Maastricht University Leading in Learning!

Maastricht Graduate School of Governance (MGSoG)

The Welfare Effects of Integrating HIV/AIDS Treatment with Cash or In Kind Transfers

Nyasha Tirivayi
Wim Groot

September 2009

Working Paper
MGSoG / 2009 / WP007

Maastricht Graduate School of Governance (MGSoG)

Maastricht Graduate School of Governance

The 'watch dog' role of the media, the impact of migration processes, health care access for children in developing countries, mitigation of the effects of Global Warming are typical examples of governance issues – issues to be tackled at the base; issues to be solved by creating and implementing effective policy.

The Maastricht Graduate School of Governance, Maastricht University, prepares students to pave the road for innovative policy developments in Europe and the world today.

Our master's and PhD programmes train you in analysing, monitoring and evaluating public policy in order to strengthen democratic governance in domestic and international organisations. The School carefully crafts its training activities to give national and international organisations, scholars and professionals the tools needed to harness the strengths of changing organisations and solve today's challenges, and more importantly, the ones of tomorrow.

Authors
Nyasha Tirivayi, PhD fellow
Maastricht Graduate School of Governance
Maastricht University
Email: Nyasha.Tirivayi@maastrichtuniversity.nl

Wim Groot
Professor of Health Economics, BEOZ
Maastricht University
Email: W. Groot@maastrichtuniversity.nl

Mailing address
Universiteit Maastricht
Maastricht Graduate School of Governance
P.O. Box 616
6200 MD Maastricht
The Netherlands

Visiting address
Kapoenstraat 2, 6211 KW Maastricht
Phone: +31 43 3884650
Fax: +31 43 3884864
Email: info-governance@maastrichtuniversity.nl

Abstract

The fight against HIV/AIDS involves the implementation of various social protection programs to improve the welfare of patients and affected households. Free or subsidized AIDS treatment is now being provided to at various scales in the afflicted regions of the world. In recent years, initiatives integrating AIDS treatment with social transfers have emerged thus raising questions on the welfare effects of this integration and if these effects are different or larger than AIDS treatment alone. The objective of this review is to establish the following: a) to assess the welfare impact of integrating AIDS treatment with cash or in kind transfers and compare them to the welfare effects of AIDS treatment alone and b) to determine the effects of the cash transfer and AIDS treatment combination versus the in kind transfer and AIDS treatment combination. The authors review economic theory and empirical studies and find that AIDS treatment alone improves patients' health and survival rates while increasing labour force participation rates. Integrating AIDS treatment with cash or in kind transfers theoretically has ambiguous effect on labour supply, while empirical evidence shows improvements in patients' health, food consumption, labour activity and adherence to treatment when food transfers are integrated with AIDS treatment. Some evidence shows that cash transfers increased household income and food consumption when integrated with AIDS treatment. However since current empirical studies are few , the authors come to a conclusion that there are opportunities for further research especially direct comparing AIDS treatment alone and its integration with cash or in kind transfers ,

1. Introduction

HIV/AIDS has major socio-economic consequences for the patient and associated household members, leading to a decline in household welfare. These include adult and infant mortality from AIDS, high medical costs of treatment, increased care burden for children, older people and women and the loss of labour supply. These consequences lead to increases in consumption insecurity, reduced investment in children's human capital and increased household poverty levels (Thirumurthy et al 2007, Salinas and Haacken 2006; Chapoto and Jayne 2005; Booysen, 2003). There is an increasing incidence of HIV/AIDS in economically marginalized communities like rural areas in Africa (UNRISD 2008). In the absence of some form of social protection, rural households may not be able to insure their consumption over periods of major illness or invest in their children leading to significant losses in household welfare (World Bank, 1993, 1995a).

The negative socio-economic consequences resulting from HIV/AIDS highlight the need for broader, innovative and effective social protection interventions to support HIV/AIDS patients and their households coping with the disease. Consequently several initiatives are being implemented to mitigate the negative impacts of HIV/AIDS. The fight against HIV/AIDS is generally organized around four themes: 1) Prevention, 2) Treatment, 3) Care and 4) Support (WHO 2007). A majority of the effort leans towards designing medical and preventative solutions to the disease and ignores the socio-economic and political consequences of the epidemic (UNRISD 2008). Most governments around the world are implementing various programs for fighting HIV/AIDS generally centered on any one or several of these themes. Treatment is increasingly being touted as vital to the prolonged survival and wellbeing of AIDS patients.

Recently, the World Health Organization and other UN agencies have called for more holistic or multiple approaches for assisting AIDS patients by catering for more or all needs of the patients - health, psychosocial, socio-economic and political. One approach has been to integrate AIDS treatment with social assistance such as cash or in kind transfers. The integration of AIDS treatment with these social transfers is driven by the argument that a single intervention like AIDS treatment alone on its own may not address

the socio-economic needs of the AIDS patients. Wagner et al (2007) argue that treatment without additional social support (e.g. food and nutrition, micro-financing and employment assistance, and transportation) limits the effects of treatment to mostly physical health rather than the socio-economic wellbeing of individuals, their families, and the community. AIDS patients have palliative care needs that include psychosocial, physical and financial support. A recent study by Uwimana and Struthers (2007) shows that AIDS patients cite financial assistance as the most critical perceived need by AIDS patients (Uwimana and Struthers 2007). Moreover HIV affects economically vulnerable people who not only need treatment but also require economic support to re-establish their livelihoods. Hence treatment should be integrated with livelihood support programmes and social protection initiatives (Russell et al 2007). Accordingly, several initiatives that integrate treatment with socio-economic support by offering treatment (Anti-Retroviral Therapy[1]) combined with social assistance have recently emerged.

In several of these combined initiatives in Africa, AIDS treatment is either free or subsidized and is coupled with either cash or in kind transfers (Slater 2004). The AIDS Support Organization (TASO) and the Reach Out Mbuya HIV/AIDS Initiative in Uganda is integrating treatment with microfinance and cash transfers like school fees grants and in kind transfers such as food support. In some countries like South Africa, AIDS treatment is offered in addition to existing cash grants like the disability grant. Family Health International is integrating treatment with food aid and income generating activities across several African countries[2].These interventions are unique in that they combine both AIDS treatment and non-contributory social transfers with the aim of reducing poverty and improving household welfare and thus they act as social protection instruments.

In several cases, AIDS treatment is being combined with social transfers so as to reduce household vulnerability, social exclusion and poverty arising from HIV/AIDS (Slater

[1] Recently most countries in Africa have begun implementing the standard AIDS treatment (Anti-Retroviral Therapy (ART) program and it is estimated that there were only more than one million ART recipients in sub-Saharan Africa by December 2006 which is still 23% of the people estimated to be need of ART treatment in Africa (WHO/UNAIDS, 2007).

[2] Also the World Food Programme and World Vision are collaborating with health facilities and donor agencies to provide food packages to AIDS patients on treatment in several countries across Africa

2006); keep AIDS patients healthy, economically active and able to support families; address probable employment discrimination resulting from stigma attached to HIV/AIDS; and help patients adhere to AIDS treatment and alleviate side effects from treatment (argument for food aid, Egger and Strasser 2005).

It is important to assess the welfare impact of these interventions. Much prominence has been attached to AIDS treatment (a medical approach) as vital for the survival of AIDS patients. Empirical literature attests that in resource-poor settings where there is no AIDS treatment, death usually occurs within one year after progression to AIDS while studies point to the significant health improvement and broader welfare gains to the household when AIDS patients are given treatment (Thirumurthy et al, 2005, 2006, Koenig et al 2004, Morgan et al., 2002). There has been no serious review of whether integrating AIDS treatment with social transfers is more effective for AIDS patients and affected households when compared to the effects of solitary AIDS treatment.

This literature review is concerned with determining whether combining social transfers, cash or in-kind, with AIDS treatment is associated with different or additional welfare effects than of AIDS treatment alone. The review identifies the relevant studies, outlines the main findings and identifies the research gap which will motivate future research. Section two refers to economic theory to determine the likely effects of the cash transfer and AIDS treatment combination versus the in kind transfer and AIDS treatment combination. In section three we describe the search strategies and selection criteria for literature while section four presents the empirical findings and section five discusses the methodologies used in the cited empirical studies. A discussion of the empirical findings and implications on policy is presented in section six and section seven concludes and discusses areas for further research.

2. Likely Effects from Integrating AIDS Treatment with Cash vs. In Kind Transfers: Suggestions from Theory

There are potentially varied or similar effects of adding cash or in kind transfers to AIDS treatment. A key question to understanding the underlying economic principles would be;

is the size of the effects from in kind transfer larger or smaller than for a cash transfer? Economic theory suggests it would depend on whether the in kind transfer is inframarginal or extramarginal (Skoufias et al 2008). *If an in kind transfer is smaller than what was consumed before the intervention, then the marginal effect of the in kind transfer is equal to the cash transfer effect. When the in kind transfer is extra marginal, then recipients are constrained to consuming more than they would have under a cash transfer (Skoufias et al 2008).* Thus economic theory suggests possible differences or similarities between the cash transfer treatment combination vs. the in kind transfer treatment combination with regards to magnitude of welfare effect.

One interesting aspect stemming from analyzing the welfare outcomes from integrating AIDS treatment with cash or food transfers is examining the effects of the two combinations: cash vs. in kind. There is ongoing debate on the merits and demerits of cash vs. in kind transfers (Gentilini 2007). One argument generally advocates for targeted cash transfer programs in rural areas due to the attributed advantages of cash over in kind goods e.g. cash provides more choices for consumption to the recipient, implementation costs are less than for in kind transfers, less stigma attached to receiving cash compared to in kind goods and does not create negative externalities (Tabor 2002). The other argument cautions the use of cash transfers as it may not be really applicable to subsistence households and may be a disincentive to labour supply while in resource poor countries in Africa there is concern over the implementation capacity, service provision constraints and cost- benefit considerations (Schubert and Slater, 2006; Tabor, 2002). Some key issues arising from the cash vs. in kind transfers debate concern targeting, design of transfer, gender of recipient and incentive effects.

The association (negative or positive) between transfers and the welfare effect may also be different or similar. The following paragraphs are derived from various theoretical arguments and propositions in theoretical literature to determine the likely welfare effects of the cash transfers-AIDS treatment integration as compared to in kind transfers-AIDS treatment integration. Theoretical propositions will be based on the demand for health

model; income-leisure choice model (labour-leisure tradeoff model) and household economic model.

Welfare measures include AIDS patient's health, household consumption, children's welfare and labour supply (Thirumurthy et al 2005, 2007, Coetzee 2006). In this review, in kind transfers will mostly refer to food aid or supplements.

2.1 Demand for health model

In this model, medical care or services are an input to produce health. In the case of AIDS treatment, it is scarce and expensive input for improving health, thus most programs/organizations offer it free of charge or subsidized to rural and low income patients, so as to help them not only restore health but invest in their health. Thus any resulting health improvement would likely improve labour capability as labour production is a function of health among other factors such as demographic characteristics, and transfers.

Food transfers are more likely to have a direct positive impact on the AIDS patient's health outcome. In the aftermath of a shock like an AIDS illness in the household, food transfers can increase food consumption, improve nutritional status and thereby boosting health, labour productivity and income earnings compared to the situation without food transfers (Abdulai et al 2005). This is because food transfers become an input to producing health. Caldwell (2005) asserts that food aid is a short term safety net improving nutrition and health for chronically ill patients. Cash transfers provide more choices for consumption and opportunities to invest in health and thus may also have an indirect impact on improving health, yet targeted and unconditional cash transfers can also contribute to antisocial use e.g. buying of cigarettes and alcohol and thus have a lower impact than in kind transfers or perhaps even a negative effect (Schubert and Slater, 2006; Tabor, 2002). Thus the food transfers-treatment combination is expected to have clearer positive impacts on health than unconditional cash transfers even if the cash transfer is conditioned on encouraging health related behaviour.

2.2 Income-leisure choice theory or labour-leisure tradeoff model

When an AIDS patient undergoes treatment, there are improvements in labour supply which lead to increased wages such that there could be both an income and substitution effect. When wages are increased (ceteris paribus), the patient could either work more due to a substitution effect that dominates the income effect (thus substituting leisure with labour supply) or they could also work less due to an income effect if the income effect is larger than the substitution effect. The theory can also be extended to the household, for instance AIDS treatment improves a patient's labour supply such that, on the one hand the income effect from patient's improved labour supply likely discourages household members to work or while improved patient's health increases his/her productivity and reduces the care burden on household members giving them all more opportunities to work (substitution effect).

Cash or in kind transfers are a form of welfare benefits. When the patient is receiving both treatment and cash or food transfers, shared within the household, additional dis/incentive effects on labour force participation are theoretically likely. Economic theory predicts that cash transfers like means-tested benefits have an income effect that cause work disincentives by preventing recipients from participating in the labour market (Gassmann and Notten 2007). Economic theory also suggests that people work less under a cash transfer because as incomes rise, people prefer leisure to work (Kanbur, Keen and Tuomala, 1994). However as alluded to in the demand for health model, an income effect can lead to investments in health, thus increase productivity, earnings and consequently labour supply. The type of cash transfers is also important, for instance a transfer that is equivalent or near the minimum wage would discourage people to work. However some empirical evidence from developing countries seems to show positive (substitution effect) or no effects of cash transfers on labour supply (Case et al 2007). Therefore the work incentive effects of cash transfers are ambiguous and it is crucial to consider the design and targeting of cash transfer being integrated with AIDS treatment. Cash transfers can also cause perverse incentives. For instance, the disability grant in South Africa's eligibility criteria requires certified or proven illness and discontinuation once the ill beneficiary recovers. There is anectodal evidence that this grant encourages poor

adherence to and uptake of AIDS treatment as patients choose to remain ill and maintain eligibility to the disability grant (Coetzee and Natrass 2004)

The labour supply effect from in kind transfers is also ambiguous. Hoynes and Schanzenbach (2007) assert that in-kind transfers cause work disincentives while Gahvari (1994) argues that the labour supply effect of in kind transfers depends on the length of provision of the in-kind transfer and the good's substitutability with leisure. With regards to food aid, the most widely held perception is that food aid discourages rural people from participating in both off and on farm work (Hoddinott 2003). Food transfers are a form of non-monetary income and following the income effect argument, when incomes rise, people prefer leisure to work (Kanbur, Keen and Tuomala, 1994). However as earlier mentioned, in the aftermath of a shock like AIDS illness, food aid could also improve health, labour productivity, and income earnings and thus labour supply (Abdulai et al 2005). This theory states that there are threshold effects in consumption giving rise to a "dynamic poverty trap." For instance, where a worker derives income only from labour without savings or loans, their productivity is directly dependent on past consumption and there is a threshold above which productivity occurs. Going beyond the threshold would raise future productivity at a declining rate as consumption rises. In context of this theory, it is possible that temporary income support can lift people out of extreme poverty. Ravallion (2003) argues that the very existence of a positive Basal Metabolic Rate for humans means that a consumption threshold must exist as put forward by proponents of the dynamic poverty trap. This theory also applies in the aftermath of shocks such as AIDS illness wherein the AIDS patient likely attains a negative Basal Metabolic Rate, resulting in declining productivity. Moreover the negative impact of the illness on the household welfare makes it more likely that current consumption would only raise future productivity at diminishing rate as the consumption threshold of the household would have been reached through increased expenditures or loss of income due to the illness.

Recent studies also caution against prematurely concluding any labour supply disincentive effects of food aid as the presence of such effects could be an indicator of poor targeting. Since labour supply is more responsive to income changes as people become wealthier, then the inclusion of wealthier recipients in a food aid program will magnify the labour

supply disincentive effect as wealthier recipients are more likely to work less than poorer recipients when they receive the food aid (Barett and Maxwell 2005, Barett 2003). Hoddinott argues that the conclusion that food aid causes labour supply disincentive effects is based on a strong assumption that other factors or household characteristics are uncorrelated with receiving food aid and do not influence household behaviour or labour supply. Hoddinott (2003) and Abdulai et al (2005) recommend to control for confounding effects such as age, sex and education of head, land holdings, size and location, and in their studies this resulted in food aid's supposed disincentive effects disappearing. Therefore the effects of food aid-treatment combination on labour supply effects seem ambiguous as on the one hand it may assist AIDS patients to improve their health and return into the labour market and on the other hand it may encourage dependency and discourage work. The labour-leisure tradeoff theory would also have repercussions on consumption since consumption is a function of labour and wages.

2.3 Household Economic Model

Consumption

When the household receives external resources such as social transfers, it allocates the resources accordingly. In this context when a household adult member is treated for AIDS and receives social transfers there are larger changes in household consumption than if the patient was on AIDS treatment alone. The effect of the social transfers on household consumption corresponds to that of a general income effect. Also according to consumer theory, cash transfers increase money income or budget and consequently the optimal consumption bundle of the household. In kind transfers like food aid increase food expenditures and decrease out of pocket food spending (Hoynes and Schanzenbach 2007). Therefore cash transfers are likely to boost total household consumption including food consumed. This is because cash transfers have a direct effect on the household expenditure. In kind transfers like targeted food aid boost total food consumption/calories and may also indirectly boost total household consumption due to an income effect resulting from decreased food spending.

Intrahousehold resource allocation.

Rosenzweig (1990) argues that programme interventions such as social transfers affect intra household resource allocation as they change the household budget constraint and production inputs such as labour under the unitary household model. Rosenzweig (1990) gives the example of a free food aid (school lunch) to one individual which he argue would result in this individual becoming more well-off than any other individual in the household compared to their condition before the free food supplements. Subsequently; the household will try to correct this disparity and increase household welfare by reducing family controlled resources given to individual receiving food aid and redistributing those resources to other members in order to maintain equality and achieve optimality. However when household resources are perfect substitutes for the programme's resource, the person-specific subsidy will have the same impact on the recipient's food consumption, health, or welfare compared to other household members as would a programme providing the equivalent amount of money to the household as a whole (Rosenzweig 1990).

The literature has shown that HIV/AIDS leads to a decline in adult patients' health, an increase in the financial burden for medical costs and a loss in household income due to reduced labour supply by the patient. This directly causes changes in returns to human capital inputs (health or earnings potential) or in employment among family members which leads to an unequal intra-household distribution of resources skewed towards the HIV infected household member. All these consequences have adverse effects on children's welfare, notably resulting in the reduction of children's schooling attendance (Case and Addington 2005). Thus when an adult patient receives treatment in a household there are likely positive externalities on children's wellbeing. Therefore intrahousehold behaviour of recipient's household is also vital for children's outcomes. According to Alderman et al. (1997), the impact of social assistance on child welfare is dependent on the response of the household to such an intervention, such that any resulting intra household resource allocation is important and should be taken into account by policy/intervention designers.

Another key issue affecting intra-household allocation is the targeting of cash and in kind transfers. Literature suggests that properly targeted cash transfers boost child education

and nutrition, while properly targeted in kind transfers like food aid increase child nutrition (Attanasio and Mesnard 2006). Gender targeting, especially the targeting of women has recently been touted as a major contributor to improved children's welfare outcomes (Ezemenari et al 2003, Duflo 2000, Lundberg et al 1997). The gender of recipient of transfer has a bearing on children's outcomes. Rosenzweig and Schultz (1982) tested the unitary household economic model in India which found that when opportunities for female employment and earnings were exogenously higher, female infants had greater survival probabilities and, by inference, received a large share of household resources. However, Duflo (2000) argues that since the gender of the recipient of transfer has a bearing on children's outcomes, then the household does not function as a unitary entity but rather as a collective entity. Therefore it is likely that both the cash transfer and food aid combination affect children's nutrition outcomes, where the cash transfer addition is likely to directly increase children's school attendance and the food transfer addition is likely to indirectly increase children's school attendance. In both targeting and gender of the recipient plays a major role.

The major suggestions from this theoretical review are that:

- AIDS treatment directly improves health and thus labour supply. However increased wages from labour supply would lead to a substitution effect which increases labour activity and/or an income effect with the opposite effect, with potential spillover effects on the other prime age household members.
- Food transfers can become an input in the household production of health, thus directly improving patient health. Food transfers are a short term safety net that increases nutritional status of chronically ill patients.
- While the widely held view is that cash or in kind transfers lead to an income effect, where people prefer to work less there is an argument for and evidence that the net effect of cash or in kind transfers on labour supply is also ambiguous. One argument is that depending on whether the substitution effect dominates the income effect or vice versa, cash or in kind (food) transfers can cause a decrease or increase in the labour supply of the AIDS patient. They may also improve the health of the patient, causing a substitution effect (through increased productivity)

consequently resulting in increased labour supply. Additionally, errors in targeting that include wealthier beneficiaries may magnify the labour disincentive effects in a study.

- Regarding food transfers, other factors and household characteristics may be influencing household behaviour and labour supply or be correlated with receiving food aid, such that if this is not controlled for in the analysis, labour supply disincentive effects are detected as empirical evidence.
- Both cash and food transfers have an income effect which leads to an increase in household consumption
- Cash and food transfers improve children's welfare outcomes through the intrahousehold allocation of resources, where the household seeks to achieve pareto optimality in utility of household members (according to the unitary household model) or where gender influences decision making and intra household resource allocation (according to the collective household model).

3. Search strategies and selection criteria for reviewing literature

A literature search for relevant articles was carried out via the Social Science Research Network, Economic Papers, Science Direct and Google search engine from October 2008 to February 2009 using the following search terms: AIDS treatment, cash transfer, cash grant, food aid, nutritional support, HIV/AIDS, household welfare, economic impact, children's welfare, labour supply, employment status, ARV[3] treatment and HAART[4]. Articles selected need to involve some form of welfare measure. Welfare is defined as the "**material standard of living of every individual in the household"** (Nelson 1997). Welfare is also a multidimensional concept capturing various components of individual and household wellbeing e.g. health, labour participation, consumption. Welfare is central to the research because firstly HIV/AIDS by its nature adversely affects the welfare of the patient and associated household through declines in patient's health, labour participation, household income, and disinvestment in children's wellbeing. Secondly, integrating AIDS treatment with social transfers, which is the focus of the study, is a form of social protection meant to mitigate the patient and household from the aforementioned welfare declines associated with the disease, thus there is a need to study welfare outcomes from such interventions. Welfare will be assessed at both patient and household level**.** The household is considered sine externalities are likely to result from the patient receiving treatment and social transfers.

Articles were selected using the following criteria in Table 1. Due to the limited number of peer reviewed articles in this area, working papers and research reports were also considered. Since this is still an emerging area of study, few studies were identified. A total of seven studies on the welfare effects of AIDS treatment were selected while only four studies on the welfare effects of integrating AIDS treatment with cash or in kind transfers were available.

[3] Anti Retroviral Therapy
[4] Highly Active Anti Retroviral Therapy

Table 1 Selection Criteria of Literature Articles

List of Criteria

1. Articles must be written in English.
2. Articles can either be research reports, review or discussion papers.
3. Articles can be published in peer reviewed journals
4. Research articles should have an introduction, a methodology and results section with a conclusion.
5. Articles should have sample that includes patients in rural or low income urban areas and their households.
6. Articles investigating some components of welfare or socio-economic impacts beyond clinical measures on morbidity and mortality e.g. consumption, labour activity, children's nutrition/education

Search terms used

AIDS treatment, cash transfer, cash grant, food aid, nutritional support, HIV/AIDS, household welfare, economic impact, children's welfare, labour supply, employment status, ARV treatment and HAART

4. Findings from Empirical Literature

4.1 Welfare Effects of AIDS treatment

The reviewed studies are presented in table 2 and they are delineated into two groups, studies evaluating the welfare effects of AIDS treatment alone and studies evaluating welfare effects of integrating AIDS treatment with social transfers.

According to two studies reviewed, the most direct effects of AIDS treatment on the patient are biological and physical. Koenig et al (2004), in a cross sectional study found positive health outcomes for AIDS patients in rural Haiti such as weight gain, improved functional capacity and 86% of patients had undetectable viral loads. Thirumurthy et al (2005)'s panel study, found that treatment had a highly non linear effect on CD4[5] count

[5] CD4 cells consist of white cells and lymphocytes which defend the body from infection. WHO's standard threshold for normal or healthy CD4 cell count is 200/mm3 . A patient with a count below this level experiences opportunistic infections and a decline in functional capacity and is thus encouraged to begin treatment (WHO 2007)

whereby at 10-20 weeks, the median CD4 count had risen to levels at which patients were generally not showing any symptoms. The study also found a statistically significant increase in CD4 count during the first three to six months of AIDS treatment (127/mm3). Both studies confirm the theoretical notion that medical treatment contributes positively to health as espoused in the demand for health model (see table 2 for a description of the study).

Five studies which investigated the broader welfare impacts of AIDS treatment on labour supply of patients are described in table 2. Coetzee (2007) examines the impact of Highly Active Antiretroviral Treatment (HAART) on labour force participation of AIDS patients in Khayelitsha, South Africa. Coetzee finds that HAART leads to increased labour market activity by patients but there was no strong effect on re-entry into employment. Coetzee estimated effects for transitions from inactivity to unemployment, and transitions from unemployment into employment, using a longitudinal data set. In a similar study, Coetzee and Nattrass (2004) carried out a comparative analysis of AIDS patients on treatment with a baseline survey of the general Khayelitsha population. Their results show that AIDS patients on treatment suffered higher rates of ill health and experienced lower labour force participation rates than the Khayelitsha sample i.e. only 70.8% of AIDS patients were employed compared to 95.4% of non-AIDS respondents. However a panel survey of the same patients indicated that after one year of treatment, the health status and labour participation response rate improved significantly for HAART patients.

Thirumurthy et al (2005) analyzed the labour supply outcomes from AIDS treatment in Western Kenya using longitudinal survey data. The study's findings indicate that HAART therapy (AIDS treatment) has a large non-linear impact on labor supply of patients (number of hours worked per week), including small enterprise income. After six months of treatment the study found that there was a 20 percent increase in the probability of the patient participating in the labor force (economic activities like farming, job and self employed work) and a 35 percent increase in weekly hours worked. Thus this study corroborates the theoretical suggestion that the labour supply responses of adult AIDS patients have spillover effects to labour supply of other household members who had

either withdrawn from employment to assume care responsibility. Thirumurthy et al (2005) find that the improved labour supply of the patient can also generate intrahousehold spillover effects on time allocation patterns within the household and influence the labour supply of other prime-age household members. The labour supply outcomes of patients' household members are varied with young boys (age 8-18 years) and women working less, young girls (age 8-18 years) and men not changing labour supply, after patient begins treatment. These effects can be contradictory, on the one hand the income effect from patient's improved labour supply discouraging household members to work while on the other hand improved patient's health reduces the care burden on household members giving them more time to work and leisure, confirming the labour-leisure trade off theory even for the household members (Thirumurthy et al 2005).

In another labour supply related study, Larson et al (2008) studied the impact of AIDS treatment (Anti-Retroviral Treatment, ART) on days harvesting tea per month for tea-estate workers in Kenya. They findings indicate that the first year on treatment had a large, positive impact on the ability of workers to participate in their work. Using data from company payroll records for 59 HIV infected workers, they found that a month before initiating ART, HIV infected workers worked 5.09 fewer days than non-HIV workers. However after a year on ART, workers doubled their work days than they would have if not ART was given. Habyarimana et al (2007) also studied the impact of AIDS treatment on labour/work performance of HIV infected workers. They analysed personnel data from two mines of the Debswana Diamond Company in Botswana, which provide free AIDS treatment to its employees. They used data on workers' absenteeism rates. Their analysis finds that there was a large increase in the absenteeism of HIV-infected workers in the year preceding the start of AIDS treatment. However 2-4 years after the beginning of AIDS treatment the abseentism rates of treated workers declined to reach levels similar to those of non-HIV infected mining workers at the Company. Thus all five studies seem to corroborate the theory that AIDS treatment improves health and thus labour capability.

A recent study investigated the socio-economic impacts of AIDS treatment on patients and household looking at income, employment status and subjective personal wellbeing.

Chhagan et al (2008) explored the short term socio-economic impact of AIDS treatment in Soweto, South Africa and find that there was an increase in mean personal and household income after AIDS treatment was initiated with mean personal income rising 53% over baseline income. In 10% of the household sample, a decrease in the number of meals missed in households occurred. The major cause for the changes in income came from changes in employment status and social grants. Other socio-economic effects included the increase in ability to seek employment, and improvement in personal well being with less illness being reported from 3 months after starting treatment. The study corroborates the theoretical notion that improved labour supply (resultant from AIDS treatment) would increase income and consumption since consumption is a function of labour income.

Another study described in table 2 investigated welfare effects in the form of positive externalities on the children of the patients. Zivin et al (2007) estimate the impact of AIDS treatment on children's schooling and nutrition outcomes using longitudinal household survey data in rural Kenya. The study's findings indicate that after six months of AIDS treatment, patients' children's weekly hours of school attendance increase by over 20 percent. The increases for young boys in these households closely followed their reduced market labor supply as shown by the study on labour supply. In addition their study also determined that adult AIDS treatment improved the short term nutritional status of young children (under the age of 5). This was measured by their weight-for-height Z-score. From these findings Zivin et al (2007) argue that there is evidence on how intrahousehold resource allocation is altered in response to significant health improvements from AIDS treatment. This corroborates the earlier mentioned theoretical notion on likely externalities resulting from AIDS treatment due to changes in intrahousehold allocation and behaviour.

4.2 Welfare Effects of Integrating AIDS Treatment with Cash or In Kind Transfers

There is limited socio-economic research that has quantified the broad welfare effects of combining AIDS treatment with cash or in kind transfers.

Cantrell et al (2008) carried out a randomized controlled trial on patients on AIDS treatment in Zambia. They found a no significant difference in weight gain (kilograms) between food beneficiaries and non-food beneficiaries. In addition, food beneficiaries had a significantly lower mean number of days late for pharmacy visits per month than non-food beneficiaries. On the other hand there was no significant difference in CD4 counts between food recipients and non-food recipients at 12 months.

Two qualitative studies focus on the integration between AIDS treatment and food transfer and find positive effects of the combination, as shown in table 2. Byron et al (2006) find that combining AIDS treatment with food support had patients self-reporting significant health outcomes such as weight gain, recovery of physical strength, improved adherence to treatment and other outcomes such as the resumption of labor activities while there was increased dietary diversity and food amount for patients and their households as received food transfers being shared within the household with preferential allocation to the AIDS patient. Egger and Strasser (2005), in a study of targeted food assistance programs, based on key informants, find reported evidence of positive impacts of food aid on patients on AIDS treatment such as improved health, weight gain, increased physical strength, improved food consumption, treatment uptake and adherence. However they conclude that there is limited quantitative data on the welfare effects of food aid on AIDS patients including on patients receiving AIDS treatment and recommended further research on the impact of food aid on AIDS patients especially through combining both qualitative and quantitative research on outcomes such as quality of life, disease progression, and survival time. Both studies corroborate the theoretical notion that food transfers would have a direct impact on health and thus labour supply as according to the demand for health model and household production model.

There are few specific studies that have looked on the welfare impact of combining cash transfers with AIDS treatment. However some interesting findings from Coetzee and Nattrass (2004) describe the income and consumption profile of HAART patients receiving a disability grant in Khayelitsha, South Africa where AIDS patients qualify for the disability grants after providing a medical report confirming that they are in the fourth

stage of AIDS illness (very ill). Their study shows that as theoretically expected, on average the disability grant contributes nearly one third towards household income which is more than the general Khayelitsha population while spending patterns indicated that the largest expenditure item for AIDS patients on treatment was food which comprised an average of 44.8% of total household expenditure). An interesting anecdotal aspect arising from Coetzee and Nattrass (2004) is the high expenditure on food by AIDS patients' households. However, the study admittedly failed to obtain data on spending patterns of the general population which could have been used for comparison. However the study notes that the design of the disability grant encourages poor treatment adherence and uptake, as patients choose to remain ill and maintain eligibility to the disability grant.

Almost all of the studies that focused on AIDS treatment integrated with social transfers did not analyse total household consumption, with one study profiling household expenditure in the presence of a cash transfer and the others focusing on food consumption only. Missing from existing literature is the comparison between AIDS treatment and AIDS treatment integrated with social transfers. Thus it is difficult to conclude if there is a significant difference in magnitude of welfare effects between the two interventions.

Table 2 Studies evaluating the welfare effects of integrating AIDS treatment with cash or in kind transfers or AIDS treatment alone

Author	***Focus***	***Study Population***	***Study Design***	***Welfare Measures***	***Main Results***
		1. Number of participants 2. Definition of participants/sample 3. Sociodemographic characteristics 4. Location 5. Country			
AIDS Treatment Integrated with Cash or In Kind Transfers					
Coetzee and Natrass (2004)	Primary focus on AIDS treatment alone Limited analysis of AIDS treatment and cash transfer (disability grant)	1. 137 2. Patients on treatment in 2002 3. Mean age =33.8, 70.1% female 4. Low income urban 5. South Africa	Panel study Quantitative	Patient's health Labour force participation Household Income Household expenditure	After one year of treatment, patients' health restored and labour force participation rates improved from 66.4% to 84.6% and employment rates from 42.3% to 52.9% Disability grant contributes towards nearly one third of household income which is more than the general population while spending patterns indicated that the largest expenditure item for AIDS patients on treatment was food which comprised an average of 44.8% of total household expenditure. Disability grant has perverse relationship with treatment, leading to drop in treatment adherence and uptake.
Egge and Strasser (2005)	Inclusion of patients on AIDS treatment integrated with food transfer (broad study on HIV/AIDS related food aid programs)	1. 66 key informants at 29 relief and development agencies 2. Patients on ART treatment in 2004-2005 3. Rural	Cross Sectional Qualitative	Patient's health Labour ability	Food aid given to patients on AIDS treatment reported to have improved health, weight gain, increased physical strength, improved food consumption, treatment uptake and adherence. Recommend further research on the

		4. Malawi, Zambia, Zimbabwe			impact of food aid on AIDS patients especially through combining both qualitative and quantitative research on outcomes such as quality of life, disease progression, and survival time
Byron et al (2006)	AIDS treatment integrated with food transfer (food aid)	1. 79 2. Patients on treatment in 2005 3. Age range was 20-63 yrs, 77% female 4. Rural 5. Kenya	Cross sectional Qualitative	Patient health and nutritional status Labour force participation Emotional health	Significant health outcomes such as weight gain, recovery of physical strength, improved adherence to treatment Resumption of labor activities Increased dietary diversity and food amount for patients also shared within their households with preferential allocation to the AIDS patient
Cantrell et al (2008)	AIDS treatment integrated with food transfer (food aid)	1. 636 food insecure patients 2. 2006 3. Urban/Periurban 4. Zambia	Panel Randomized Trial	CD4 count Adherence Weight gain	Improved adherence by 40% Non-Significant difference in weight gain Non-significant difference in CD4
AIDS Treatment Alone					
Koenig et al (2004)	AIDS treatment alone	1. 1050 2. Patients on treatment in 2003 3. Rural 4. Haiti	Cross sectional Quantitative	Patient health	Positive outcomes such as weight gain, improved functional capacity and 86% of patients had undetectable viral loads
Thirumurthy et al (2005)	AIDS treatment alone	1. 321 (266 households) 2. Non-pregnant patients on treatment in 2004-2005 3. Mean age =23.78 4. Rural 5. Kenya	Panel study Quantitative	Labour supply of adult AIDS patients receiving treatment; and Labour supply of patients' household members. Patient health	6 months after treatment initiation, there is a 20 percent increase in patients' likelihood of participating in the labour force and a 35 percent increase in weekly hours worked. Young boys and women working less, girls and men not changing labour supply. The effects on child labour may suggest potential schooling impacts from treatment.

					At 10-20 weeks, the median CD4 count of patients rose to levels at which patients were generally asymptomatic
Coetzee (2007)	AIDS treatment alone	1. 261 2. Patients on treatment in 2002-2005 3. Mean age =34,71% female 4. Low income urban 5. South Africa	Longitudinal study Quantitative	Transitions from inactivity to unemployment Transitions from unemployment into employment	AIDS treatment restores the health of individuals increases the number of individuals wanting to re-enter the labour market. No strong effect on re-entry into labour market, thus unemployment may increase among AIDS patients.
Habyarimana et al (2007)	AIDS treatment alone	1. N= 538 2. HIV-infected workers from 1998-2006, 3. 82% male 4. Low income-mine 5. Botswana	Longitudinal design Quantitative	Labour supply-number of days worked before and after AIDS treatment	In the first year on treatment had a large, positive impact on the ability of workers to participate in their work. HIV infected workers worked 5.09 fewer days than non-HIV workers. However after a year on ART, workers doubled the work days than they would have if not ART was given. .
Thirumurthy et al (2007)	AIDS treatment alone	1. 76 households 2. Children in households of non-pregnant patients on treatment in 2004-2005 3. Mean age for children under 5yrs =0.72 4. Rural 5. Kenya	Panel study Quantitative	Children's short term nutritional status Children's school attendance	Children's weekly hours of school attendance increase by 20 to 35 percent within six months after treatment is initiated for the adult household member. For boys these increases closely follow their reduced market labor supply. Children's short-term nutritional status improves dramatically. (weight-for-height Z-score for children (under the age of 5).
Chaagan et al (2008)	AIDS treatment alone	1. n=249 2. Patients from 2003-2006	Longitudinal Design Case Study Quantitative	Income Employment Status	Mean personal income rose 53% over baseline income. Also increase in household income

		3. Mean age =36yrs, 79% female 4. Low income urban 5. South Africa		Personal Wellbeing	Decrease in the number of meals missed in 10% households sampled. Increase in ability to seek employment, and improvement in personal well being with less illness being reported from 3 months after starting treatment
Larson et al (2008)	AIDS treatment alone	1. N=59, patients, Reference=1992 2. HIV infected workers from 2002-2005, 3. Rural 4. Kenya	Longitudinal study' Ambi-directional cohort study	Labour supply- worker absenteeism rates before and after AIDS treatment	Large increase in the absenteeism of HIV-infected workers in the year preceding the start of AIDS treatment. 2-4 years after the beginning of AIDS treatment the abseentism rates of treated workers declined to reach levels similar to those of non-HIV infected mining workers at the Company

5. Methodology Discussion

5.1 Sampling and Statistical Analysis

Seven studies analysed the impact of AIDS treatment alone and they had a sample size ranging from 76 to 2051 respondents (see table 2). Five studies measured labour supply responses of patients receiving treatment, while the other two measured externalities on children and the general socio-economic impacts of receiving treatment None of the studies exclusively employed a random design but they either used random selection for non-AIDS patients and non-random sampling or a cohort design for AIDS patients. Five of the studies had AIDS patients and non-AIDS patients in their sample with the exception of Koenig et al (2004) and Chhagan et al (2008) who sampled AIDS patients exclusively. Three studies, Koenig et al (2004), Habyarimana et al (2007) and Larson et al (2008) surveyed patients only while the rest of the studies researched on both the patient and their household. Longitudinal or panel design was commonly used in almost all the studies, with the exception of one which used a cross sectional design. However of the seven studies, only one study combined both quantitative and qualitative methods by adding a case study to an initial survey (Chhagan et al 2008). Statistical methods varied from descriptive analysis in one study (Chhagan et al 2008) to the use of regression models in the rest.

Four studies included some analysis on the combination between AIDS treatment and cash or in kind transfers. They had relatively small sample sizes ranging from 79 to 137 respondents (see table 2). Only two studies had a control group in their sample (Megazzini et al 2006, Coetzee and Natrass 2004). Both Byron et al (2006) and Egge and Strasser (2005) employed a cross sectional design, qualitative and descriptive approach in investigating the patient health, labour supply response and emotional wellbeing outcomes when AIDS treatment is combined with food aid. The studies therefore could not quantify their outcomes or make any statistical inferences. Egge and Strasser (2005) highlight the limitations to their study as it was largely based on key informant interviews. Coetzee and Natrass (2004)'s study, secondarily analyzed the impact of receiving of a

disability grant on the patient and their household and used descriptive analysis. This analysis did not specifically assess the impact of combining this type of cash transfers with treatment, and was mostly descriptive of the contributions of the cash transfer to household income. Only Byron et al (2006) and Megazzini et al (2006) primarily focused on the integration between AIDS treatment and social transfers while for the other two this was not the primary intent of the study, which explains the limited evidence provided. Additionally Megazinni et al (2006) employed inferential statistics in assessing the health outcomes from combining AIDS treatment with food transfers, while Byron et al (2006) had rich insights from the focus group interviews of the AIDS patients.

Unsurprisingly studies had mostly sample sizes of below 500 since AIDS treatment is not yet provided on a large scale basis in resource poor countries. The use of non-random sampling by some studies in selecting AIDS patients probably reflects the challenge of randomly selecting AIDS patients on treatment since probability sampling might not necessarily yield a sample with identified or known HIV infected individuals or affected households and would require inference from indicators such as mortality and presence of illnesses which might or might not be related to HIV/AIDS. In addition some HIV/AIDS studies follow the cohort design, where there is no randomization due to the challenges of doing so.

5.2 Quality Assessment

Nine studies focused on labour supply outcomes, with 5 studies quantifying employment rates, re-entry into labour market, weekly hours worked, abseentism rates and work days after AIDS treatment. Two studies analysed other welfare outcomes. Chhagan et al (2008) has the advantage of having both survey and case study data that looked at various welfare measures including household income, personal wellbeing and employment status even though they could only carry out a descriptive analysis in their quantitative approach. The group of studies by Thirumurthy and colleagues carried out in Western Kenya (Thirumurthy et al 2005, Thirumurthy et al 2007), also had the added strength of having looked at various aspects of welfare such as children's wellbeing and labour supply responses of the patient and associated household members. Two studies quantified health outcomes in the form of weight gain or CD4 counts or viral loads after

AIDS treatment. A major insight from the review is that the studies that look at the combination of AIDS treatment and cash or in kind transfers are limited and mostly preliminary but still relevant due to the qualitative nature of the data. Hence there is need for combining qualitative and quantitative approaches in future research.

6. Discussion of Empirical Findings

The reviewed studies report improvements in patient health, food consumption, labour activity and adherence to treatment when food transfers were integrated with AIDS treatment. Another conclusion derived from the empirical review is that cash transfers increase household income when integrated with AIDS treatment. The only seeming differences between the welfare effects of AIDS treatment alone and those resulting from AIDS treatment integrated with cash or in kind transfers is that the integrated approach leads to improved income and food consumption (and thus consumption) while food aid specifically improved treatment adherence and uptake, exhibiting a critical complementarity. However the review could not establish if there is a significant difference in magnitude of welfare effects between the two interventions important for justifying the integration of HIV treatment with the social transfers.

The empirical review also supported the theoretical suggestions that AIDS treatment enhances patient's health and thus labour capability, that there is indeed a labour-leisure tradeoff resulting from both AIDS treatment and AIDS treatment combined with cash or in kind transfers resulting in income and substitution effects on labour supply and also some spillover income and substitution effects on other household members. One study corroborated the notion from the household economic model, that there would be an increase in household consumption from adding cash or food transfers with positive intra-household resource allocation consequences on children. Interestingly some evidence from the empirical review also points to a perverse relationship between treatment and some cash transfers which require one to be ill to be eligible, discouraging treatment adherence and uptake. This perverse relationship potentially has ramifications on the successful implementation of AIDS treatment policies where such cash transfers are provided.

7. Conclusion

As mentioned earlier on, a major challenge to writing this review was the limited availability of relevant studies. A major weakness with most studies reviewed was the lack of balance between quantitative and qualitative methods of data collection. Future studies should broaden the methodological approach to include both qualitative and quantitative methods in collecting data under a longitudinal design. More research is also recommended in evaluating these combined interventions in comparison to solitary AIDS treatment in order to determine if there is any added value from the cash or in kind transfers. The studies did not directly include consumption as a variable in analysis hence the need for its inclusion in future research. Another area for further research since there are limited studies on this subject, is the interaction or complementarity between the cash/in kind transfers and AIDS treatment i.e. whether an integrated approach affected treatment adherence.

Bibliography

Abdulai, Awudu, Barrett, Christopher B. and Hoddinott, John (2005) 'Does Food Aid Really Have Disincentive Effects? New Evidence from Sub-Saharan Africa', *World Development 33 (1): 1689-704.*

Alderman, H., Haddad, L. and Hoddinott, J. (1997) 'Policy Issues and Intrahousehold Resource Allocation: Conclusions', in Haddad et al. (1997) *Intrahousehold Resource Allocation in Developing Countries.* Baltimore, MD and London: Johns Hopkins University Press.

Attanasio, O and A. Mesnard, The Impact of a conditional cash transfer programme on consumption in Colombia, *Fiscal Studies* ***27*** *(4) (2006), pp. 421–442*

Barrett, Christopher B. (2003) *Food* Aid Effectiveness: It's the Targeting, Stupid! Working Paper. Rome: World Food Programme, Policy Service, Strategy and Policy Division.

Baylies, C. (2002). 'The Impact of AIDS on Rural Households in Africa: A Shock Like Any Other?' *Development and Change, 33(4), pp. 611-632*

Booysen, F and S. van der Berg. (2005). "The Role of Social Grants in Mitigating the Socio-economic Impact of HIV/AIDS in two free state communities" *The South African Journal of Economics 73 (s1), 545–563.*

Booysen, F. R. "Chronic and transitory poverty in the face of HIV/AIDS-related morbidity and mortality: Evidence from South Africa". Paper presented at international conference on "Staying Poor: Chronic Poverty and Development Policy", University of Manchester, 7-9 April 2003, United Kingdom

Byron, E; Gillespie, S; and M. Nangami. 2006. "Integrating Nutrition Security with Treatment of People Living with HIV: Lessons being Learned in Kenya". IFPRI Research Report. Washington D.C.

Caldwell. R. "Food Aid and Chronic Illness: Insights from the Community and Household Surveillance Surveys". Paper presented at the International Conference at the HIV/AIDS and Food and Nutrition Security International Food Policy Research Institute (IFPRI), 14-16 April 2005, Durban, South Africa,

Cantrell et al. A Pilot Study of Food Supplementation to Improve Adherence to Antiretroviral Therapy Among Food-Insecure Adults in Lusaka, Zambia. *JAIDS Journal of Acquired Immune Deficiency Syndromes: October 2008 - Volume 49 - Issue 2 - pp 190-195*

Chhagan, V; Luiz, J; Mohapi, L; McIntyre, J and Martinson Neil. 2008 "The socioeconomic impact of antiretroviral treatment on individuals in Soweto, South Africa". *Health Sociology Review, South Africa*

Chapoto, A and T.S Jayne. (2005). "Impact of HIV/AIDS-related deaths on Rural Farm Households' Welfare in Zambia: Implications for Poverty Reduction Strategies". Working paper no. 15 IFPRI, Lusaka, Zambia

Chequer, P. et al. 1992. "Determinants of Survival in Adult Brazilian AIDS Patients, 1982- 1989." *AIDS* 6:483-487.

Coetzee, C and N. Natrass. (2004). Living on Aids Treatment: a Socio-economic Profile of Africans Receiving Antiretroviral Therapy In Khayelitsha, Cape Town, CSSR Working Paper No. 71. University of Cape Town

Coetzee, C. 2007. The impact of Highly Active Antiretroviral Therapy (HAART) on employment in Khayelitsha, South Africa. *South African Journal of Economics, special edition in collaboration with JEAPP.*

Duclos, J, Sahn, D and S.D Younger. (2006). "Robust Multidimensional Spatial Poverty Comparisons in Ghana, Madagascar, and Uganda"". *World Bank Economic Review, 2006, vol. 20, issue 1, pages 91-113*

Duflo, E. (2000). Child outcomes in Africa. Child health and household resources in South Africa: Evidenced from the old age pension program. AEA Papers and Proceedings, 90, 393-398.

Egge, K. and Strasser S. (2005) Measuring the Impact of Food on HIV/AIDS – Related Beneficiary Groups, With a Special Focus on TB, ART, CI and PMTCT Beneficiaries, M&E Indicators for Consideration, C-SAFE

Ezemenari, K., Chaudhury, N. and Owens, J. (2003) Gender and risk in the design of social protection interventions, Social Protection Discussion Paper Series No 0231, Washington, DC: World Bank

Habyarimana, James, Bekezela Mbakile, and Cristian Pop-Eleches. 2007. "HIV/AIDS, ARV Treatment and Worker Absenteeism: Evidence from a Large African Firm." Unpublished manuscript, Columbia University.

Gentilini, U. (2007). *Cash and Food Transfers: A Primer*. Rome: World Food Programme.

Greenblott, K. (2007) Social Protection in the Era of HIV&AIDS: Examining the Role of Food Based Interventions. WFP Occasional Paper #12, Rome

Grossman, M. The Demand for Health - A Theoretical and Empirical Investigation, New York: Colombia University Press, 1972.

Jaffar S, Grant AD, Whitworth J, Smith PG, Whittle H. The natural history of HIV-1 and HIV-2 infections in adults in Africa: a literature review. *Bull WHO 2004; 82: 462–469.*

Kanbur, R. M. Keen, and M. Tuomala (1994), "Labor Supply and Targeting in Poverty Alleviation Programs." *World Bank Economic Review* 8,2: 191-211.

Klasen, S., (2000), Measuring poverty and deprivation in South Africa, *Review of Income and Wealth*, (46), pp. 33-58.

Koenig, Serena P., Fernet Leandre, and Paul E. Farmer. 2004. "Scaling-up HIV Treatment Programmes in Resource-limited Settings: The Rural Haiti Experience." *AIDS* 18:S21-S25.

Larson, B.A.; Fox, M.P.; Rosen, S.; Bii, M.; Sigei, C.; Shaffer, D.; Sawe, F.; Wasunna, M. and Simon, J.L. (2008) 'Early effects of antiretroviral therapy on work performance: Preliminary results from a cohort study of Kenyan agricultural workers' *AIDS 22:421-425.*

Lundberg, S; Pollak, R and T. Wales , Do husbands and wives pool their resources?. *Journal of Human Resources* **32** (1997), *pp. 463–480.*

Massoumi, E, "Multidimensional Approaches to Welfare Analysis," in J. Silber (ed.), Handbook on Income Inequality Analysis, Kluwer Academic Publishers, Dordrecht and Boston, 1999.

Morgan, Dilys et al. 2002. "HIV-1 Infection in Rural Africa: Is There a Difference in Median Time to AIDS and Survival Compared With That in Industrialized Countries?" *AIDS 16:597- 603.*

Natrass, N. (2005). Title: Disability and welfare in South Africa's era of unemployment and Aids, WORKING PAPER 06/147, CSSR, Cape Town

Nelson, J. A. (1997), Household Equivalence Scales: Theory Versus Policy?, *Journal of Labor Economics, 11, (3), 471-491.*

Ravallion, M. 2003. “Targeted Transfers in Poor Countries: Revisiting the Tradeoffs and Policy Options”. World Bank Policy Research Working Paper No. 3048. Available at SSRN: http://ssrn.com/abstract=412803

Rosenzweig, M.R., and T.P. Schultz. 1982. Market Opportunities, Genetic Endowments and Intrafamily Resource Distribution: Child Survival in Rural India. *American. Economic. Rev., 72(4): 803815.*

Rosenzweig, M. 1990. Programme Interventions, Intrahousehold Allocation, and the Welfare of Individuals: Economic Model of the Household. In: B.L. Rogers and N.P. Schlossman, eds. *Intrahousehold Resource Allocation: Issues and Methods for Development Policy and Planning. Food and Nutrition Bulletin, Supplement No. 15.* Tokyo: United Nations University Press, pp. 233-243.

Russell, S.; Seeley, J.; Ezati, E.; Wamai, N.; Were, W. nd Bunnell, R. (2007) 'Coming back from the dead: Living with HIV as a chronic condition in rural Africa' *Health Policy and Planning 22: 344-347.*

Salinas, G and M. Haacken. (2006). HIV/AIDS: The Impact on Poverty and Inequality. Working Paper, IMF.

Slater, R. 2004. “The Implications of HIV/AIDS for Social Protection”. DFID, London.

Schubert, B.S and R. Slater. (2006). “Social Cash Transfers in Low-Income African Countries: Conditional or Unconditional?” *Development Policy Review, 2006, 24 (5): 571-578*, Blackwell Publishing, Oxford OX4 2DQ, UK

Skoufias, E; Unar, M and T. Gonzalez.” The Impacts of Cash and In Kind Transfers on Consumption and Labour Supply: Experimental Evidence from Rural Mexico”, presentation at the Poverty Analysis, Monitoring and Evaluation Thematic Group: Training Events and Materials, World Bank, July 23 2008.

Tabor, S.R. (2002). “Assisting the poor with cash: design and implementation of social transfer programs”, Social Safety Nets Primer Series, Discussion paper No. 0223, the World Bank.

Thirumurthy, H; Zivin, J. G and M. P Goldstein 2007. AIDS Treatment and Intrahousehold Resource Allocations: Children's Nutrition and Schooling in Kenya.

Center for Global Development Working Paper No. 105. Available at SSRN: http://ssrn.com/abstract=982927

Thirumurthy, H; Zivin, J.G and M.Goldstein. (2005) The Economic Impact of AIDS Treatment: Labor Supply in Western Kenya NBER Working Paper No. 11871

Uwimana J and P. Struthers. Met and unmet palliative care needs of people living with HIV/AIDS in Rwanda. *SAHARA J. 2007 May; 4(1):575-85.*

van der Walt, S. (2004). "A Multidimensional Analysis of Poverty In the Eastern Cape Province, South Africa". Stellenbosch Economic Working Papers: 3 / 2004

Wagner, G.; Ryan, G. and Taylor, S. (2007) 'Formative evaluation of antiretroviral therapy scale-up efficiency in Sub-Saharan Africa' AIDS Patient Care and STDs 21:871-888.

Zwahlen, M and M. Egger. 2006. Progression and mortality of untreated HIV-positive individuals living in resource-limited settings: Update of literature review and evidence synthesis. *Periodical/UNAIDS Obligation HQ/05/422204*, University of Bern, Switzerland.

www.who.org

www.unaids.org

www.unrisd.org

Maastricht Graduate School of Governance
Working Paper Series

List of publications

2009		
No.	Author(s)	*Title*
001	Roelen, K., Gassmann, F. and C. de Neubourg	Child Poverty in Vietnam - providing insights using a country-specific and multidimensional model
002	Siegel, M. and Lücke, M.	What Determines the Choice of Transfer Channel for Migrant Remittances? The Case of Moldova
003	Sologon, D. and O'Donoghue, C.	Earnings Dynamics and Inequality in EU 1994 - 2001
004	Sologon, D. and O'Donoghue, C.	Policy, Institutional Factors and Earnings Mobility
005	Muñiz Castillo, M.R. and D. Gasper	Looking for long-run development effectiveness: An autonomy-centered framework for project evaluation
006	Muñiz Castillo, M.R. and D. Gasper	Exploring human autonomy effectiveness: Project logic and its effects on individual autonomy
007	Tirivayi, N and W. Groot	The Welfare Effects of Integrating HIV/AIDS Treatment with Cash or In Kind Transfers
2008		
No.	Author(s)	*Title*
001	Roelen, K. and Gassmann, F.	Measuring Child Poverty and Well-Being: a literature review
002	Hagen-Zanker, J.	Why do people migrate? A review of the theoretical literature
003	Arndt, C. and C. Omar	The Politics of Governance Ratings
004	Roelen, K., Gassmann, F. and C. de	A global measurement approach versus a country-specific measurement approach. Do they draw the same picture of child poverty? The case of Vietnam

	Neubourg	
005	Hagen-Zanker, J., M. Siegel and C. de Neubourg	Strings Attached: The impediments to Migration
006	Bauchmüller, R.	Evaluating causal effects of Early Childhood Care and Education Investments: A discussion of the researcher's toolkit
007	Wu, T., Borghans, L. and A. Dupuy	Aggregate Shocks and How Parents Protect the Human Capital Accumulation Process: An Empirical Study of Indonesia
008	Hagen-Zanker, J. and Azzarri, C.	Are internal migrants in Albania leaving for the better?
009	Rosaura Muñiz Castillo, M.	Una propuesta para analizar proyectos con ayuda internacional:De la autonomía individual al desarrollo humano
010	Wu, T.	Circular Migration and Social Protection in Indonesia

2007		
No.	Author(s)	*Title*
001	Notten, G. and C. de Neubourg	Relative or absolute poverty in the US and EU? The battle of the rates
002	Hodges, A. A. Dufay, K. Dashdorj, K.Y. Jong, T. Mungun and U. Budragchaa	Child benefits and poverty reduction: Evidence from Mongolia's Child Money Programme
003	Hagen-Zanker, J. and Siegel, M.	The determinants of remittances: A review of the literature
004	Notten, G.	Managing risks: What Russian households do to smooth consumption
005	Notten, G. and C. de Neubourg	Poverty in Europe and the USA: Exchanging official measurement methods
006	Notten, G and C. de Neubourg	The policy relevance of absolute and relative poverty headcounts: Whats in a number?
007	Hagen-Zanker, J. and M.	A critical discussion of the motivation to remit in Albania and

	Siegel	Moldova
008	Wu, Treena	Types of Households most vulnerable to physical and economic threats: Case studies in Aceh after the Tsunami
009	Siegel, M.	Immigrant Integration and Remittance Channel Choice
010	Muñiz Castillo, M.	Autonomy and aid projects: Why do we care?
2006		
No.	Author(s)	*Title*
001	Gassmann, F. and G. Notten	Size matters: Poverty reduction effects of means-tested and universal child benefits in Russia
002	Hagen-Zanker, J. and M.R. Muñiz Castillo	Exploring multi-dimensional wellbeing and remittances in El Salvador
003	Augsburg, B.	Econometric evaluation of the SEWA Bank in India: Applying matching techniques based on the propensity score
004	Notten, G. and D. de Crombrugghe	Poverty and consumption smoothing in Russia
2005		
No.	Author(s)	*Title*
001	Gassmann, F.	An Evaluation of the Welfare Impacts of Electricity Tariff Reforms And Alternative Compensating Mechanisms In Tajikistan
002	Gassmann, F.	How to Improve Access to Social Protection for the Poor? Lessons from the Social Assistance Reform in Latvia