

## **Remittances, Bancarization and the Demand for Insuring Schemes**

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**Abstract:** Empirical evidence that migrants send home more remittances after disaster raises the question whether insurance (both formal and informal) and remittances are substitutes. We investigate this question using a unique data set about the usage patterns of financial services through households in South Africa. We show that the likelihood that a household has a formal funeral cover increases in income and if it is banked. However, it is lower for households receiving remittances which supports the idea that remittances act as (self-)insurance. We also show that determinants of informal insurance differ from those of formal insurance and that the use of formal funeral cover is influenced by other risk mitigation strategies.

**Keywords:** Remittances, Insurance, Risk management strategies

JEL classification: D14, F24, G22, O16

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## **1. Introduction**

"A good share of rural households borrow, many more save, but all seek to insure against the vagaries of life. In the view of the virtually complete absence of formal insurance markets and social security systems accessible by the poor [...], they use a multitude of measures to reduce the likelihood or impact of risks, either through ex-ante or ex-post measures for smoothing income, consumption or both" (Zeller and Sharma 2000: 162).

Insurance markets play an important role for fostering economic development. This is one of the important messages of the World Development Report 2001 (World Bank 2001). The report highlights the importance of "security". Thus, what is needed by households in developing countries is access to (some kind of) insurance. In principle, households possess a wide range of measures to cope with risk or insuring schemes. In industrialized countries, formal insurance is widely used; often it is mandatory or even provided by the government through a social security system. In less developed countries, households rely much less on formal insurance but use semi-formal insurance and, probably even more importantly, additional risk management strategies to deal with risk once it has been realized. A household's choices of ex-ante and of ex-post mechanisms to deal with risk are interrelated. One way to deal with risk ex-post is to increase the flow of remittances. Empirical evidence shows that remittances act like insurance. Given that different risk management strategies are interrelated, one would like to know the fact that a household receives remittances influences its demand for formal insurance?

We investigate this question empirically using a unique dataset for South Africa. The FinScope<sup>TM</sup> survey<sup>1</sup> provides information about the usage patterns of all kinds of financial services and arrangements. In particular, it contains a comprehensive set of questions on the usage patterns of formal and informal financial services and devices (Stone 2005). For sociocultural reasons, South African people find it extremely important to cover funeral expenses. As a result, a formal funeral cover is the formal insurance cover most households possess in South Africa. They also use burial societies, which are informal insurance arrangements. And, of course, a substantial share of

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<sup>1</sup> We thank the FinMark Trust ([www.finscope.co.za](http://www.finscope.co.za)) team for providing the data and kind support to our research.

households receives remittances.<sup>2</sup> With our data we can address the following questions: do remittances influence the decision to buy formal funeral cover or to join a burial society? How important is saving, borrowing, and selling assets for dealing with shocks? In how far does the bancarization status matter for the kind of funeral arrangement chosen?

In this paper we argue that remittances have an income and a substitution effect. As remittances increase income, households receiving remittances should *ceteris paribus* more likely possess formal funeral cover. However, remittances also provide self-insurance and thereby are a substitute for formal insurance. We expect that the substitution effect dominates the income effect and therefore households that receive remittances are less likely to possess formal funeral cover. Indeed, this hypothesis is supported by the data. We can show that the probability that a household possesses formal funeral cover increases in income. But given the level of income, the fact that a household receives remittances decreases the probability that it has formal funeral cover. Moreover, we see that other risk management strategies, such as accounting for the possibility to take a loan after damage has occurred, influence the usage of formal funeral cover. Interestingly, the factors that determine the use of formal funeral cover are in many cases different from those explaining the probability that a household member belongs to a burial society. This might be due to the fact that the membership in a burial society not only provides informal insurance but has additional social and cultural aspects. Finally, we provide evidence that bancarization matters, in particular we find that banked households are more likely to have funeral cover, both formal and informal.

The paper is organized as follows: in section 2 we describe the risk management strategies used by low-income populations. We provide information on the usage patterns of financial services in South Africa in section 3. Next, in section 4 we derive the testable hypotheses about the use of formal and informal insurance schemes. We present the empirical analysis, starting with a description of the data and the regression framework as well as its results in section 5. Finally, we discuss the results in section 6 and conclude.

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<sup>2</sup> About a quarter of respondents in the 2004 FinScope questionnaire indicate that their source of income is money from family members and friends.

## **2. Risk management strategies used by low-income populations**

All households are exposed to some kind of risk, showing however huge differences regarding the intensity and the frequency of the related shock, and the ability to deal with it. Low-income or poor populations often live in riskier or unhealthier environments as the better-off and have fewer resources to prevent and mitigate risks, to cope with the consequences of the related shocks, and to "get back on their feet" (Arun and Steiner 2008: 1; Churchill 2006: 12; Cohen and Sebastad 2006: 26). The vulnerability to risks such as illness, disability, crop loss, lack of income generation opportunities or natural disasters, is hence closely related to material poverty. Regarding the exposure to risks, the trajectory out of poverty can be seen as a zigzag route, where advances reflect periods of income growth and asset building, and declines reflect the impact of shocks, emergencies and economic stress (Cohen and Sebastad 2006: 25). Accordingly, the path of many people into poverty can also be seen linked to shocks and emergencies when low-income people do not have (access to) adequate risk-management mechanisms. (Social) security/safety nets and the enhanced ability of poor and low-income people to mitigate risks and cope with adverse shock are consequently fundamental for sustained poverty reduction (World Bank 2001: 3).

Regarding the kind of unexpected and expected risks mentioned by low-income households, there can be differentiated idiosyncratic and covariant risks. The biggest concern for many respondents and the presumably greatest burden to their households' budgets turned out to be of personal nature, especially health-, disability and death-related risks (e.g. Cohen and Sebastad 2006: 27).

In the context of limited coverage of social safety nets and access to (or usage of) formal insurance products in most developing countries, low-income populations employ a large variety of strategies for dealing with risk. Thereby, risk mitigation can take place at two different stages. The "first stage" refers to ex-ante arrangements for influencing the exposure to risk which aims at the protection from income shortfalls before they occur. Measures for lowering the risk ex-ante consist mainly of conservative production decisions (such planting safe, low-yielding varieties or mixed cropping) and in diversifying the household's economic activities. Such arrangements aiming at making the income streams more stable or income smoothing, lead however mostly to losses in the profitability of the respective economic activities employed (Morduch 1995: 106 et seqq.; Ruthven and Kumar 2002: 14). The usage of anticipated measures to reduce exposure to risk show the awareness of low-income population of relevant risks and the limited possibilities for dealing with the shock once it has occurred.

The "second stage" refers to ex-ante and ex-post mechanisms of dealing with damage that occurs, e.g. with the negative income shock that the household faces in this case. Ex-ante arrangements for dealing with damage or smooth consumption consist in saving, and insuring, include both formal and informal insurance schemes. Ex-post mechanisms comprise borrowing, receiving remittances, as well as the adjustment of consumption to lower and income or labour to higher levels (Morduch 1995: 104 et seqq.). The latter coping mechanisms of reducing consumption might affect the family's nutrition or education level (e.g. children are taken out of school after adverse shocks, Jacoby and Skoufias 1992), and the extension of working hours might affect the health or social situation of the family. Financial arrangements constitute hence important options for dealing with damage and the related shocks.

In-depth studies on financial management of low-income and poor households or Financial Diaries show that different formal, semi-formal and informal arrangements and services are mostly combined and a large number of small transactions help people to gather the lump sums they need out of their small and mostly unstable income streams. The financial instruments are used for different needs consisting mainly of expenses related to life-cycle needs, emergencies, seasonality (economic) opportunities (Rutherford 2003; Ruthven and Kumar 2002; Collins 2004). Hence, poor households also use distinct financial informal and formal arrangements for dealing with shocks, including borrowing, lending, saving and taking part in insurance societies such as burial societies or buying (micro)insurances (Rutherford 2001).

Although mechanisms can be combined, ex-ante and ex-post mechanisms of dealing with the damage are, of course, substitutes. In the literature it is argued that remittances act like insurance. There is evidence on both the macro and the micro level for this argument. On the macro level, Mohapatra, Joseph and Ratha (2009) use cross-sectional data for a large number of countries and show that in countries with a significant proportion of migrants, the flow of remittances increases both statistically and economically significantly after a natural disaster.<sup>3</sup> Yang (2007) focuses on the impact of hurricanes in a sample of developing countries. In the poorer half of the sample, remittances increase significantly after a hurricane.

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<sup>3</sup> This also shows that remittances influence decisions at the first stage. Households with remittances are more likely to possess a concrete house and have better access to means of communication (Mohapatra, Joseph and Ratha, 2009).

There are a few papers that study the effect of income shocks on the level of remittances by using household data. Gubert (2002) provides evidence for a region in Mali that crop failure increases national and international remittances. Other studies use natural disasters for their identification strategy. Yang and Choi (2007) possess household panel data for the Philippines and measure changes in local rainfalls as an exogenous shock. They show that roughly 60 per cent of exogenous declines in income are replaced by remittances inflows from overseas. They do not find any effect of the income decline on remittances receipts for households that do not have overseas migrants. Using a panel of the LSMS from Jamaica, Clarke and Wallsten (2003) reveal that remittances increased by 25 per cent for every dollar of damage the hurricane Gilbert inflicted on the household. Given this evidence, the question arises whether remittances influence the demand for insurance and ultimately its use.

This wider notion of financial devices used for "insuring" refers to different risk-prevention and -management strategies, including reciprocity- and relationship-based lending and borrowing strategies and individual savings. The financial function of insuring in terms of financial arrangements for risk mitigation can be fulfilled by many more financial services than just insurance products. This broad understanding of insuring is fundamental for the present study where we explore the interrelation of various types of financial arrangements for coping with shocks. Thus, we aim at analyzing the different kinds of interdependencies between savings, borrowing, remittances and funeral cover schemes, considering both formal and semi-formal arrangements.

### **3. Usage patterns of financial services in South Africa**

The most recent Human Development Report 2007/08 shows that inequality remains one of the central challenges for the (human) development in South Africa: although the country ranks 56<sup>th</sup> for GDP per capita, it yields a low Human Development Index (HDI) rank of 125<sup>st</sup> out of 179 countries. Since 1975, when the HDI was first composed, the measures of human well-being in South Africa slightly improved from 0.653 to 0.741 in 1994. Since then, South Africa's Human Development Index has fallen strongly (2006: 0.670), mainly due to a particularly low rank in life expectancy at birth, but also because of low literacy and low school enrolment ranks (UNDP 2008). This is related to the HIV/AIDS pandemic, to the sharp rise of unemployment, to informal employment and to income inequality. Income inequality remains high between racial and occupational groups, between different educational levels and also, of less tremendous magnitude,

between regions and between urban and rural areas. The differential for occupation surpasses the ones for education and race (Leite et al. 2006: 25 et seq.). The socioeconomic inequality in South Africa is strong despite a social pension system with grants for children, disabled and elderly people, which has been reformed and opened to all South African citizens since the end of Apartheid. It can be generally said that the main objective of the social welfare system is to lift needy people out of poverty (Triegaardt 2005: 250).

Like in many other development countries, there is a significant fraction of international but also national migration. From 1994 until 2007, before Zimbabweans started to flow into South Africa in very large numbers, South Africa had an estimated negative net migration rate. The vast majority of emigrants were made up of white middle-aged people going to the UK, Australia and the USA (Cronje 2006). Internal labour migration has increased since the end of Apartheid. As such, 32.6 percent of rural African households contained (labour) migrant household members in 1993; by 1999 this had risen to 35.8 percent (Posel 2003). Consequently, an increasing proportion of the population receives remittances regularly. After the analysis of census and survey data Posel (2003) comes to the conclusion that approximately 79 percent of all rural African households with migrant workers received remittance income in 1993; in 1999 this had increased to 85 percent. At the same time, nearly half of the 7% of the population migrated within South Africa have been away from the family home for more than five years and visit their families regularly (Truen et al. 2005: 14 et seq.)

Access to and usage of financial services also differ strongly in the heterogenous society: roughly half of the South African population has been banked in 2006, but the white and wealthiest of the population remains the part of the population with the highest level of bancarization of over 90%. Increasing shares of the black and coloured population have become banked, reaching 45% and 53% in 2006 respectively. The difference between urban and rural populations remains, although urban and rural population have become increasingly banked, except for tribal population which remained at 30%. Considering the differences by Living Standards Measure (LSM)<sup>4</sup>, the lowest classes have remained at around 20% banked, whereas the probability of being banked has increased strongly in the medium lower classes from 32-48% to 35-61% (FinScope Data, 2004-2006). The most important link to the bank, corresponding to 48% of the population, consists in

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<sup>4</sup> The LSM is a categorization ranging from 1 to 10 for providing a rough proxy for wealth, with the lower numbers comprising the poorest part of the population.

ATM cards, which might be partly due only to the payment system of governmental social pensions through ATMs (Overbye 2005: 312).

The second most popular financial service – even more preferred than savings/ transaction accounts – are funeral insurances with 39% of the population holding either a formal funeral policy or belonging to a burial society. Loans and other insurances are held by around 10% or less of the population, and retail or store card are used by larger share of the population of 20% (FinScope Data, 2004-2006). Hence, as indicated by the nationally representative FinScope data sample, funeral cover is the only insurance or risk-mitigating financial service widely used. The most popular kind of insurance is burial societies held by 19% of the population which generally cover six people. This type of insurance is most common among black and coloured populations; the second most popular insurance is used mostly within the coloured community and directly provided by an undertaker (funeral cover). Funeral policies offered by banks or insurance companies are most frequently purchased by white people. The usage pattern of funeral cover is, however, quite different from bancarization trends and shows to be much more equally distributed by race: the coverage of black, white and coloured is between 36-59%, only the Asian population shows a low coverage of 25%; The fact that burial societies generally cover large families adds to a high equality in funeral coverage. Formal funeral cover is most common in formal urban areas, but it can also be found with more than 32 % of people living in tribal land, rural or urban informal areas (FinScope Data 2004-2006; Napier et al. 2007: 2 et seq.).

Taking a closer look at poor people's demand for financial services and especially for funeral insurance, the picture becomes more complex. The Financial Diary research in South Africa suggests that households would use an average of 17 different financial instruments, including at least one credit, insurance and savings instrument. This high number of financial arrangements contains both formal financial services such as bank accounts, semiformal arrangements like savings groups and informal ones such as loans given to or taken from neighbours (Collins 2005: 722 et seqq.). More than three quarters of the respondents showed to hold at least one, and more than half of the households at least two types of funeral cover.<sup>5</sup> Because of the frequency of deaths experienced by the respondents within their household or within the larger family, also due to HIV/AIDS, and because of the high funeral costs (generally up to seven months of income),

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<sup>5</sup> The Financial Diary only gives in-depth insights into the financial lives of the respondents without claiming representativity.

households used a variety of financial instruments to deal with these expenses and spent approximately 3% of their gross monthly income on their funeral arrangements (Collins and Mor-duch forthcoming: 16). Even though households spent already a significant proportion of their income with funeral insurance schemes, payouts from the burial society and the formal insurance coverage had generally be complemented by remittances or in-kind contributions from relatives, money savings and sometimes even by a loan taken to cover all the expenditure related to a funeral. The cost of food are an important expenditure besides the cost of the undertaker, especially in rural areas where the "umkhululo" or "the feast to take off the mourning clothes" is celebrated one month after the funeral (Financial Diaries n.a.a: 5 et seq.). Besides the financial contribution, the emotional and practical support of burial society members plays an important role, especially the help with preparing and serving the feast during the burial, providing utensils for cooking etc. (Financial Diaries n.a.b: 5). Hence, a complex mix of formal and informal instruments are employed for insuring funeral costs, which even go beyond the different funeral schemes.

#### **4. Links between different financial arrangements and hypotheses**

We investigate the relationship between different risk management strategies. In particular, we study how the fact that a household receives remittances influences the demand for insurance. We look at this question from the ex-ante perspective, which is the point in time when a household decides about buying insurance coverage and before the damage has occurred. On the one hand, remittances generate income and may thereby allow the household to buy insurance. On the other hand, a household anticipates that in the case of damage the migrant may send more remittances, thereby mitigating income shocks and reducing the need for insurance. Thus, remittances have an income and a substitution effect. Both effects can be captured in a model of insurance demand. In the insurance literature on demand for insurance the focus is on the income effect. This effect arises if the income which a household has increases in both states of the world (without and with damage) by the same amount. The theoretical analysis reveals that the effect of income on demand for insurance depends on the absolute risk aversion. The demand for insurance increases (decreases) with income as the household has increasing (decreasing) absolute risk aversion (Gravelle and Rees 2004, Ch. 19.2.).

The empirical evidence on remittances shows that they increase after natural disasters. In a theoretical model this would be captured by a given increase in income in the state without damage

and by a higher increase in income in the state with damage. This implies a decline in the demand for insurance assuming the aim of insurance is to get a certain combination of incomes in the states without and with damage. Given the stronger increase in income in the state with damage, the amount of coverage a household buys to obtain a certain income in the state with damage is lower. Therefore, remittances are also self-insurance (Schlesinger 2000).

In our data we observe whether the respondent has bought formal or informal funeral cover. We do not observe the coverage though. Since households in South Africa have rather low household income but attach great importance to traditional funeral ceremonies, insuring funeral expenses and providing for dependants seems very important. HIV/Aids has pushed the death rate among young and middle-aged adults and increased the demand for funeral cover even more. Formal funeral cover provides the best (most reliable) funeral insurance. Therefore, our first hypothesis is

*Hypothesis 1:* A household is more likely to possess formal funeral cover if its income is higher.

Remittances increase income which c.p. should lead to more demand for insurance. At the same time, they are substitutes for insurance. The effect of remittances on insurance demand therefore depends on the magnitude of the two opposing effects. We expect that the substitution effect dominates since we control for income and therefore formulate

*Hypothesis 2:* A household is less likely to possess formal funeral cover if its receives remittances.

Besides remittances the household can use different risk coping mechanisms to reduce income shocks. From the questionnaire, we know which risk coping strategy the household is inclined to embark on. Several of these mechanisms can be regarded as substitutes for formal insurance cover. Our third hypothesis is

*Hypothesis 3:* A household is less likely to possess formal funeral cover if it intends to take an informal loan to smooth an income shock.

One option households can choose besides buying formal funeral cover and using no insurance cover at all (as captured by some of the self-declared risk coping behaviour used for testing hypothesis 3) is informal insurance obtained by becoming a member of a burial society. In addition to providing insurance, being a member of burial societies has bearings on the individual's network, on community relations and implies various non-monetary benefits such as practical assistance with funeral arrangements. Thus, joining a burial society is a much more complex decision than buying formal funeral cover.

There are different distribution channels through which formal funeral covers are sold. Banks give financial advice and sell insurances. If a household regularly interacts with the bank, the bank can use this contact for selling insurance products. Our hypothesis is that

*Hypothesis 4:* A household is more likely to possess formal funeral cover if it regularly interacts with a bank. However, this does not influence the probability of being member of a burial society.

## **5. Empirical Analysis**

We make use of a unique data set on the access to and usage of both formal financial services as well as semi-formal and informal financial products: the FinScope™ surveys ([www.finscope.co.za](http://www.finscope.co.za)), a FinMark Trust initiative, consist in a series of comprehensive national household surveys on the people's perceptions, needs, and usage patterns related to all kind of financial services and arrangements. The first survey has been conducted in 2003 in South Africa by FinMark Trust, has been repeated and adapted since and is being applied to other African countries since (Porteous 2007: 7). We use the 2004 South African data, since it is the first household survey that includes a wide set of questions on financial behaviour. In 2004, the data was benchmarked to Census 2001 figures. That is the population reflected the total as per the 2001 census. For limited comparability of the surveys both across countries and also across year we thus focus on the 2004 survey in South Africa which includes all the central variables relevant for our analysis. The sample was drawn from the national household samples and is representative at the national level.

### ***The regression framework***

The probability of having a formal funeral cover is modelled as a maximum-likelihood logit function of both individual and household characteristics as well as income, banking and risk coping information. We apply the data on burial society membership to the logistic model accordingly, yielding separate regressions for the formal and the informal arrangements. According to the hypothesis, the binary dependent variable indicates if the individual holds a funeral policy or not (framework 1; yes=1, no=0) or if he or she belongs to a burial society or not (framework 2; yes=1, no=0). All models are estimated using sampling weights as provided by FinMark Trust. Robust standard errors are reported to account for heteroskedasticity.

### **Variables**

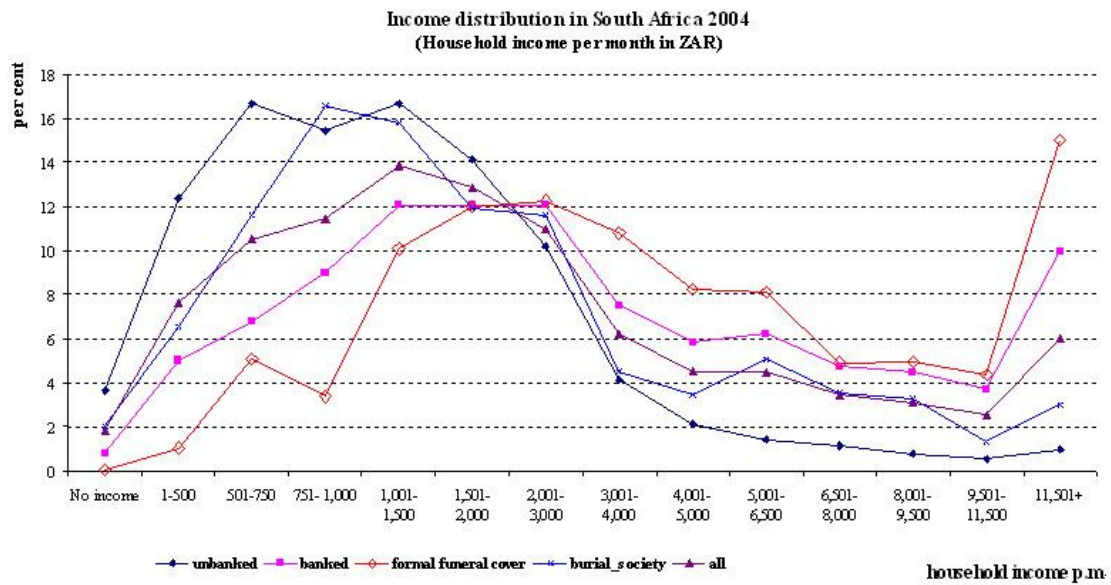
All our hypotheses revolve around the individual choice for formal or informal funeral cover. We define our dependent variables accordingly. The binary variable 'formal funeral cover' takes the value 1 if the respondent holds either a funeral policy or takes part in a funeral scheme (0 if not). We contrast this variable with an alternative dependent variable 'burial society'. It takes the value 1(0) if the respondent belongs (does not belong) to a burial society.

The income information that is required to test the Hypotheses 1 and 4 is provided by the Fin-Scope question q126 (monthly household income). It captures monthly household income in 28 categories (1=no income, 28= more than ZAR 200,001).<sup>6</sup> We use this continuous variable, including square terms in order to account for possible non-linearities, and alternatively dummy variables to account for significant influences of particular income groups. As such, we employ a binary variable taking the value 1 for employed people living below the poverty line. The poverty line varies according to household size, the larger the household the larger the income required to keep its members out of poverty. We follow the classification for South Africa by Schwabe (2004) to assess the working poor's propensity to buy formal or informal funeral policies. As can be seen in Table 1 and Figure 1, individuals earning in low income ranges make up a disproportionately high share of burial society members. We also define a binary variable 'high income' that takes the value 1 if the respondent belongs to the 10 per cent of people with highest income.

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<sup>6</sup> We control for all respondents who were unwilling or unable to provide information on their monthly income.

**Figure 1: Income distribution by banking status and funeral cover (numbers in per cent)**



For testing Hypothesis 2, we identify respondents who receive remittances by question 73p. Our explanatory variable takes the value 1 if the individual's source of income is ‘through family members or friends’ (n=758 or 25 per cent). Although we control for the level of monthly household income, remittances might still have a positive effect on the probability to buy a formal funeral cover if the part of income made up of remittances is not perfectly captured by the FinScope variable q126.

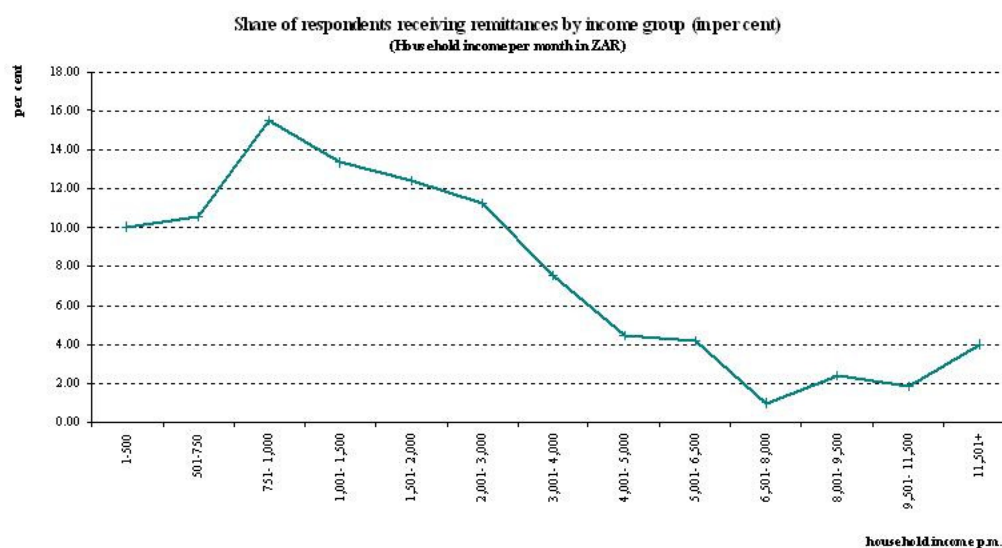
**Table 1: Income distribution by banking status and funeral cover (numbers in per cent)**

Household Income per month (q126)	Banking status		Funeral cover			all
	unbanked	banked	any	policy or scheme	burial society	
No income	4	1	1	0	2	2
R1-R500	12	5	4	1	7	8
R501-R750	17	7	8	5	12	11
R751-R1 000	15	9	10	3	17	11
R1 001-R1 500	17	12	13	10	16	14
R1 501-R2 000	14	12	12	12	12	13
R2 001-R3 000	10	12	11	12	12	11
R3 001-R4 000	4	8	8	11	5	6
R4 001-R5 000	2	6	6	8	3	5
R5 001-R6 500	1	6	6	8	5	4
R6 501-R8 000	1	5	4	5	4	3
R8 001-R9 500	1	4	4	5	3	3
R9 501-R11 500	1	4	3	4	1	3
R11500+	1	10	9	15	3	6
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

As can be seen in Figure 2, the share of respondents receiving remittances is highest in the no income or low income group, and phasing out at a monthly income higher than ZAR 11,500. In case the substitution effect dominates, our analysis will yield a negative coefficient of the remittance variable.

Hypothesis 3 predicts a lower propensity to buy formal funeral cover for households, which make use of informal loans to smooth income shocks. We define several binary variables reflecting the individual's risk management strategies based on question 117 'Manner in how to deal with occurrence'. Controlling for other factors such as income and remittances, we are thus able to better understand the impact of the respondent's attitude towards different ex-post risk management strategies on his or her preference for formal or informal insurance products. In our sample, 832 respondents or 29% declare they would take an informal loan if they experienced a negative income shock. In this analysis, we also include psychological factors such as risk perception. We define three variables indicating if the respondent perceives general threads such as droughts and floods ('general risk') or household specific risks such as theft or fire ('household risk') are likely to happen. Given that we assess the determinants of funeral cover purchases, we specifically account for respondents who believe chances are the family's main wage earner dies ('death risk').

**Figure 2: Remittances as source of income by monthly household income**



In Hypothesis 4, we put emphasis on insurance distribution channels and the individual’s interaction with banks. There are several approaches to this, and we test them separately as well as in combination. A first approximation of people’s interaction with banking facilities is their banking status. We regard individuals as banked, if they have declared to be currently banked or that they previously have been banked (FinScope variable q29). We also examine if individuals who usually receive their money into bank have a systematically higher probability to buy formal funeral cover than others since they are regularly exposed to potential marketing activities of bank employees (based on q83a). Most people in our sample actually do not receive or send money (n=1499 or 52 per cent). The second largest group (n=769 or 27 per cent) is made up of those who receive their money into bank. Another fairly big group (n=522 or 18 per cent) gets their money with family members or friends. Since multiple answers were permitted, channels of money transfer are not mutually exclusive. We can probe the determinants of buying a formal funeral cover more deeply by the more differentiated Financial Penetration Index (FPI, q516), which measures the extent and the nature of financial products and services take-up. Based on their usage patterns of relevant products and services (banking products, savings and investment products specifically and insurance/assurance products), respondents to the FinScope questionnaire were grouped into eight tiers, with higher scores indicating more intense usage of banking products and services.

As control variables we include a whole set of personal and household demographics such as gender, age, race and province in all our models. For clarity reasons, we do not report the coefficients of these variables in the regression tables though. We limit our analysis to individuals of legal age, i.e. of age 18 and older, which is a requirement for buying a formal insurance policy. We account for the level of education using the variable *q107* which comprises seven categories ranging from 1 'no formal education' to 7 'university completed'. In our regression framework, we test the continuous education variable as well as two dummy variables for high school education and *matric*<sup>7</sup> or higher educational degree.

### **Results**

Hypothesis 1: Table 2 reports the estimated marginal effects of each explanatory variable, evaluated at the mean of all variables. Higher household income increases the demand for formal funeral insurance. More specifically, a 1 point increase in monthly household income raises the probability of having a formal funeral cover by 8.2 percentage points, a large effect relative to the predicted probability of 0.19 (column 1), and the estimate is highly statistically significant.<sup>8</sup> Since the square term of household income is negatively significant, the impact of a larger income decreases with the level of income. The alternative and more extreme measure of income, a binary variable for high income classes, also explains a significant share of the dependent variable's variation. If an individual is among the last decile in the sample's income distribution, the likelihood of her or him having acquired a formal funeral cover increases by 13.9 percentage points. Respondents who successfully finished high school with a *matric* are also more likely to have purchased formal insurance products. In contrast, living in an urban area does not add additional information to the likelihood that a respondent has a funeral policy or takes part in a funeral scheme.

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<sup>7</sup> In South Africa, matriculation or *matric* refers commonly to the final year of high school and to the qualification received on graduating from high school; even though formally it refers to the minimum entry requirements of university.

<sup>8</sup> Evaluated at the mean of all independent variables.

<i>dy/dx</i>	(1)	(2)
Household income	0.082*** (0.010)	
(Household income) <sup>2</sup>	-0.003*** (0.000)	
High income		0.139*** (0.040)
Working poor	-0.002 (0.036)	-0.025 (0.036)
High School	0.033 (0.031)	0.085*** (0.032)
Matric	0.169*** (0.038)	0.269*** (0.039)
Urban area	0.019 (0.026)	0.036 (0.026)
Mean dep. variable	0.19	0.20
Observations	2800	2800

*Notes:* marginal effects of coefficient estimates from logistic regression, evaluated at means of all variables; robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The results regarding Hypothesis 2 are displayed in Table 3. Remittances are a common phenomenon in low- and middle-income countries. Money from family and friends increases income, enabling the recipient to buy more insurance products. At the same time, remittances can be regarded as substitutes for insurance. As can be seen in Table 3, if the respondent receives remittances, she or he is less likely to be in possession of a formal funeral cover by between 9 and 9.6 percentage points. The substitution effect dominates in all model specifications, even if no control for income is included (column 1). The relationship between both variable specifications of income and the demand for formal funeral cover that evolved in the first regression framework (Table 2) proves robust. And again, education enhances the respondent's propensity to buy formal funeral cover substantially.

**TABLE 3**  
**Regression Analysis: Formal funeral cover and Remittances**  
**(Formal funeral cover as dependent variable)**

<i>dy/dx</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>
Household income		0.080*** (0.010)	
(Household income)^2		-0.003*** (0.000)	
High Income			0.125*** (0.039)
Working Poor		-0.004 (0.035)	-0.027 (0.035)
Receive Remittances	-0.096*** (0.021)	-0.090*** (0.021)	-0.090*** (0.022)
High school	0.084*** (0.032)	0.028 (0.031)	0.081** (0.032)
Matric	0.293*** (0.038)	0.160*** (0.038)	0.262*** (0.039)
Urban area	0.038 (0.025)	0.023 (0.025)	0.037 (0.025)
Mean dep. variable	0.20	0.18	0.19
Observations	2800	2800	2800

*Notes:* marginal effects of coefficient estimates from logistic regression, evaluated at means of all variables; robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

We continue the empirical analysis testing Hypothesis 3. The results can be seen in Table 4. The effects of income and remittances remain statistically highly significant and the magnitude of their impact is stable. Respondents that feel inclined to deal with occurrences by taking an informal loan are systematically less likely to have opted for formal funeral cover. The effect is rather sizeable with 6.2 percentage points. In contrast, South Africans who rely on insurance policies in a risk scenario have, not very surprisingly, a considerably higher inclination to purchase funeral

policies. Once we include variables capturing risk perception into the model (column 2), the risk coping strategy to take an informal loan even gains in importance. Moreover, respondents that believe a household-specific risk such as fire or theft are likely to happen in the near future raise the probability to own a formal funeral insurance product by more than 5 percentage points. Notably, it makes no systematic difference if the death of the main wage earner is considered likely to happen. This might be due to the fact that the respondent is not necessarily the main wage earner and her or his personal decision to buy funeral insurance is unrelated to the main wage earner's funeral coverage.

**TABLE 4**  
**Regression Analysis: Formal funeral cover and risk coping strategies**  
**(Formal funeral cover as dependent variable)**

<i>dy/dx</i>	(1)	(2)
Household income	0.077*** (0.010)	0.077*** (0.010)
(Household income) <sup>2</sup>	-0.003*** (0.000)	-0.003*** (0.000)
High Income		
Working Poor	-0.011 (0.334)	-0.012 (0.033)
Receive remittances	-0.095*** (0.021)	-0.094*** (0.021)
Coping strategy A: Sell Assets	0.081 (0.059)	0.042 (0.054)
Coping strategy B: Take a formal loan		Reference category
Coping strategy C: Informal loan	-0.062*** (0.021)	-0.092*** (0.023)
Coping strategy D: cash in insurance policy	0.254*** (0.061)	0.203*** (0.061)
Coping strategy E: Government grant	0.061 (0.046)	0.020 (0.042)
Coping strategy F: Withdraw savings	-0.002 (0.030)	-0.035 (0.028)
Death risk		0.023 (0.032)
Household risk		0.051** (0.024)
General risk		0.061 (0.032)
High School	0.029 (0.031)	0.028 (0.031)
Matric	0.137*** (0.038)	0.140*** (0.038)
Urban area	0.020 (0.026)	0.028 (0.025)
Mean dep. variable	0.18	0.18
Observations	2800	2800

*Notes:* marginal effects of coefficient estimates from logistic regression, evaluated at means of all variables; robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

We now turn to Hypothesis 4 and contrast the determinants of formal and informal funeral cover, instanced by burial societies, focussing on distribution channels. We model the probability of having a formal funeral cover or of being a member of a burial society as a logistic function of income, education, risk coping strategies, risk perception and remittances. From Table 5a we can deduct that the individual's banking status, a rough approximation of familiarity with banks, increases the probability of having a formal funeral cover about 16 percentage points. Opposed to this, it increases the likelihood to be a member of a burial society by about 6 percentage points only (Table 5b). As a second basic measure of bank interaction, we include a variable that controls for the fact that the respondent receives his or her money "into bank" (as opposed to "by cash" or "in other forms"). This adds additional explanatory power to both regression frameworks (Table 5a and 5b column 2). Interestingly, the dummy variable for high income groups turns out significant for formal funeral cover only. Household income has a significant positive impact on the probability to belong to a burial society. The income effect is much weaker than for formal funeral cover though, it increases the probability of having an informal funeral cover by 1.7 percentage points only. Education has no systematic influence on joining a burial society either.

We can probe the determinants of the funeral cover choice more deeply by adding the Financial Penetration Index to the explanatory variables. It has a positive and statistically highly significant impact on both dependent variables, its marginal effect being greater on formal funeral cover. What is more, the continuous income variable loses its significance for informal funeral cover once more differentiated measures of bancarization are included in the model. It seems thus as if the income effect that emerged in the first model (Table 5a column 1) reflects non-monetary aspects linked to income. The fact that the square term of the income variable evolves insignificant supports this view. Following this line of argument, income increases the probability of belonging to a burial society in the basic model since it serves as a medium for becoming familiar with important aspects of an institutional system and the fundamental laws of saving and receiving payouts. The level of income renders unimportant though. Once we properly account for familiarity with the banking system, the income variable loses its explanatory power.

While remittances remain robust in all specifications with formal funeral cover as a dependent variable, recipients of remittances have no significantly higher or lower inclination to join a burial society than others. It stands to reason that the insurance character of remittances plays a role for formal funeral cover only. People who decide to become a member of a burial society apparently ponder about different aspects than when they decide about formal funeral cover. Considerations

about the individual's network, about community relations and other non-monetary benefits such as practical assistance with funeral arrangements might be of greater importance.

**TABLE 5a**  
**Regression Analysis: Formal funeral cover and bank interaction**  
**(Formal funeral cover as dependent variable)**

<i>dy/dx</i>	(1)	(2)	(3)
Household income	0.065*** (0.009)		0.051*** (0.010)
(Household income) <sup>2</sup>	-0.002*** (0.000)		-0.002*** (0.001)
High Income		0.074** (0.030)	
Receive Remittances	-0.071*** (0.020)	-0.067*** (0.021)	-0.043* (0.024)
Working poor	-0.001 (0.034)	-0.017 (0.033)	-0.004 (0.033)
Banked	0.160*** (0.019)	0.162*** (0.020)	0.065*** (0.206)
Receive money through bank		0.102*** (0.025)	0.050** (0.023)
Financial Penetration Index			0.081*** (0.010)
High school	-0.001 (0.029)	0.026 (0.029)	0.006 (0.030)
Matric	0.103*** (0.035)	0.258*** (0.036)	0.045 (0.037)
Urban area	0.020 (0.024)	0.158 (0.024)	0.025 (0.024)
Mean dep. variable	0.17	0.17	0.16
Observations	2800	2800	2800

*Notes:* marginal effects of coefficient estimates from logistic regression, evaluated at means of all variables; robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**TABLE 5b**  
**Regression Analysis: Burial Society and Bank Interaction**  
**(Member of Burial Society as dependent variable)**

<i>dy/dx</i>	(1)	(2)	(3)
Household income	0.017** (0.008)		0.013 (0.008)
(Household income)^2	-0.001 (0.000)		-0.001** (0.000)
High Income		0.019 (0.028)	
Receive Remittances	-0.020 (0.019)	-0.020 (0.019)	-0.005 (0.019)
Working poor	0.000 (0.026)	0.004 (0.026)	0.003 (0.025)
Banked	0.061*** (0.019)	0.071*** (0.018)	0.034* (0.020)
Receive money through bank		-0.014 (0.019)	-0.042** (0.018)
Financial Penetration Index			0.040*** (0.007)
High school	0.027 (0.021)	0.034 (0.021)	0.027 (0.020)
Matric	-0.015 (0.026)	-0.000 (0.026)	-0.039 (0.025)
Urban area	-0.023 (0.021)	-0.021 (0.021)	-0.023 (0.023)
Mean dep. variable	0.13	0.13	0.12
Observations	2800	2800	2800

Notes: marginal effects of coefficient estimates from logistic regression, evaluated at means of all variables; robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## **6. Discussion of results & conclusions**

We started our analysis with the question how the fact that a household receives remittances influence its use of funeral cover. From the empirical literature we know that remittances increase after a disaster has occurred. This suggests that remittances are substitutes for insurance. At the same time, remittances increase income which *ceteris paribus* should increase the use of insurance. Our empirical analysis shows that households are more likely to possess formal funeral cover if their income is higher. We also provide evidence that remittances decrease the likelihood that a household has formal funeral cover (when we control for income). Thus, our results suggest that both risk management strategies are substitutes.

We also study how the use of formal funeral cover is influenced by other risk management strategies. Here, we also find some substitution effect. Households that consider taking an informal loan as an option to deal with occurrences are less likely to possess formal funeral cover. Finally, access to banking services may influence the use of insurances as well. Indeed, we find that banked households are more likely to possess formal funeral cover.

Comparing the determinants of the use of formal and informal funeral cover, we see some notable differences. Most importantly, remittances only influence the use of formal funeral cover. This result suggests that informal funeral cover, i.e. being a member of a burial society, fulfils other functions than a formal funeral cover. There might be considerations about the individual's network, about community relations and other non-monetary benefits such as practical assistance with funeral arrangements which might be of greater importance.

## References

ARUN, Thankom and STEINER, Susan (2006): "Micro-Insurance in the Context of Social Protection", in: Brooks World Poverty Institute Working Paper, No. 55: 1-13.

CLARK, George R.G. and WALLSTEN, Scott J. (2003): Do Remittances Act Like Insurance? Evidence From a Natural Disaster in Jamaica, World Bank.

CHURCHILL, Craig (2006): "What is insurance for the poor?", in: CHURCHILL, Craig (ed.): Protecting the poor. A microinsurance compendium, Munich, Geneva: Munich Re Foundation, International Labour Office (ILO), 12-24.

COHEN, Monique and SEBASTAD, Jennefer (2006): "The demand for microinsurance", in: CHURCHILL, Craig (ed.): Protecting the poor. A microinsurance compendium, Munich, Geneva: Munich Re Foundation, International Labour Office (ILO), 25-44.

COLLINS, Daryl (2004): "The Financial Diaries Project – Background and Methodology", in: <http://www.financialdiaries.com/methodology.htm> (Access: 29/03/2008).

COLLINS, Daryl (2005): "Financial instruments of the poor: Initial findings from the Financial Diaries study", in: Development Southern Africa, Vol. 22, No.5.

COLLINS, Daryl and MORDUCH, Jonathan (forthcoming): "Banking Low-Income Populations: Perspectives from South Africa", in: BARR, Michael Barr and BLANK, Rebecca (ed.): Access, Assets, and Poverty: The Role of Financial Services Among Low- and Moderate-Income Households.

FINANCIAL DIARIES (n.a.a): Focus note "Funerals and finance - events in the lives of Financial Diaries households", [http://www.financialdiaries.com/key\\_findings.htm](http://www.financialdiaries.com/key_findings.htm) (Access: 01/09/2009).

FINANCIAL DIARIES (n.a.b): Focus note "Financial Decisions and Funeral Costs", [http://www.financialdiaries.com/key\\_findings.htm](http://www.financialdiaries.com/key_findings.htm) (Access: 01/09/2009).

GRAVELLE, Hugh and REES, Ray (2004), Microeconomics, 3rd edition, Pearson Education Limited, Essex.

GUBERT, Flore (2002): "Do Migrants Insure Those who Stay Behind? Evidence from the Kayes Area (Western Mali)", Oxford Development Studies, 30(3), 267-287.

LEITE, Phillippe, MCKINLEY, Terry and GUERREIRO OSORIO, Rafael (2006): "The post-Apartheid evolution of earnings inequality in South Africa, 1995-2004", in: Working Paper of the International Poverty Centre, UNDP, Vol. 32 (October 2006).

MOHAPATRA, Sanket; JOSEPH, George; RATHA, Dilip (2009): Remittances and Natural Disasters, Ex-post Response and Contribution to Ex-ante Preparedness, World Bank Policy Research Working Paper No. 4972, June 2009.

MORDUCH, Jonathan (1995): "Income Smoothing and Consumption Smoothing", in: Journal of Economic Perspectives, Vol. 9, No.3, 103-114.

NAPIER, Mark et al. (2007): *Going out in style - the culture and finance of death in South Africa*, FinMark Trust; FNS Research Surveys.

PORTEOUS, David (2007): *Financial Service Access and Usage in Southern and East Africa: What do Finscope Surveys Tell Us?*, Vorna Valley, South Africa: FinMark Trust, <http://www.finscope.co.za/index.asp> (Access: 11/01/2009).

POSEL, Dorrit (2003): *Have Migration Patterns in post-Apartheid South Africa Changed?* Paper prepared for Conference on African Migration in Comparative Perspective, Johannesburg, South Africa, 4 to 7 June.

RUTHERFORD, Stuart (2001): *The Poor and Their Money*, New Delhi: Oxford University Press.

RUTHVEN, Orlanda and KUMAR, Sushil (2002): "Fine-Grain Finance: Financial Choice and Strategy Among the Poor in Rural North India", in: Institute for Development Policy and Management (ed.): *Finance and Development Research Programme Working Paper Series*, Vol. 57, Manchester: University of Manchester.

SCHLESINGER, Harris (2000): "Insurance Demand," in G. Dionne (ed.), *Handbook of Insurance*, 2000, Boston: Kluwer Academic Publishers.

STONE, Robert (Emerging Market Economics Limited) (2005): "Financial Access Indicators Stocktake. A paper for the Department for International Development", London: Department for International Development (DFID).

UNDP (2008): *Human Development Report 2007/2008 - Country Factsheet South Africa: The Human Development Index - going beyond income*, [http://hdrstats.undp.org/en/countries/country\\_fact\\_sheets/cty\\_fs\\_ZAF.html](http://hdrstats.undp.org/en/countries/country_fact_sheets/cty_fs_ZAF.html) (Access: 31/08/2009).

WORLD BANK (2001): *World Development Report 2000/2001 - Attacking Poverty: Opportunity, Empowerment, and Security*, Oxford: Oxford University Press.

YANG, Dean (2007): "Coping with Disaster: The Impact of Hurricanes on International Financial Flows, 1970-2002." Mimeo, Department of Economics, University of Michigan, Ann-Harbor.

YANG, Dean and CHOI, HwaJung (2007): "Are Remittances Insurance? Evidence from Rainfall Shocks in the Philippines." *World Bank Economic Review* 21(2), 219-48.

ZELLER, Manfred and SHARMA, Manohar (2000): "Many borrow, more save, and all insure: implications for food and micro-finance policy", in: *Food Policy*, Vol. 25, No.2, 143-167.