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IMPACTS OF CONDITIONAL CASH TRANSFERS ON GROWTH, INCOME DISTRIBUTION AND POVERTY IN SELECTED ASEAN COUNTRIES

Edited by
SOTHEA OUM
GIANG THANH LONG
VATHANA SANN
PHOUPHET KYOPHILAVONG

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LIST OF PROJECT MEMBERS

PROFESSOR FUKUNARI KIMURA (PROJECT SUPERVISOR): Chief Economist, Economic Research Institute for ASEAN and East Asia (ERIA), Indonesia. Professor, Faculty of Economics, Keio University, Japan.

DR. SOTHEA OUM (PROJECT COORDINATOR): Associate Researcher, Economic Research Institute for ASEAN and East Asia (ERIA), Indonesia.

DR.GIANG THANH LONG: Vice Director, Institute of Public Policy and Management (SPPM), National Economics University (NEU), Hanoi, Vietnam

DR. SANN VATHANA: Deputy Secretary General, Council for Agricultural and Rural Development, Social Protection Coordination Unit (CARD-SPCU), Cambodia

DR. PHOUPHET KYOPHILAVONG: Associate Professor, Director, Research Division, Department of Economics and Business Management, National University of Laos.

EXECUTIVE SUMMARY

In fiscal year 2009, ERIA completed a research project entitled: “Social Protection in East Asia – Current State and Challenges”. Thirteen country experts on social protection were brought together to provide an overview, and to discuss challenges in social protection in their respective countries. The project highlighted the current state of social protection, and identified broad avenues to strengthen it. Eventhough the project provided useful overviews and broad directions for reforms, various thematic issues and impacts were not analyzed. These are gaps that the current research attempts to fill.

As a starting point, the focus of this study is an analysis of the impacts of unconditional and conditional cash transfers (programs which provide households with cash payments so long as they make use of public services) on income distribution and poverty in Cambodia, the Lao PDR, and Vietnam. Existing formal social protection systems normally exclude some important vulnerable groups. In developing countries, supports often fall short of providing assistance to those such as the elderly who have recently fallen into poverty, or are poor for a transient period, such as farmers during the lean season or victims of natural disasters. In order to address these gaps, assistance could be provided by expanding and improving existing social assistance and other types of social transfer programs in the selected areas. There are a number of countries (such as Mexico, South Africa, and Bangladesh) that have achieved considerable success with conditional cash transfers. Learning from this success, it is worth considering incentive-based cash transfer schemes.

The objectives of this research are as follows: (i) to show the income distribution and poverty implications of providing cash transfers to vulnerable households; and (ii) to provide cost estimates and practical policy implications for introducing such programs. Main findings from respective country’s paper can be summarized as follows:

Giang Thanh Long, in his paper on Vietnam, attempts to quantify the potential impacts of various cash transfer programs on poverty in old-age in Vietnam by using the Vietnam Household Living Standards Survey (VHLSS) of 2008. Given current

characteristics of the elderly population in terms of poverty and vulnerability, three programs are considered: (i) a universal program for all elderly people; (ii) a program for only female elderly; and (iii) a program for only rural elderly. In general, the simulation results indicate that, given the same fiscal costs, the program for rural elderly would be the most effective in terms of poverty reduction. Also, with the same fiscal costs, programs providing lower benefits to a wider group of beneficiaries would be more effective in poverty reduction than programs providing higher benefits to a more limited number of beneficiaries. The paper argues that it would be financially affordable for Vietnam to expand the current cash transfer program to wider groups of the elderly, so as to reduce their poverty and vulnerability.

The second paper by Vathana Sann and Sothea Oum presents the complexities of designing a pilot CCT (Conditional Cash Transfer) scheme in Cambodia, focusing on the benefit level, potential selected beneficiaries, and tentative costing in different scenarios. The paper argues that high school dropout rates and a high incidence of child labor are serious outcomes of the vulnerability affecting children. They also have a profound effect on the likelihood of future generations moving out of poverty. Programs intended to fight child labor and keep children in school (in-kind transfers including school feeding and take-home rations, cash scholarships) should be not only expanded but also harmonized. While addressing demand constraints that prevent parents from sending their children to school, it is equally (if not more) important to also improve the quality of education. Cash transfers help poor households to access services and can provide incentives to change behavior. Given the importance of behavior in determining nutrition outcomes, a cash transfer program, in particular, could be used to address demand constraints in fighting chronic malnutrition, the main source of vulnerability among infants and small children. Such a program would fulfill the dual objectives of alleviating chronic poverty while combating maternal mortality and malnutrition. The paper provides clear evidence of favorable income distribution and poverty impacts with affordable fiscal costs.

The paper also discusses the better allocation of the very limited resources that are available, so as to ensure coverage of main sources of vulnerability and of the most vulnerable groups. Coherence rather than competition between sectors needs to be strengthened, as investments in social protection without adequate investments in basic

social services, including health, education, water supply and housing, would remain ineffective. Better targeting plus coherence between current sector investments in social protection, and a gap analysis-driven identification of priorities for scaling-up across sectors, will ensure maximum coverage and provision for the poor and vulnerable. Existing health equity funds, school feeding, scholarships and public works are already addressing most of the major sources of vulnerability faced by the poor, and already have, to various extents, a strong presence in Cambodia. However, coordination and expansion are needed to ensure appropriate coverage and sustainable financing of programs.

Finally, Phouphet Kyophilavong studies the impacts on income distribution and poverty in the Lao PDR of introducing conditional cash transfer programs to the poor, As the country has poor social protection, especially for poor people, and the economy is vulnerable to external shock, especially from the Global Financial Crisis, it is important to consider cash transfer programs for the poor, applying a Computable General Equilibrium (CGE) model- and Micro-simulation. This study focuses on cash transfers to poor households with children who live in rural and urban areas. The simulation result shows that cash transfer has a significant impact on poverty, and improves income distribution. Especially, poverty reduced more in rural rather than urban areas. It is therefore important for government to consider establishing social support programs for the poor in order to reduce poverty and mitigate external shocks, such as the recent crisis and rising food prices.

It is clear that cash transfer to poor families with children would require a small budget, but also that it would have a significant impact on poverty and income. However, this result might be affected from changing the poverty line, and it is important to choose right target (poor families with children).

Since empirical results show that cash transfers could reduce poverty and improve income distribution, it is clearly important for the Lao government to consider establishing comprehensive social support programs for reducing poverty in Laos. However, in order to establish social support programs, it needs to consider appropriate program design, including target groups, revenues and capacity of institutions. However, the study has several weaknesses requiring future improvement. First, it does not consider conditions during cash transfer in the model, nor the cost effectiveness of

programs. Secondly, this study focuses only on poor families with children, and it needs to consider wider perspectives such as rural areas without roads, health care or schools. Thirdly, it is necessary to consider the administrative cost and effect on prices of the program. Fourthly, the transfer program modeled does not distinguish the number of children per household. We transfer the same amount to a poor family with children under 12 years old, irrespective of the actual number of children in the family. In addition, we do not set conditions for cash transfer.

What emerged from the three studies is that cash transfer programs (both conditional and unconditional) could play very important roles in mitigating gaps in income distribution and reducing poverty in these dynamic and emerging economies. The initiatives could be managed effectively through the existing institutional arrangements without putting too much strain on the national budgets.

The studies also provide some lessons for developing Asian countries in considering social pensions for older people and the vulnerable. First, a universal social pension can work in low-income countries. Given limited funding, targeting the most vulnerable groups, such as rural older people, would help reduce the incidence of poverty substantially. Second, in countries where the incidence of poverty, among older people, is a significant issue, a universal social pension scheme providing low benefits to a large number of beneficiaries would be more beneficial in terms of poverty reduction than a universal social pension scheme providing higher benefits to a small number of beneficiaries. Third, the vulnerable aging and older people should not be ignored in any development strategies.

However, cash transfers are not the sole solution for fighting poverty and should be considered merely as an instrument to help reduce poverty. It is necessary to prepare well for an aging population from now on, by promoting robust and inclusive growth, education and health for children and mother, and youth, which in turn will guarantee older, healthier, and wealthier nations.

As economic growth pushes up income and urbanization proceeds, shifts from traditional types of social protection to modern official types of social protection become inevitable. The latter becomes essential even to political stability along the path of economic development; otherwise, economic development cannot be sustainable. When countries reach a middle-income level, issues to be tackled include the

development of pension system for ageing, unemployment insurance that backs up rapid transformation of industrial structure, health insurance for nation-wide health management, and others. In countries where poverty reduction is still of importance, effective and efficient wealth redistribution mechanism is called for. Because social protection is often accompanied with huge fiscal burden, the development of efficient system with proper prioritization and scheduling is needed.

CHAPTER 1

Expanding Cash Transfer Program to Tackle Old-Age Poverty in Viet Nam: An *Ex-Ante* Evaluation

GIANG THANH LONG*

By using the Viet Nam Household Living Standards Survey (VHLSS) from 2008, this paper quantifies the potential impacts of various cash transfer programs on old-age poverty in Viet Nam. We use static micro-simulation techniques to estimate how such programs could reduce such poverty. We consider three targeted groups of elderly people along with four age thresholds to evaluate the potential impacts. We find that a cash transfer program would be influential in reducing old-age poverty. More importantly, our micro-simulation results indicate that, given limited funding, targeting the rural elderly would be most effective for poverty reduction, and that a program providing lower benefits to a higher number of beneficiaries would be better in reducing poverty incidence than a program providing higher benefits to a lower number of beneficiaries.

* Giang Thanh Long is Vice Director of the Institute of Public Policy and Management (IPPM) at the National Economics University in Hanoi, Viet Nam. He is also a research fellow at Indochina Research and Consulting (IRC) Vietnam. Contacts: longgt@neu.edu.vn | longgiang@irc.com.vn.

1. Introduction

According to the Population and Housing Census of 2009 (GSO, 2010a), the proportion of the elderly (people aged 60 and over) in Viet Nam's population was about 8.7 percent. Population projections by GSO (2010b) show that the Vietnamese population will reach the aging threshold by 2017 and the elderly population will account for 26 percent of the total population by 2050.[1]

At the same time, under swift socio-economic changes since *Doi moi* (renovation) programs, there has been a significant transformation of household living arrangements, in which the traditional extended family has been replaced by the nuclear family. As such, the past decade has witnessed a continuous decline in the number of households where the elderly were living as dependents, while during the same period there has been a continuous increase in the number of households where the elderly were living alone or with other elderly people (Giang and Pfau, 2007). Also, due to large flows of migration, Viet Nam has experienced an increase in the so-called 'skip-generation', families where old-age grandparents are living with grandchildren, particularly in rural areas. Regarding social protection, only a small percentage of the Vietnamese elderly are receiving public contributory pensions or social allowances, while most are living on their own and/or supported by family members (MoLISA, 2005). Thus, weakening familial support and a fragile social protection system will leave the elderly with various poverty risks and vulnerabilities.

Such demographic and familial changes has resulted in the Government of Viet Nam (GoV) playing a more crucial role in providing a social safety net for vulnerable and poor elderly people. Among a number of programs aiming to reduce poverty incidence, the GoV introduced a monthly cash transfer program to some specific groups

[1] According to Cowgill and Holmes (1970) (as quoted in Andrews and Philips, 2006), a population is classified as 'aging' when the elderly (65 and over) account for 7 to 9.9 percent of the total population. Similarly, 10-19.9 percent of people 65 and over identifies a population which is 'aged'; a population with 20-29.9 percent people of 65 and over is 'very aged' and more than 30% describes a population which is 'hyper aged'. This categorization is used by the United Nations and other international organizations. In this paper, however, we use this definition only when we compare the demographic status of Viet Nam with other countries. In the main part of the paper, an elderly is defined as a person aged 60 and over, and we use the term 'aging', 'aged', 'very aged', and 'hyper-aged' population when the elderly population accounts for 10 percent, 20 percent, 30 percent and 35 percent, respectively.

of elderly people. This program was implemented in 2004 to provide a minimum monthly benefit of VND 65,000 (about $US 4)[2] to all elderly people aged 90 and over who did not have a contributory pension and not eligible for other special social allowances. In April 2007 (under Decree 67/2007/ND-CP), the minimum eligible age was reduced to 85, and the minimum monthly benefit was increased to VND 120,000 (about $US 7). In 2010 (under Decree 13/2010/ND-CP), the minimum eligible age was reduced to 80, and the minimum monthly benefit was increased to VND 180,000 (about $US 9). Recent studies show that this program has helped a number of elderly citizens to cope with poverty incidence, but has been unable to lift them out of poverty (see, for instance, ILSSA and UNFPA, 2007; Pham and Castel, 2010; World Bank, 2010). Even NACSA (2006) shows that, due to a number of administrative and monitoring weaknesses, about two-thirds of eligible individuals in some provinces did not receive any benefits.

As such, given the low coverage of the contributory pension scheme as well as potential risks due to economic fluctuations, expanding the current cash transfer program will become an important policy response to tackle poverty for the elderly in Viet Nam. For any developing country like Viet Nam, however, the 3-A questions (i.e., Adequacy of benefits, Acceptability of stakeholders, and Affordability) are always concerns of the government.

Guided by such facts and policy questions, this paper aims to provide an *ex-ante* evaluation of the potential impacts of expanded cash transfer programs for various types of elderly people on old-age poverty reduction. We consider different elderly groups at different age thresholds as well as personal conditions (such as the elderly living in rural areas or elderly females). The impacts will be indicated by reductions in old-age poverty rates and poverty gaps. We will also provide cost projections for these programs to see whether they will be financially feasible in the long-term under an aging population in Viet Nam.

The paper is organized as follows. In section II, we will analyze the situation of the aging population and old-age poverty in Viet Nam in order to provide rationales for

[2] The minimum benefit level is considered as a baseline level for different types of beneficiaries. Depending on specific conditions, beneficiaries can receive an amount of money being equal to the baseline level multiplied by a specific factor.

expanding the current cash transfer program. In section III, we will review previous studies using *ex-ante* evaluation techniques to provide results on the potential impacts of cash transfers on elderly poverty reduction. Then, in Section IV, we will present data and methodology, in which we will describe poverty measurement and micro-simulation assumptions and procedures. The findings and policy implications will be discussed in Section V. The last section of the paper will provide concluding remarks.

2. Aging and Old-Age Poverty in Viet Nam

Over the past three decades, since Viet Nam started population and family planning policies aimed at reducing fertility rates, the Vietnamese population has changed substantially in terms of age structure, in which the elderly population has grown at the highest pace in comparison with other population groups in both absolute and relative terms (UNFPA Viet Nam, 2011). The recent population projections by GSO (2010b) indicate that the elderly population in Viet Nam will continue increasing in the coming decades, from about 9 percent of the total population in 2009 to 26 percent in 2050. Two of the most important issues of an aging population in Viet Nam include the growth of the 'oldest old' (Table 1) and the feminization of aging (Table 2).

Table 1. The Vietnamese Population: Rapid Growth of 'Oldest Old'

Age Group (% total population)	1979	1989	1999	2009	2019	2029	2039	2049
60-64	2.28	2.40	2.31	2.26	4.29	5.28	5.80	7.04
65-69	1.90	1.90	2.20	1.81	2.78	4.56	5.21	6.14
70-74	1.34	1.40	1.58	1.65	1.67	3.36	4.30	4.89
75-79	0.90	0.80	1.09	1.40	1.16	1.91	3.28	3.87
80+	0.54	0.70	0.93	1.47	1.48	1.55	2.78	4.16
Total	6.96	7.20	8.11	8.69	11.78	16.66	21.37	26.10

Source: Population and Housing Census 1979, 1989, 1999 and 2009; GSO (2010).

Table 2. Sex Ratio of the Old-Age Population in Viet Nam, 2009

Age Group	60-69	70-79	80+
Females per 100 males	131	149	200

Source: Population and Housing Census 2009.

Table 1 shows that the 'oldest old' group (80+) has increased significantly over time in terms of percentage of total population. The results from Table 2 indicate that when reaching a more advanced age, there are many more females than males, and widowhood and living-alone are more common for females than for males. These facts in turn require the government to address various issues related to aging and gender.

Moreover, the swift economic transformation since the *Doi moi* (renovation) programs in 1986 has had significant impacts on all areas of society, resulting in substantial improvements in living standards for many people, including the elderly. However, the benefits of such growth have not been shared equitably among population groups, resulting in a large number of elderly people being left behind in poor and vulnerable living conditions, as the majority of the Vietnamese elderly are still living in rural areas (Table 3), where economic development has always lagged behind that of urban areas due to low endowments (Gaiha and Thapa, 2007).

Table 3. Distribution of the Elderly Population in Viet Nam

	1992/93	1997/98	2002	2004	2006	2008
Rural	77.73	76.06	76.83	73.33	72.30	72.49
Urban	22.27	23.94	23.17	26.67	27.70	27.51

Source: VLSS 1992/93 and 1997/98; VHLSS 2002-2008.

Also, because of large flows of migration, Viet Nam has experienced a decreasing trend of households where the elderly are living with children, while experiencing an increasing trend of households with only elderly persons or of the elderly living alone (Table 4).

Table 4. Living Arrangements of the Vietnamese Elderly, 1992/93-2008

Year	1992/93	1997/98	2002	2004	2006	2008
With children	79.73	74.48	74.27	70.65	63.74	62.61
Living alone	3.47	4.93	5.29	5.62	5.91	6.14
Only elderly couple	9.48	12.73	12.48	14.41	20.88	21.47
With grand-children	0.68	0.74	0.82	1.09	1.16	1.41
Other	6.64	7.12	7.14	8.23	8.31	8.37
Total	100	100	100	100	100	100

Source: VLSS 1992/93 and 1997/98; VHLSS 2002-2008.

In addition, more than 70 percent of the elderly do not receive either a contributory pension or any social allowances (Tables 5 and 6). The results also show that more vulnerable groups, such as ethnic-minority and rural elderly citizens, generally have lower access than do their counterparts, especially to the contributory pension. Recent studies (see, for example, Evans *et al.*, 2007; UNFPA, 2011) show that elderly households' income sources are mostly from agricultural production, but this is increasingly prone to natural disasters and climate change.

Table 5. Percentage of the Elderly Receiving Pensions and Social Allowances, 2008

	Contributory Pensions	**Social Allowances (including cash transfers)**
All old-age	*21.9*	*18.5*
Age group		
60-69	25.8	15.6
70-79	18.8	16.2
80+	17.7	30.6
Ethnicity		
Kinh	23.3	19.1
Ethnic minorities	8.0	12.6
Poverty		
Non-Poor	24.5	18.5
Poor	4.8	18.0
Residence		
Rural	16.0	20.1
Urban	37.5	14.2
Region		
Red River Delta	38.9	22.4
Northeast	30.3	13.3
Northwest	20.5	16.2
North Central Coast	28.8	26.5
South Central Coast	7.6	19.2
Central Highlands	10.9	6.1
Southeast	15.5	13.8
Mekong River Delta	4.3	15.5

Source: Giang (2010), estimates from VHLSS 2008.

Table 6. Average Annual Benefits of Contributory Pension and Social Allowances for an Elderly Household, 2008

	Pensions (VND 1,000)	Pensions as a % of household per capita expenditure	Social allowances, including cash transfers (VND 1,000)	Social allowances as a % of household per-capita expenditure
All elderly	4957.2	16.56	954.5	5.47
Age group				
60-69	6119.7	18.94	922.2	4.70
70-79	4106.8	14.02	887.6	5.48
80+	3533.2	15.24	1172.4	7.52
Ethnicity				
Kinh	5354.7	17.82	998.1	5.63
Ethnic minorities	1043.1	4.13	525.3	3.88
Poverty				
Non-Poor	5635.1	18.26	1004.5	5.19
Poor	535.4	5.51	628.7	7.33
Residence				
Urban	10890.2	26.38	744.3	2.71
Rural	2706.1	12.84	1034.3	6.52
Region				
Red River Delta	9167.1	27.66	1032.2	6.20
Northeast	5881.4	23.43	711.5	3.93
Northwest	3369.5	11.37	379.2	2.28
North Central Coast	5930.3	27.53	1437.5	8.98
South Central Coast	2082.0	5.85	1223.8	8.92
Central Highlands	2549.8	9.81	373.2	0.78
Southeast	3840.6	8.63	718.9	2.63
Mekong River Delta	1129.2	3.15	811.6	4.32

Source: Giang (2010), estimates from VHLSS 2008.

Poverty incidence and vulnerability of the elderly are critical for some groups. Table 7 shows the variation of the official poverty line, which is measured by real per capita expenditure:[3] 50 percent of the official poverty line shows extreme poverty, from which it is very difficult to escape; 125 percent of the official poverty line shows near-poor status, in which people are not poor, but vulnerable to poverty; and 200 percent of the official poverty line shows non-poor status, in which people may never fall into

[3] In Vietnam, there are two poverty lines. The first line, namely 'food poverty line' defined by MoLISA, is measured by the annual amount of money required to purchase a 'typical' basket of food items which provides 2,100 calories. The second line, which is the 'official poverty line' defined by GSO, includes the purchase of the aforementioned basket of food items and the purchase of a 'minimal' amount of non-food items. In all social programs, the MoLISA poverty line is used. There are poverty lines for rural and urban areas: up to late 2009, VND 200,000 per capita income for rural and VND 260,000 per capita income for urban; in 2010 they were increased to VND 400,000 per capita income and VND 500,000 per capita income, respectively.

poverty. For any poverty line, the results generally show three critical trends: (i) the poverty rate increases as people get older; (ii) elderly females are always poorer than their male counterparts; and (iii) elderly people in rural areas and those from ethnic minorities are always poorer than their urban and Kinh (Vietnamese) counterparts.

In terms of age, the estimates show that, by all three poverty lines, the elderly at more advanced ages generally experienced higher poverty rates than did the younger elderly. Also, when the poverty line is changed, the elderly at more advanced ages would have larger changes in the poverty rate than would the younger elderly.

Table 7. Vulnerability to Poverty of the Vietnamese Elderly, 2008

Elderly Group	50% poverty line	Official (100%) poverty line	125% poverty line	200% poverty line
All elderly	*0.9*	*13.3*	*26.5*	*58.2*
By age				
60 – 69	0.6	10.2	22.8	54.9
70 – 79	1.1	16.3	29.3	60.5
80+	1.5	15.7	31.0	62.3
By gender				
Male	0.8	11.7	23.5	55.7
Female	1.0	14.4	28.7	59.9
Ethnicity				
Kinh (Vietnamese)	0.4	12.4	24.5	53.1
Ethnic minorities	6.9	43.2	63.8	78.7
Residential areas				
Rural	1.2	17.0	33.5	68.5
Urban	0.1	3.7	8.2	31.0
Living arrangements				
Alone	1.2	14.7	25.1	52.4
With children	0.9	14.4	26.0	57.8
Others	1.1	13.6	24.8	54.1

Source: Own estimates, using VHLSS 2008.

Regarding gender, elderly females had a higher poverty rate than did their male counterparts. Similarly, by all three poverty thresholds, elderly females would experience larger changes in poverty rates than would elderly males. In other words, elderly females were always more vulnerable to poverty than were their male counterparts.

The findings for Kinh and other ethnic minority elderly citizens show their substantial differences in poverty rates under four poverty lines. In general, ethnic

minority elderly people were much poorer and more vulnerable than Kinh elderly citizens. Similar results are found for the rural and urban elderly, in which the former had significantly higher poverty rates and were more vulnerable to poverty than the latter.

By living arrangements, the results show that, under the first two poverty lines, the elderly living alone had the highest poverty rates. However, under the other poverty lines, households where the elderly were living with children had the highest poverty rates, and this situation might be elucidated by the fact that larger households tend to have lower per-capita expenditure.

3. Cash Transfers and Old-Age Poverty Reduction: An Overview

Recently, numerous studies have indicated that cash transfers are playing an important role in reducing poverty for both the elderly and their families, as well as extending coverage of the social protection systems (see, for instance, HAI, 2006). While such *ex-post* evaluations are obviously important for discussing the advantages and drawbacks of the existing cash transfer programs, *ex-ante* evaluations are also equally important to understand the potential impacts of proposed schemes since they may help policy makers decide on key design elements of a cash transfer program, such as the order of magnitude of the necessary transfers to achieve the desired impacts, and the targeted areas and elderly groups. This section provides a brief overview of some relevant studies with a focus on analytical frameworks and main findings.

In a study on Greece, Matsaganis *et al.*, (2000) discuss the desirability and feasibility of a minimum guaranteed income scheme to protect the poor. Using data from the European Community Household Panel (ECHP) in 1994, the study estimates how poverty rates and other income inequality indices would have been changed if a minimum guaranteed income scheme was introduced in 2000. Different scenarios are assumed for different targeting levels and possible leakage rates. The findings show that extreme poverty rates would be reduced significantly in all policy settings if such a scheme were introduced. However, the study also emphasizes that dealing with

budgetary and administrative constraints is extremely important for the design and implementation of such a scheme.

Assessing the impacts of a universal income grant scheme on poverty reduction in South Africa, Bhorat (2003) uses data from the Income and Expenditure Survey 1999, namely IES 1999, which are simulated updates from those of the IES 1995 with a number of assumptions. Poverty rates are measured by the Foster-Greer-Thorbecke (FGT) index, in which household consumption is re-scaled according to the household living arrangements. The study makes simulations for different types of households and recipients under various benefit levels. Moreover, the study also estimates the minimum financial requirements of the program to reach certain poverty-reduction levels. For instance, the government needs to spend about 8.3 percent of total national budget expenditure in order to close the poverty gap completely.

For 15 African countries, Kakwani and Subbarao (2005) use household data to measure changes in poverty rates and the poverty gap if a social pension through cash transfer had been introduced in these countries. To do this, they classify household arrangements by different types, and then consider different targeting options, including such policies as universal provision, targeting all elderly people, and targeting the elderly who live alone. The simulated results provide not only the expected reductions in poverty rates, but also the required financial capacity to achieve such options. The study then makes simulations on the impacts of the scheme under a fixed budget constraint and benefit level. It shows quite different results for these countries, as they have very different economic, social, and demographic characteristics.

Similarly, with a set of 18 countries in Latin America and their household data, Dethier *et al.,* (2010) examine the impact of universal minimum old-age pensions on old-age poverty and the fiscal costs. Poverty incidence is measured by the poverty rate. The simulation results show that a universal minimum pension would substantially reduce poverty among the elderly in the countries where social pensions are absent, while the impacts would be small in the countries where minimum pension systems already exist and poverty rates are low, such as Argentina, Brazil, Chile and Uruguay. In general, such schemes have much to be commended in terms of incentives, spillover effects and administrative simplicity, but have a high fiscal cost.

For Viet Nam, Weeks *et al.*, (2004) use data from the Vietnam Living Standard Survey (VLSS) in 1997/98 with the prices in 1993 to estimate the potential costs for implementing a universal cash transfer program to all elderly citizens aged 65. Not including administrative costs, the estimated budgetary cost would have been 2.2 percent of GDP in 1998, if the benefit was equal to the poverty line. This study, however, did not discuss how the scheme would help to reduce the poverty rate and poverty gap for the elderly in Vietnam.

Giang and Pfau (2009a, b), using VHLSS 2004, estimate the impacts of various cash transfer programs on old-age poverty incidence in Viet Nam. They find that there will be a clear trade-off between total benefit costs and poverty reduction, and that a cash transfer program focusing on the rural elderly and targeting wider elderly groups will have the greatest potential to reduce old-age poverty.

This paper, with the most updated household survey data from 2008, aims to contribute another *ex-ante* evaluation of an expanded cash transfer program for the elderly by exploring different designs using age, benefits, budget scenarios, and targeting strategies.

4. Data and Methodology

4.1. Data

The main aims of this paper are to quantify the potential impacts on old-age poverty and the fiscal costs of expanding the cash transfer program to various groups of elderly Vietnamese. To pursue these research objectives, we will use the most recent Viet Nam Household Living Standard Survey from 2008 (namely, VHLSS 2008). This was one of the six household surveys in Viet Nam conducted by the General Statistics Office (GSO) since 1992 under the World Bank's Living Standard Measurement Surveys (LSMS).

The survey is conducted at household level, but includes a number of individual characteristics such as age, gender, relationship to the household head, marital status, work status, and educational attainment. Such data let us identify an elderly person (aged 60 and over) and an elderly household (which includes at least one elderly

person). The VHLSS 2008 surveyed 38,523 persons in 9,189 households. The number of elderly persons and households were 3,972 and 2,974, respectively. Of the elderly, by gender, 41.3 percent were males (1,641 persons) and 58.7 percent were females (2,331 persons); and by areas, 24.8 percent were living in urban areas (988 persons) and 75.2 percent were living in rural areas (2,984 persons).

At the household level, the survey provides information on the sources of income, household expenditure, and ownership of consumer durables, business and agricultural activities, poverty incidence, participation in poverty alleviation programs, social insurance, wealth, and housing conditions.

Nevertheless, the data have some critical limitations. Most of the income sources are only identified at the household level, so it is not clear which member is the source of household income. Similarly, expenditure is identified at household level and there are no equivalence scales for different household members, so we do not know who is spending, and can only identify expenditure per capita within the household. Wealth data are also available only at the household level, so it is difficult to analyze intra-household transfers.

4.2. Methodology

In this paper, we will apply static micro-simulation techniques with the aforementioned data. There are three steps in our analysis.

First, we will set up a number of cash transfer programs using different age thresholds and specific characteristics of the elderly, and then estimate their potential impacts on elderly poverty reduction and respective fiscal costs.

Second, at a fixed budget level, we will simulate a number of alternatives to look for the most effective scheme in terms of poverty reduction. We will use different poverty indicators to evaluate reduction magnitude.

Lastly, we will estimate the long-term fiscal costs of universal cash transfer programs, in which only age thresholds are considered for different simulations.

4.2.1. Poverty Measures

In this paper, poverty incidence is measured by poverty rate and poverty gap. The poverty rate represents the percentage of the population whose expenditure is below the

official poverty line. In 2008, the official poverty line was measured by per capita expenditure per year and was VND 3,360 thousand (or VND 280,000 [~ $US 15] per month).

The poverty gap indicates how much money is needed to close the gap between per capita expenditure and the official poverty line for each member of the population (it is zero for the non-poor). We must be clear that we define this as an absolute measure of income, so that Viet Nam's poverty gap would be defined as the total amount of money required to bring the expenditure of all poor people up to the poverty line.

We will apply these measures for directly (eligible) elderly recipients, the overall elderly population, and the total population of all ages.

4.2.2. Targeting Groups

In this paper, we will consider three targeted groups, which are chosen based on regulations in the current cash transfer program in Viet Nam, as well as the situation of the most vulnerable elderly groups (for instance, see Evans *et al.*, 2007; Giang and Pfau, 2009c). These groups are not chosen by means-testing of income or wealth because the administrative burden of such choices in Viet Nam would be extremely high.

Three groups are as follows:

(1) All elderly people (namely, **ALL**). This is a universal scheme.

(2) Only the elderly living in areas classified as rural (namely, **RUR**);

(3) Only elderly females (namely, **FEM**);

4.2.3. Measurements of Potential Impacts

First, given conditions and targeting strategies as well as data structure of 2008, we will calculate how the poverty rate of the elderly would have been changed (in percentage terms) if different choices for the current cash transfer program had been implemented in Viet Nam. In general, the higher the percentage change, the more effective the scheme would be. The poverty reduction effects with the introduction of cash transfers (CT) are computed as follow:

*Poverty rate (PR) reduction effect = [(pre-CT PR – post-CT PR)/pre-CT PR]*100 (%)* ---- (1)

*Poverty gap (PG) reduction effect = [(pre-CT PG – post-CT PG)/pre-CT PG]*100 (%)* --- (2)

Second, we will also provide information on the distribution of the elderly population within different poverty ratios, which are measured by the ratios between their per capita expenditure and the poverty line. The results will show the percentage of the elderly who would move out of different poverty thresholds.

Lastly, we will calculate Gini coefficients, so as to see how the proposed cash transfer programs would help to reduce inequality in terms of per-capita expenditure.

4.2.4. Main Assumptions

We use the VHLSS 2008 data to simulate a counterfactual situation in which the current cash transfer program for the elderly in Viet Nam would be expanded to various elderly groups as indicated above. There are four main assumptions for such simulation exercises.

First, for the baseline case, we assume that the benefit level is equal to 50 percent of the official poverty line. This amount was equal to VND 1,680 thousand per year [or US$ 90 per year], equivalent to 9.3 percent of GDP per capita in 2008.

Second, we assume that the benefits will be added to their household's total expenditure, and then divided equally among each member of the elderly household. This is a necessary assumption, because we are unable to account for differentiated individual expenditure within the household due to data limitation as discussed above. Under this assumption, the simulated cash transfer programs would reduce poverty for various groups, including the elderly poor, the elderly non-poor, the non-elderly poor, and the non-poor non-elderly. In other words, the leakage rate would be expected to be high in some cases.

Third, we assume that only benefit levels and age thresholds would be changed to match given fiscal costs, while other factors will remain the same. For instance, provided with benefits, the elderly and their family members will not change behavior such as the supply of labor and consumption styles. Also, there will be no macroeconomic feedback due to the expansion of the cash transfer program, because the government needs to increase social expenditure for the program.

Obviously, these aforementioned assumptions are strong, and thus there would be potential biases in estimation. As such, policy implications need to be thoroughly considered.

4.2.5. Simulating Fiscal Costs of a Universal Cash Transfer Program for the Elderly

To estimate fiscal costs of a universal cash transfer program for the elderly in Viet Nam, we will use age as a key variable, meaning that we will set different minimum eligible ages for the cash transfer program regardless of the specific characteristics of elderly recipients. We will use the method discussed in Willmore (2007), which includes only costs for paying benefits, and excludes administrative costs. In detail, suppose that the number of eligible elderly people accounts for *e* percent of the total population, and the benefit provided to each person is equal to *b* percent of GDP per capita. The total fiscal costs excluding administrative costs will be *t* percent of GDP, in which $t=e*b$. This calculation implies that the benefit is not linked to the official poverty line, which grows with inflation rather than GDP. Also, an increased number of eligible elderly recipients or higher benefit levels means higher fiscal costs. We will use the population projections by GSO (2010b) for the estimated elderly population.

5. Simulation Results and Policy Discussion

5.1. Potential Impacts of the Expanded Cash Transfer Programs on Old-Age Poverty

We now consider the potential impacts and fiscal costs of different cash transfer programs on old-age poverty in Viet Nam, given two important baselines: (i) age will be considered at four thresholds, i.e. 60 and over (or all elderly persons); 65 and over; 70 and over; and 75 and over; and (ii) three categorical elderly groups, i.e., ALL, RUR, and FEM.

Table 8 presents our estimates. It is crucial to note that these estimates are not comparable because each program focuses on a specific elderly group at a certain age threshold.

Table 8. Impacts on the Recipients' Poverty Rate and Fiscal Costs

Age \ Category	ALL (All elderly)	RUR (Only rural elderly)	FEM (Only female elderly)
60 and over			
Benefit as % of GDP per capita	9.3	9.3	9.3
Beneficiaries as % of total population	10.38	7.80	6.09
Fiscal costs as % of GDP 2008	0.965	0.725	0.567
Fiscal costs (VND billion)	14,330	10,777	8,420
- Pre- (%)	13.28	16.43	13.88
- Post- (%)	6.19	7.96	7.26
- Change (%)	-53.4	-51.6	-47.7
65 and over			
Benefit as % of GDP per capita	9.3	9.3	9.3
Beneficiaries as % of total population	7.70	5.88	4.62
Fiscal costs as % of GDP 2008	0.680	0.547	0.430
Fiscal costs (VND billion)	10,098	8,121	6,389
- Pre- (%)	13.90	17.54	15.27
- Post- (%)	6.61	8.35	7.95
- Change (%)	-52.4	-52.4	-47.9
70 and over			
Benefit as % of GDP per capita	9.3	9.3	9.3
Beneficiaries as % of total population	5.03	3.82	3.07
Fiscal costs as % of GDP 2008	0.468	0.355	0.286
Fiscal costs (VND billion)	6,946	5,278	4,252
- Pre- (%)	15.65	19.76	16.82
- Post- (%)	7.49	9.40	8.60
- Change (%)	-52.1	-52.4	-48.9
75 and over			
Benefit as % of GDP per capita	9.3	9.3	9.3
Beneficiaries as % of total population	3.1	2.40	1.95
Fiscal costs as % of GDP 2008	0.288	0.223	0.181
Fiscal costs (VND billion)	4,277	3,315	2,690
- Pre- (%)	16.36	20.15	17.54
- Post- (%)	8.64	10.58	9.98
- Change (%)	-47.2	-47.5	-43.1

Note: GDP in 2008 was VND 1,485,038 billion.
Source: Own estimates, using VHLSS 2008.

In general, given the same benefit level provided to all specific groups of the elderly, the fiscal cost would be higher for the cash transfer program covering more of the elderly. In the same category, however, the results clearly show that higher fiscal costs would bring greater impacts on poverty reduction. For instance, the program covering all elderly people would cost 0.965 percent of GDP in 2008 and reduce the poverty rate from 13.28 percent to 6.19 percent (or a 53.4 percent reduction), but the program covering all elderly people aged 70 and over would cost 0.468 percent of GDP in 2008, but only reduce the poverty rate from 15.65 percent to 7.49 percent (or a 52.1 percent reduction).

To explore how the proposed cash transfer programs would impact the poverty incidence of other groups of people rather than only the elderly, Table 9 provides the simulation results for a universal program (providing benefits to the entire elderly population), in which impacts on poverty reduction are presented for the directly (eligible) elderly; the total elderly population; and the non-elderly population.

Table 9. Impacts on Poverty of Other Groups of People

Age \ Category	ALL (All elderly)	RUR (Only rural elderly)	FEM (Only female elderly)
Spending			
Fiscal costs (VND billion)	14,330	10,777	8,420
As % of GDP 2008	0.965	0.725	0.567
- % spent by direct recipients	49.33	52.27	34.88
- % spent by elderly	49.33	52.27	45.95
- % spent by non-elderly	50.67	47.73	54.05
Direct recipients			
- Pre- (%)	13.28	16.43	13.88
- Post- (%)	6.19	7.96	7.26
- Change (%)	-53.4	-51.6	-47.7
Elderly			
- Pre- (%)	13.28	13.28	13.28
- Post- (%)	6.19	7.34	8.55
- Change (%)	-53.4	-44.7	-35.61
Non-elderly			
- Pre- (%)	14.2	18.4	14.6
- Post- (%)	13.1	17.1	13.5
- Change (%)	-7.75	-7.07	-7.53

Source: Own estimates, using VHLSS 2008.

In terms of spending, the results in Table 9 show a high leakage rate of all proposed cash transfer programs. For instance, in the program for elderly females, only 34.88 percent of the total fiscal costs would be spent by female direct recipients, while 45.95 percent and 54.05 percent would be spent by the entire elderly population and non-elderly population, respectively. A part of these findings can be elucidated by our second assumption for simulation, i.e., benefits for an elderly recipient would be shared with his/ her household members.

Another interesting result is that the potential impacts on poverty reduction would be higher if the program had a higher coverage. For example, throughout the simulation results with different groups of people, ALL would always have the highest rate of poverty reduction, while FEM would have the lowest rate of poverty reduction. It

should be noted, however, that such poverty reduction would be a trade-off with higher fiscal costs.

Given limited government revenue, we now consider all possible alternatives to a cash transfer program for the elderly in Viet Nam. These alternatives would have the same fiscal cost, which is about 0.75 percent of 2008 GDP – a middle level of three micro-simulation cases. We will vary eligible ages (from 60 to 90 years old) and benefit levels (from 20 percent to 200 percent of the poverty line) to find these alternatives. The simulation results are presented in Table 10, but only the programs with the highest impacts on the reduction of the poverty rate are listed.

Table 10. Optimal cash transfer programs with the same benefit costs of 0.75 percent of 2008 GDP

Cat.	Starting age	Beneficiaries as % of total population	Benefit level as % of poverty line	Benefit level as % of GDP per capita	% change in poverty gap for the elderly population
RUR	61	7.35	54.86	10.20	-58.29
RUR	64	6.22	64.78	12.05	-52.34
RUR	67	5.23	77.10	14.34	-46.38
RUR	71	3.82	105.53	19.63	-42.73
RUR	76	2.43	165.91	30.86	-35.53

Source: Own calculations, using VHLSS 2008.

With the same total fiscal costs, Table 10 provides two interesting findings and policy implications.

First, only programs for the rural elderly (RUR) would be selected from simulation processes with different age thresholds and benefit levels. For instance, at the same fiscal costs of 0.75 percent of GDP in 2008, we would be able to choose either a program providing a benefit equal to 54.86 percent of the official poverty line (or 10.20 percent of GDP per capita) to all elderly people aged 61 and over living in rural areas or a program also for the rural elderly providing a benefit equal to 77.10 percent of the official poverty line (or 14.34 percent of GDP per capita) to all elderly people aged 67 and over, and so on.

Second, in terms of reduction in the poverty rate for the entire elderly population, the results show that higher poverty reduction would occur in the program with lower starting eligible ages and lower benefit levels. For example, the poverty rate would be

reduced by 58.29 percent in the program providing a benefit equal to 54.86 percent of the official poverty line (or 10.20 percent of GDP per capita) to all rural elderly people aged 61 and over, while such a reduction would be only 35.53 percent in the program providing a very high benefit equal to 165.91 percent of the official poverty line (or 30.86 percent of GDP per capita) to all rural elderly people aged 76 and over. These findings recommend that, *given the same fiscal costs, programs with a lower age of eligibility and benefit levels would be more influential in poverty reduction than programs with a higher age of eligibility and benefit levels.*

Table 11 provides the simulation results for (i) Gini coefficients, which are measured by per capita expenditure, and (ii) poverty ratios, which are calculated according to the ratio between per capita expenditure and the official poverty line. In general, the results indicate that, though the impact magnitudes would be different, all proposed cash transfer programs would be able to reduce expenditure inequality for the elderly population in particular and the Vietnamese population in general. For instance, a universal program would reduce the Gini coefficient for elderly people from 0.359 to 0.330; and for the whole Vietnamese population from 0.352 to 0.345.

Notable findings on the poverty ratios for the elderly are also presented in Table 11. Though the potentials of the proposed cash transfer programs would obviously be different, the results show that all the programs in consideration would be able to lift a proportion of the elderly population out of poverty. For instance, about 10.9 percent of the elderly population were living in near-poor range (100% to 125% of the official poverty line), but this number would be reduced to 7.4 percent if a universal cash transfer program had been introduced in 2008. At the same time, the percentage of the elderly living under the official poverty line would have been reduced substantially from 12.1 percent to 6.1 percent; and the percentage of the elderly living above 200% of the official poverty line would have increased from 44.9 percent to 54.1 percent.

Table 11. Potential Impacts on Equality and Poverty Distribution

Indicators	Pre-program	Post-program			
		60+	65+	70+	75+
Group	***Gini coefficient***				
Total population	0.352	0.345	0.346	0.348	0.349
Elderly	0.359	0.330	0.331	0.341	0.347
Poverty ratios	***Percentage of the elderly population***				
0% - 50%	0.8	0.08	0.1	0.3	0.4
50% - 100%	12.5	6.1	6.6	7.9	9.6
100% - 125%	10.9	7.4	7.9	9.7	9.9
125% - 200%	31.3	32.3	32.5	32.8	33.1
> 200%	44.9	54.1	52.9	49.3	47.0

Source: Own calculations, using VHLSS 2008.

5.2. The Long-term Fiscal Costs of Universal Cash Transfer Programs

As indicated in a number of studies on cash transfer programs, such as UN-DESA (2007), the crucial issue for any developing country is whether the fiscal costs would be affordable. This question is important in the case of Viet Nam as well. To do this, given the aforementioned calculation method adopted from Willmore (2007), we will use the population projection results from GSO (2010b). The period for our fiscal cost simulation is 2009-2049. The elderly population is disaggregated into four 5-year age groups as presented in Table 2. Using these four age thresholds, the simulation results for four universal cash transfer programs are provided in Table 12.

Suppose that we will provide the same benefit as in 2008 (i.e., 50 percent of the official poverty line), which was about 9.3 percent of GDP per capita, to all elderly people in four cash transfer programs according to four age thresholds. As the Vietnamese population ages, more elderly people would be beneficiaries of the cash transfer program, and therefore the fiscal costs would be higher. Table 12 shows, however, that the highest fiscal costs for a universal cash transfer program covering all elderly people would be as high as 2.43 percent of GDP in 2049. Such a finding is in line with the simulation results for many other developing countries in UN-DESA (2007).

Table 12. Fiscal Costs for Universal Cash Transfer Programs, 2009-2049

Year	2009	2019	2029	2039	2049
Providing benefits to all elderly (aged 60 and over)					
Eligible Population (as % of total population)	8.68	11.37	16.66	21.37	26.10
Benefit (as % GDP per capita)	9.3	9.3	9.3	9.3	9.3
Fiscal Cost (as % of GDP)	0.81	1.06	1.55	1.99	2.43
Providing benefits to all elderly aged 65 and over					
Eligible Population (as % of total population)	6.42	7.08	11.38	15.56	19.06
Benefit (% GDP per capita)	9.3	9.3	9.3	9.3	9.3
Fiscal Cost (as % of GDP)	0.60	0.66	1.06	1.45	1.77
Providing benefits to all elderly aged 70 and over					
Eligible Population (as % of total population)	4.61	4.30	6.82	10.36	12.92
Benefit (% GDP per capita)	9.3	9.3	9.3	9.3	9.3
Fiscal Cost (as % of GDP)	0.43	0.40	0.63	0.96	1.20
Providing benefits to all elderly aged 75 and over					
Eligible Population (as % of total population)	2.97	2.63	3.46	6.06	8.03
Benefit (% GDP per capita)	9.3	9.3	9.3	9.3	9.3
Fiscal Cost (as % of GDP)	0.28	0.25	0.32	0.56	0.75

Source: Own calculations, using data from GSO (2010b).

Notes: fiscal costs are for benefit payments only, and exclude administrative and other related costs.

6. Concluding Remarks

Using VHLSS 2008 with micro-simulation techniques, this paper generally found that a cash transfer program would be able to significantly reduce old-age poverty in Viet Nam, both in terms of the poverty rate and the poverty gap. The simulation results indicate that a cash transfer being prioritized for the rural elderly would be the most effective in terms of poverty reduction, given the small fiscal costs. Moreover, programs providing lower benefits to a wider group of beneficiaries would be more effective in poverty reduction than programs providing higher benefits to a limited number of beneficiaries. Our simulation results also argued that it would be financially affordable for Vietnam to expand the current cash transfer program to wider groups of the elderly, which in turn would help to reduce poverty and vulnerability of the elderly.

From the experiences of Vietnam, there are some lessons for other developing Asian countries in considering social pensions for older people. First, a universal social pension can work in low-income countries. Given limited funding, targeting the most vulnerable groups, such as rural older people, would help reduce the incidence of

poverty among older people substantially. Such a scheme would also fill the gap to put in place a comprehensive social protection system aimed at protecting all citizens. Second, in countries where the incidence of poverty among older people is a significant issue, a universal social pension scheme providing low benefits to a large number of beneficiaries would be more beneficial in terms of poverty reduction than a universal social pension scheme providing high benefits to a small number of beneficiaries. Third, aging and older people should not be ignored in any development strategies. Cash transfers are not the sole solution for fighting poverty among older people, and should be considered merely as an instrument to help reduce poverty. It is necessary to prepare well for an aging population from now by promoting education and health for the youth, which in turn will guarantee older, healthier, and wealthier nations.

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CHAPTER 2

Design Features of the Conditional Cash Transfer Programme in Cambodia: Impacts on Income Distribution and Poverty

VATHANA SANN
Council for Agricultural and Rural Development, Social Protection Coordination Unit, Cambodia (CARD-SPCU)

SOTHEA OUM
Economic Research Institute for ASEAN and East-Asia (ERIA)

The objective of this paper is to present the complexities of designing the pilot CCT (Conditional Cash Transfer) scheme in Cambodia, focusing on the benefit level, potential selected beneficiaries, and tentative costing in different scenarios. The four potential beneficiaries for this paper are selected to address gaps in health, nutrition, and education. They are: pregnant woman, infants (< 2 years old), children of primary-school-age, and those of secondary school-age. If proven effective, targeted cash transfer programs linked to education and health should be integrated, or at least harmonized. High impacts on poverty rate are projected, mainly if transfers are directed to rural areas. The poverty rate in rural areas is expected to be reduced from 28.13% in the base year 2010 to 27.10% in the CCT scheme for pregnant women, to 25.54% for infants, to 22.68% for primary school children, and to 24.20% for secondary school children. The total impact on rural poverty is a 13 percentage point reduction in the rural poverty rate from the base year (from 28.13 to 15.13%). The proposed CCT scheme, especially if targeted at the poor population, is estimated to reduce the Gini-coefficient at the national level from 0.4191 to 0.3933. An annual budget of 0.95% of GDP for all four scenarios is required to make this a reality (or 0.88% of GDP if limited to only targeted poor beneficiaries in rural areas). The total government budget for social sector ministries increased by 0.8 percentage points between 2006 and 2010, to 3.9% of gross domestic product (GDP). Given this trend of increasing social budget as share of GDP, it is secured that the proposed CCT scheme, at 0.88%, is in line with the government's spending capacity.

Keywords: *Cambodian Millennium Development Goal, National Social Protection Strategy, Conditional Cash Transfer, Potential Beneficiaries*

1. Introduction

The main rationale behind the Cambodian National Social Protection Strategy for the Poor and Vulnerable (NSPS) is the need to accelerate progress towards the Cambodian Millennium Development Goals (CMDGs). Achievement of the CMDGs has been further delayed by the recent food, fuel and financial crises, which have had a negative impact on the poor and widened social disparities. The NSPS outlines short- and medium-term provision of response measures to address the consequences of shocks confronting Cambodian citizens, and also provides a long-term framework for a comprehensive social protection system to contribute to the sustainable reduction of poverty over time (RGC, 2011). In the short and medium term, then, the NSPS prioritises the development of effective and sustainable social safety nets targeted at the poor and vulnerable, with complementary social welfare services for special vulnerable groups. Under this goal, the NSPS has the following objectives: (i) the poor and vulnerable receive support including food, sanitation, water and shelter, to meet their basic needs in times of emergency and crisis; (ii) poor and vulnerable children and mothers benefit from social safety nets to reduce poverty and food insecurity and enhance the development of human capital by improving nutrition, maternal and child health, promoting education and eliminating child labour, especially its worst forms; (iii) the working-age poor and vulnerable benefit from work opportunities to secure income, food and livelihoods, while contributing to the creation of sustainable physical and social infrastructure assets; (iv) the poor and vulnerable have effective access to affordable, quality health care and financial protection in case of illness; and (v) special vulnerable groups, including orphans, the elderly, single women with children, people living with disabilities, people living with HIV, and TB patients and those with other chronic illness, receive income, in-kind and psycho-social support and adequate social care.

Achievement of these objectives requires a mix of programmes that cover both chronic and transient poverty as well as hunger, and also promote human capital development. Addressing major sources of vulnerability will take priority, while simultaneously building the foundations of an effective safety-net system that can be

developed further. Given these priorities, CCT is one of the preferred instruments for short- and medium-term implementation: Cash and in-kind transfers and fee exemptions (as already being applied in health and education, with new cash-transfer programmes to address high levels of malnutrition and the worst forms of child labour).

Besides presenting the complexities of designing the CCT pilot scheme as an integral part of NSPS (where a coordination mechanism is central), this paper will point out the design features of CCT, focusing on the benefit level, targeting mechanism, and potential selected beneficiaries. Moreover, this paper will project tentative costing in different scenarios (level of coverage, geographical segment of the poor, and level of benefit). Scenarios of CCT schemes for selected beneficiaries are proposed and the impact of these proposed schemes on selected indicators in comparison with the international experience is presented.

This paper is organised into four main parts beginning with a review of vulnerability profiles and the reasons for determining the potential beneficiaries for the proposed CCT schemes and literature review in Section 2, followed by the presentation of data and programme type for the design of features of the CCT scheme in Section 3. The impact of CCT on income distribution and poverty, with referencing to other international experience, is elaborated in Section 4, while costing for each scenario is presented in Section 5.

2. Vulnerability Profile and Literature Review

2. 1. Vulnerability Profile

Infants and children constitute over a third of the Cambodian population. More than 1.7 million children aged below 18 were income poor in 2004 (2004 CSES by NIS, 2004) and 40% live in poverty, suffer high rates of malnutrition and child mortality and thus have low levels of educational achievement. In recent years, the child mortality situation has improved substantially, but there are still wide regional variations that need to be addressed. It is estimated that child poverty is higher among the younger age groups and reduces as age increases. However, small children (up to five years old) are

currently not targeted by social protection, except if they are beneficiaries of health protection through the Health Equity Funds (HEFs) and to some extent through interventions focusing on early childhood development (ECD). According to the Cambodia Demographic and Health Survey (CDHS) of 2005 (NIPH, NIS and ORC Macro, 2006), 64% of children in Cambodia face deprivation in at least two areas of wellbeing (food, health, education, information, water and sanitation, and shelter).

Girls and women of reproductive age (15-49) are also vulnerable, despite progress in advancing gender equality and opportunities for women in Cambodia. Women have particular vulnerabilities arising from their health needs: maternal mortality remains unacceptably high; women make up a bigger proportion of HIV-infected adults than in the past (52% in 2009 versus 38% in 1997)[1]; their low nutritional status is a growing concern; and the overall number of women reporting constraints in accessing health care remains high[2].

2. 2. Constraint to Human Capital Development

2.2.1. Access to Quality Education

Poor access to quality education is a source of vulnerability for young Cambodians. A lack of basic school facilities, a shortage of textbooks and inadequate supply of (trained) teachers are key constraints. According to MoEYS (2010), Cambodia particularly suffers from a shortage of teachers in primary and secondary education (49 and 26 students per teacher, respectively). Low educational outcomes remain a concern, with particular challenges in writing and mathematics. Dropout rates are high: although enrolment rates are as high as 82% in primary school, they decrease sharply to 29% in lower secondary, down to 13% in upper secondary school. Children in rural areas are more than two times less likely to continue to lower secondary than children in Phnom Penh (25% of the former versus 61% of the latter).

Increasing the attainment of schooling, especially among girls, is a challenge in much of the developing world. Nonetheless, over 180 governments have adopted

[1] Of all new infections among women, two-thirds will be among non-sex workers or women at "low risk".

[2] In 2005, 89% of women reported at least one problem in accessing health care. Getting money for treatment remains the main one, followed by the concern that no provider or drugs are available, and not wanting to go to health services alone (NIPH, NIS and ORC Macro, 2006).

universal primary education and gender parity in schooling as Millennium Development Goals. These commitments notwithstanding, there is surprisingly little evidence on policies and programs that effectively raise school attainment, including for girls. Most Cambodian children undertake some schooling, but a large share complete only very few grades. According to the 2000 Demographic and Health Survey (NIPH, NIS and ORC Macro. 2001), 85% of 15 to 19 year olds had completed grade 1 while only 27% had completed grade 7, the first year of lower secondary. These percentages are lower in rural areas, 83 and 21 respectively, and lower still for rural girls, at 78% and 17% respectively. To address these problems, the Cambodian government has initiated a series of reforms in the education sector, including scholarship programs for students from disadvantaged backgrounds.

2.2.2. Access to Quality Health Care

Access to quality health care is limited for the poor, owing to factors such as distance from health facilities, difficult and expensive transport, lack of qualified health staff in remote facilities, lack of drugs and equipment, limited opening hours of health facilities and negative attitudes of health staff. Serious outcomes of poor access to quality health care are persistently high maternal and under-five mortality rates. Maternal mortality, at 461 per 100,000 births, remains highly worrying. Only 63% of births were attended by trained birth attendants in 2009, even though this represented a significant increase from 22% in 2003 (MoH, 2010). Under-five mortality is estimated to be at 83 per 1,000 children in this age range, with children in the poorest quintile almost three times more likely to die before the age of five than those in the highest wealth quintile.

Cambodians experience high costs of access to, and utilisation of, essential health care services. Total annual health expenditure is about US$40 per capita, of which around 60% is individuals' out-of-pocket spending. The Health Financing Charter (HFC), introduced in 1996, regulates the application of user fees at government health facilities. Its purpose was both to ensure uniform application of user fees and to provide an income for health facilities. The HFC also sanctioned a fee exemption system for those too poor to pay for health care, to enable them to receive care at government

facilities for free, when needed. In practice, the exemption system covers fewer than half of those considered too poor to pay for services.

2.2.3. Malnutrition and Maternal Mortality as Major Challenges

Chronic and acute malnutrition remains high in Cambodia, particularly among infants and young children. Malnutrition is caused by inadequate feeding practices, high levels of infectious disease and inability to access and afford nutritious food. Despite efforts to address the underlying causes of malnutrition, the proportions of thin (8.9%), short (39.5%) and underweight (28.8%) children remain high (Table 1). Despite improvements between 2000 and 2005, chronic malnutrition rates have since stagnated; acute malnutrition saw an increase between 2007 and 2008, possibly as a result of the 2007-2008 food price crises (CAS 2008 by NIS 2008).

Table 1. Nutritional Status of Children under 5 of Age in Selected Asian Countries

Country	Underweight	Thin	Short	Year
India	43.5	20	47.9	2005/6
Lao	31.6	7.3	47.6	2006
Myanmar	29.6	10.7	40.6	2003
Cambodia	28.8	8.9	39.5	2008
Philippines	20.7	6	33.8	2003
Indonesia	19.6	14.8	40.1	2007
Papua New Guinea	18.1	4.4	43.9	2005
Thailand	7	4.7	15.7	2005/6

Note: With the exception of Cambodia, all data taken from the WHO Global Database on Child Growth and Malnutrition on 13th August, 2009.

In addition to malnutrition, Maternal Mortality Rates (MMR) are also high in Cambodia compared to the East Asian average (Table 2). While there have been significant improvements, it remains a challenge; only 58 % of births were attended by trained birth attendants in 2008, which did, however, represent a significant increase from 32% in 2000. Women frequently skip antenatal and postnatal check-ups due to their precarious employment and income situation, coupled with an absence of effective social protection coverage for them (CARD and WB, 2010).

Table 2. MMR in the East Asia and the Pacific Region.

Country	MMR per 100,000 Live-Born	Uncertainty Range (Estimate)
Cambodia	540	370-720
China	45	30-60
DR Korea	370	110-1200
Fiji	210	55-720
Indonesia	420	240-600
Lao PDR	660	190-1600
Malaysia	62	41-82
Myanmar	380	260-510
Papa New Guinea	470	130-1300
Philippines	230	60-700
Republic of Korea	14	14-27
Vietnam	150	40-560

Source: Maternal mortality in 2005. Estimates developed by WHO, UNICEF, UNFPA, World Bank. WHO (2008).

Various factors explain high levels of MMR: only 58% of women have access to a skilled birth attendant; 57% of pregnant women have anemia; emergency obstetrics and newborn care (EmONC) is inaccessible, with the Cesarean Section rate below 1%t against the minimum recommended 5%; and inadequate family practices during pregnancy and childbirth such as the use of traditional birth attendants and unclean cord care. There are also considerable financial barriers to the use of health services, with out-of-pocket expenditure representing about 70% of total per capita health spending. The greatest inequalities are in access to delivery care: women from the richest quintile are 10 times more likely to have a facility-based delivery (67.4 %) than those from the poorest quintile (6.5 %). There is also an issue of lack of post-natal service provision. These adverse factors, for both pregnant women and new mothers, compound the threat to newborn survival.

2.2.4. International Experiences of Impact of CCT Programs on Human Development

On average, CCT programs have been found to have a strong impact on human development indicators (although in health the impact varies quite significantly across programs, as it depends on additional factors such as quality of service delivery and how severe children's health outcomes are). Table 3 summarizes selected evidence presented in Fiszbein and Schady (2009).

All reviewed CCT programs have had an impact on school enrolment, while impact on health outcomes is more heterogeneous. Mexico's *Oportunidades* has had an

estimated impact on child height of approximately 1 cm, but only for children between 12 and 36 months of age. In Colombia's *Familias en Acción*, Attanasio *et al.,* (2005) found that the Z scores of children covered by the scheme who were younger than two years of age improved by 0.16 points with the program, but there was no statistically significant impact on older children. In contrast, Brazil's *Bolsa Alimentação* appears to have had a negative impact on weight for age and a borderline significant negative effect on height for age (Morris *et al.*, 2004).

Table 3. Impact of CCT programs on human development indicators

Program	School Enrolment		Growth monitoring		
	Age range	Impact (%)	Outcome	Age (months)	Impact
Chile Solidario **(Chile)**	6-15	7.5	n/a		
Familias en Acción **(Colombia)**	8-13 14-17	2.1 5.6	Height-for-age Z score	<24 24-48 >48	**0.161** 0.011 0.012
Oportunidades **(Mexico)**	Grades 0-5 Grade 6 Grades 7-9	1.9 8.7 0.6	Height (cm) Change in height (cm)	12-36 4-12 12-36 36-48	**0.959** 0.503 **1.016** –0.349
Red de Protección Social **(Nicaragua)**	7-13	12.8	Height-for-age Z score	<60	**0.17**
Bolsa Escola/Bolsa Alimentação **(Brazil)**	10-15	3	Height for-age Z score	<24 24-48 49-83	–0.110 –0.190 –0.040

Source: Fiszbein and Schady (2009).
Note: Significant estimates are in bold. Results must be interpreted with caution owing to the methodological limits of the study.

There is strong evidence showing that failure of nutrition interventions can be related to both poor quality of services, and to people who have little incentive to attend health care visits, follow training courses, and use supplied micro-nutrients appropriately. Some studies have also estimated the impact of CCT schemes on children's haemoglobin levels and anaemia. Gertler (2004) estimates that, in Mexico's *Oportunidades*, CCT-covered children were 26% less likely to be anaemic after the first year than those not exposed to the program. Other studies have also found impacts on infant mortality (Barham, 2005, Mexico), infant and maternal mortality, children's self-reported illnesses (Gertler, 2004, Mexico) and diarrhoea incidence among children aged 48 months or younger in rural areas (Attanasio *et al.*, 2005, Colombia).

Most evaluations suggest positive program impacts on health centre visits by children. Maluccio and Flores (2005), for instance, estimate that the *Red de Protección Social* in Nicaragua had resulted in a 13 percentage-point increase in the probability that a child aged 0-3 had been taken to a health centre and weighed in the past six months. Attanasio *et al.* (2005) report even larger effects for the *Familias en Acción* program in Colombia: the study finds a 22 percentage-point increase in the probability that a child aged 0-1 had been taken to growth and developing monitoring, 33 percentage points for children aged 2-4 and 1.5 percentage points for children aged 4 years old and above. Only in a few countries (Chile and Mexico) does there appear not to be significant impacts of CCT programs on preventive health care usage, partly because of already relatively high usage of services (Fiszbein and Schady, 2009*).* Moreover, CCT schemes have been used widely to increase the frequency of preventive visits and address malnutrition. Although effectiveness varies across programs, some have achieved positive impacts. In Mexico, preventive visits increased from 16 to 18 % in communities covered by *Oportunidades*, the national CCT program. Similarly, growth monitoring in communities which received CCTs increased by 20 percentage points in Honduras, and from 23 to 33 percentage points in Colombia, where the program also reduced stunting among children younger than two years of age by 6.9 %.

3. Data and Programme Type

CCT programs require the same systems as other transfer programs: at minimum, a means to establish the eligibility of clients and enrol them in the program, a mechanism to pay their benefits, and preferably strong monitoring and evaluation systems. This section aims at outlining in broad terms how a cash-based incentives program that targets education, malnutrition and MMR could work, and highlights key points that should be thought through when implementing a cash-transfer program. The section should be used as a basis to stimulate discussions, rather than be seen as a definitive proposal: many features will evolve during discussions with key stakeholders, and more analyses would have to be performed before initiating program implementation.

3.1. Overall Program Design

The short and medium term NSPS identified the potential for piloting a cash transfer program targeted at poor pregnant mothers and poor families with young children. Such a program would fulfil the dual objective of alleviating chronic poverty and promoting human capital. Table 4 below summaries the proposed approaches for CCT programmes to be piloted in Cambodia based on the measurements used to address life cycle risks. Consultations held in October 2009 suggested that the program could be integrated into the existing national policy framework on maternal and child health and would be part of an early childhood development approach that aims to improve, among others, child health, development outcomes and readiness for school.

Table 4. Proposed Scheme of Cash Transfer Programme

No	Proposed CCT	Vulnerable Group	De-selecting Criteria
1	Cash transfer for targeted poor household	Poor families	Too general, specific objective is to be defined. Working-age poor can be covered by other types of social protection programs
2	Cash transfer for eliminating the worst form of child labour	Child labour (1-15 year)	Can be combined with the education improvement programme, narrow targeted group
3	Scholarship for poor children	School age (6-15)	On-going, impact assessment is needed
4	Cash transfer for infant nutritional improvement	Infant (< 2 years)	Can be combined with intervention on pregnant women and mothers
5	Cash transfer for maternal health and nutritional improvement	Pregnant woman	
6	Cash transfer for elderly, people with disability, and most vulnerable groups	Elderly (> 65 year)	Need more evidence and consultation

Source: Authors' own design.

If well implemented, a cash transfer program could be expanded to become one of the core pillars of support for the poor and vulnerable. Once an effective cash transfer program is in place and the poor have been identified, it would be easy to expand it to cover additional poor beneficiaries, such as the disabled or the elderly poor. Such an expanded cash transfer program, covering various categories of beneficiaries, could become one of the core pillars of support for the poor and vulnerable (CARD and WB, 2010).

If proven effective, targeted cash transfer programs linked to education and health should be integrated, or at least harmonized. In the short term, cash transfers linked to education and health need to be piloted and implemented independently, so as to limit capacity requirements, enable better measurement of effectiveness and identify gaps and challenges. In the medium term, however, keeping such programs separated may lead to inefficient outcomes linked to households' double dipping, potential tensions over budget allocations and separate administrations with similar purposes. Following international best practices, it is advisable that, if successful, these separated programs be integrated into a harmonized cash transfer program that supports poor children all along their developmental path.

A cash transfer, in addition to providing direct support to poor families, could ensure attendance of poor families with children at growth monitoring checkups and training sessions, and could facilitate better transition to planned deliveries and required follow-up care to help reduce the risks to maternal and child survival.

A small benefit for young children to address malnutrition delivered at regular and predictable intervals to poor families (possibly during growth monitoring visits and training sessions) could provide some incentive for families to bring children to health checkups and to attend training sessions, and ensure that children receive the early childhood care that they require, in particular support with procuring nutritious food. A cash transfer program for small children could be for instance conditional on adults receiving parenting education through the Baby Friendly Community Initiative (BFCI) – while also expanding the BFCI infrastructure – and on children receiving preventive medicine (including ART for young children living with HIV) through health clinics and their outreach services.

3.2. Targeting and Program Coverage

In implementing such a cash-based incentives program, it will be important to look carefully at targeting and program coverage. Important issues to be considered include: whether all pregnant women and children should be covered or only poor ones; how to target poor families; and whether coverage should be nationwide, or limited to certain geographic areas.

3.2.1. Targeting All vs. Only Poor Families

If the program were to be targeted, a relevant question would be how to target poor families. A harmonized approach for pre-identification of poor households based on a set of standardized procedures and criteria for all kinds of social transfers and fee exemptions was developed over recent years in Cambodia. The most straightforward way would be using the existing Identification of Poor Households (ID Poor) targeting system, since it would spare the program from having to build yet another targeting system ex novo. If such a targeting strategy should be adopted, it would be important to include a provision financing some of the costs of implementing the ID Poor system in program costing. Nonetheless, if severe malnutrition proves not to correlate perfectly with ID Poor holders, it may be worth thinking about how to extend targeting criteria to families with severely malnourished children.

3.2.2. Geographic Coverage.

Ideally, given how malnutrition is widespread all across the territory, the program should be implemented nationwide (though implementation may begin with a pilot to evaluate program effectiveness and some of the key program parameters). Nevertheless, if budget constraints were to prevent national coverage, a malnutrition map should be constructed to primarily target areas with the highest malnutrition rates.

In this paper, since official demographic data for 2010 is limited, the projected number based on growth rate of selected potential beneficiaries for CCT projects is shown in Table 5. The estimated numbers of potential beneficiaries (woman in general, infants, children in general, and school-age children) are presented and disaggregated by geography (rural and urban). Based on numbers presented in Table 5, it is a political decision if Cambodia were to target only the rural poor, and specifically pregnant women (at an estimated number of 89,815 persons) and new-born children and infants (less than 2 years old, 0.23 million) for a CCT programme to address food security as well as maternal and child health. On the other hand, if a CCT scholarship programme were to tackle educational improvement among poor families, 0.69 million primary school-age children and 0.35 million secondary school-age children would benefit.

Table 5. Projected Numbers of Potential Beneficiaries (2010).

	Total (2010)	Urban		Rural	
GDP (USD)	11,218,000,000				
Population	15,053,000				
		Targeted	**Universal**	**Targeted**	**Universal**
Pregnant women	311,723	6,567	36,360	89,815	275,364
Infant (<2years old)	799,272	19,666	100,246	233,200	699,026
Primary school age	2,344,160	54,765	307,269	688,645	2,036,891
Secondary school age	1315761	26,774	179,732	356,371	1,136,030
Poverty line (Riel)	2882				
Poverty rate (%)*	25.81%	12.71%		28.13%	
Gini coefficient	0.4191	0.4523		0.3684	

Source: Author's calculation.
Note: * NCDD (2010).

3.3. Benefit Levels and Payment System

There has been some discussion as to whether the transfers are designed to encourage participation in public services (health, sanitation, education) or whether the intention is for larger transfers to address food security and hence poverty alleviation via purchasing power. To begin consideration of benefit level, it is essential to understand changes in the food and non-food poverty lines in Cambodia, as presented in Table 6 below. Poverty lines for different regions of the country, with different consumption bundles and price levels, are calculated separately and evolve over time. The poverty lines used in the 2004 and 2007 Cambodia Socio-Economic Survey (by NIS, 2004 and WB, 2009) are indicated in the Table below. The resulting average national poverty line for 2007 was 2,470 Riels per Capita per Day, or about US$ 0.61 (at an exchange rate of R 4,062, as used in 2007).

Table 6. Food and Non-Food Poverty Line and the Change from 2004 to 2007

Domain		2004	2007
Phnom Penh	Food	0.44	0.60
	Non-Food	0.14	0.16
	Total	0.58	0.76
Other Urban	Food	0.39	0.56
	Non-Food	0.09	0.11
	Total	0.48	0.67
Rural	Food	0.34	0.48
	Non-Food	0.09	0.10
	Total	0.45	0.58
National	Food	0.35	0.50
	Non-Food	0.09	0.11
	Total	0.45	0.61

Source: WB (2009) and NIS (2004).

The pattern of the latest average monthly income by different quintile of population is presented in Table 7. In general, in moving the first and second quintile of the population out of the monthly poverty line (US$18.3), the transfer of US$13.3 and US$6.3 per month respectively is needed.

Table 7. Average monthly income per capita and per household in 2009

Quintiles	Cambodia		Phnom Penh		Urban		Rural	
	Value ($)	%	Value ($)	%	Value ($)	%	Value ($)	%
Average Monthly Income per-Capita								
1	5	2	20	2	8	2	4	3
2	12	5	44	5	22	7	10	7
3	21	10	67	8	35	11	18	12
4	36	16	104	13	58	18	30	19
5	150	67	557	69	193	59	90	59
Average Monthly Income per-Household								
1	18	2	83	2	33	2	16	2
2	51	5	193	5	96	6	44	6
3	94	10	316	8	156	10	79	11
4	165	16	512	13	254	16	134	19
5	730	67	2,706	71	1,033	66	424	61

Source: NIS (2009).

If the programme is designed to address food security issues, there are global reference points that help predict the impact of an increase of income on nutrition. As a general rule, rates of under-nutrition, defined as low weights for age, decline at half the rate that income increases. Thus a 10% increase of income might achieve a 5% decrease in malnutrition rates. Similarly, anaemia, defined as haemoglobin levels below 10.9 g/dl, declines at roughly 25% of the rate of income growth (Aldermann, 2004).

This gives a first approximation of the effect of the income transfer alone (that is, not including behavioural change promoted by the health services). Household data from Cambodia can be used to make more precise estimations but given that, even with higher-level transfers, such estimates imply that the impact of the transfer on nutritional status will be largely determined by the quality of the health services (Aldermann, 2004).

Table 8. Sample Means of per-Capita Daily Consumption

	2004	2007	% change
Phnom Penh	8,067	13,324	65.2
Other urban	4,424	6,976	59.8
Rural	2,571	3,710	44.1
Cambodia	3,238	4,964	53
Poorest 20%	1,107	1,608	44.4
Next poorest 20%	1,660	1,656	44.3
Middle 20%	2,231	3,227	44.1
Next richest 20%	3,192	4,710	47.1
Richest 20%	8,004	12,889	61
Share of Food Consumption			
Phnom Penh	42.87	42.94	
Other urban	57.68	57.07	
Rural	64.45	65.45	
Cambodia	61.88	62.44	
Poorest 20%	69.08	72.56	
Next poorest 20%	67.41	68.63	
Middle 20%	65.09	64.7	
Next richest 20%	60.55	60.1	
Richest 20%	47.29	46.14	

Source: WB (2009) and NIS (2004).

Similar calculations can be made with regards to food purchases. Using data from the 2007 Cambodia Socio-Economic Survey (CSES) aggregated by quintile, a 10% increase in income is estimated to lead to an 8.5% increase in food expenditure. This is at the top end, compared with the global experience. But the increase in food expenditure is always larger than the increase in the amount of food (as measured by calories). Using global experience, it is estimated that the quantity of food increases at half the rate that expenditure increases. This implies that an affordable transfer program might increase calories by 3-4% (Aldermann, 2004). The difference between the increase in expenditure on food and the quantity of food in calories usually reflects a

change in the quality of the diet with greater diversity, possibly reinforcing messages related to child care and complementary feeding.

To achieve its intended outcomes, the program benefit levels should be consistent with the program objectives, and they should at least cover – if not exceed – the cost of pogram participation, such as the costs of transportation to a health facility and also the costs of nutrition for the mother. In many other countries' implemented CCT programmes, cash transfer accounted around 20% of pre-transfer consumption of household from the poorest quintile (Fiszbein and Schady, 2009). Benefits are usually also differentiated by household characteristics such as poverty level, size and composition, or specific needs or behaviours (such customization tends to improve the poverty impact per unit of transfer, but also complicates administration and communication with the public and is thus more common in high-capacity settings).

3.4. Conditionality: Combining Supply and Demand Sides

The success of a cash-based incentives program should be evaluated on two fronts. The first would be its success in providing much-needed cash-assistance to the poor. This means, by and large, ensuring that targeting has been done appropriately, and that good fiduciary procedures are in place for payments. The second would be to improve children's nutritional status and MMR. This is a much more challenging task, as it requires three components to work well: the cash transfers component; delivery of health and nutrition-related services; and the interaction between the two (i.e. conditionality). In particular, some thinking will have to be done about how and when to make the payments so as to guarantee participation of poor families and, in practical terms, how to implement such a system.

Cash transfers could be associated with soft conditions for compliance with a set of actions related to maternal and childhood health. Notably, a food transfer component, as a delivery mechanism for micronutrients, could also be integrated. If covering all children aged five or younger proves to put excessive strain on fiscal resources, then children aged two or younger should be covered as a priority. Given the prevalence of malnutrition across all income distribution quintiles, such a program may need complementary interventions to promote behavioural changes among the rest of the population who do not qualify for a cash transfer. In particular, public information and

outreach activities may be needed, in addition to the CCT program, targeted at the poor. Linkages to other complementary welfare services, to address other, overlapping vulnerabilities facing families with children, should also be considered in an attempt to ensure a comprehensive and integrated approach.

3.5. The Need for Monitoring and Evaluation

The M&E system should have a dual purpose: to monitor implementation, and rapidly identify flaws, such as delays in payments, leakages in coverage, poor quality of training, and ensure that that beneficiaries do not receive benefits from multiple programs; and also evaluate the medium-term impact of the program on overall welfare improvements of beneficiaries (through the cash-transfer assistance), and on children's nutritional status.

3.6. Extending Coverage and Scope beyond Malnutrition and MMR

After a cash transfer system is in place, it could be worthwhile thinking about whether to expand it to other categories of poor beneficiaries, and to make it the Government's core social assistance program. For instance, it could be worthwhile thinking about extending program coverage to holders of ID Poor cards who are disabled or old. Such an expansion should come, however, at a later stage, once good implementation has been ensured and the fiscal sustainability of the program has been well evaluated.

3.7. Length of Transfer

In the context of Cambodia, CCT schemes are not considered to be a permanent social transfer programme for any specific target population. Politically, a benefit level at US$13.3 per month for the first and second quintile of the population may result in the immediate moving of per capita income to the level of the third quintile. Moreover, in avoiding the phenomena of social disparity, dependency and moving towards a welfare state, CCT schemes have to be designed with exiting strategy in mind, where the transfer of benefits to the potential beneficiaries has to be limited in terms of length of transfer (the number of months in a year that a beneficiary may receive benefits).

Table 9 summaries the proposed length of social transfer in a year for the potential beneficiary group.

Table 9. Proposed Length of CCT for Potential Beneficiaries

No	Potential Beneficiaries	Length of Transfer	Reason
1	Pregnant woman	3 months	During the pre-pregnant period, most of the pregnant women have participated already in the labor market. A transfer of three month period at 13.3 $ per month is not only an incentive to encourage the pregnant woman to obtain the public health service during the ante-natal, delivering, and post-natal cares, but also a compensation of absence from labor market.
2	Infant	7 months	Similar to the above reason for pregnant women, a support for 7 months to the infants through the mothers is the incentive of breast feeding during the first 7 month of post-delivery, the absence from labor market, and the source of finance for mother and child food and nutrition.
3	Primary-school age	8 months	In Cambodia, the school day period is 8 months divided into two school semester equally.
4	Secondary-school age	8 months	

Source: Authors' own design.

3.8. Scholarship Programme as a CCT Scheme in Cambodia

Given the importance of behavioural practices in determining nutrition outcomes, a cash transfer program could be used to address demand constraints in fighting chronic malnutrition, the main source of vulnerability among infants and small children. Questions remain open on the extent to which strict enforcement of conditions is necessary to achieve such an impact, as well as on the relative importance of investments to boost demand versus addressing supply-side constraints (i.e. quality of service delivery). However, there is little doubt that, if well implemented, cash transfers can be an effective tool to influence the behaviour of poor households in key areas of human development. Poor households have higher rates of malnutrition and poorer health outcomes compared with other groups, despite the fact that levels of malnutrition remain high for all income groups.

In Cambodia, the Japan Fund for Poverty Reduction (JFPR) scholarship program selected 93 lower secondary schools and, within each of these schools, approximately 45 girls who were beginning 7th grade were awarded scholarships of USD45 each. The

value of the scholarship is large in 2002; mean per capita GDP in Cambodia was approximately USD300. Once a girl is selected for a JFPR scholarship, she is automatically eligible to continue receiving a scholarship for the three years of the lower secondary cycle. The JFPR program therefore attempts to increase the fraction of girls who make the transition from primary school to lower secondary school, and encourage girls to complete the lower secondary school cycle. In 2003/04, there were 698 lower secondary schools in Cambodia, so the JFPR scholarship program covered approximately 15 % of lower secondary schools in the country. It showed a large, positive effect on school enrolment (30-43 %) and attendance (22-33 %). The impact of the JFPR program appears to have been largest among girls with the lowest socioeconomic status.

Although the JFPR program is known as a "scholarship" program, it does not directly subsidize the fees paid by parents for the education of their daughters; rather, families receive cash transfers provided their daughter is enrolled in school, maintains a passing grade, and is absent without "good reason" fewer than 10 days in a year. The JFPR program therefore functions much like a "conditional cash transfer" (CCT) program of the sort that has been implemented in many Latin American countries.

4. Impact of Conditional Cash Transfer on Income Distribution and Poverty

In principle, the impact of CCT programs on poverty could be smaller than would be suggested by simple back-of-an-envelope calculations based on the size of the transfer, because of both intended and unintended effects of the program. However, if part of the transfer is invested, or if the transfer enables households to better smooth consumption, then CCT programs also can have impacts on consumption in the long run.

Since the concept of design and implementation of CCT is relatively new to Cambodia, except the experience in scholarship programmes in the education sector, the proposed CCT scheme's impact on several indicators is estimated in comparison to

existing international experience. The impact of CCT on consumption and food share, as well as poverty at program and at national level, is presented.

4.1. Dimension of Impacts

There is now ample scientific evidence to suggest that significant longer-term losses occur, both to the individual and to the economy, if child malnutrition is not addressed early on. According to the Lancet series on maternal and child under-nutrition, "poor foetal growth or stunting in the first two years of life leads to irreversible damage, including shorter adult height, lower attained schooling, reduced adult income, and decreased offspring birth-weight." [3]

All existing studies showed that economic losses are likely to be high. Preventing one child from being born with a low birth-weight is worth US$580.[4] Another estimate suggests that the productivity losses in India associated with under-nutrition, iron deficiency anaemia, and iodine deficiency disorders (IDD), in the absence of appropriate interventions, will amount to about US$114 billion between 2003 and 2012 (India's annual GDP is about US$601 billion). And a similar study that examines only the productivity losses with forgone wage employment resulting from child malnutrition, estimates the loss at 0.4 % of annual GDP.[5]

In addition to alleviating chronic poverty, cash transfers (both conditional and unconditional) can help promote human development by addressing demand for services. A major (though far from unique) cause of low utilization of education and health services by poor households is often the monetary (opportunity) costs that this entails. Poor households may not have the necessary resources to pay for transportation to health facilities (even if care is offered for free), or for textbooks and uniforms; often, in particular if the immediate returns to education are low, child labour seems a rational decision and families may send their children to work to supplement family incomes.

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[3] See also J. Behrman (2004), "Estimated Economic Benefits of Reducing Low Birth Weight in Low Income Countries," *HNP Discussion Paper*, The World Bank.

[4] It was calculated under the assumption that all non-low-birth weight children would survive to adulthood and become laborers. When corrected for age-specific mortality, the benefit becomes US$510.

[5] See for details: World Bank (2006), *Repositioning Nutrition as Central to Development a Strategy for Large-Scale Action.*
http://siteresources.worldbank.org/NUTRITION/Resources/281846-1131636806329/NutritionStrategyCh1.pdf.

Some of these children may end up in hazardous working conditions, which can permanently damage their physical and moral development. Accordingly, international best practices show that providing cash support to poor households helps reduce financial barriers and improve utilization of education and health services.

Cash transfers (in particular conditional ones) can also be used to provide incentives to households to change behavioural practices. The way payments are made, or conditions attached to receiving payments, can be used to provide incentives to households to change their behavioural practices. International evidence shows that attaching some form of conditions to payments can improve utilization of health care services, attendance and enrolment of children in schools, household behaviour with regard to nutrition and educational attainments. This has been demonstrated in the Cambodian context as well: the Scholarship for the Poor program, which, by paying a scholarship conditional on attending school, is a form of CCT, was found to have significantly increased enrolment (although impact on attainments was of lower magnitude; Filmer and Schady, 2006).

4.2. Estimated Impact on Consumption among Program Beneficiaries

The impact of CCTs on immediate consumption is an important determinant of poverty alleviation in the short term, especially because most of the beneficiaries belong to the poorest quintile of the population. Fiszbein and Schady (2009) assessed the impact of CCTs on short-term consumption or income of several programmes and showed that the pre-program median per capita consumption levels for the target population were low in all programs.

Table 10. International Lesson on the Impact of CCTs on per-Capita Consumption

Country	Year	Daily per capita consumption ($)	Daily per capita transfer ($)	Ratio of transfer to consumption (%)	Impact on per capita consumption
Brazil	**2002**	0.83	0.06	8	**7**
Cambodia	**2007**	0.89	0.02	2–3	**B**
Columbia	**2002**	0.85	0.12	17	**A**
	2006	1.19	0.13	13	**10**
Ecuador	**2003**	1.12	0.08	8	**A**
	2005	1.13	0.08	7	**B**
Honduras	**2000**	0.79	0.06	9	**A**
	2002	0.68	0.06	11	**7**
Mexico	**1998**	0.59	0.12	21	**B**
	Jun-99	0.58	0.14	20	**7.8**
	Oct-99	0.59	0.13	19	**8.3**
Nicaragua	**2000**	0.63	0.16	29	**A**
	2001	0.53	0.15	31	**29.3**
	2002	0.52	0.15	30	**20.6**

Source: Fiszbein and Schady (2009)

Note: A. Baseline, B. No significant impact on consumption

As shown in Table 10, per capita consumption varied between US$0.52 per day in Nicaragua and US$1.19 per day in Colombia. Size of the transfer varies a great deal across countries and programmes and affects the ratio of the transfer to median consumption differently. For households in Nicaragua, the transfer represented about 30% of consumption whereas in Cambodia, it is accounted for only about 2%. The largest impact of CCT on consumption is found in the RPS programme in Nicaragua, where the largest transfer was made. Neither the Ecuadorian nor Cambodian programmes appear to have increased consumption level. In the case of the Cambodian scholarship programme, the result is not unexpected, given the small size of the transfer (2-3% of median consumption) and the fact that short-term poverty alleviation was not a programme goal.

4.3. The Impact of CCT Schemes on Poverty at Programme and National Level in Cambodia

Experience from different countries suggested that CCTs generally helped in reducing national poverty. In Mexico, for instance, there are large effects on poverty (headcount index reduced from 24.06 to 22.22%) whereas in Brazil, the headcount index reduced slightly from 24.21% to 23.69%.

Using household survey data from the 2004 socioeconomic survey and calibrating it to match the government's latest poverty estimate (MoP, 2010) of 25.8% in 2010. The poverty line and consumption is adjusted to reach this same poverty rate with estimated Gini coefficient at 0.42.

Table 11. Impact of Transfer (13.3$ per-month per-beneficiaries) on Poverty and Income Distribution

		Impact on Poverty Index				
		Baseline	**Pregnant women**	**Infant (< 2 years old)**	**Primary school**	**Secondary school**
Targeted	**Urban**	12.71	12.34	11.51	10.47	11.05
	Rural	28.13	27.10	25.54	22.68	24.20
	Total	25.81	24.87	23.43	20.84	22.22
Universal	**Urban**	12.71	12.34	11.51	10.47	11.05
	Rural	28.13	27.10	25.54	22.68	24.20
	Total	25.81	24.87	23.43	20.84	22.22
		Impact on Gini-coefficient				
Targeted	**Urban**	0.4523	0.4516	0.4504	0.4490	0.4502
	Rural	0.3684	0.3657	0.3618	0.3557	0.3594
	Total	0.4191	0.4169	0.4136	0.4085	0.4116
Universal	**Urban**	0.4523	0.4507	0.4481	0.4438	0.4463
	Rural	0.3684	0.3652	0.3607	0.3533	0.3578
	Total	0.4191	0.4160	0.4116	0.4044	0.4088

Source: Author's calculation.

As presented in Table 11, different scenarios of CCTs had been proposed and the impact is varied. High impacts on poverty rate are estimated mainly if the transfer is directed at rural areas. The poverty rate in rural areas is expected to be reduced from 28.13% in the base year 2010 to 27.10% in the CCT scheme for pregnant women, to 25.54% for infants, to 22.68% for children at primary-school age, and 24.20% for secondary-school age. The total impact on rural poverty is an estimated 13 percentage point-reduction (from 28.13 to 15.13%) in the rural poverty rate from the base year.

Changes in poverty over time depend not only on changes in average levels of real per capita consumption, but also on changes in the size distribution of per capita consumption. Inequality in the distribution of per-capita household consumption increased during the period 2004 to 2007 from 0.3960 to 0.4310 at national level, where the increase from 0.3420 to 0.3460 during the same period is found in rural areas (WB, 2009 and NIS, 2004). The proposed CCT scheme, especially if targeted at the poor

population, is estimated to reduce the Gini-coefficient at the national level from 0.4191 in 2010 to 0.3933 in one year operation of the project (2011).

5. Tentative Cost Estimates for a Cash-based Incentives Program

In this section, we discuss potential impacts of CCT that may address the issues of pregnant woman lacking incentives to obtain health service from public providers, poor households keeping their children in school, and an outright anti-poverty measure. As shown previously in Table 5, the potential beneficiaries for the proposed CCT schemes in Cambodia including pregnant woman, infants (less than 2 years old), and primary- and secondary-school age children. As discussed earlier, the benefit level is US$13.3 per month for the targeted poor beneficiaries to reach the poverty line. Several caveats are worth stressing in these cost calculations.

First, these estimations only consider the cost of the cash transfer program. Second, the estimations are based on very preliminary parameters, and will need to be revised upon considering implementation constraints and as more information becomes available. More analyses will have to be performed to determine a more precise level of benefits that may significantly change the cost estimates. Third, administrative costs are also likely to vary depending on program effectiveness and coverage. Experience shows that it may be possible, if the program were to have national coverage, to keep administrative costs below 15% after some years of implementation. Fourth, these estimates do not take into consideration the cost of targeting the poor that are currently borne by the *ID Poor* program, but if such a cash transfer program is to be put in place, ways to pay at least in part for the implementation of the *ID Poor* should be explored. Finally, this calculation is based on the assumption that the duration of transfer for the beneficiaries is taken into consideration.

The static impacts on income distribution and poverty are very significant. If the program were to operate for a sustained period of time, the poverty rate would be reduced, and the Gini coefficient would be cut. Therefore, should the program be properly implemented and leakages prevented, the program could be one of the most

effective policy interventions to narrow the income gaps between the rich the poor. This poverty reduction would in turn help Cambodia to avoid a future poverty trap and social tensions that are happening. As shown in Table 12, an annual budget at 0.95% of GDP for all four scenarios is required to make it reality (or 0.88% of GDP if limited to only targeted poor beneficiaries in rural areas).

It is hard to determine the level of spending on social protection, and on CCT programs in particular, by the government given the current budget structure. The new budget structure, in use since 2007, has two chapters (64 and 65), in which there are items labelled as social interventions[6]. Government expenditure on these items amounted to a total of US$181 million across all government agencies in 2008, showing a 55% increase since 2007. Nevertheless, given the level of aggregation in the budget, it is not possible to determine how much of this goes to social protection activities and how much to other types of social intervention. Most of the explicit social protection spending currently targets public employees and formal sector workers. Moreover, the total government budget for social sector ministries increased by 0.8 percentage points between 2006 and 2010, to 3.9% of gross domestic product (GDP). Budgets for the health and education sectors together have consistently accounted for more than 70 % of total social-sector spending, with the health budget increasing one half of a percentage point over this period. Given this trend of social budget increase as share of GDP, it is secured that the proposed CCT scheme, at 0.88%, is in line with the government's spending capacity.

[6] Chapter 64.5 is called Allowances and Social Transfers, and includes: 1. Family 2. Health and birth giving 3. Death 4. Retirement 5. Demission 6. Work Accidents and Invalidity 7. Orphans of Personnel 8. Other 9. Return Attenuation. Chapter 65.7 refers to Social Assistance, which includes 1. Assistance for hospitalisation 2. Medicaments 3. Food and Supplies 4. Natural Disaster 5. Research Stipends 6. Local Scholarships and Research 7. Scholarships and Research for Abroad 8. Others. Chapter 65.8 refers to Subsidies to Cultural and Social Entities, including subsidies to 1. Communities 2. Orphan Centres 3. Travel scholarships 4. The CRC 5. Sport and Culture Community 6. Rehabilitation Centres 7. King Affairs (King's Charity Programmes).

Table 12. Estimated Annual Cost of CCTs Scheme for Cambodia

		Estimated Annual Cost			
		Pregnant Women	**Infant (<2 years old)**	**Primary school**	**Secondary school**
		Annual cost			
Targeted	**Urban**	262,004	1,742,399	3,455,428	2,257,793
	Rural	3,547,310	20,057,601	43,844,572	31,442,207
	Total	3,809,314	21,800,000	47,300,000	33,700,000
Universal	**Urban**	1,434,590	8,901,936		
	Rural	10,865,410	60,898,064	142,700,000	103,500,000
	Total	12,300,000	69,800,000	165,000,000	120,000,000
		Transfer as % of GDP			
Targeted	**Urban**	0.0023	0.0155	0.0308	0.0201
	Rural	0.0316	0.1786	0.3911	0.2799
	Total	0.0340	0.1941	0.4219	0.3000
Universal	**Urban**	0.0128	0.0794	0.1987	0.1474
	Rural	0.0969	0.5433	1.2718	0.9193
	Total	0.1100	0.6230	1.4710	1.0670

Source: Author's calculation.

6. Conclusion

The key question discussed in this paper is how to better allocate the very limited resources that are available to ensure coverage of main sources of vulnerability and of the most vulnerable groups. The RGC and its partners face tight capacity and budget constraints across all sectors. Any spending on social protection interventions has high opportunity costs, as resources are limited and spending on social protection means fewer resources for other sectors. Coherence rather than competition between sectors needs to be strengthened, as investments in social protection without adequate investments in basic social services, including health, education, water and housing, would remain ineffective. Better targeting plus coherence between current sector investments in social protection, and a gap analysis-driven identification of priorities for scaling-up across sectors, will ensure maximum coverage and provision for the poor and vulnerable.

The matching of main sources of vulnerability with programs that are being implemented suggests the need to scale up and harmonize existing interventions, and also the presence of gaps that could be addressed by the implementation of a few new programs. HEFs, school feeding, scholarships and public works are already addressing

most of the major sources of vulnerability faced by the poor and already have, to various extents, a strong presence in Cambodia. However, coordination and expansion are needed in the context of sustainable financing of programs.

High dropout rates and high incidence of child labour are serious outcomes of the vulnerability affecting children. They also have a profound effect on the likelihood of future generations moving out of poverty. Programs intended to fight child labour and keep children in school (in-kind transfers including school feeding and take-home rations, cash scholarships) should be not only expanded but also harmonized. While addressing demand constraints that prevent parents from sending their children to school, it is equally (if not more) important to also improve the quality of education. Cash transfers help poor households to access services and can provide incentives to change behavioural practices. Given the importance of behavioural practices in determining nutrition outcomes, a cash transfer program, in particular, could be used to address demand constraints in fighting chronic malnutrition, the main source of vulnerability among infants and small children. Such a program would fulfil the dual objective of alleviating chronic poverty while combating maternal mortality and malnutrition.

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CHAPTER 3

Impact of Cash Transfer on Poverty and Income Distribution

PHOUPHET KYOPHILAVONG

Faculty of Economics and Business Management

National University of Laos

Laos has inadequate social protection, especially for the poor and the Lao economy is vulnerable to external shock, particularly from events like the global financial crisis. It seems that the poor suffered significant effects from the shock. Therefore, it is important to consider creating cash transfer programs for the poor. The main objective of this study is to assess the impact of cash transfers on poverty and income distribution during a crisis. A Computable General Equilibrium (CGE) model- and Micro-simulation are employed for this study. This study focuses on cash transfers to poor households with children, living in rural and urban areas. The simulation result shows that cash transfer has a significant impact on poverty and income distribution. It is noteworthy that poverty reduced more in rural rather than in urban areas. It is therefore important for government to consider establishing social support programs for the poor, in order to reduce poverty and mitigate external shocks such as the recent crisis and rising food prices.

Keywords: Conditional Cash Transfer, Crisis, Poor, CGE model-micro-simulation, Laos
JEL Classification: I0; C68

1. Introduction

Laos is a small, open Least Developed Country (LDC) in Southeast Asia. Laos was ranked 122th out of 169 countries in 2010 (UNDP, 2010). 34 percent of the population lives below the poverty line. Despite high poverty, low school enrolment and poor nutrition, there is no social transfer program for the poor. In addition, Laos lacks a social assistance program or conditional cash transfer (CCT) program for direct support of the poor during external shocks, such as the recent global financial crisis, rising food and fuel prices, and natural disasters. It is therefore important that policy makers consider establishing CCT programs for the poor.

Conditional cash transfers (CCT) were implemented in Latin America in the 1990s, and interest in them is increasing among developing countries including Laos. A CCT program aims to reduce current poverty, improve human capital formation, and help prevent the intergenerational transmission of poverty. CCT seems to be "a magic bullet in development" (Adoto and Hoddinot, 2007). Even though CCT programs are quite successful in some countries in Latin America, in terms of poverty reduction, increasing consumption, school enrolment, accession to heath care and improved nutrition, their establishment is complex, costly and needs strong institutions to support them. Study is needed to fill the knowledge gaps before establishing CCT programs in Laos.

The main objective of this study is therefore to quantify the possible impacts of cash transfer on poverty, using a Global Trade Analysis Project (GTAP) and Micro-simulation. This study focuses on cash transfer to poor families with children in rural and urban areas. The study is important for policy makers in developing social protection packages to mitigate the negative impact of external shocks, and reduce poverty.

The rest of this paper is organized as follows. Section 2 provides information on the Lao economy and external shock such as the recent crisis. Section 3 reviews social protection and its issues. Section 4 reviews the trends of poverty, education and nutrition conditions of children. Section 5 presents an overview of the literature on social protection and cash transfer programs, in foreign countries and in Laos. Section 6 explains the methodology of the study and its data collection. Section 7 is the

simulation design and its results. The final section presents conclusions, and contains policy recommendations.

2. The Lao Economy and External Shocks

Except during the Asian financial crisis of the 1990s, Laos has been achieving high rates of economic growth with low inflation. The average rate of economic growth was about 6.5% between 2001 and 2006, an increase from about 6.2% during the period - 1996 to 2000.[1] The average inflation rate was maintained in single digits during 2001-2006, which was a significant decline from the average rate of 57% during 1996-2000, and the exchange rate was also stable over the same period (Table 2-1). Of the total GDP of US$ 4,053 million in 2007, the agricultural sector accounted for 40.3%, the industrial sector for 34.1% and the services sector for 25.6% (World Bank, 2009). However, since 2003, the industrial sector has grown more than 10%, which has reduced agriculture's share.

[1] The engine of growth during this period was capital inflows of Foreign Direct Investment (FDI) in the mining and hydropower sectors and mining production and exports. For a more detailed discussion of the impact of FDI in the mining and hydropower sectors on the Lao economy see Kyophilavong and Toyoda (2008).

Table 2-1. Key Macroeconomic Indicators

Macroeconomic Indicators	2001-2006	1996-2000	1990-1995
Population (million person) *	5.46	4.86	4.40
Population Growth (%)	2.12	2.06	2.52
GDP (current million US$) **	2,416	1,618	1,276
GDP Growth (%)	6.53	6.18	6.46
Growth per-capita (constant 2000 US$) **	379	307	248
GDP per-capita Growth (%)	4.04	3.68	3.80
Reserve Money (M2) (million US$) *	450,981	270,728	148,280
Money Supply (M2) (%) *	21.14	65.99	30.92
Inflation –CPI (%)	9.73	57.00	15.27
Trade Deficit (million US$) ***	-219.91	-263.21	-174.92
Trade Deficit/ GDP (%)	-9.24	-16.06	-13.14
Foreign Reserve (million US$) ***	220	127	48
External Debt (million US$) *	2,640	2,410	1,965
External Debt/ GDP (%)	115	152	161
Budget Deficit (including grants) (million US$)	-104	-58	-100
Budget Deficit/ GDP (%)	-4.42	-3.60	-7.61
Budget Deficit (exclude grants) (million US$)	-149	-121	-145
Budget Deficit/ GDP (%)	-6.29	-7.58	-11.21
Exchange Rate (Kip/ US$) Official Rate ***	10,163	4,094	727

Sources:

* Asian Development Bank (ADB), *Key Indicators for Asia and the Pacific 2008.* www.adb.org/statistics.

** World Bank, *World Development Indicators CD-ROM (2005),* and

*** International Monetary Fund, *International Financial Statistics CD-ROM August 2008.*

Even though Laos has been maintaining high economic growth, with low inflation and a stable exchange rate, it still has serious macroeconomic issues to overcome. First, Laos is basically facing chronic twin deficits in both government spending and international trade. These deficits are mainly financed by Official Development Assistance (ODA), FDI, and remittances. The fiscal issue is particularly serious in Laos. Secondly, there is a huge gap between savings and investment. The savings rate is low because of low average incomes. Thirdly, Laos is also facing a high burden of external debt. The external debt accumulation was close to 60% of GDP in 2007. If Laos becomes heavily dependent upon foreign finance, especially to meet its debt obligations, this could cause a foreign debt crisis and might lead to macroeconomic instability.

The Lao economy is vulnerable to external shock, such as the Asian financial crisis in 1997 and the global financial crisis in 2008[2]. This kind of external shock has a

[2] The detail discussion on the impact of Global Financial Crisis on Lao economy, see Kyophilavong (2008; 2009).

negative impact on the Lao economy, especially on the poor[3]. A crisis can affect the Lao economy in a variety of ways. The main impact of the asian financial crisis on the Lao economy came through depreciation of the exchange rate and high inflation. In addition, a downturn in the global economy has led to declining demand for Lao exports, particularly exports of minerals, garments, and agricultural products.

In order to minimize the impact of the recent crisis, the Lao government has implemented a number of measures. However, these did not include social assistance or conditional cash transfer (CCT) programs. It is therefore important to consider a cash transfer program for the poor, in order to mitigate the negative impact of external shocks, and to reduce poverty.

3. Social Protection and Its Issues

There are four systems for social protection in Laos; the State Authority of Social Security (SSS); the Social Security Organization (SSO); Community Based Health Insurance (CBHI); Health Equity Funds (HEF) (Table 3-1). Social protection is still at an early stage and its coverage is very low. Expenditure on social protection is also very low compared with other countries[4] (Table 3-2 and 3-3).

Laos lacks a social assistance program for direct support of the poor during an external shock such as the global financial crisis, rising food and fuel prices, and natural disasters. Despite widespread poverty, low school enrolment and poor nutrition, there is no conditional cash transfer (CCT) to the poor. The establishment of a cash transfer program to support households is therefore one of the most important tasks in the reduction of poverty.

Social protection is necessary to mitigate poverty to achieve the Lao Millennium Development Goal. But there has been insufficient vision and capacity to focus

[3] The impact of Asian Financial Crisis on Lao economy in Keomixay *et al.* (1999) and the impact of Global Financial Crisis in Kyophilavong (2010).

[4] The Lao government has promoted and supported social programs by issuing various decrees and regulations found in GoL (1993a), GoL (1993b), GoL (1999a), and GoL (1999b). More details of social welfare establishment history were discussed in Voladet and Vilaylack (2006).

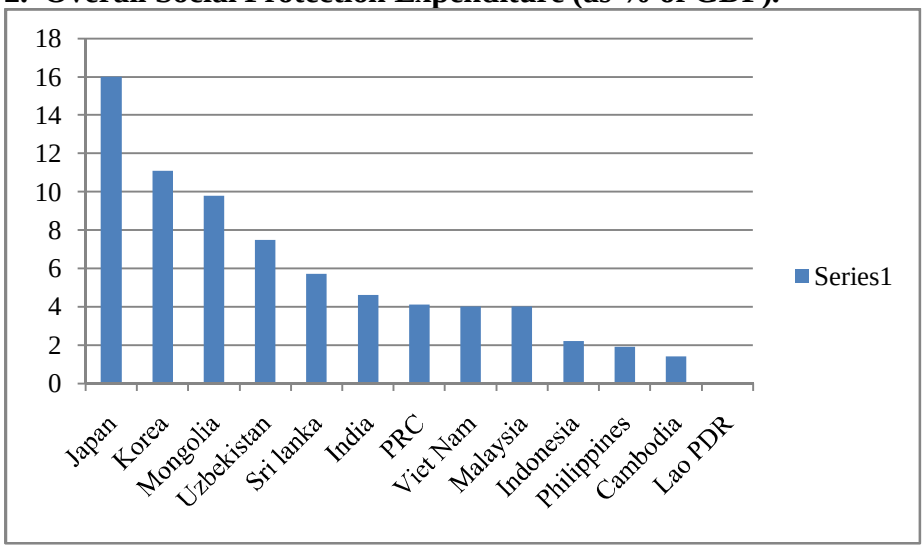
assistance on the area where they it was most needed (ADB, 2004). The Lao government has limited revenues, and there is a lack of capacity and management skill in government agencies (Leeber, 2010).

Table 3-1. System of Social Protection in Laos

	State Authority of Social Security **SASS**	Social Security Organization **SSO**	Community Based Health Insurance **CBHI**	Health Equity Funds **HEFs**
- Target Population	Civil Servants and their dependents	Private-sector salaried workers and their dependents	Self-employed and informal-economy population	Families identified as below the poverty line
- Number of Target Population	800,000	200,000	150,000	1,500,000
- Dependency Ratio	2.7	2.1	4.2	4.2
- Regulation - Implementation	- Decree 70 (2006) - 2006	- Decree 207 (2001) - 2002	- Regulations Decree pending - 2002	- MOH Regulations - 2004
- Authority - Scope of Operation	- MOLSW - All provinces	- MOLSW - VC and 3 provinces	- MOH - 18 cities in VC and 8 provinces	- MOH - Selected province
- Requirement of Contribution - Health Care Delivery	- 4% of Salary - Contact with Provider; Capitation and Reimbursement	- 2.2 % of Salary - Contact with Provider; Capitation with Adjustment	- Flat Amount - Contact with Providers; Capitation based on Contributions	- Flat Amount - Capitation through CBHI for some reimbursement by free of service for other
- Insured persons (August 2009) - Percent to Target	- 300,000 - 37.5	- 85,000 - 42.5	- 65,000 - 43.3	- 15,000 - 1.0

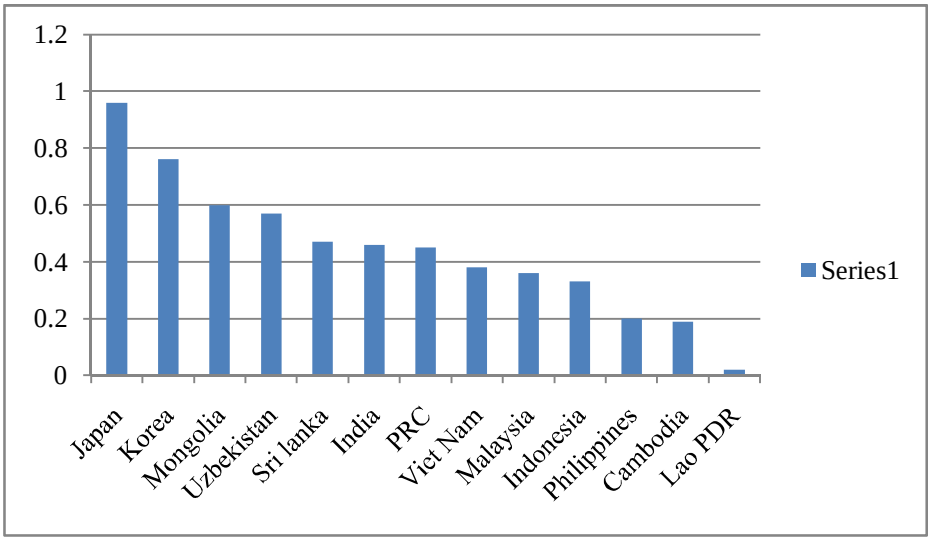
Source: Leebouapao (2010).

Table 3-2. Overall Social Protection Expenditure (as % of GDP).



Source: ADB (2011).

Table 3-3. Social Protection Index



Source: ADB (2011).

4. Trends in Poverty, Education and Nutrition of Children

In order to eradicate poverty by 2020, the Lao government has implemented the National Growth and Poverty Eradication Strategy (NGPES), an overall development and poverty alleviation framework (GoL, 2004).

Analysis of three Lao Expenditure and Consumption Surveys (LECS) from WB and DOS (2009) showed that the incidence of poverty has fallen since LECS 1, though it fell slowly during 1997/98. The incidence of poverty fell from 46% in LECS 1 to 39% in LECS 2, and to 33.5% in LECS 3 in 28% in LECS 4. Inequality has also changed since LECS; it increased between LECS 1 and LECS 2, but declined by LECS 3 (Table 4-1).

Table 4-1. Trend of Poverty

	LECS 1 1992/ 93	LECS 2 1997/ 98	LECS 3 2002/ 03	LECS 4 2007/ 08
Lao PDR	46	39.1	33.5	28
Urban	27	22	20	17
Rural with road	43	32	31	30
Rural without road	61	51	46	43
Lowland			28	20.5
Midland			36.5	29
Upland			34	33

Source: World Bank and DOS (2009).

Note: LECS (Lao Expenditure and Consumption Census) in 2007/08.

Table 4-2. Percentage of Household has Child

	Non-poor	Poor	Total
Urban			
No child	39.5	22.9	37.3
Have a child	60.5	77.1	62.8
Rural			
No child	27.2	6.3	21.8
Have a child	72.9	93.7	78.2

Source: Lao Expenditure and Consumption Survey (LECS) in 2007/08.

Table 4-3. Number of Household and Child

	Number of Household Members			Number of Children in Household		
	Non-poor	Poor	Total	Non-poor	Poor	Total
Urban						
No child	4.3	5.8	4.4	-	-	-
Have a child	5.7	7.1	5.9	1.7	2.3	1.8
Total	5.1	6.8	5.4	1.0	1.8	1.1
Rural						
No child	4.0	4.9	4.1	-	-	-
Have a child	5.9	7.3	6.3	2.0	2.9	2.3
Total	5.4	7.2	5.8	1.5	2.8	1.8

Source: Lao Expenditure and Consumption Survey (LECS) in 2007/08.

Despite increased consumption and reduced poverty, malnutrition remains a serious problem (Table 4-4). Underweight and stunting in children under the age of 5 was 37%

and 40% in 2006 (DOS *et al.*, 2008). Underweight and stunting declined by only 15 to 17% from 1993 to 2006. This shows that nutrition is one of the most serious problems in Laos. Supporting the poor in order to improve nutrition for children is therefore one of the most important tasks facing Laos.

Table 4-4. Poverty and Nutrition (in %)

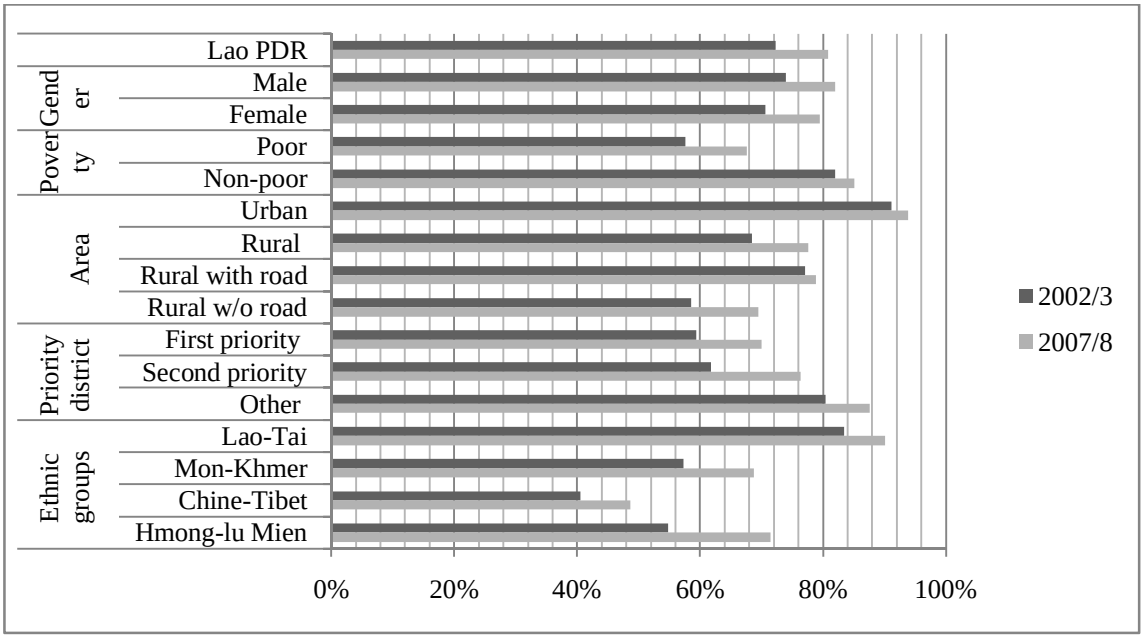
	Stunting	Underweight
Richest	17.5	19.3
Rich	32	33
Middle	38	41
Poor	38	43
Poorest	43	54

Source: World Bank and DOS (2009).

Note: Lao Expenditure and Consumption Census (LECS) in 2007/08.

Poverty and education for children are highly correlated. Children in rural areas must travel 8 km on average to the nearest secondary school while this journey in urban areas averages 3 km. 81% of 6-10 year olds were enrolled in school in 2007/08 compared with 72% in 2002/3 (Table 4-4). However, only 78% of rural children were enrolled, against 94% of urban children. Main reasons for low enrollment in rural areas were: school fees, other expenses, and the need for their labor in agriculture (WB and DoS, 2009).

Table 4-4. School Enrolment



Source: World Bank and DOS (2009).

5. Literature Reviews

Literature on CCT programs mainly relates to Latin America. There are some studies on CCT programs and school enrolment, dropout and child labor as follows: Gitter and Barham (2008) studied women's power, conditional cash transfers, and schooling in Nicaragua; Bourguignon *et al.*, (2003) studied conditional cash transfers, schooling, and child labor in Brazil's Bolsa Escola Program; Dearden *et al.,* (2008) studied conditional cash transfers and school dropout rates; Janvry *et al.,* (2006) studied conditional cash transfer programs serving as safety nets in keeping children at school, rather than working when exposed to shock.

In addition, there are some studies on the general achievements of CCT programs and their weaknesses as follows: Caldes and Maluccio (2005) studied the cost of conditional cash transfers; Janvry and Sadoulet (2006) studied conditional cash transfer programs designed for maximum effect of the conditionality; Soares *et al.,* (2009) studied conditional cash transfers in Brazil, Chile and Mexico and their impact upon

inequality. Barrientos (2004) studied the relationship between cash transfer for older people, reduced poverty and inequality.

There are quite a few studies of CCT program in Asia. ERIA research teams have reviewed current social protection and direction in some Asian countries (Asher *et al.*, 2010). And Edes (2009) also highlights social protection in the developing Asia Pacific region. In Laos, there are few studies on social protection: Leebouapao (2010) overviewed social protection in Laos; Thome and Pholsena (2009) reviewed health financing reform and challenges in expanding the current social protection schemes; ADB (2004) shows challenges and opportunities for social protection; Burns (2004) presents the issues and options of social protection; Voladet and Vilaylack (2006) and Leebouapao, L. (2010) describe the current situation of social protection mechanisms in Laos and identify constraints on social protection programs.

There are few studies using Computable General Equilibrium (CGE) models of cash transfers: Coady and Harris (2004) used the general equilibrium framework to evaluate transfer programs; Bassanini *et al.*, (1999) also used a CGE model to evaluate the economic effects of employment- conditional income support schemes for the low-paid in four OECD countries.

Related studies on cash transfers such as food aid and subsidies were found in Arndt and Tarp (2001), Gelan (2006), Gelan (2007), and Lofgen and El-said (2000). A study using micro-simulation for evaluation of cash transfer programs was found in Bourguignon and Spadaro (2006).

According to the literature survey, there are very few studies related to Laos using CGE model: Fukase and Martin (1999) built a simple CGE model to analyze the economic effect of joining the AFTA; Warr (2006) built a two sector, multi-household CGE model to analyze the impact of a hydropower dam (NT2); Warr and Menon (2006) built a CGE model to assess the impact of road improvement on poverty. Kyophilavong (2010) used a GTAP model to estimate the impact of the global financial crisis on the Lao economy. This shows that there are very few studies using a quantitative approach to analyze the impact of social programs in Laos.

6. Methodology and Data

In order to attempt to assess the impact of cash transfers on poverty and income distribution in the Lao context, the Global Trade Analysis Project (GTAP) model and Micro-simulation were employed. The GTAP model is a multi-region computable equilibrium (CGE) model (Hertel eds., 1997).

The GTAP model assumes perfectly competitive markets, where the zero profit condition holds, and that all the markets are cleared. The regional household allocates expenditures across three categories: private household, government, and savings. It derives income from the 'sale' of primary factors to the producers, which combine them with domestically produced and imported intermediate composites to produce final goods. These final goods are in turn sold both domestically to private households and the government, and exported to the rest of the world. Both government and private households also import final consumption goods from the rest of the world. A global bank intermediates between global savings and regional investments by assembling a portfolio of regional investment goods and selling shares in this portfolio to regional households in order to meet their savings demands. Finally, a global transport sector assembles regional exports of trade, transport and insurance services and produces a composite goods used to move merchandise trade among regions.

As in the various types of the integrated- microsimulation- CGE model approach, this study uses a top-down approach with micro accounting to estimate the impact of cash transfers on poverty and income distribution (Ravallion, 2008; Chen and Ravallion, 2004; Ravallion & Lokshin, 2008). There are three steps for estimating the effect of transfers on household welfare. First, we used existing references for the impact of transfers on prices. Secondly, the price changes from the GTAP model are used with the Lao household expenditure survey to estimate household welfare changes.

The household welfare change is calculated using the formula in Chen and Ravallion, 2004 and Ravallion & Lokshin, 2008. In this approach, household welfare changes resulting from transfers consist of four factors: a price effect, a production effect, labor income, and consumption. The changes in the price of particular food and non-food items alter household welfare based on the share of the revenue of these items.

Wage change influences household income according to its share of wage income. The price changes also affect the consumption of households, and the increase of prices decreases household welfare.

The welfare impact from cash transfer in change of utility for household i can be expressed as follows[5]:

$$g_i = \sum_{j=1}^{57} \left[p_{ij}^s q_{ij}^s \frac{dp_{ij}^s}{p_{ij}^s} - p_{ij}^d \left(q_{ij}^d + z_{ij} \right) \frac{dp_{ij}^d}{p_{ij}^d} \right] + \sum_{k=1}^{2} \left(w_k L_{ik}^s \frac{dw_k}{w_k} \right)$$

= (change in revenue) – (change in expenditure) – (change in input) + (change in wage)

gi	= The monetary value of the change in utility for household i
pijsqijs	= The revenue (selling value) from household production activities in sector j
pijs	= Supply price from household i in production activities in sector j
qijs	= Quantity supplied from household i in production activities in sector j
pijdqijs+zij	= The (negative) weight for demand price changes
pijd	= Demand price from household i in production activities in sector j
qijd	= Quality demanded from household i production activities in sector j
zij	= Commodities used as production inputs, of which zij is used for production good in sector j
wkLiks	= The weight for changes in the wage rate for activity k
wk	= Wage rate to activitiy k
Liks	= Household's "external" labor supply to activity k

The latest version of the GTAP database, version 7, was used for this study. This version has 113 countries and 57 sectors. To facilitate our analysis, we have aggregated the sectors into 10 groups and the countries into 10 regions. The third Lao Expenditure and Consumption Survey (LECS 3) in 2002/2003 were used for micro-simulation. There are 57 sectors of production and consumption in the GTAP data base. On the other hand, there are 356 categories for consumption and 117 categories of production in LECS 3. Therefore, in order to link results from the GTAP model to the micro-

[5] The measurement of welfare impact from trade liberalization has data constraints because initial data of price and wage levels are not included. However, this problems is overcome by calculating a first-order approximation to the welfare impact in a neighborhood of the household's optimum (Chen and Ravallion, 2004; Ravallion and Lokshin, 2008).

simulation model, it is important to reconcile the data. See discussion of data reconciliation in Kyophilavong *et al.* (2010).

7. Simulation Design and Results

There are few social programs and little social assistance in Laos. In addition, the existing social protection program is small scale, and implemented only in some provinces and regions. We therefore assume that government implements a cash transfer program which focuses on poor families with children in urban and rural areas[6]. It is important to note that in this program, we assume that transfers are unconditional.

As previously mentioned, this simulation focuses on cash transfers to poor families with children in urban and rural areas. Three simulations were conducted[7]. In Simulation 1, 2 and 3, government transfers 5%, 10% and 15% of mean income per-capita per-month to poor households with children[8] (Table 7-1). It is important to note that mean incomes per month for poor families with children in rural and urban areas are different. The mean monthly incomes of poor families with children were about $30 in urban and $11 dollars in rural areas. The income poverty line was estimated based on the official consumption poverty line[9] (World Bank and DOS, 2009).

The Lao government faces large budget deficits and also high external debt. However, the production and exports of the natural resources sector (mining and electricity) have been increased since 2003, and government revenues are expected to increase (World Bank, 2010). We have therefore assumed that the Lao government will

[6] The issues of social cash transfer were discussed in Blackorby and Donaldson (1988) and Besley and Coate (1991). For more detailed discussion on targeting transfers in developing countries see Coady, Grosh and Hoddinott (2004); Kakwani, Soares and Son (2005).

[7] We assume that this cash transfer is a small program and that it does not impact significantly on prices and wages. However, it is important to consider the price effect when we formulate a large scale transfer program.

[8] In normal practice a program will transfer money to households; however, to simplify the simulation, we designed our program on an individual transfer basis.

[9] Since official income poverty lines are not established in Laos as far as we know. Since official per capita expenditure poverty lines in LECS 3 are established, the income poverty lines are obtained by taking the mean per capita expenditures for the poor households based on the expenditure poverty lines. The income poverty line is the same in rural and urban areas.

fund this cash transfer program from resource revenues[10]. The budget requirement for implementing a cash transfer program is shown in table 7-1. In simulation 1, the total budget requirement was $1.18 million dollars, simulation 2 was $2.36 million dollars and simulation 3 was $3.54 million dollars which account for about 1.92%, 3.84% and 5.76% of government current expenditure in 2010. It is important to note here that this budget does not include administrative costs and other costs for implementing and managing the program.

Table 7-1. Simulation Design (in US Dollar)

		Urban				Rural				Total Amount per-year (million)
		Poor		Non Poor		Poor		Non Poor		
		with children	without children	with children	without children	with children	without children	with children	without children	
Base	Number of Person in Lao (thousand)	362	81	610	215	1,184	36	2,635	397	N/A
	Income per-capita per-month	29.92	33.88	27.40	29.44	10.78	14.79	10.47	11.06	N/A
simulation 1	5% of mean income per-capita (per-month)	1.50				0.54				14.15
simulation 2	10% of mean income per-capita (per-month)	2.99				1.08				28.31
simulation 3	15% of mean income per-capita (per-month)	4.49				1.62				42.46

Source: Author's estimation from Lao Expenditure and Consumption Survey (LECS).
Note: Exchange Rate (Kip/ US$) is 8,000.

The impact of cash transfers on poverty and income distribution is shown in tables 7-2 and 7-3.

It is clear that cash transfers to poor families with children could reduce poverty and combat declining income distribution in both urban and rural areas. An increase of 5%

[10] In order to avoid 'Dutch Disease', where a rise in revenues from the exploitation of natural resources results in a decline in manufacturing, effective government expenditure is essential. For sustainable economic development, expenditure on human resource development is crucial (Larsen, 2006; Levy, 2007; Iimi, 2007).

of income for poor urban families with childen, reduces poverty by about 4%, and the income gap will reduce by 2%. If the income of these households increases by 15%, the poverty rate will reduce by 14% and the income gap will reduce by about 6%.

Poor rural households with children see a more positive impact in terms of poverty than do their urban equivalents from this cash transfer program. An increase of 5% of income for poor rural households with children will reduce poverty by about 12%, and the income gap will fall by 2%.

If the income of poor rural households with children increases by 15%, the poverty rate will fall by 35% and the income gap will reduce by about 6%. The main reason for this is that there are a large proportion of poor families in rural areas and their income is close to the poverty line. Therefore, by increasing their income by a small percentage, they can be lifted above the poverty line.

The impact of cash transfers on poor families with children in urban and rural areas seems to have a similar impact on income distribution. Because their increase of income is rather small, it does not have much impact on the Gini coefficient of urban and rural income distribution.

Table 7-2. Impact of Cash Transfer on Poverty and Income Distribution in Urban Areas

	Urban		Urban	
	Poverty Rate	**Gini Index**	**Poverty Rate Change (%)**	**Gini Index Change (%)**
Base Line	0.34951	0.42097		
Simulation 1	0.33476	0.41244	-4.2	-2.0
Simulation 2	0.31549	0.40424	-9.7	-4.0
Simulation 3	0.30002	0.39638	-14.2	-5.8

Source: Author's estimation from Lao Expenditure and Consumption Survey (LECS).

Table 7-3. Impact of Cash Transfer on Poverty and Income Distribution in Rural Areas

	Urban		Urban	
	Poverty Rate	**Gini Index**	**Poverty Rate Change (%)**	**Gini Index Change (%)**
Base Line	0.28699	0.42848		
Simulation 1	0.25092	0.41941	-12.6	-2.12
Simulation 2	0.21610	0.41063	-24.7	-4.16
Simulation 3	0.18613	0.40220	-35.1	-6.13

Source: Author's estimation from Lao Expenditure and Consumption Survey (LECS).

8. Conclusion and Policy Implication

As there is no national level social protection or social transfer program in Laos, this study assumes that the Lao government implements a cash transfer program to poor households with children in both urban and rural areas. In order to assess its impact on poverty a CGE model and micro-simulation were used. The primary conclusion of this study is as follows.

The Lao economy is vulnerable to external shocks, and poor households seem to most vulnerable. But there is no social protection to protect the poor from external shocks, especially during the recent global financial crisis. There is lack of capacity, management skills and revenues for implementing appropriate and effective social protection schemes.

Within an affordable government budget, it is clear that cash transfers to poor households with children could reduce poverty and improve income distribution in both urban and rural areas. Poor rural families with children rather than the urban poor, seem to benefit more in terms of poverty reduction, from this cash transfer program. Impacts on income distribution, however, seem to be similar.

There is still no existing comprehensive social assistance program or conditional or non-conditional cash transfer program in Laos. The empirical result shown in this paper demonstrates that cash transfer could reduce poverty and improve income distribution. It is therefore important for the Lao government to consider establishing a comprehensive social support program aimed at reducing poverty in Laos. However, in order to establish a social support program, the government needs to consider appropriate program design, including the target group, national revenues and the capacity of institutions.

This study has several weaknesses for future improvement. First, it does not consider conditions relating to cash transfer in the model, nor the cost effectiveness of such a program. Secondly, this study focuses only on poor households with children, and it needs to consider wider perspectives such as rural areas without roads or health or schools. Thirdly, it is necessary to consider the administrative cost and effect on prices of the program. Fourthly, the transfer model used in this paper does not distinguish the number of children in a household. We transfer the same amount to poor families with

children under 12 years old irrespective of the number of children in the household. In addition, we do not set conditions for cash transfer.

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