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Are cash transfers a realistic policy tool for poverty reduction in Sub-Saharan Africa?

Evidence from Congo-Brazzaville
and Côte d'Ivoire

Working
Paper

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Abstract

This paper uses evidence from two contrasting African countries, a middle-income oil producer (the Republic of Congo) and a low-income country (Côte d'Ivoire) on the potential role of cash transfers as instruments for poverty reduction and human development. Quantitative simulations of the targeting efficiency, impacts, cost, cost-effectiveness and affordability of different cash transfer options are combined with analysis of political and administrative feasibility. The analysis finds that cash transfers would have more impact on monetary poverty reduction than on human development, while a major practical challenge is to target efficiently in a context of mass poverty. Large-scale cash transfers could be financed domestically in Congo, but this is unlikely in Côte d'Ivoire, and political support is weak in both countries.

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1 Introduction

This paper contributes to the developing debate on whether cash transfers can become effective national policy instruments in Sub-Saharan Africa. As non-contributory income transfers to the poor or vulnerable, cash transfers have emerged in several Sub-Saharan African countries in recent years, but mainly as small pilots, except in a few middle-income countries (MICs) in Southern Africa.

Tax-financed old age pensions have developed in Botswana, Lesotho, Namibia, Swaziland and South Africa, partly as a response to high AIDS mortality that has left many old people caring for grandchildren but deprived of traditional support from their own children.

However, in the rest of Africa, particularly in the low-income countries (LICs), donors appear to be the main drivers of support for cash transfers. Their interest comes from the success of cash transfers elsewhere, particularly in Latin America, as instruments for poverty reduction and human capital development. In contrast, national elites remain sceptical and domestic financing has been minimal, despite a call by the African Union to expand social protection, including by 'introducing and extending public-financed, non-contributory cash transfers' (AU, 2008). As Niño-Zarazúa et al (2012: 163) have argued, the new cash transfers in African LICs 'lack strong and sustainable institutional bases', limiting the potential for scale-up.

Several features of the Sub-Saharan African context, particularly in the LICs, make cash transfers more problematic than in other regions of the developing world. These include much higher levels of poverty and human deprivation (making the needs greater and the challenges of targeting more difficult), limited fiscal space, weak administrative capacity, and supply-side constraints in the social sectors (limiting the potential demand-side impact of cash transfers).

This paper explores such issues by analysing evidence from two contrasting countries, the Republic of Congo (Brazzaville) and Côte d'Ivoire. Congo provides an example of a different category of MIC than the southern African cases. It is typical of the oil-rich Gulf of Guinea countries where oil wealth provides substantial public resources but broader economic development remains elusive, social provision is weak and the "oil curse" compromises good governance. Côte d'Ivoire is a post-conflict LIC.

Neither Congo nor Côte d'Ivoire has yet established any kind of national cash transfer programme. So the analysis presented here is *ex ante* in nature, focusing on the *potential* role of cash transfer programmes. The paper addresses the following questions. To whom and how could cash transfers be meaningfully targeted? To what extent would different types of cash transfers contribute to poverty reduction and improve human development outcomes? What types of programmes would be most cost-effective? How affordable would they be? And would they be politically and administratively feasible at scale?

2 Methodology

This is a comparative study of policy options, using *ex ante* simulations of the targeting efficiency, impacts, cost, cost-effectiveness and affordability of different types of cash transfers, and qualitative analysis of political and administrative feasibility. The simulations used the data sets of national household surveys, namely the Enquête Congolaise auprès des Ménages (ECOM) 2005 and, in Côte d'Ivoire, the Enquête sur le Niveau de Vie des Ménages (ENV) 2008, along with demographic and fiscal data.

Table 1 provides baseline data and information on the samples for these two surveys. As can be seen, roughly half the population in both countries lives in poverty, and the poverty gap is similar (at 18-19%). However, conditions are worse in Côte d'Ivoire than in Congo with respect to access to basic social services. For example, in Côte d'Ivoire many school-age children are not enrolled at all, whereas in Congo enrolment rates are high and the main problem is age-correct enrolment and repetition.

All simulations were short-term, using official demographic and economic data for 2008 as if the programmes already existed at national scale in that year. It was assumed that the real levels and distribution of consumption expenditure, poverty rates and levels of human deprivation or development, as obtained by ECOM in 2005 and ENV in 2008, remained unchanged. All nominal money values were adjusted for inflation.

The programme options (see **Table 2**) included pure categorical programmes ('universal' child allowances for different age-groups, old age pensions, disability pensions, maternity allowances) and programmes targeting the poor or the first expenditure quintile.

Table 1: Baseline data and survey samples for Congo and Côte d'Ivoire

	Congo, ECOM 2005	Côte d'Ivoire, ENV 2008
Poverty and human development		
Poverty headcount (%)	50.1	48.6
Average poverty gap (%)	18.9	18.1
Education deprivation ¹ (% of children 6-10)	33.0	...
School enrolment (% of children 6-10)	87.2	58.9
Education deprivation ¹ (% of children 11-14)	58.5	...
School enrolment (% of children 11-14)	91.5	64.9
Child labour ² (% of children aged 6-10)	n/a	26.8
Child labour ² (% of children aged 11-14)	n/a	39.7
Use of health services by children aged 0-4 who are ill (%)	70.0	63.5
Use of health services by all individuals who are ill (%)	61.6	56.0
Survey sample and age breakdown		
Total sample size: households	5,002	12,600
Total sample size: individuals	26,015	59,699
Children <5 (% of sample)	14	14
Children <15 (% of sample)	40	39
Elderly 60+ (% of sample)	5	4
Elderly 65+ (% of sample)	3	3
Disabled (% of sample)	1	1
Notes: ¹ Defined as children out of school or 2 classes or more behind their correct age cohort. ² Defined as the exercise by a child of any type of economic activity, remunerated or not, and/or domestic work for at least 28 hours per week.		

Sources: ECOM 2005, Congo, and ENV 2008, Côte d'Ivoire.

The benefit levels varied slightly between the two countries, reflecting different national conditions, but sought to achieve a balance between potential impacts and budgetary cost. In both countries, the benefit amounts were set at levels equivalent to 20-25% of the poverty line for universal child allowances and 50% of the poverty line for old age pensions, disability pensions and maternity allowances, the latter being higher on the grounds that there would usually be only one beneficiary per household. A sliding scale of benefit amounts with a cap of four beneficiaries was used for the economically targeted transfers to reflect household economies of scale and also to avoid introducing perverse incentives to foster children unnecessarily.

Table 2: Specifications of cash transfer programme options

Programme option	Eligibility/targeting	Transfer amount per person per month			Long term operating costs as % of transfer costs ¹
		% of poverty line	Congo (CFA)	Côte d'Ivoire (CFA)	
Child allowance 1	Universal for children < 5	25	7,250	5,000	10
Child allowance 2	Universal for children < 15	20	5,800	4,000	10
Child allowance 3	Targeted by PMT to children <15 in poverty (Congo) & Q1 (Côte d'Ivoire)	Sliding scale	Sliding scale ²	Sliding scale ³	20
Old age pension	Universal for persons aged 60+ (Congo) and 65+ (Côte d'Ivoire)	50	14,500	10,000	10
Disability pension	Universal for persons with certified disability	50	14,500	10,000	20
Maternity allowance	Universal for pregnant/lactating women (1 year)	50	14,500	10,000	20
1 st quintile transfers	Targeted by PMT to households in 1 st quintile	Sliding scale	n/a	Sliding scale ³	20

Notes: ¹ These percentages are comparable to the cost-transfer ratio (CTR) seen in mature transfer programmes internationally (see Grosh et al, 2008). During the early years of any programme, CTRs are inflated by high start-up and roll-out costs. ² Sliding scale from CFA 8,700 to 1,530 per beneficiary, capped at 4 beneficiaries. ³ Sliding scale from CFA 6,000 to 3,600, capped at 4 beneficiaries.

The analysis of *targeting* options focused on the relevance and efficiency of categorical and economic targeting approaches. Economic targeting in countries with large informal sectors, where direct means testing is impossible, requires the use of proxy means tests (PMTs) or other eligibility tests using indicators correlated with poverty or extreme poverty. Sometimes these are combined with selection procedures in which community bodies help to identify the most vulnerable households. For our simulations of economically targeted programme options, PMT formulae were constructed for each country, using multivariate regressions to identify a small number of characteristics of households (potentially observable by social workers engaged in enrolment procedures) that would together provide the best predictor of the intended target groups. The level of eligibility was set higher in Congo (at the poverty line) than in Côte d'Ivoire (the 1st quintile) due to the larger potential fiscal space for social protection in Congo.

The efficiency of PMT-based targeting was analysed by calculating a programme's inclusion error (the proportion of selected beneficiaries who are outside the target economic group) and its exclusion error (the proportion of those in the target economic group who are not selected). This method was extended to compare the targeting efficiency of PMT-based programmes with purely categorical programmes.

The *impact* analysis focused on the income effects of transfers on monetary poverty and human development. The impacts on the poverty headcount and average poverty gap were measured in terms of consumption expenditure per capita and using national poverty lines with spatial deflators.

The simplified model assumed that transfers are added fully to consumption, with no savings, that intra-household distribution is neutral and that there are no second order effects on income, prices or behaviour. It should be noted that this ignores the possible substitution effects of behavioural changes resulting from conditionality.

Probit regressions analysed the impact of transfers on non-monetary variables for education, use of health services and (in Côte d'Ivoire) child labour¹. In Congo, the analysis of education impacts focused on educational deprivation, defined, following Gordon and Nandy (2012), as the proportion of children aged 6-11 or 11-14 out of school or 2 classes or more behind the norm for their age cohort. In Côte d'Ivoire, the indicators used were the probability of school enrolment by children aged 6-10 and 11-14. In both countries, the health indicators employed were the use of health facilities in the event of illness by children under 5 and by the population as a whole. The probabilities of school enrolment and child labour were estimated together in Congo, using a bivariate Probit regression model.

The impacts were analysed at two levels: the beneficiary households and the population as a whole. From a public policy perspective, it is interesting to measure the impacts at a broad societal level, rather than just for the beneficiaries themselves as in most *ex post* impact evaluations of projects. The results can then be combined with cost data to calculate the cost-effectiveness of alternative policy options and thereby inform national policy choices.

The *cost* of a transfer programme includes both the transfers themselves and administrative costs. Transfer costs depend on assumed benefit levels and estimated beneficiary numbers, using official demographic data and after taking into account inclusion and exclusion errors. In all cases it is assumed that programmes are implemented at national scale and that initial set-up and rollout costs have been expended in the past. Administrative costs are therefore the long-term operating costs, using fixed ratios of administrative to transfer costs (CTR) ranging from 10 to 20%, depending on programme complexity. These ratios are close to the levels shown by mature, well-run programmes internationally.² However, during the early years of implementation, start-up and roll-out costs would be high, increasing the CTR well above the range indicated here. Programmes might also start as pilots, with diseconomies of scale that would increase further the CTR.

To measure *cost-effectiveness*, the indicator employed was the cost of a 1-percentage point reduction in the poverty gap.

Affordability was analysed in terms of the fiscal space to meet the costs of the different options. Following Heller (2005), fiscal space is defined here as 'the room in a government's budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy'. As Handley (2009) argues, the basic rationale is that such space needs to exist or to be created in order for governments to increase spending on programmes in a sustainable manner. Affordability is therefore analysed with respect to the overall fiscal balance and key potential levers for expanding fiscal space, such as increased government revenue, reduced government debt and expenditure reallocation, using IMF and national data on public finances.

The analysis of *administrative feasibility* focused on two key dimensions: first, the availability of social welfare offices and social workers; and, second, the possession of documents providing proof of identity and age, which is a key requirement for enrolment of cash transfer beneficiaries. Finally, the *political feasibility* of cash transfers was analysed in terms of the political discourse in each country.

¹ Child labour was defined as the exercise by a child of any type of economic activity, remunerated or not, and/or domestic work for at least 28 hours per week. This is close to the UNICEF definition used in the MICS.

² According to the World Bank, the administrative costs of well-executed cash or near-cash programmes cluster in the range of 8-15% of total costs (Grosh et al, 2008).

3 Analysis

3.1 Targeting

The targeting of cash transfer programmes faces especially difficult challenges in Sub-Saharan Africa given the extensive nature of poverty and the low level of differentiation (in income, expenditure, wealth, household characteristics and human development) across the lower deciles. Most countries display very low levels of human development across much of the wealth or consumption expenditure distribution, sometimes with markedly improved conditions only for those at the top of the distribution, in contrast with the situation in most of Latin America, where a situation of “bottom inequity” (the concentration of poverty and deprivations at the bottom of the distribution) is more common.³ This raises the question as to whether the type of targeting applied to cash transfers in Latin America, aimed at empowering a left-behind minority to build human capital and rise out of poverty, is appropriate in the very different conditions of mass poverty in Sub-Saharan Africa, although there may be greater comparability with some low income countries in Central America. Does it make sense to target all those in poverty when these are half or more of the population? And, if that is fiscally impossible anyway, what sub-set of the poor should be targeted, and how can they be accurately identified when there is so little to distinguish them from the rest of the poor?

Both Congo and Côte d’Ivoire illustrate these challenges, despite the different nature of their national economies (oil-rich and oil-poor) and the fact that GNI per capita is almost twice as high in the former (\$2,150 in 2010) as in the latter (\$1,160). In Congo, where the political elite captures much of the oil wealth, poverty is widespread (50.1% in 2005) despite the relatively high GNI per capita. In Côte d’Ivoire, once the wealthiest country in West Africa, a long period of economic shocks (since the 1980s) and political crises (since the late 1990s) has shrunk GDP per capita and raised the poverty headcount from 10% in 1985 to 48.9% in 2008. In both countries, per capita consumption expenditure rises only gradually across the first six deciles: by \$7.60 per decile in Congo and \$7.40 in Côte d’Ivoire.

In addition, although human deprivations are negatively correlated with wealth, they tend to be high (by international standards) across all wealth quintiles. In Congo, the risk of death before the age of five diminishes very little across the first four quintiles and, even in the fifth quintile, is more than three times higher than for children across all quintiles in Latin America (23 deaths per thousand live births, according to UNICEF, 2010). The negative correlation between wealth and chronic malnutrition is more linear, as **Table 3** shows, but it is still the case that, even in the fifth quintile, the rates are much higher (21% in Côte d’Ivoire and 20% in Congo) than the averages for children across all quintiles in Latin America (14%).

Table 3: Under-5 mortality and chronic malnutrition by wealth quintiles

	Wealth quintiles				
	1	2	3	4	5
Under-5 mortality rate (per 1000 live births)					
Cote d'Ivoire, 2006	150	146	121	111	100
Congo, 2005	135	130	130	124	85
Chronic malnutrition, children <5 (%)					
Cote d'Ivoire, 2006	41.9	39.6	34.6	26.3	21.1
Congo, 2005	31.9	27.2	24.6	23.7	19.7

Sources: Demographic and Health Survey 2005 for Congo (MPAT et al, 2006); Multiple Indicator Cluster Survey 2006 for Côte d’Ivoire (MEMPD et al, 2007).

³ See, for example, Victora et al (2005) for a comparison of top and bottom inequity with respect to under-five mortality in Africa and Latin America.

This situation, which would seem to call for universal rather than narrowly targeted approaches, reflects not only the extensive nature of poverty and the shallowness of the differences in income, consumption and wealth across the bulk of the population, but also the unhealthy environment and the weaknesses in the supply and quality of health services, which affect most households. These social characteristics not only raise important questions about whom to target, they also make the practical implementation of targeting more difficult than is the case in countries where social differentiation is starker.

On the other hand, simple categorical approaches can be criticised on the grounds that demographic categories such as children, the elderly and people with disabilities are poor predictors of poverty or vulnerability. The data from Congo and Côte d'Ivoire generally support this view (see **Table 4**), although monetary poverty indices are slightly higher among children than in the population as a whole due to the higher fertility rates in the poorer deciles. In Congo, for example, the poverty headcount is 53.6% for children under 15 compared with 50.3% for the population as a whole while in Côte d'Ivoire, 56.7% of children under 15 live in poverty compared with 48.9% for the population as a whole.

Table 4: Poverty indices by demographic categories

	Poverty headcount	Poverty gap
Congo, 2005		
Population as a whole	50.1	18.9
Children < 15	53.6	20.4
Elderly 60+	50.3	18.5
Disabled	51.6	20.3
Côte d'Ivoire, 2008		
Population as a whole	48.9	18.1
Children < 15	56.7	21.7
Elderly 60+	52.1	20.1
Disabled	50.9	19.1

Sources: Authors' calculations, based on ECOM 2005, Congo, and ENV 2008, Côte d'Ivoire.

For the elderly and people with disabilities, the poverty indices vary only marginally compared with the broader population, suggesting that the vast majority of elderly and disabled are integrated within households with productively employed adults, even though there is also evidence that a small minority of the elderly are living isolated or are victims of abuse, sometimes due to witchcraft accusations and the dispossession of widows in matrilineal inheritance systems (Soko, 2010; Dzon, 2010). Unlike in Southern Africa, where HIV prevalence is much higher, AIDS has not created a 'missing generation' leaving large numbers of elderly without support from their own children and having to care alone for their grandchildren.

Given the weak differentiation in household characteristics and wealth across the bottom deciles in African countries, it is difficult to construct a PMT formula that can predict eligibility to programmes targeting the poor or extreme poor with reasonable degrees of accuracy. Furthermore, as Kydd and Wylde (2011) observe, targeting errors increase the lower the cut-off level, which should make the targeting of the extreme poor (the first quintile in the Ivorian case) less robust than targeting all the poor (as in Congo).

These concerns are borne out by the results for exclusion and inclusion errors in Congo and Côte d'Ivoire (see **Table 5**). Since these are based on *ex ante* simulations, the errors are only those inherent in the design of the PMT, ignoring the effects of institutional factors during implementation (such as weak capacity and rent-seeking by gate-keepers), which are impossible to predict. In Congo, the PMT for eligibility to a child allowance targeting poor households produced exclusion and inclusion errors of 25.8% and 36.2% respectively. The PMT in Côte d'Ivoire, targeting only the first quintile, produced much larger inclusion errors (about 60%), which is not surprising since targeting

errors tend to increase when targeting is more narrowly focused on the poorest, while exclusion errors (21-24%) were similar to those in Congo.

Table 5: Inclusion and exclusion errors of economically targeted transfer options¹

	Inclusion error	Exclusion error
Congo		
Child allowance 3 (poor households, <15)	36.2	25.8
Côte d'Ivoire		
Child allowance 3 (1st quintile households, <15)	60.4	21.4
Transfers to 1 st quintile households (PMT)	62.4	24.3
Note: ¹ Inclusion error is the proportion of beneficiaries who are not in the targeted group; exclusion error is the proportion of those targeted who are not beneficiaries. This takes into account both the economic threshold (below poverty line in Congo, in 1 st quintile in Côte d'Ivoire) and, where applicable, the categorical criterion (children of the designated age group in the case of child allowances).		

It may be argued that this is still better than the results of any alternative method. Under all categorical options, except universal benefits for children under 15, the proportion of the first quintile population that would be excluded is higher than in the programmes targeted with a PMT. In all cases in both countries more than 70% of the beneficiaries of the categorical programmes are from households not in the first quintile.

The degree of progressiveness of the targeting was also calculated using the Coady-Grosh-Hoddinott (CGH) indicator, which compares the actual distribution of the transfers with a neutral distribution (Coady et al, 2004). In this case, we have calculated the ratio of the transfers received by the first quintile to a neutral 20% share. Any value higher than 1 is deemed progressive and any value lower than 1 is regressive. On this measure, the economically targeted programmes are the most progressive, as shown in **Table 6**. The categorical options are also progressive in most cases, but much less so. However, the old-age pension and the maternity allowance are slightly regressive in Congo.

Table 6: Targeting efficiency and progressiveness of transfer options

	% of beneficiaries not in 1 st quintile	% of individuals in 1 st quintile not benefiting	CGH indicator (Q1 % share of transfers/20 %)
Congo			
Child allowance 1 (universal, <5)	78.7	35.9	1.01
Child allowance 2 (universal, <15)	79.0	7.7	1.12
Child allowance 3 (poor households, <15)	68.2	22.9	1.61
Old age pension (universal, 60+)	77.8	72.9	0.93
Disability pension (universal)	81.9	94.8	1.08
Maternity allowance (universal)	77.5	74.8	0.97
Côte d'Ivoire			
Child allowance 1 (universal <5)	75.6	23.2	1.27
Child allowance 2 (universal <15)	77.9	4.3	1.28
Child allowance 3 1st quintile households, <15)	62.0	25.8	1.92
Old age pension (universal, 60+)	72.3	78.9	1.20
Disability pension (universal)	75.6	90.4	1.03
Maternity allowance (universal)	74.4	75.1	1.16
Transfers to 1 st quintile households (PMT)	62.4	24.3	1.85

Sources: Authors' calculations, based on ECOM 2005, Congo, and ENV 2008, Côte d'Ivoire.

An alternative or complementary approach to targeting would be to focus on the most deprived geographical areas. Administratively this would require only good disaggregated poverty maps to select the worst-off populations. A strong case could be made for targeting certain Sahelian regions in the north of Côte d'Ivoire where monetary poverty and human deprivation are much worse than elsewhere. For example, North Region has a poverty headcount of 77.3%, compared with the national average of 48.9% (ENV 2008), and a net primary enrolment rate of only 26.5% compared with 55.1% nationally (MICS 2006). These contrasts are less pronounced in Congo, which is heavily urbanized. The main difficulty with this approach is that it would still exclude large numbers of poor and deprived people in other areas. For example, although South Region in Côte d'Ivoire has a poverty headcount of 44.6%, lower than the national average, it has the largest absolute number of poor (17% of the national total).

3.2 Impacts

The results of the impact analysis, for both beneficiaries and the population as a whole, are presented in **Table 7** (for Congo) and **Table 8** (for Côte d'Ivoire). Four main points stand out. First, the poverty impacts on *beneficiary households* are substantial for all the programme options. Under the assumptions employed, the poverty headcount for beneficiary households would decline by between 10.5% and 16.8% in Congo and between 7.4% and 13.8% in Côte d'Ivoire, and the poverty gap would fall by 18.5-29.2% and 17.9-29.0% respectively.

Second, however, demographic factors mean that the impacts of the different types of programmes vary widely at the level of the *population as a whole*. Old age pensions, disability pensions and maternity allowances have very small impacts for the simple reason that there are very few beneficiary households. The child allowances have much larger impacts since the age structures of these countries are pyramidal with a wide base of children. The universal child allowance (age <15) has an impact 4.3 times greater than the old age pension on the average poverty gap in Congo and 6.6 times greater in Côte d'Ivoire.

Third, the poverty impacts would be much larger for universal than economically targeted variants of categorical programmes because of the high exclusion errors and the fact that in Côte d'Ivoire targeting was directed only at first quintile households rather than all the poor as in Congo.

Fourth, while the human development impacts of cash transfer options are positive, although varying in importance at the societal level in accordance with the demographics, on the whole these impacts are very small. Data on the Probit regressions for impacts on human development, including the statistical significance of the results, are in Annex 1. In Congo, the national reduction in educational deprivation for children aged 6-10 ranged from 1.0% to 3.3%. In Côte d'Ivoire, school enrolment for children aged 6-10 increased in a range from 0.2% to 3.2%, while child labour in the age-group 11-14 declined between 0.1% and 1.7%. Use of health services in the event of illness of children under 5 increased very slightly in Côte d'Ivoire, and not at all in Congo.

Table 7: Impacts of cash transfer options, Congo (% change)

	Poverty headcount	Poverty gap	Non-use of health services		Deprivation in education ¹	
			Age 0-5 ²	All ages	Age 6-10	Age 11-14
Impacts on programme beneficiaries						
Child allowance 1 (universal, <5)	-10.5	-18.5	0.0	-3.5	-1.7	-2.0
Child allowance 2 (universal, <15)	-16.5	-29.2	0.0	-5.3	-3.3	-2.8
Child allowance 3 (poor households, <15)	-10.8	-22.3	0.0	-4.2	-3.7	-2.5
Old age pension (universal, 60+)	-13.9	-27.2	0.0	-7.2	0.0	-2.2
Disability pension (universal)	-12.1	-28.4	0.0	-7.7	0.0	-0.7
Maternity allowance (universal)	-16.8	-23.5	0.0	-4.3	-3.7	-3.4
Impacts on population as a whole						
Child allowance 1 (universal, <5)	-6.7	-11.9	0.0	-2.0	-1.2	-1.2
Child allowance 2 (universal, <15)	-15.1	-26.8	0.0	-4.6	-3.3	-2.8
Child allowance 3 (poor households, <15)	-7.2	-6.3	0.0	-2.6	-2.9	-1.9
Old age pension (universal, 60+)	-4.0	-7.8	0.0	-2.4	0.0	-0.5
Disability pension (universal)	-0.8	-1.8	0.0	-0.4	0.0	0.0
Maternity allowance (universal)	-4.1	-5.7	0.0	-0.9	-1.0	-0.7
Notes: ¹ A child aged 6-14 is considered deprived in education if he/she is not attending school or is more than 2 classes behind the correct class for his/her age cohort. ² The marginal effect for per capita expenditures (in logarithm) in the Probit regression for children under age 5 is very small (-0.006) and statistically insignificant from zero ($p = 0.919$): unlike for the all-age population group, the variable does not have any power explaining the use of health care services by children under 5						

Sources: Based on ECOM 2005.

Table 8: Impacts of cash transfer options, Côte d'Ivoire (% change)

	Poverty headcount	Poverty gap	Use of health services		School enrolment		Child labour	
			Age <5	All ages	Age 6-10	Age 11-14	Age 6-10	Age 11-14
Impacts on programme beneficiaries								
Child allowance 1 (universal, <5)	-8.4	-17.1	2.4	1.6	1.8	0.6	-0.9	-0.9
Child allowance 2 (universal, <15)	-13.8	-29.0	3.4	2.3	3.2	1.2	-1.6	-1.7
Child allowance 3 (Q1 households, <15)	-7.4	-19.7	3.9	2.6	3.4	1.2	-1.3	-1.4
Transfer to Q1 households	-9.1	-22.2	4.2	2.9	3.6	1.2	-1.4	-1.5
Old age pension (universal, 65+)	-12.3	-21.7	2.8	2.6	2.5	0.9	-1.1	-1.2
Disability pension (universal)	-10.9	-22.4	2.5	2.3	2.3	0.8	-1.1	-1.1
Maternity allowance (universal)	-12.0	-20.4	2.9	2.1	2.2	0.7	-1.0	-1.1
Impacts on population as a whole								
Child allowance 1 (universal, <5)	-6.2	-12.9	2.4	0.9	1.2	0.4	-0.6	-0.5
Child allowance 2 (universal, <15)	-13.0	-27.6	3.4	1.9	3.2	1.2	-1.6	-1.7
Child allowance 3 (Q1 households, <15)	-4.4	-13.5	1.5	0.8	1.5	0.4	-0.7	-0.6
Transfer to Q1 households	-5.6	-15.5	1.6	1.0	1.6	0.5	-0.8	-0.8
Old age pension (universal, 65+)	-2.2	-4.2	0.3	0.4	0.3	0.1	-0.2	-0.2
Disability pension (universal)	-1.0	-2.2	0.2	0.2	0.2	0.1	-0.1	-0.1
Maternity allowance (universal)	-2.8	-4.9	1.0	0.4	0.4	0.1	-0.2	-0.2

Sources: Based on ENV 2008.

3.3 Costs, cost-effectiveness and affordability

The costs of programmes, which have been calculated hypothetically for 2008 as if they existed at scale in that year, include both transfers and administrative costs, and are shown in **Table 9**, along with fiscal indicators and data for our measure of cost-effectiveness: the cost of a 1 percentage point reduction in the average poverty gap.

As would be expected, the universal child allowances for children under 15 are the most expensive because of the demographic weight of the target population. The universal allowances for children under 5 and the economically targeted transfers cost less, although the costs of the latter are boosted by the size of the inclusion error, especially for the Q1 options in Côte d'Ivoire. The old age pensions are less costly since the numbers of beneficiaries are much smaller, although this is offset partially by the higher value of the pension (compared to the child allowance) and, in Congo, by the lower age eligibility (65 instead of 60). The disability pensions and maternity allowances are among the least expensive due to their small numbers of beneficiaries.

The economically targeted options are the most cost-effective. In Congo, to reduce the average poverty gap by 1 percentage point, it costs CFA 18.7 billion a year for the child allowance targeted to children under 15 in poor households, compared with a range of CFA 22.4 to 27.3 billion for the other options. In Côte d'Ivoire, it costs around CFA 64 billion under the two programme options targeted to the first quintile compared with a range of CFA 75.5 to 98.1 billion for the 'universal' categorical options. These results show that, if poverty reduction is the primary objective, the economically targeted programme options are preferable from a cost-effectiveness standpoint, although they have other disadvantages.

In terms of affordability, the issue is whether fiscal space exists for one or more of the policy options considered and, if not, whether it could be created in a sustainable manner through increased domestic revenue, debt reduction and/or expenditure reallocation. Aid, which may play a valuable role in helping to finance the initial start-up and roll-out costs of cash transfers, is generally considered too unpredictable for long-term financing of social transfers, especially when these are legislated entitlements requiring non-discretionary expenditure (Handley, 2008).

Congo, as an oil exporter, has a large overall fiscal surplus equivalent to 23.4% of GDP in 2008. Besides high oil revenues, boosted by the rise in global prices, debt reduction slashed public debt to 24% of GDP in 2010. It seems that Congo would have little difficulty financing one or more of the simulated social transfer programmes, which range in cost from 0.2% to 2.5% of GDP.

There are two main caveats. First, there is competition for resources from other sectors, notably for expenditure on physical infrastructure given the strong emphasis on infrastructure-led growth in Congo's development strategy and public expenditure priorities. There are also competing priorities within the social sectors. The most expensive option, the universal allowance for children under 15, would cost more than the entire existing health budget. Second, oil revenue may decline in the long term as oil reserves decline, although these could be boosted by new discoveries. According to a comparative study of oil producing countries (Villafuerte and Lopez-Murphy, 2010), the ratio of reserves to annual production is quite low in Congo, at 21 years compared to more than 100 years in Iran, Kuwait, Qatar and Venezuela. From this perspective, the high primary non-oil fiscal deficit in Congo, although projected to decline from 44.3% in 2008 to 26.8% in 2012 (IMF, 2010), may limit the scope for financing large social transfer programmes in the long term.

Table 9: Programme costs, fiscal indicators and cost-effectiveness, 2008

	% of GDP	% of government expenditure			Cost of reducing poverty gap ¹ by 1 percentage point (CFA billion)
		Total	Health	Education	
Congo					
<i>Cost of programme options</i>					
Child allowance 1 (universal, <5)	1.2	4.6	61	51	25.3
Child allowance 2 (universal, <15)	2.5	9.1	122	93	22.4
Child allowance 3 (poor, <15)	1.3	4.6	62	52	18.7
Old age pension (universal, 60+)	0.8	2.8	37	31	23.2
Disability pension (universal)	0.2	0.8	10	9	27.3
Maternity allowance (universal)	0.6	2.3	31	26	26.9
<i>Fiscal indicators</i>					
Overall fiscal balance including grants	23.4				
Government revenue excluding grants	37.0				
Public debt, 2010	23.8				
Health expenditure	2.0				
Education expenditure	2.4				
Côte d'Ivoire					
<i>Cost of programme options</i>					
Child allowance 1 (universal, <5)	1.8	8.3	192	44	79.0
Child allowance 2 (universal, <15)	3.8	18.0	419	97	75.5
Child allowance 3 (Q1, <15)	1.5	7.0	164	38	64.1
Transfer to Q1 households	1.8	8.4	194	45	64.0
Old age pension (universal, 65+)	0.6	3.1	71	16	88.6
Disability pension (universal)	0.4	1.7	40	9	98.1
Maternity allowance (universal)	0.8	3.7	87	20	93.8
<i>Fiscal indicators</i>					
Overall fiscal balance including grants	-0.6				
Government revenue excluding grants	18.9				
Public debt, 2010	66.8				
Health expenditure	0.9				
Education expenditure, 2007	3.9				
Note: ¹ Poverty gap is for whole population					

Sources: Authors' cost calculations based on demographic data, ECOM 2005 (Congo), ENV 2008 (Côte d'Ivoire) and IMF, 2011, for macroeconomic data.

In contrast, Côte d'Ivoire has historically run a small overall fiscal deficit, which averaged 1.4% in 2006-2010. There is little fiscal space for the expansion of expenditure even though a rapid post-conflict recovery (in GDP and government revenue) is expected in the short term and Côte d'Ivoire may soon benefit from debt reduction. Overall, the cost of social transfers, ranging by programme from 0.4 to 3.8% of GDP, appears difficult to absorb.

The longer-term perspectives for fiscal space in Côte d'Ivoire are clouded by the fact that, as a percentage of GDP, government revenue (18.9% on average between 2006 and 2010) is slightly above the average for oil-importing countries in Sub-Saharan Africa (18.1%), so the scope for increasing the average tax burden is likely to be limited. Furthermore, competition for public resources is intense. Supply-side deficiencies in education and health are a major concern and, in the case of health, have been exacerbated by very low levels of aggregate government health expenditure, which was only 0.9% of GDP (less than half as much as in Congo) in 2008. The potential for resource competition with the national health system can be gauged from the ratio of estimated social transfer programme costs to actual health expenditure, which ranges from 40% (disability pension) to 419% (universal allowance for children under 15).

3.4 Administrative feasibility

The analysis of administrative feasibility focused on two dimensions: the scale and geographical distribution of relevant administrative structures and human resources, and possession of documents providing proof of identity and age, which are needed for enrolment in cash transfer schemes.

Regarding the potential capacity for implementation, the social affairs ministries in both countries have networks of social centres staffed by social workers, although these are tilted towards urban areas and skills are weak. While it might be argued that some cash transfers operations can be outsourced to the private sector, notably for payments, large social transfer programmes do require officials at the local level for key procedures such as targeting and enrolment. NGOs can manage these functions in an emergency setting, or can be contracted on a short-term basis, but are not a substitute for long-term public services.

In Congo, there are 104 social welfare centres, known as *circonscriptions d'action sociale* (CAS), of which 99 were functioning in 2010. The staff of the social affairs ministry increased from 2,345 in 2005 to 3,306 in 2009, with 76% at sub-national level, 18% in subordinate technical institutions and only 6% at the central level, suggesting a substantial human resource cadre at the local level. Staff are heavily concentrated in urban areas, although this partly reflects the fact that Congo is one of the most urbanized countries in Africa, with 62% living in urban areas, 12% in small towns and only 26% in rural areas according to the 2007 census. Only about 45% of the Ministry's personnel are qualified in social work. The CAS currently have no budgets of their own and most have neither computer equipment nor means of transport, making it difficult to function in practice.

In Côte d'Ivoire, the social affairs ministry has 283 local institutions, including 79 social centres that have a broad mandate comparable to Congo's CAS. In 2009, the ministry had 3,065 staff, including 2,447 social workers. This is much lower on a per capita basis than in Congo, and personnel are heavily concentrated in or close to Abidjan. On the other hand, Côte d'Ivoire is one of the few francophone African countries with a national training school for social workers, the Institut National de Formation Sociale (INFS).

Overall, this analysis shows that both countries do have a basic administrative capacity in the social welfare sector, although they would need to invest in capacity development to be able to administer large national-scale cash transfer programmes efficiently and avoid weakening already fragile social welfare services.

The second issue, the extent of possession of documents proving identity and age, is a potentially serious one, including for categorical programmes such as pensions and child grants, due to the weakness of the civil registration systems and cost barriers. In Côte d'Ivoire, only 54.9% of children under 5 have birth certificates, a proportion that falls to 40.5% in the rural areas and 28.7% in the first

quintile, according to the 2006 MICS. Cost was the second main reason provided for non-possession (18.6%) after the conflict/crisis (33.8%). In Congo, the problem is less acute, with only 8.3% of children not possessing birth certificates according to the census in 2007. Nevertheless, this proportion is higher in certain regions and much higher in the indigenous pigmy population (68%), which suffers from a structural situation of social exclusion. Interviews with CAS staff in the field found that the costs for late registration were high (approximately \$28), creating a serious barrier for the very poor.

A third issue, the risk of corruption, was not investigated as such, but it may be noted that both Congo and Côte d'Ivoire score very poorly on the 2011 Corruption Perceptions Index, ranking jointly at 154 out of 182 countries (Transparency International, 2011). To limit the risk that corruption distorts the selection/enrolment procedures of a transfer programme, exacerbating targeting errors, it would be advisable to keep selection procedures simple, limiting opportunities for rent-seeking by programme officials and collusion between them and potential beneficiaries.

PMTs may be too complex because they require survey-type procedures and frequent retargeting (compared with simple age-based systems with on-demand enrolment and automatic graduation), while also being less transparent than age-based eligibility systems and so requiring grievance systems for complaints. These requirements are administratively demanding in low-capacity countries like Congo and Côte d'Ivoire.

3.5 Political feasibility

Patronage-based political systems are characteristic of most of Sub-Saharan Africa (Chabal and Daloz, 1999), not only in the low-income countries but even more so in the oil-producing MICS of the Gulf of Guinea, where the 'resource curse' (Karl, 1997) enlarges the scope for patrimonial politics.

Although multi-party systems developed in name in both Congo and Côte d'Ivoire through constitutional reforms in the early 1990s, the emergence of effective systems of multi-party politics was in practice hindered by civil wars in both countries. The coup d'état in Côte d'Ivoire in 1999 ushered in a period of acute instability, culminating in civil war and territorial division and ending only with the military defeat of former President Laurent Gbagbo in April 2011. In Congo, President Denis Sassou N'guesso, who had ruled under a one-party system since 1979 but was defeated in multi-party elections in 1992, returned to power with the support of Angolan troops in 1997 during a civil war that continued until 1999, and has since consolidated power.

In these systems, the mass of the population, which is weakly if at all organised, has no real avenues for making inputs into policy processes. At best policy processes involve small numbers of ruling politicians and senior public officials, often in dialogue more with donors than their own populations, and the resulting policies, strategies and plans orient only to a limited extent what is done in practice.

In both Congo and Côte d'Ivoire, social protection is formally part of the political discourse. In his manifesto for the 2009 president elections, Sassou N'guesso (2009: 19) pledged to 'restructure social protection so as to extend its basic aspects to the entire population', while in Côte d'Ivoire the Poverty Reduction Strategy Paper for 2009-2015 declared the government's intention to 'extend social protection to the whole population, in particular the most vulnerable' (RCI, 2009).

However, the type of social protection envisaged in both countries mainly concerns the extension of social insurance, currently restricted to a small minority employed in the formal sector, through the creation of national health insurance schemes, rather than the establishment of non-contributory social transfers. Furthermore, no real progress has yet been made to implement these commitments. Although the lack of progress is also likely to reflect the political instability (in Côte d'Ivoire) and capacity constraints (in both countries), the main focus of policy attention lies elsewhere: on economic growth through public investment in physical infrastructure.

4 Conclusions and issues arising

Cash transfers are far from being a 'silver bullet' for poverty reduction and human development in Sub-Saharan Africa. They would certainly have positive impacts, but the *ex ante* evidence from Congo and Côte d'Ivoire suggests that this would be more in terms of monetary poverty reduction than improved access to basic social services or human development.

There are two possible reasons for this. First, at very low levels of consumption expenditure, the increases in household resources resulting from quite small transfers go primarily to improving food consumption, given the high share of food in total consumption, especially among the poor. This might mean that the most important human development impact of transfers would be on child nutrition, although there is no consensus in the international literature on the extent to which nutrition responds to increases in the income of poor households (*Leroy et al, 2009; Manley et al, 2011*). Unfortunately, neither ECOM nor ENV provide anthropometric data for this type of analysis.

Second, other factors besides household income, such as the availability and quality of education and health services, may act as impediments to the take-up of basic social services, limiting the extent to which social protection measures affect overall utilization. For example, the health systems in both countries are plagued by problems of drug stock-outs. In Côte d'Ivoire, where 30% of children never enter the first class of primary education, the limited number of available school places means that each year about 90,000 children are refused entry to the first year of primary school. These problems raise important issues about the relative prioritization of demand and supply side measures in the social sectors in Sub-Saharan Africa.

The practical difficulties are considerable. The extensive nature of poverty and human deprivations, and the weak differentiation in consumption expenditure, assets and human development across the bottom quintiles of the population make it difficult to decide objectively whom to target and lend weight to arguments in favour of universal approaches. As the large inclusion and exclusion errors associated with the technical properties of PMTs in both Congo and Côte d'Ivoire show, these social characteristics make it difficult to distinguish the poor from the near-poor, or the extreme poor from the moderate poor. Furthermore, in African countries with weak public administrations (even where networks of social welfare centres and social workers exist) and with high levels of corruption, complex targeting methods for the selection of beneficiaries are likely to be difficult to implement at national scale and prone to manipulation.

On the other hand, limited fiscal space, especially in the LICs, militates in favour of concentrating resources on the poorest of the poor, and, despite their targeting errors and institutional risks, the economically targeted options are the most cost-effective from a poverty perspective. The purely categorical approaches have higher implicit inclusion errors and may also be less simple to implement than might be expected due to the difficulty of proving identity, age or disability in countries with weak civil registration systems.

On balance, it would seem reasonable for an oil-producer like Congo to establish a system of universal categorical-type programmes. This is likely to be affordable, although there is some uncertainty about long-term oil revenues and the government's ability to diversify the economy (and sources of tax revenue) and reduce its non-oil primary deficit. The poverty impacts would be substantial, especially in the case of child allowances. By virtue of their redistributive nature, universal transfers would also reduce inequality and improve social cohesion in a country with a high Gini coefficient (0.47 in 2005) and a history of conflict. They would also have lower capacity requirements and corruption risks and could be established through the existing network of CAS if investments were made in the necessary operational systems. The main uncertainty is political, as the formal commitment to extend social protection has not been reflected in practical measures.

In a LIC like Côte d'Ivoire, the prospects for cash transfers seem much weaker. Fiscal constraints are such that probably none of the simulated programme options could be financed domestically, except possibly the smallest categorical programmes such as the disability pension. The alternative would be to scale down economic targeting to focus on a much smaller layer of ultra-poor, possibly the bottom

10% or 5%, but it is not clear that even this would be affordable, except possibly through a long process of phase-in, starting perhaps in the most deprived geographical areas. The inclusion and exclusion errors would be very high, along with the administrative capacity requirements. In addition, civil registration is weak and the complementary supply-side provision of basic social services is deficient. Given also that cash transfers are absent from the mainstream political discourse, it is difficult to escape the conclusion that advocacy for national cash transfer programmes is probably misplaced in such an unfavourable context.

Annex: Regressions for impacts on human development

Congo: Probit regressions used for impact on education (Y=1 is deprived)

Explanatory variables	Age 6-10		Age 11-14	
Expenditures (per capita log)	-0.079	***	-0.113	***
Siblings in preschool (y/n)	-0.331	***	-0.223	***
Siblings in primary school (y/n)			0.110	***
Siblings in secondary school (y/n)	-0.072	***	-0.055	**
Siblings in tertiary school (y/n)	0.268	***	0.181	***
Siblings attending private school (y/n)			-0.139	***
Siblings attending other schools (y/n)	0.175	***	0.085	**
Child is a girl (y/n)			-0.043	**
Child lives in Pointe Noire (y/n)			0.108	***
Child lives in other urban community (y/n)	0.050	*	0.202	***
Child lives in semi-urban community (y/n)	0.062	**	0.173	***
Child lives in rural community (y/n)	0.085	***	0.278	***
Parents are satisfied with the child's school (y/n)	-0.140	***	-0.110	***
Parents indicate shortage of books at child's school (y/n)	-0.087	***	-0.087	***
Parents indicate problem with teachers at child's school (y/n)	-0.041	***		
Parents indicate problem with school building (y/n)	-0.041	*		
Household head did not finish primary school (y/n)	0.090	***		
Household head finished secondary school (y/n)	-0.090	***	-0.168	***
Household head finished tertiary education (y/n)	-0.187	*	-0.220	***
Number of observations	3328		2741	
P-value	0		0	
Pseudo R-Square	0.2395		0.166	

Note: Values denote marginal effects; coefficients are only displayed if marginal effect is significant (* p<0.10, ** p<0.05, *** p<0.01).

Côte d'Ivoire: Biprobit estimation used to estimate the impact on schooling (=1 if the child attends school) and working (=1 if the child works)

Explanatory variables	6-10 years old				11-14 years old			
	School		Working		School		Working	
Gender (male is reference group)								
female	-0.245	***	0.001		-0.525	***	0.106	**
Child's age (age=10 is reference group)								
Age 6	-0.879	***	-0.767	***				
Age 7	-0.273	***	-0.519	***				
Age 8	-0.002		-0.267	***				
Age 9	0.017		-0.146	**				
Age 11					0.447	***	-0.269	***
Age 12					0.234	***	-0.13	**
Age 13					0.124	**	-0.028	
Area of residence (urban is reference group)								
Rural	-0.293	***	0.724	***	-0.216	***	0.798	***
Region of residence (region 1 is reference group)								
Region 2	-0.131		0.375	**	0.081		0.217	
Region 3	-0.715	***	1.011	***	-0.759	***	0.823	***
Region 4	-0.418	***	0.494	***	-0.337	***	0.385	***
Region 5	-0.209	**	-0.541	***	0.001		-0.532	***
Region 6	0		1.008	***	-0.034		0.658	***
Region 7	-0.238		0.132		0.084		-0.361	**
Region 8	-0.303	**	0.33	**	0.148		0.331	*
Region 9	-0.225	***	0.374	*	-0.005		0.008	
Region 10	0.064		-0.112		-0.271		-0.587	
Region 11	-0.301	**	0.679	***	0.113		0.407	**
Region 12	-0.203		0.696	***	0.176		0.599	***
Region 13	0.263	*	-0.721	***	0.23		-0.496	***
Region 14	-0.981	***	0.842	***	-1.128	***	0.748	***
Region 15	-0.297	***	0.065		0.125		0.26	
Region 16	-0.046		-0.81	***	0.488	***	-0.573	***
Region 17	0.151		-0.328		0.384	***	-0.148	
Region 18	-0.183		0.164		0.105		-0.152	
Region 19	-0.645	***	0.233		-0.831	***	0.08	
Household head ever went to school	0.553	***	-0.067		0.469	***	-0.093	*
Household size	0.011	*	0.006		0.013	*	-0.003	
Distance of school	-0.062	***	0.038		-0.038	*	0.01	
Expenditures (per capita ln)	0.349	***	-0.089	*	0.155	***	-0.14	***

School fees (ln)	-0.034	***	-0.007		-0.036	***	0.009	
Constant	-2.883	***	-0.176		-0.683		0.695	

Note: Values are coefficients after biprobit estimation; * is for p-value<0.10, ** p-value<0.05, *** p-value<0.01.

Congo: Probit regressions used for impact on health (Y=1 is non-use of health services)

Explanatory variables	Age 0-4		All ages	
Expenditure (per capita log)	-0.006		-0.038	***
Child lives in Pointe Noire (y/n)	0.140	***	0.074	***
Child lives in other urban community (y/n)	0.059	*	0.071	***
Child lives in rural community (y/n)			0.068	***
Household head finished secondary school (y/n)			-0.039	***
Distance to health services more than 30 minutes			0.024	*
Number of household members aged 0-5	0.028	*	-0.017	***
Number of household members aged 6-14	0.030	***	0.009	**
At least 1 household member aged above 14 sought to increase his/her earnings and was willing to take an additional job	-0.051	**		
At least one adult household member is literate			-0.078	***
Individual suffered from fever/malaria	0.226	***	0.056	***
Individual suffered from diarrhoea	0.139	***	0.040	**
Individual had an accident			0.246	***
Individual suffered from dental problems			-0.066	***
Individual suffered from skin problems	0.216	**		
Individual suffered from ear/nose/throat problems			-0.053	**
Individual suffered from other health problem	0.230	***	0.049	***
Individual missed less than a week from school/work			-0.133	***
Individual missed between 1-2 weeks from school/work			-0.247	***
Individual missed more than 2 weeks from school/work			-0.284	***
Household sometimes had problems satisfying nutritional needs in past year			0.025	*
Household often had problems satisfying nutritional needs in past year	0.096	***	0.065	***
Household always had problems satisfying nutritional needs in past year	0.226	***	0.078	***
Dwelling has dirt floor	0.028	***	0.055	***
Dwelling does not have access to sewage/sewage pit			-0.051	**
Number of observations	1443		10072	
P-value	0		0	
Pseudo R-Square	0.079		0.0617	

Notes: Values denote marginal effects; coefficients are only displayed if marginal effect is significant at a 10% level or higher (* p<0.10, ** p<0.05, *** p<0.01).

Côte d'Ivoire: Probit regressions used to estimate the impact on health consultation (=1 if the person, if ill, went for health consultation)

Explanatory variables	Age 0-4		All ages	
expenditures (per capita ln)	0.163	***	0.112	***
Strata of residence (strata 1 is the reference group)				
Strata 2	-0.170	***	-0.100	***
Strata 3	-0.059		0.003	
Strata 4	0.007		0.091	*
Strata 5	-0.001		0.039	
Strata 6	-0.118	**	-0.063	*
Strata 7	-0.126	**	-0.071	*
Strata 8	-0.100	*	-0.101	***
Strata 9	-0.118		-0.001	
Strata 10	-0.084		0.041	
Strata 11	-0.100		-0.014	
Person has health insurance			0.197	***
Age	-0.044	*	-0.004	***
Age squared	0.003		0.000	***
Gender (male is the reference group)				
Female	-0.018		0.024	**
Days of sickness	0.030	**	0.033	***
Distance to clinic	-0.028	***	-0.020	***
Distance to hospital	0.004		-0.005	
Household size	0.002		0.006	***
Household head ever went to school	-0.015		0.008	
Area of residence (urban is the reference group)				
Rural	0.008		0.011	
Note: Values are coefficients after probit estimation; * is for p-value<0.10, ** p-value<0.05, *** p-value<0.01.				

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