion of zero values is too large to be of any econometric use. Notwithstanding that, these data also emphasize the social norms previously mentioned: out of 31 non-null expenditures dedicated to house repairs, 28 are made by the husbands. We have the following proportions of non-null expenditure, for electricity: 124 husband / 14 wives and rent: 94 husbands / 3 wives. Table 2 displays the censoring levels for each of our expenditure categories and the proportions of expenditure that are strictly greater for the husband than for the wife. As can be observed, censoring levels are important for both health and saving, and only for the latter is there no majority of couples in which husbands spend strictly more than wives.

5 Estimating Expenditure Functions

In Tables 3 to 6 we present our estimates of equation (6) with OLS, Tobit, 2SLS and IV Tobit. In each table, the first column displays estimates related to food and other daily non-durables (estimated by OLS and 2SLS). The other four columns exhibit estimates which take account of the censoring of the other categories and are estimated using Tobit (with and without instrumentation). The Tobit model is appropriate if we consider that zero values are corner solutions for households which, given their preferences, chose not to consume due to realized prices and income.[14] Estimates are obtained on two subsamples: husbands and wives. Combining both would certainly have enriched our results. However, regressing on this aggregate sample would have required a series of household dummies, to capture intrahousehold unaccounted for interactions and specificities, which created a problem of weak instruments for all our potential candidates. Preliminary tests indicate that our estimates suffer from heteroskedasticity, which we correct for. Outliers in the form of bad leverage points were identified and given lesser weight /or/ discarded using the technique described in Verardi and Croux (2008) for robust estimation. This explains why sample size differs from one category to another.

Tables 3 and 4 report the results for both the husbands and wives subsamples using OLS and Tobit estimating techniques. These results do not take into account the potential endogeneity of the variable personal income. For the subsample of husbands, income has a positive and significant impact for every category. Spouse's income has a significant and positive impact only on food and superfluous expenses. Differences in significance tend to show that personal income has a more widespread impact on one's pattern of consumption than spouse's income. However, it appears that both income and spouse's income coefficients are not significantly different at a ten percent level, except for savings. As to the subsample of wives, we find stronger results. In this case, spouse's income is never significant and for all items its coefficient is significantly smaller than the one on income.

Tables 5 to 6 present the results for both subsamples using 2SLS and IV Tobit. The last line of each table reveals the coefficients and standard errors of our instrumental variable used in the first stage regression where personal income is the dependent variable. Our identifying instrument, a dummy taking value one if an individual has been living in the neighbourhood for at least 24 months, is strongly significant for all categories. Intuitively there are reasons to expect this variable to be correlated with income

[14] Another explanation for zeroes is infrequent purchase. Some of the goods may be consumed during the survey period but not necessarily purchased at that time. In this case a purchase-infrequency model is indicated as it treats zeroes as resulting from the durable nature of a good. This can apply to two of our expenditure categories: health and clothing. This phenomenon however seems unlikely since we collected data on consumption over a period of six months prior to interviewing.

(spending time in a neighbourhood helps create a network and potential earning opportunities) while at the same time it can reasonably be considered independent from tastes and preferences. This does not in itself guarantee a successful identification of the second stage estimation. In order to ensure that our 2SLS estimations have acceptable properties, we carry out some checks. Our estimates may indeed suffer an important bias if the instrument is only weakly correlated with the endogenous variable. Since the Cragg-Donald statistics based weak-instrument test does not apply in the presence of heteroskedasticity, we cannot refer to the critical values put forward by Stock and Yogo (2005) to evaluate the strength of our instrument. Hence, we turn to the robust version of this test: the Kleibergen-Paap rk F-statistic. As Baum et al (2007) note, our statistics should be compared to the value 10, the "rule of thumb" given by Staiger and Stock (1997). Our statistics of 9.80 and 10.29 respectively for the husbands and wives subsamples are close to this threshold. This indicates that weak instruments need not be regarded as a crucial problem here.

Results from 2SLS and IV Tobit shown in Tables 5 and 6 point out that for the subsample of husbands personal income has a positive and significant impact on only three expenditure categories: food, superfluous expenditure and savings. For all items our 2SLS and instrumented Tobit estimates reveal that spouse's income has no significant impact on expenditure. Similarly to our previous estimates, both income and spouse's income coefficients are not significantly different at a ten percent level, except for savings. As for the subsample of wives we find that, apart from health, personal income is significant in explaining the pattern of expenditure across all categories. Spouse's income is not significant for all items and save for health, its coefficient is significantly smaller than on income.

Results from the subsample of wives validate our conjecture since for all expenditure categories - except for health in the case of instrumented regressions - personal income has a larger impact in absolute value than spouse's income. Not only are spouse's income coefficients not significant across items but they are also significantly smaller than personal income coefficient. As far as our conjecture is concerned, the results are less clear-cut for the husbands subsample. Personal income is widely significant contrarily to spouse's income while both appear to be of similar magnitude, with the exception of savings. However, these results confirm that both private and public goods contributions are indepent from spouse's income. Thus, irrespective of the nature of the good, whether public or private, consumption appears to be isolated from spouse's influence which fits our separate spheres framework.

5.1 Quantile regressions

When addressing this issue of what determines expenses for different kinds of goods, the mean could be influenced by extreme points at the right tail of the distribution. It

therefore seems relevant to go beyond the mean and two-stage least squares or instrumented Tobit techniques. It is in fact more than plausible that individuals in the lower quantiles of the distribution act or react differently than those in the higher quantiles. This is all the more true given that a non-negligible number of individuals in our sample choose not to spend on some budget items. We indeed observe censoring in most of the expenditure categories - the only non-censored item being 'food and other non-durable expenses'.

A suitable method for investigating this question is the Censored Quantile Instrumental Variables (CQIV) estimator developed by Chernozhukov and Kowalski (2007) and put to use by Kowalski (2007) which simultaneously takes account of endogeneity and censoring and therefore produces non-biased estimates. They propose to use, as a first step, the control function approach to correct for endogeneity. The residuals from the first step are then to be included with all the endogenous and exogenous variables in the three-step censored quantile regression estimator developed by Chernozhukov and Hong (2002). Moreover, contrary to IV Tobit which is likely to be inconsistent in this case, CQIV does not rest on distributional assumptions for handling censoring. We also resort to Lee's estimator (2007) combining the control function approach with quantile regressions for the only non-censored budget item.

Tables 7 to 11 display quantile regression estimates for all the expenditure categories. In all tables, we present bootstrapped standard errors obtained after 500 replications. Although the results for the male subsample are less compelling, the female subsample largely confirms what has been put forward previously. Since the coefficients on spouse's income are almost never significant, as opposed to those on income, spouses' financial spheres appear once again to be isolated from one another. Moreover, as long as the coefficient on *income* is significant at a 5% level[15], the difference with the coefficient on *spouse's income* is also significant.

5.2 Other Consistency Checks

One may regard estimating equation by equation as inappropriate considering that all expenditure decisions are made simultaneously with respect to a given income. Meaning that if you increase the expenses for one budget item, it will affect the others. Estimations should then be carried out on a system of equations. We thus perform a three-stage estimation for systems of simultaneous equations that integrates all five expenditure categories and instruments the endogenous variable *income*. Results (not displayed) confirm our previous conclusions with respect to our conjecture and our separate spheres framework. We also run the same system of equations considering

[15]However, in the male subsample, two differences are not significant regarding the superfluous expenses category.

simultaneously the endogeneity of *income* and *spouse's income*.[16] Results are similar for females while the coefficients of *income* lose significance in the male subsample.

We also ran similar regressions including the natural log of income instead of income in level in order to mimic a potential non-linear relationship with expenditure categories. Results for our 2SLS and instrumented Tobit - using the same instrument as for income - lead to similar outcomes: expenditure categories are positively and significantly influenced by one own's income, and spouse's income is generally not significant.[17] As to the significance of difference in magnitude between coefficients on the logarithms of income and spouse's income, we also obtain similar results as for levels.

Alternative specifications were explored by adding variables such as *age* and *education*. *Education* can be suspected of affecting spending pattern (in this case we used *No education* a dummy taking value one if individual has not attended primary school) and *age* may reflect the fact that irrespective of the household's demographic distribution, young individuals have different expenditure patterns from those of long established household members. Education was found to have no impact throughout the set of regressions while age prevented us from finding adequate instruments. However, in all of the regressions, whether or not correcting for endogeneity, the inclusion of both variables did not alter our overall conclusions.

The body of evidence gathered from our various estimations tends to indicate that spouse's income is not significant when taking into consideration endogeneity and censoring. Therefore, private goods consumption as well as public goods contributions appear to be safe from spouse's influence. These pieces of evidence give credit to our separate spheres framework.

6 Conclusion

What our empirical investigations reveal is that our conjecture is verified in the case of the females subsample and to a lesser extent for the males subsample. Furthermore our estimates confirm that spouses' financial spheres are disconnected. For almost all our private and public goods expenditure categories spouse's income appears to be not significant in explaining one's individual consumption allocation. Therefore, raising marginally the wife's income would influence her private and public consumption according to her own preferences, and not those of her husband. This would barely affect her husband's provision of public goods based on his best response function. Our findings are robust to changes in functional forms and to three-step simultaneous equations

[16] The instruments are dummies taking a value of one if duration in the area exceeds 24 months for the individual and the spouse respectively.

[17] In the female case, the Kleibergen-Paap statistics indicates that weak instrument might constitute a concern.

estimations, and remain true across a majority of the non-censored quantiles. They indicate that members of a couple are secretive and relatively independent and that their union is best depicted as interdependence through the consumption of public goods.

This investigation highlights important policy implications. If policy makers were to aim at raising women's financial capability, they could simply transfer money directly to them. Risk of leakage into their husband's pocket is indeed minimized since spouses do not pool income and households appear to be a collection of separate economies. Increasing a certain type of public good expenditure would imply considering social conventions regarding the respective responsibilities of husbands and wives, and the potential spouse's income effects that we emphasized.

APPENDIX

A Survey Methodology

We selected households according to a random process. In Enagnon we succeeded in obtaining a map of the city and performed a simple selection of lots according to an implemented random process. In this district it is common for households to live on the same lot in semi-detached rooms. Our enumerators selected one room per lot according to a clock-wise selection varying from lot to lot (for the first lot of the day they selected the first room clock-wise, for the following one the second room clockwise and so on). In Enagnon-plage and Vossa we used a pseudo-random process by which every tenth lot according to a specific direction was picked and then room selections were done in a similar fashion to Enagnon. Overall, only 3 households categorically refused to be surveyed and were replaced by other randomly selected households. Enumerators were asked to pass several times and at different moments of the day, until contacts were established in such a way that none of the selected households were skipped. The most qualified of our enumerators also acted as a supervisor and visited many households already interviewed in order to check the accuracy of the responses. Other than that we analysed every completed questionnaire closely. Several appointments were held with each team of enumerators and in case of incoherence or lack of answers we regularly sent them back on the field. Questionnaires often needed successive rounds of checks until final approval. As mentioned above we emphasized the fact that the interview with every single household member had to be carried in his/her sole presence in order to get as precise and reliable information as possible. Fear of divulging information in front of other members would have led individuals to lie or to refuse to answer. On average our four teams of two enumerators completed eight questionnaires a day. The taking account of intra-household secrecy greatly lengthened the survey by requiring specific appointments with each adult member. We compensated every household for their time by donating 1500 francs CFA.

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	Sample in Couple		Female in Couple		Male in Couple	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Expenditure in 1000 CFA francs (monthly):						
Food & non durable expenses	46.60	32.17	37.76	23.45	55.83	37.11
Health	16.79	42.35	6.57	18.55	27.44	55.57
Clothing	22.42	27.84	18.45	20.58	26.57	33.33
Personal expenditure	2.76	2.70	1.82	1.72	3.73	3.16
Expenses in savings devices	12.27	27.58	10.61	15.71	14.00	35.97
Income	70.03	72.48	55.34	33.23	85.36	95.59
Spouses characteristics:						
Female	0.51	0.50	1.00	0.00	0.00	0.00
Polygamous	0.21	0.41	0.23	0.42	0.20	0.40
Age	38.27	11.77	34.90	10.35	41.79	12.14
Not educated	0.46	0.50	0.66	0.48	0.26	0.44
Household size	5.19	2.34	5.28	2.44	5.09	2.24
Vossa	0.28	0.45	0.28	0.45	0.29	0.45
Enagnon	0.46	0.50	0.46	0.50	0.45	0.50
Number of households members:						
Male, aged 16 - 59	1.37	0.93	1.39	0.97	1.35	0.89
Female, aged 16 - 59	1.39	0.78	1.42	0.81	1.36	0.74
Children, aged 6 - 15	1.45	1.53	1.50	1.56	1.40	1.51
Children younger than 6	0.85	0.87	0.84	0.86	0.88	0.88
Members older than 60	0.10	0.35	0.10	0.35	0.10	0.34
Number of observations	572		292		280	

Table 1: Individual Characteristics

	Censoring		
	Husband	Wife	$y_H > y_W$
Expenses			223 (80%)
Health	33%	56%	176 (63%)
Clothing	18%	16%	161 (58%)
Superfluous expenses	5%	9%	220 (79%)
Savings	34%	29%	120 (43%)
N	280	292	

Table 2: Censoring levels of the dependent variables

	Food	Health	Clothing	Superfluous expenses	Savings
Income	.261 ***(.0717)	.146 **(.0621)	.0608***(.0214)	.0158 ***(.00297)	.13 ***(.0315)
Spouse income	.247 ***(.0708)	.133 (.125)	.028 (.0736)	.0138 ** (.00535)	.0096 (.0501)
Polygamous household	11.3 ** (5.42)	8.66 (14)	5.38 (4.74)	.575 (.428)	-3.8 (3.66)
Size of the household	4.08 (3.21)	2.65 (5.03)	-1.17 (2.27)	-.0911 (.179)	-1.15 (1.47)
Female aged between 16 and 59	-4.24 (6.01)	1.3 (7.99)	4.9 (4.27)	-.149 (.319)	-1.65 (2.68)
Children aged between 6 and 15	-5.85 (3.67)	-2.07 (5.84)	.375 (2.82)	-.26 (.203)	1.44 (1.69)
Younger than 6	-.756 (2.89)	7.19 (6.49)	3.09 (2.96)	.157 (.208)	3.32 * (1.77)
Older than 59	-10.1*** (3.41)	15.3 (11.8)	-8.49 * (4.61)	-.594 (.423)	-4.18 (3.34)
Vossa	-2.37 (3.56)	10.6 (11.6)	8.32 * (4.77)	-.348 (.319)	-.462 (3.23)
Enagnon	12 *** (3.77)	-2.2 (9)	9.44 ** (3.92)	.562 * (.295)	-1.28 (3.03)
Constant	9.49 (6.96)	-31.6** (13.9)	4.83 (5.68)	2.2 *** (.452)	1.67 (4.26)
Number of observations	273	275	277	275	271

Table 3: Coefficients for different budget items with OLS and Tobit for Males

	Food		Health		Clothing		Superfluous expenses		Savings	
Income	.48	***(.0408)	.223	***(.0805)	.249	***(.0536)	.0299	*** (.0031)	.225	***(.0483)
Spouse income	.0109	(.0145)	-.041	(.0253)	.00688	(.0149)	.00116	(.00094)	.00828	(.0146)
Polygamous household	2.61	(2.53)	3.66	(5.11)	1.99	(3.3)	.249	(.225)	2.7	(2.59)
Size of the household	3.47	** (1.7)	2.98	(3.41)	.605	(1.6)	-.107	(.113)	-.506	(1.27)
Female aged between 16 and 59	-1.83	(2.36)	-3.14	(4.98)	-2.46	(3.27)	.163	(.216)	1.89	(2.25)
Children aged between 6 and 15	-3.22	(1.98)	-4.31	(4.56)	.214	(1.91)	.0906	(.127)	1.05	(1.28)
Younger than 6	-4.39	** (1.85)	-5.11	(4.91)	-.419	(2.02)	.0443	(.135)	.328	(1.33)
Older than 59	-5.55	** (2.6)	1.63	(4.77)	-2.41	(2.66)	.278	(.298)	.528	(2.38)
Vossa	-1.65	(2.27)	5.88	(6.4)	9.8	*** (2.68)	-.638	*** (.198)	-2.44	(1.93)
Enagnon	3.97	* (2.05)	1.67	(4.5)	11.3	*** (2.99)	-.00708	(.197)	-3.6	* (1.99)
Constant	1.77	(3.95)	-22.3***	(8.33)	-6.17	(4)	.247	(.273)	-6.19	* (3.2)
Number of observations	290		292		290		290		287	

Table 4: Coefficients for different budget items with OLS and Tobit for Females

	Food		Health		Clothing		Superfluous expenses		Savings	
Income	.312	* (.181)	-.473	(.583)	-.0659	(.287)	.048	** (.023)	.622	** (.267)
Spouse income	.214	(.131)	.594	(.476)	.149	(.289)	-.0111	(.0194)	-.27	(.165)
Polygamous household	10	(7.05)	31	(27.8)	9.25	(9.67)	-.354	(.859)	-13.4	(8.17)
Size of the household	3.62	(3.23)	5.57	(6.84)	-.586	(2.75)	-.187	(.285)	-6.42	(3.93)
Female aged between 16 and 59	-3.74	(5.58)	-.79	(10.8)	3.96	(5.1)	-.219	(.527)	6.54	(6.4)
Children aged between 6 and 15	-5.55	(3.42)	-4.14	(7.17)	.161	(3.12)	-.211	(.279)	5.6	(3.52)
Younger than 6	-.395	(2.94)	4.55	(7.56)	2.05	(4.01)	.271	(.294)	7.71	* (4.07)
Older than 59	-9.43	** (3.86)	6.04	(15.6)	-11.3	(8.24)	-.026	(.674)	1.11	(5.53)
Vossa	-2.18	(3.53)	11.1	(12.9)	10.1	(6.41)	-.367	(.396)	1.67	(4.66)
Enagnon	12.2	***(3.69)	.217	(10.6)	10.5	** (4.93)	.465	(.385)	2.39	(4.84)
Constant	8.37	(7.12)	-20.1	(17.8)	6.65	(7.44)	1.66	** (.686)	-14.3	(10.1)
Income instrumented by:										
Duration in the area $>$ 24 months	21.29	*** (6.8)	22.8	***(6.76)	25.9	***(7.79)	22.7	*** (7.05)	21.8	*** (6.3)
Number of observations	273		275		277		275		271	

Table 5: Coefficients for different budget items with 2SLS and IVTobit for Males

	Food		Health		Clothing		Superfluous expenses		Savings	
Income	.746	*** (.201)	.579	(.427)	.577	*** (.217)	.0612	***(.0195)	.833	*** (.24)
Spouse income	-.0192	(.0248)	-.0917	(.0682)	-.0366	(.0334)	-.00237	(.0024)	-.067	(.0417)
Polygamous household	1.24	(2.91)	2.17	(5.75)	.795	(4.05)	.0889	(.308)	.113	(3.83)
Size of the household	3.28	* (1.68)	2.57	(3.42)	.402	(1.86)	-.13	(.135)	-.558	(1.9)
Female aged between 16 and 59	-2.73	(2.51)	-3.9	(5.34)	-3.52	(3.74)	.0564	(.273)	-.137	(3.67)
Children aged between 6 and 15	-3.59	* (1.99)	-4.5	(4.69)	-.131	(2.13)	.0487	(.151)	.154	(2.1)
Younger than 6	-3.5	* (1.96)	-3.85	(4.94)	.656	(2.28)	.149	(.174)	2.06	(2.34)
Older than 59	-6.46	** (2.85)	.489	(5.36)	-3.45	(3)	.175	(.284)	-1.68	(3.57)
Vossa	1.63	(3.56)	10.1	(8.17)	13.7	*** (3.79)	-.255	(.325)	4.75	(4.03)
Enagnon	6.41	** (3.09)	4.16	(5.41)	13.7	*** (3.69)	.281	(.308)	1.51	(3.81)
Constant	-9.62	(9.54)	-37	* (19.4)	-20.1	** (9.25)	-1.09	(.912)	-33.3	*** (11.1)
Income instrumented by:										
Duration in the area $>$ 24 months	11.32	*** (3.53)	12	*** (3.61)	12.4	*** (3.6)	11.3	*** (3.47)	12	*** (3.57)
Number of observations	290		292		290		290		287	

Table 6: Coefficients for different budget items with 2SLS and IVTobit for Females

	Male				Female				
	Income		Spouse income		Income			Spouse income	
10	0.336	(0.272)	0.035	(0.246)	0.727	***	(0.265)	-0.0321	(0.0449)
20	0.232	(0.246)	0.107	(0.244)	0.907	***	(0.270)	-0.0558	(0.0368)
30	0.258	(0.232)	0.151	(0.157)	0.766	***	(0.277)	-0.0204	(0.0357)
40	0.273	(0.242)	0.215	(0.384)	0.761	***	(0.246)	-0.0260	(0.0321)
50	0.188	(0.232)	0.266	(0.185)	0.706	***	(0.193)	-0.0122	(0.0330)
60	0.333	(0.246)	0.243	(0.195)	0.774	***	(0.202)	-0.0190	(0.0367)
70	0.353	(0.242)	0.314	(0.191)	0.821	***	(0.257)	0.0263	(0.0427)
80	0.370	(0.482)	0.280	(0.379)	0.882	***	(0.323)	0.0188	(0.0459)
90	0.489	(0.533)	0.288	(0.399)	1.030	***	(0.392)	-0.0075	(0.0504)

Table 7: Expenses: quantile regressions - endogeneity corrected with control function

	Male					Female				
	Income		Spouse income			Income			Spouse income	
40	-0.292	(0.198)	0.343	*	(0.180)					
50	-0.298	(0.311)	0.422		(0.295)					
60										
70	-0.641	(0.454)	0.738	*	(0.382)	0.129		(0.130)	-0.0164	(0.0203)
80						0.224		(0.206)	-0.0291	(0.0331)
90	0.272	(1.360)	-0.036		(0.990)	0.971	**	(0.400)	-0.1290 **	(0.0648)

Table 8: Health: CQIV

	Male				Female				
	Income		Spouse income		Income			Spouse income	
20	0.345	(0.215)	-0.322	(0.228)	0.155		(0.199)	-0.0055	(0.0359)
30					0.337	**	(0.152)	-0.0276	(0.0299)
40	0.119	(0.375)	-0.039	(0.361)	0.450	**	(0.200)	-0.0343	(0.0333)
50	0.283	(0.555)	-0.376	(0.525)	0.587	***	(0.219)	-0.0289	(0.0326)
60	0.016	(0.353)	0.069	(0.343)	0.585	***	(0.227)	-0.0319	(0.0346)
70	-0.046	(0.415)	0.110	(0.411)	0.741	***	(0.234)	-0.0588	(0.0318)
80	-0.454	(0.480)	0.535	(0.501)	0.702	***	(0.270)	-0.0409	(0.0380)
90	0.124	(0.753)	0.205	(0.754)	0.738	*	(0.435)	0.0054	(0.0775)

Table 9: Clothing: CQIV

	Male						Female					
	Income			Spouse income			Income			Spouse income		
10	0.047	*	(0.025)	-0.0120		(0.0200)	0.053		(0.041)	-0.0027		(0.0047)
20	0.040		(0.025)	-0.0075		(0.0196)	0.030		(0.019)	0.0004		(0.0023)
30	0.061	**	(0.027)	-0.0187		(0.0226)	0.037	**	(0.018)	-0.0006		(0.0054)
40	0.058	**	(0.029)	-0.0182		(0.0227)	0.048	**	(0.019)	-0.0018		(0.0024)
50	0.053	*	(0.030)	-0.0223		(0.0244)	0.048	**	(0.021)	-0.0014		(0.0028)
60							0.049	**	(0.022)	-0.0016		(0.0029)
70	0.061	**	(0.030)	-0.0162		(0.0240)	0.068	**	(0.028)	-0.0028		(0.0047)
80	0.083	**	(0.032)	-0.0338		(0.0277)	0.102	***	(0.034)	-0.0044		(0.0084)
90	0.195	***	(0.041)	-0.1250	***	(0.0333)	0.057		(0.038)	-0.0001		(0.0047)

Table 10: Superfluous expenses: CQIV

	Male						Female					
	Income			Spouse income			Income			Spouse income		
40							0.245	*	(0.134)	-0.0075		(0.0644)
50	0.191		(0.204)	-0.084		(0.113)	0.329	**	(0.129)	-0.0166		(0.0215)
60	0.981	*	(0.531)	-0.493	*	(0.293)	0.495	***	(0.128)	-0.0333		(0.0212)
70	0.583	***	(0.151)	-0.277	***	(0.107)	0.497	***	(0.128)	-0.0303		(0.0282)
80	0.676	***	(0.206)	-0.282	**	(0.122)	0.741	***	(0.178)	-0.0490		(0.0372)
90	0.981	***	(0.286)	-0.392	**	(0.182)	0.978	***	(0.226)	-0.0809		(0.0516)

Table 11: Savings: CQIV