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Giang, Thanh Long and Pfau, Wade Donald
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An Exploration for a Universal Non-contributory Pension Scheme in Vietnam*

Giang Thanh Long

Wade Donald Pfau

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Rapid declines in fertility rates and mortality rates along with substantial improvements in health care systems have resulted in the growth of older persons around the world, and this trend is expected to continue in the coming years. With the definition of an older person as aged 60 years and over, the medium-variant population projections of the United Nations show that the number of older persons will increase from 672 million in 2005 (or 10.3 per cent of the world population) to around 2 billion people in 2050 (or 21.8 per cent of the world population) (United Nations, 2007a). Particularly in the developing countries that grow old before becoming rich, population aging will present various challenges for public policies in the coming decades. In addition, under profound social and economic changes stemming from modernization and urbanization, the weakening of family bonds also suggests an urgent task for the old age security in developing countries, where social security systems are underdeveloped with extremely limited coverage (Schwarz, 2003).

As one of the fastest growing economies in the world, Vietnam is also experiencing the changes just described. The aforementioned population projections indicate that the older population in Vietnam will increase significantly from 7.6 per cent of the whole population in 2005 to 26.1 per cent in 2050. Moreover, swift economic transformation since *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 older persons. However, while such remarkable successes have been widely acknowledged, many groups of older persons are still living in poor and vulnerable conditions. The majority of them are living in rural, isolated, and disadvantaged areas (Le *et al.*, 2005). Only a small percentage of the older persons in Vietnam are receiving public pensions, while others are living on their own and/or supported by family members (MOLISA, 2005). In addition, a potentially worrisome issue for supporting the older persons is that the past decade has witnessed a continuous decline in the number of those living as dependents, and a continuous increase in the number of those living alone or in households with only older persons (Giang and Pfau, 2007a). Thus, any reduction in family support caused by the aforementioned trends will leave the older persons behind with further vulnerabilities. The above situation demands that policy makers and social researchers provide more attention to discussing and creating social welfare programs that can protect the millions of older people in Vietnam during these rapid social and economic changes.

Recently, an increasing number of non-contributory pension (NCP) schemes have been implemented in many countries in Africa, Asia, and Latin America as a tool to reduce the severity of poverty for the older persons and their families. NCP is a social protection scheme that provides monthly benefits (in-kind or cash) to the vulnerable groups of people, especially the old and the poor, who do not need to contribute anything to the scheme. Benefits are provided via universal or means-tested schemes, and government budget is the main financing source of the scheme. For instance, Botswana and Lesotho have universal programs, while Argentina, Brazil, India, and Thailand provide means-tested benefits (HAI, 2006). In Vietnam, a social pension scheme was implemented in 2004 to provide a benefit of 65,000 Vietnamese dong (VND) (or about US\$ 4) per month to the elderly aged 90 and over who did not have a contributory pension. In April 2007, the eligible age was revised to 85 and over, and the benefit was increased to VND 120,000 (about US\$ 7) per month. Yet more than two-thirds of the eligible individuals have not received any benefit, and even some provinces have not carried out this scheme (NACSA, 2006). Also, ILSSA and UNFPA (2007) shows that the impacts of the current scheme still have been

limited in terms of both coverage and poverty reduction, though it has been able to help the recipients overcome certain difficulties.

Guided by such an urgency, this chapter aims to explore the potential efficacy of a universal NCP scheme in Vietnam by discussing such research questions as how such a scheme would help to reduce poverty incidence for the elderly, and how much it would cost under demographic changes. Although management and financing sources are also important issues, we will not discuss them in this chapter. The remainder of the chapter is organized as follows. We will provide a review of relevant studies in the next section. Then, in the third section, we will present our data and estimation methodology. The empirical results and policy implications will be presented in the fourth section. The last section will provide some concluding remarks.

Briefly, some of our findings are as follows. First, the impacts of a universal NCP scheme on poverty rates and the poverty gap of the older persons would be significant, but become less potent when the eligibility age is higher. In particular, with the benefits provided, the older persons who are females; who are married; who are living in urban areas; who are working, or who are receiving social insurance benefits would be more likely to reduce their poverty rates and poverty gaps than other elderly groups. Second, the financial simulations show that the cost of the scheme, which provides a benefit equal to 50.0 per cent of the official poverty line to all the persons aged 60 and over, would be about 1.2 per cent of GDP in 2004. As population ages as in the projections of the United Nations (2007a), the cost would be higher, but only as high as about 3.0 per cent of GDP.

A REVIEW OF RELEVANT STUDIES

Recently, numerous studies have been conducted to analyze the impacts of NCP schemes on poverty reduction, and most of them show that these schemes are playing an important role in reducing poverty for both elderly and their families, as well as extending coverage of the social protection systems (see, for instance, Case and Deaton, 1998; Barrientos and Lloyd-Sherlock, 2003; and HAI, 2006). In addition, though the remaining question is about financing sources for maintaining such schemes in developing countries with limited resources, a number of studies indicate

that a universal scheme would cost about 2-3 per cent of annual GDP at most (see, for instance, Willmore, 2007; United Nations, 2007b).

While such *ex-post* studies are obviously important for evaluating advantages and drawbacks of the existing schemes, *ex-ante* studies are also equally important to understand the potential impacts of proposed schemes. However, only a handful of *ex-ante* studies with micro-simulation techniques have been conducted to examine the potential role of an NCP scheme in reducing poverty. In this section, we will review some relevant studies, including their analytical frameworks and main findings.

In a paper on Greece, Matsaganis *et al.* (2000) discuss the desirability and feasibility of a minimum guaranteed income scheme to protect the poor. Using the data from the European Community Household Panel (ECHP) in 1994, the paper 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 for such a scheme. However, the paper also emphasizes that dealing with budgetary and administrative constraints is extremely important for design and implementation.

Also 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 (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 accordingly to the household living arrangements. The paper makes simulations for different types of households and recipients under various benefit levels. Moreover, the paper 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 per cent of total national budget expenditures in order to completely close the poverty gap.

With the same research interests, Gassman and Behrendt (2006) evaluate the impacts of a number of cash transfer programs on poverty in Senegal and Tanzania. Using data from the Senegalese Households Survey in 2001/02 (ESAM-II) for Senegal, and the Household Budget Survey 2001/02 for Tanzania, the authors make

attempts to measure the changes in the poverty rates of these countries if a cash transfer program had been introduced. Two national poverty lines (i.e., the food poverty line and basic needs poverty line) and an international poverty line are utilized in the simulations, and poverty rates are measured with the FGT index. The simulated results show that all kinds of cash transfers (i.e., universal old-age and disability pensions, universal child benefits, and targeted cash transfers) would have reduced poverty rates significantly if they had been introduced in these countries. The paper concludes that “introducing basic old-age and disability pensions in Senegal and Tanzania would not only improve the living standard of benefit recipients, but also of other members living in the same household, especially children” (Gassman and Behrendt, 2006, p. 33). The paper also emphasizes that a universal cash transfer scheme, particularly a child benefit, is an effective tool for poverty reduction, but targeted cash transfer schemes provide ambiguous results regarding this purpose. Thus, policy settings need to be carefully considered in different social and economic contexts.

Kakwani and Subbarao (2005) apply a similar assessment for 15 African countries. By using household data sets, they 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, and targeting elderly who live alone. The simulated results provide not only expected reductions in poverty rates, but also the required financial capacity to achieve such options. The paper 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.

With the same analytical framework, Kakwani, Son, and Hinz (2006) obtain similar results for Kenya. The paper shows that the introduction of a non-contributory pension scheme will help reduce poverty rates, the poverty gap, and poverty severity for many elderly and their families in this country. Such a scheme will also be financially feasible, as the cost will be merely 1.0 or 2.0 per cent of GDP if the

scheme provides a benefit of 20.0 per cent or 50.0 per cent of per capita national income to all persons aged 55 and over, respectively.

For Vietnam, to the best of our knowledge, only one study by Weeks *et al.* (2004) discusses quantitatively about introducing a universal old-age pension scheme in Vietnam. They use data from the Vietnam Living Standard Survey (VLSS) in 1997/98 to estimate the cost of implementation if such a scheme was introduced in 1998. This scheme provides benefits to all elderly aged 65 and over, and the level of benefits is calculated from two ratios: the ratio of the poverty line to average per-capita consumption, and the ratio of the proposed benefit to the VLSS 1997/98 poverty line. Without administrative costs, the estimated budgetary cost would have been 2.2 per cent of GDP in 1998, if the benefit was equal to the poverty line. However, this study did not discuss how the scheme would help to reduce the poverty rate and poverty gap for the elderly in Vietnam.

It is worth noting that, although all of the above studies work with different data under different research objectives, they all use the same assumptions that everything, except the proposed benefits, remains unchanged, and that beneficiaries do not alter their behavioral responses, and there are no macroeconomic feedbacks from the introduction of a new pension scheme. For instance, we do not know how the labor force participation rates, savings, or living arrangements of the elderly might change in response to the program benefits, or how the government budget would have been re-allocated if such a scheme had been introduced. These assumptions are necessary when working with household survey data, and will be used in this chapter as well.

DATA AND METHODOLOGY

Data

To pursue the research objectives, we use the Vietnam Household Living Standard Survey in 2004 (namely VHLSS 2004). This is one of the four household surveys in Vietnam over the past decade conducted by the General Statistics Office, Vietnam (GSO) along with other international agencies, as a part of the World Bank's Living Standard Measurement Surveys (LSMS). Descriptions of this survey can be found in

World Bank (2005) and GSO (2007). Unless otherwise noted, our calculations will use the sample weights to make the data representative for the entire Vietnamese population, both urban and rural, and across the regions.

The survey is focused on households, but it also includes some individual's characteristics in the household, such as age, gender, relationship to the household head, marital status, working status, wages, health status, and educational attainment. This structure enables us to identify the older people aged 60 and over, as well as their households (which include at least one older person). The VHLSS 2004 includes 39,696 people in 9,189 households, in which the number of elderly people and the number of elderly households are 3,806 and 2,784, respectively.

At the household level, the survey provides such extensive data as sources of income, business and agricultural enterprises, detailed household expenditures, ownership of consumer durables, poverty incidence, poverty alleviation programs, social insurance, wealth, and housing conditions.

The data, however, also have some limitations. Besides wages, most income sources are only identified at the household level, so it is not clear which member is the source of the income. Similarly, expenditure is also identified at household level, so we do not know who is spending. Wealth data are only available at the household level. These problems limit the analysis of intra-household sharing. Moreover, the official poverty line is based on per-capita expenditure, which is estimated by dividing total expenditure of a household by the number of household members. As indicated in many studies, such as Deaton (1997) and Barrientos (2006), such a measure is established for household as a whole rather than for particular individuals, and it may underestimate or overestimate poverty rates under different household settings.

Poverty Measures

In this chapter, we follow the GSO to calculate per capita expenditures-based poverty rates. The GSO method is to calculate the minimum expenditures needed to satisfy basic nutritional and living needs. This method provides an absolute poverty line that stays constant in real terms over time. The elderly poverty rate is measured by

percentage of the older persons whose household's per capita expenditure per year was less than the official poverty line, which was 2,077 thousand Vietnamese dong (VND) in 2004.

Poverty gap is estimated in two ways. First is by average distance between per-capita expenditure of the elderly poor and the official poverty line, in percentage of the latter; and this measure indicates how far the elderly poor are below the poverty line. Second is by monetary term, which shows how much was needed to close poverty gap for the elderly.

These calculations are made using the population sample weights in the survey to get aggregate numbers.

Simulating the Potential Benefits of a Universal NCP Scheme for Poverty Reduction

For empirical estimation, using the aforementioned data, we will first draw an overall picture of demographic characteristics and poverty status for the elderly in Vietnam, in which age, gender, marital status, residential areas and regions, and educational attainment of the elderly, as well as their respective poverty rates and poverty gaps will be described. Then, the elderly population will be further decomposed into sub-groups to examine how their poverty rates and poverty gaps would have been changed in the counterfactual situation that a universal NCP scheme was introduced in Vietnam in 2004.

By age, we divide the older population into three groups: young elderly (aged 60-69), older elderly (aged 70-79), and oldest elderly (aged 80 and over). A benefit, which is equal to 50 per cent of the official poverty line, will be provided to all older persons at three different age thresholds to examine three different scenarios for a universal NCP scheme.

We assume that the older person's benefits are spent by their household, so that it is added to the total household expenditure. In per capita terms, this means that each member of an older person's household will enjoy some of the benefits. Because

we are otherwise unable to account for individual expenditures in a household, this is a reasonable assumption.

Similarly, as the benefits provided to the elderly in one household will raise the per-capita expenditure for everyone in that household, there are four possible ways in which we account for the NCP-induced expenditure: reducing poverty for the direct recipients (or elderly poor), reducing poverty of the non-recipients in the household (or non-elderly poor), improving per-capita expenditure for the non-poor recipients, and improving per-capita expenditure for the non-poor non-recipients. This is an important implication for introducing a universal NCP scheme to the elderly. Based on these cases, we can estimate how a universal NCP scheme would reduce poverty rate for the direct recipients, for the elderly population, as well as for Vietnamese population as a whole.

We will also provide the information of how the percentage of elderly people living within different poverty ratios would be reduced under different scenarios of a universal NCP scheme. Furthermore, Gini coefficient will be calculated to show how a universal NCP scheme would help to reduce inequality for elderly people in particular, and Vietnam in general.

Simulating the Costs of a Universal NCP Scheme

To estimate the costs of a universal NCP scheme, we will apply a static simulation method proposed by Willmore (2007). This simulation will not consider administrative costs for the scheme operation. Suppose that the number of the eligible elderly accounts for $e(\%)$ of the total population, and the NCP benefit provided to each person is equal to $b(\%)$ of per-capita GDP. The total expenditure of the scheme without administrative costs will be $t(\%)$ of GDP, in which $t=e*b$. This estimate implies that the benefit is not linked to the poverty line, because the poverty line grows with inflation rather than GDP. To the extent that GDP will grow faster than inflation, it indicates a growth of the benefit in terms of its percentage of the poverty line. Also, more eligible elderly or higher benefit means more expected costs for the scheme.

Again, the most important note is that all the estimates assume that everything other than the NCP benefit will remain the same. In particular, the elderly and family members will not change their behaviours in response to the potential gain from an NCP scheme, and there will also be no macroeconomic feedbacks from the introduction of such a scheme.

This chapter seeks to quantify the potential impacts of a universal NCP scheme on poverty incidence for the older persons in Vietnam. Our discussion will first provide a number of older person's characteristics and their current poverty status. Then, we will present a detailed analysis about the introduction of a universal NCP scheme to older persons.

DEMOGRAPHIC CHARACTERISTICS AND POVERTY STATUS

Table 1 provides general information about the older persons in Vietnam in 2004 for a number of characteristics based on the 2004 VHLSS. Also, their poverty status will be presented through the poverty rate and poverty gap.

By age, young elderly accounted for nearly 50 per cent of the elderly population, while the oldest elderly accounted for about 15 per cent. However, as indicated in Giang and Pfau (2007a), the Vietnamese population is aging because the former had a declining trend, while the latter had an increasing trend over the past decade. The estimates show that the elderly at more advanced ages generally had higher poverty rates and poverty gaps than the younger elderly.

About 60 per cent of the elderly were married. The result (not shown) even shows that more than 95 per cent of elderly were married or widowed. The elderly with other marital statuses (divorced, separated, and never married) accounted for only 4 per cent of the elderly population. The married elderly had significantly lower poverty rates than did their unmarried counterparts. However, these groups had similar poverty gaps.

TABLE 1
Demographic Characteristics and Poverty
of the Elderly and their Households in Vietnam, 2004

	Percentage of Elderly Population	Average Poverty Rate (%)	Poverty Gap (as % of Poverty Line)
Vietnam's Total Population		19.3	24.1
Elderly People		17.9	22.9
Age			
60 – 64	26.8	12.6	22.5
65 – 69	22.9	17.3	21.7
70 – 74	20.9	20.2	24.4
75 – 79	14.3	22.2	21.0
80 – 84	8.8	24.3	24.3
85 – 89	4.0	15.2	23.9
90 and older	2.3	18.1	29.0
Gender			
Male	41.6	16.4	23.1
Female	58.4	18.9	22.8
Marital Status			
Married	60.5	15.8	23.4
Unmarried	39.5	21.1	22.5
Urban / Rural Status			
Urban	26.7	4.3	17.6
Rural	73.3	22.8	23.3
Region			
Red River Delta	25.8	16.3	18.6
Northeast	10.5	25.2	24.0
Northwest	1.9	53.2	29.3
North Central Coast	12.6	31.2	24.8
South Central Coast	9.9	21.6	25.8
Central Highlands	3.4	24.1	32.5
Southeast	15.4	2.8	23.1
Mekong River Delta	20.6	13.1	18.2
Living Arrangement			
Alone	5.6	21.4	25.8
Only Married Couple	14.4	14.0	22.1
With Children	75.5	18.6	22.9
With Others, no Children	4.5	14.8	21.2
Working?			
Yes	43.9	18.4	22.2
No	56.1	17.5	23.5
Receiving Social Insurance?			
Yes	23.2	6.6	18.5
No	76.8	21.3	23.3
Education (Highest Degree)			
No	58.4	23.4	27.5
Primary	22.3	13.0	18.8
Secondary	12.6	6.3	18.1
Vocational & Technical	4.0	3.4	25.3
Higher (College and above)	2.7	0.4	11.4

Source: Own calculations from VHLSS 2004.

Regarding residential areas, more than 70 per cent of the elderly were living in rural areas. This number, however, has been declined over the past decade on the account of on-going urbanization (Giang and Pfau, 2007a). The results show that urban elderly had a substantially lower poverty rate and poverty gap than did their rural counterparts. Similarly, the results for residential regions indicate that more than 60 per cent of the elderly were living in the three largest rice-producing regions in Vietnam, i.e., the Red River Delta, the Southeast, and the Mekong River Delta.

By living arrangements, more than 75 per cent of the elderly were living with their children, and about 15 per cent of the elderly were living as married couples with no one else. The elderly living alone or living with others accounted for about 10 per cent of the elderly population. However, these elderly groups tended to increase, while the elderly living with children tended to decrease in recent years (Giang and Pfau, 2007a). In terms of poverty rate, the estimated results show that the elderly living alone had the highest rate, while those of the married couples had the lowest rate.

Regarding gender, female elderly were dominant. They had a higher poverty rate, but a similar poverty gap in comparison with their male counterparts. However, going further with marital status and living arrangements, more than 80 per cent of elderly living alone were rural female elderly, and most of them did not receive any benefits from the formal social insurance scheme (results are not shown). This status calls for more attention in making welfare policies to this elderly group.

As expected, the working elderly had a lower poverty gap than did the non-working counterparts. Nevertheless, it is striking to find that the former had a higher poverty rate than did the latter. This situation might reflect that working was a requirement for the elderly to overcome poverty.

In terms of educational attainment, about 60 per cent of the elderly had no educational degrees, and just 3 per cent of them had higher education degrees (college, university, and post-graduate). Though, as presented in Giang and Pfau (2007b), the number of elderly without degrees has decreased in recent years, while those with other educational degrees, especially higher education, increased over time. As expected, the elderly without degrees had the highest poverty rate and poverty gap

(23.4 per cent and 27.5 per cent, respectively), while those with higher education degrees had the lowest levels (only 0.4 per cent and 11.4 per cent, respectively).

IMPACTS OF A UNIVERSAL NCP SCHEME ON THE ELDERLY POVERTY

We now consider the potential impacts of a universal NCP scheme on the elderly poverty in Vietnam. More specifically, we will examine how the elderly poverty rate and poverty gap would have been changed if such a scheme was introduced to them in 2004.

As mentioned earlier, suppose that we will provide a benefit equal to 50 per cent of the poverty line in 2004 to all the elderly in certain age groups. There are three schemes in examination: a NCP scheme provides such benefit to all elderly (or 60+); a NCP scheme provides such benefit to only elderly aged 70 and over (or 70+); and a NCP scheme provides such benefit to only elderly aged 80 and over (or 80+).

TABLE 2
Changes of Poverty Rate under the Proposed NCP Schemes

Indicators	% Elderly Population	Current Poverty Rate (%)	60+		70+		80+	
			Post-reform Poverty Rate (%)	Percentage of Change (%)	Post-reform Poverty Rate (%)	Percentage of Change (%)	Post-reform Poverty Rate (%)	Percentage of Change (%)
Vietnam		19.3	17.3	-10.4	18.2	-5.7	19.0	-1.6
Elderly		17.9	9.3	-48.0	12.7	-29.1	16.4	-8.4
Marital, Gender and Age								
Married male, 60-69	15.4	13.4	7.1	-47.0	13.0	-3.0	13.0	-3.0
Unmarried male, 60-69	5.7	13.4	9.4	-29.9	13.2	-1.5	13.2	-1.5
Married female, 60-69	20.8	14.1	6.1	-56.7	12.5	-11.3	13.8	-2.1
Unmarried female, 60-69	7.8	18.1	11.0	-39.2	17.6	-2.8	17.6	-2.8
Married male, 70-79	8.7	17.3	7.0	-59.5	8.6	-50.3	17.3	0.0
Unmarried male, 70-79	6.6	26.7	13.7	-48.7	14.9	-44.2	26.7	0.0
Married female, 70-79	11.3	20.6	7.5	-63.6	8.0	-61.2	19.5	-5.3
Unmarried female, 70-79	8.6	23.8	14.0	-41.2	14.0	-41.2	23.5	-1.3
Married male, 80+	1.5	20.2	9.7	-52.0	9.8	-51.5	12.7	-37.1
Unmarried male, 80+	3.8	23.2	17.5	-24.6	17.5	-24.6	17.5	-24.6
Married female, 80+	2.8	21.9	12.6	-42.5	12.6	-42.5	12.6	-42.5
Unmarried female, 80+	7.0	20.4	11.5	-43.6	12.4	-39.2	12.4	-39.2
Gender and Residential Areas								
Male, Urban	11.2	2.9	1.6	-44.8	2.2	-24.1	2.7	-6.9
Male, Rural	30.4	21.4	10.9	-49.1	15.4	-28.0	20.1	-6.1
Female, Urban	15.5	5.3	1.5	-71.7	2.4	-54.7	3.8	-28.3
Female, Rural	42.9	23.8	12.9	-45.8	17.1	-28.2	21.9	-8.0
Residential Regions								
Red River Delta	25.8	16.3	5.7	-65.0	8.6	-47.2	14.3	-12.3
Northeast	10.5	25.2	18.1	-28.2	22.3	-11.5	24.1	-4.4
Northwest	1.9	53.2	42.4	-20.3	50.4	-5.3	52.5	-1.3
North Central Coast	12.6	31.2	15.7	-49.7	21.2	-32.1	27.4	-12.2
South Central Coast	9.9	21.6	11.1	-48.6	15.7	-27.3	19.8	-8.3
Central Highlands	3.4	24.1	15.5	-35.7	18.9	-21.6	23.4	-2.9
Southeast	15.4	2.8	2.0	-28.6	2.6	-7.1	2.7	-3.6
Mekong River Delta	20.6	13.1	5.7	-56.5	9.1	-30.5	12.5	-4.6
Living Arrangement								
Alone	5.6	21.4	2.7	-87.4	5.2	-75.7	16.4	-23.4
Only Married Couple	14.4	14.0	1.6	-88.6	4.5	-67.9	12.9	-7.9
With Children	75.5	18.6	11.4	-38.7	15.1	-18.8	17.6	-5.4
With Others, no Children	4.5	14.8	6.6	-55.4	7.5	-49.3	7.7	-48.0
Working?								
Yes	43.9	18.4	8.2	-55.4	13.4	-27.2	17.4	-5.4
No	56.1	17.5	10.1	-42.3	12.1	-30.9	15.6	-10.9
Receiving Social Insurance?								
Yes, Male	12.1	6.7	2.7	-59.7	4.6	-31.3	6.3	-6.0
No, Male	29.5	20.4	10.7	-47.5	14.8	-27.5	19.2	-5.9
Yes, Female	11.1	6.5	1.7	-73.8	3.9	-40.0	6.0	-7.7
No, Female	47.3	21.8	11.8	-45.9	15.4	-29.4	19.6	-10.1

Source: Own calculations based on VHLSS 2004.

TABLE 3
Changes of Poverty Gap under the Proposed NCP Schemes

Indicators	% Elderly Population	Current Total Poverty Gap (billion VND)	60+		70+		80+	
			Post-reform Total Poverty Gap (billion VND)	Percentage of Change (%)	Post-reform Total Poverty Gap (billion VND)	Percentage of Change (%)	Post-reform Total Poverty Gap (billion VND)	Percentage of Change (%)
Vietnam		7,662	6,592	-14.0	7,008	-8.5	7,456	-2.7
All Elderly		671	280	-58.2	416	-38	588	-12.3
Gender, Marital, and Age								
Married male, 60-69	15.4	93.4	43.6	-53.3	89.6	-4.1	90.5	-3.1
Unmarried male, 60-69	5.7	10.4	5.4	-48.1	9.4	-9.6	10.3	-1.0
Married female, 60-69	20.8	86.3	31.4	-63.6	72.0	-16.6	82.9	-3.9
Unmarried female, 60-69	7.8	74.0	37.0	-50.0	71.7	-3.1	71.7	-3.1
Married male, 70-79	8.7	78.5	27.0	-65.6	31.6	-59.7	78.5	0.0
Unmarried male, 70-79	6.6	28.1	15.6	-44.5	16.0	-43.1	28.1	0.0
Married female, 70-79	11.3	56.0	13.2	-74.4	14.1	-74.8	50.1	-10.5
Unmarried female, 70-79	8.6	115.0	52.3	-54.5	52.5	-54.3	114.8	-0.2
Married male, 80+	1.5	25.1	4.1	-83.7	5.1	-79.7	7.6	-69.7
Unmarried male, 80+	3.8	23.4	15.1	-35.5	15.1	-35.5	15.1	-35.5
Married female, 80+	2.8	13.3	2.4	-82.0	2.4	-82.0	2.4	-82.0
Unmarried female, 80+	7.0	67.0	33.4	-50.1	36.3	-49.9	36.3	-49.9
Gender and Residential Areas								
Male, Urban	11.2	10.0	4.0	-60.0	6.4	-36.0	8.5	-17.0
Male, Rural	30.4	249.0	107.0	-57.0	161.0	-35.7	222.0	-10.8
Female, Urban	15.5	24.0	4.1	-82.6	7.4	-68.5	17.0	-27.7
Female, Rural	42.9	388.0	165.4	-57.4	242.0	-37.6	341.0	-12.1
Residential Regions								
Red River Delta	25.8	128.0	29.6	-76.9	58.7	-54.1	107.0	-16.4
Northeast	10.5	103.0	57.4	-44.3	80.2	-22.1	93.9	-8.8
Northwest	1.9	49.9	28.4	-43.1	41.1	-17.6	47.6	-4.6
North Central Coast	12.6	159.0	69.5	-56.3	97.4	-38.7	137.0	-13.8
South Central Coast	9.9	90.4	33.4	-63.1	48.2	-46.7	72.3	-20.0
Central Highlands	3.4	43.5	20.8	-52.2	25.5	-41.4	40.8	-6.2
Southeast	15.4	16.4	9.1	-44.5	14.7	-10.4	15.9	-3.0
Mekong River Delta	20.6	80.3	32.3	-59.8	50.0	-37.7	73.8	-8.1
Living Arrangement								
Alone	5.6	50.7	1.8	-96.4	8.1	-84.0	39.2	-22.7
Only Married Couple	14.4	73.0	2.1	-97.1	13.3	-81.8	54.1	-25.9
With Children	75.5	524.0	265.0	-49.4	382.0	-27.1	481.0	-8.2
With Others, no Children	4.5	23.3	11.6	-50.2	12.4	-46.8	14.0	-39.9
Working?								
Yes	43.9	293.0	107.0	-63.5	196.8	-32.8	272.0	-7.2
No	56.1	378.0	173.5	-54.1	219.0	-42.1	316.3	-16.3
Receiving Social Insurance?								
Yes, Male	12.1	27.3	10.1	-63.0	17.1	-37.4	24.5	-10.2
No, Male	29.5	232.0	100.2	-56.8	150.0	-35.3	206.0	-11.2
Yes, Female	11.1	19.7	3.2	-83.8	9.7	-50.8	16.8	-14.7
No, Female	47.3	392.0	167.0	-57.4	239.0	-39.0	341.0	-13.0

Source: Own calculations based on VHLSS 2004.

Tables 2 and 3 present the estimated results for the potential impacts of a universal NCP scheme on poverty rates and the poverty gap of the elderly under various demographic characteristics.

In general, both tables show that a universal NCP would have positive impacts on poverty reduction for the elderly in Vietnam, and even for the Vietnamese population as a whole, though the magnitudes would be different, depending on elderly groups. It is also obvious that, for reducing both poverty rate and poverty gap, the NCP scheme in the first scenario (60+) generally would have larger cost and a greater impact than the second scenario (70+) and the third scenario (80+).

As can be seen in these tables, in all age brackets, the proposed universal NCP schemes under the three scenarios would reduce poverty rates and poverty gaps more substantially for the married elderly than their unmarried counterparts. More specifically, in each age group, married females would be more likely to reduce their poverty rates and poverty gaps than others, while the unmarried female would be less able to do so than others. One interesting finding here is that, even in the NCP schemes with higher eligibility ages, the younger elderly, who are actually not eligible beneficiaries, would still be able to reduce their poverty rates and poverty gaps. In other words, these NCP schemes would be able to help reduce poverty incidence for the eligible elderly's family members, who are not eligible for receiving a benefit. As explained, we assume that an elderly's benefit from an NCP scheme would be shared among members of that elderly's household, and as such it would improve per-capita expenditure for each member of the household.

By gender and residential areas, the estimates clearly show that urban elderly, especially females, in all three scenarios, would be more probably to reduce their poverty rates and poverty gaps than other elderly groups. Among the rural elderly, the female elderly would also have a lower poverty rate and poverty gap than their male counterparts. In other words, such an NCP scheme would have female-oriented impacts on poverty incidence.

In comparison with other regions, except the Southeast, in all three scenarios the results generally indicate that the older persons living in the Northwest, which is the mountainous and remote region with underdeveloped infrastructures and human resources, would be less able to reduce their poverty incidence. This finding can also

be explained by the other fact that the Northwestern older persons were very poor, and thus it would be less probably for them to improve living standards as older persons living in other regions by the same amount of benefits provided from the proposed NCP schemes. As such, regional differences should be carefully considered in implementing an NCP scheme for the elderly.

Regarding the elderly living arrangements, the findings generally indicate that the elderly living alone and the elderly living as married couples would be able to significantly reduce both poverty rates and the poverty gaps in all NCP scenarios. In comparison with other elderly groups, the elderly living with children would be able the least to reduce poverty incidence in all NCP scenarios. This estimate can be expounded by the fact that the average number of members in the households of the elderly living with children was significantly higher than those living in other living arrangements, and as such the former might have lower per capita expenditure than the latter.

For the potential changes in both poverty rate and poverty gap regarding the working and non-working elderly, the NCP scheme in the first scenario (60+) shows that the working elderly would be more likely to reduce these poverty indices than the non-working elderly. However, the findings are opposite for the NCP schemes in the last two scenarios (70+ and 80+). These estimates can be elucidated by the facts (not shown) that the young elderly accounted for about 50 per cent of the elderly population, and that the young elderly accounted for about 70 per cent of the working elderly, while the older elderly and the oldest elderly accounted for 28 per cent, and only 3 per cent, respectively. Therefore, the NCP scheme in the first scenario would have a more significant and direct impact than the NCP schemes in other two scenarios in reducing the poverty rates and poverty gaps for these groups.

Similar results are found for the elderly as recipients and non-recipients of social insurance benefits. The estimates indicate that, with the same benefit provided, the recipient elderly, particularly females, would be more likely than the non-recipient counterparts in reducing their poverty indices. This finding is supported by the fact that, on average, the former's households had smaller size and significantly higher per-capita expenditure than those of the latter. Also, the former's households might have more than one recipient. Thus, the impacts of NCP benefits on the former will be

larger than on the latter. Another possible reason for this finding is that receipt of social insurance benefits is strongly associated with lower probability of poverty of the elderly households in both urban and rural areas (Giang and Pfau, 2008).

COSTS AND BENEFITS OF THE PROPOSED UNIVERSAL NCP SCHEMES

Our next analysis considers how much the proposed NCP schemes will cost to get reduction in the elderly poverty rates and poverty gaps as discussed above.

TABLE 4
Costs of the Proposed NCP Schemes

Indicators	60+		70+		80+	
	Total Costs (billion VND)	Percentage Change of Poverty Gap	Total Costs (billion VND)	Percentage Change of Poverty Gap	Total Costs (billion VND)	Percentage Change of Poverty Gap
Total Cost	8,204	-58.2	4,110	-38.2	1,238	-12.3
As % of GDP 2004	1.2		0.6		0.2	
Gender, Marital, and Age						
Married male, 60-69	1,263	-53.3	0	-4.1	0	-3.1
Unmarried male, 60-69	468	-48.1	0	-9.6	0	-1.0
Married female, 60-69	1,706	-63.6	0	-16.6	0	-3.9
Unmarried female, 60-69	640	-50.0	0	-3.1	0	-3.1
Married male, 70-79	714	-65.6	1,020	-59.7	0	0.0
Unmarried male, 70-79	541	-44.5	225	-43.1	0	0.0
Married female, 70-79	927	-74.4	612	-74.8	0	-10.5
Unmarried female, 70-79	706	-54.5	1,014	-54.3	0	-0.2
Married male, 80+	123	-83.7	238	-79.7	237	-69.7
Unmarried male, 80+	312	-35.5	193	-35.5	193	-35.5
Married female, 80+	230	-82.0	118	-82.0	118	-82.0
Unmarried female, 80+	574	-50.1	690	-49.9	690	-49.9
Gender and Residential Areas						
Male, Urban	919	-60.0	416	-36.0	125	-17.0
Male, Rural	2,494	-57.0	1,259	-35.7	306	-10.8
Female, Urban	1,272	-82.6	605	-68.5	209	-27.7
Female, Rural	3,519	-57.4	1,830	-37.6	598	-12.1
Residential Regions						
Red River Delta	2,117	-76.9	1,070	-54.1	313	-16.4
Northeast	861	-44.3	416	-22.1	131	-8.8
Northwest	156	-43.1	72	-17.6	16	-4.6
North Central Coast	1,034	-56.3	543	-38.7	203	-13.8

South Central Coast	812	-63.1	457	-46.7	119	-20.0
Central Highlands	279	-52.2	140	-41.4	46	-6.2
Southeast	1,263	-44.5	548	-10.4	168	-3.0
Mekong River Delta	1,682	-59.8	864	-37.7	242	-8.1
Living Arrangement						
Alone	459.4	-96.4	300	-84.0	100	-22.7
Only Married Couple	1,181.4	-97.1	629	-81.8	93	-25.9
With Children	6,194	-49.4	3,006	-27.1	938	-8.2
With Others, no Children	369.2	-50.2	175	-46.8	107	-39.9
Working?						
Yes	3,602	-63.5	3,000	-32.8	109	-7.2
No	4,602	-54.1	1,110	-42.1	1,129	-16.3
Receiving Social Insurance?						
Yes, Male	993	-65.9	423	-37.4	86	-46.9
No, Male	2,420	-56.5	1,250	-35.3	345	-11.2
Yes, Female	911	-83.8	377	-50.8	151	-14.7
No, Female	3,880	-57.4	2,060	-39.0	656	-13.0

Source: Own calculations based on VHLSS 2004.

Table 4 provides a detailed cost simulation for reducing poverty gap in each universal NCP scheme, which provides a benefit equal 50 per cent of poverty line in 2004 to all eligible elderly. It is noted that the estimated total cost is only for benefit payments, and without considering any administrative and other related costs for implementation.

It is obvious in the estimation that the total cost would be lower as the eligible age is higher. With a universal NCP scheme under the first scenario (60+), the total cost would be about 1.2 per cent of GDP in 2004, while those for the second (70+) and the third scenarios (80+) would be only 0.6 per cent and 0.2 per cent of GDP in 2004, respectively.

By combination of gender and marital status, the estimated results show that, in all age brackets, the rate of poverty gap closing for the married elderly will be generally higher than those for the unmarried elderly. In particular, such differences will be higher for the elderly at more advanced ages, e.g. the rates for the unmarried elderly would be less than 40 per cent, while those for the married elderly would be more than 70 per cent. As mentioned, the elderly's benefits can impact poverty in four ways under our assumption, and the findings for the non-recipient elderly of the two NCP schemes (i.e., 70+ and 80+) support this argument. For instance, the married female young elderly would be able to reduce their poverty gap by 16.6 per cent and 3.9 per cent in NCP schemes for the elderly aged 70 and over (70+) and aged 80 and over (80+), respectively, though they would not be recipients of these schemes. As

mentioned earlier, such findings suggest that NCP benefits will be shared among members of elderly households. In other words, the potential impacts of an NCP scheme would be not only on reduction of elderly poverty, but also on reduction of poverty for the elderly's family members.

We now proceed further to see whether the proposed NCP schemes would be able to reduce inequality, which is measured by the Gini coefficient, for Vietnam in general, and for the elderly in particular. A Gini coefficient shows the degree of equality with which incomes or expenditures are divided in a society, with a measure of 0 showing perfect equality, and a measure of 1 showing that all resources in society are held by one household. Also, we will explore how the NCP benefits would be used among recipients and non-recipients.

TABLE 5
Benefits of the Proposed NCP Schemes

Indicators	Pre-reform	Post-reform		
		60+	70+	80+
Population	Gini Coefficient			
Vietnam	0.370	0.364	0.366	0.369
Elderly	0.377	0.347	0.359	0.372
Poverty Ratios	Percentage of the Elderly Population			
0% - 75%	6.9	2.8	4.2	6.0
75% - 100%	11.0	6.5	8.5	10.4
100% - 150%	23.6	21.3	23.0	23.4
150% - 250%	29.8	34.5	32.7	31.0
250% - 400%	16.8	21.5	19.0	17.3
> 400%	11.9	13.4	12.6	11.9
Scheme Indicators				
% to reduce poverty gap for the direct recipients	--	4.8%	5.7%	5.5%
% to reduce poverty gap for the elderly population	--	4.8%	6.2%	6.7%
% to reduce poverty gap for the Vietnamese population	--	13.0%	15.9%	16.6%
% spent by the direct recipients	--	47.3%	42.8%	34.8%
% spent by the elderly population	--	47.3%	47.2%	40.8%

Source: Own calculations based on VHLSS 2004.

Table 5 provides our estimated results. It is shown that, in all scenarios, an NCP scheme would help to reduce inequality for the elderly population, as well as the Vietnamese population, though the magnitudes of impacts would be clearly different, depending on each scheme. For instance, it would help to reduce Gini coefficient for the elderly people from 0.377 in 2004 to 0.347 if the NCP scheme in the first scenario was introduced in the same year. Respectively, the Gini coefficient for the Vietnamese population as a whole would be decreased from 0.370 to 0.364.

Another interesting piece of information can also be seen through the estimates of the poverty ratios for the elderly. These ratios are estimated by dividing per-capita expenditure of the elderly by the poverty line in the year 2004. The distribution of poverty ratios for the elderly in 2004 and the three NCP scenarios are presented in Table 5. Though the potentials of the proposed NCP schemes would be apparently different, the estimated results show that all these schemes would be able to not only help the recipients to get out of poverty, but also improve per-capita expenditure for the non-recipients. Under the proposed NCP scheme in the first scenario (60+), for example, the number of the elderly living under the poverty line would fall from 17.9 per cent to 9.3 per cent of the elderly population. At the same time, the number of the elderly living above the poverty line, except those whose per-capita expenditure ranged between 100 per cent and 150 per cent of poverty line, would increase, e.g., from 29.8 per cent to 34.5 per cent, and from 11.9 per cent to 13.4 per cent for the elderly whose per-capita expenditure ranged between 100 per cent and 150 per cent, and more than 400 per cent of poverty line, respectively.

The above argument is also supported by some other estimates for the proposed schemes, which are presented in the lowest panel of Table 5. It is clearly shown that the benefits from all NCP schemes would be shared among recipients and non-recipients. For instance, under the third NCP scenario, the estimated cost would actually contribute only 5.5 per cent and 6.7 per cent to reducing the poverty gap for the direct elderly recipients and the whole elderly population, respectively, but it would contribute about 16.6 per cent to reducing poverty gap for the whole Vietnamese population. Also, only 34.8 per cent of the total cost would be actually spent by the direct recipients, but 40.8 per cent of the total cost would be spent by the elderly population as a whole. These estimates provide an extremely important information for the policy makers in considering an appropriate scheme under certain contexts.

COSTS OF THE PROPOSED UNIVERSAL NCP SCHEMES UNDER DEMOGRAPHIC CHANGES

As indicated in a number of studies on the NCP schemes, such as the United Nations (2007b), the biggest concern for any developing country in implementing such a scheme is whether the cost of the scheme would be feasible, given various economic constraints in these countries. This question is important for the case of Vietnam as well.

TABLE 6
Estimated Costs for a Universal NCP Scheme
under Demographic Changes, 2004-2050

Data	VHLSS	UN (2007a)				
Year	2004	2010	2020	2030	2040	2050
<i>Providing benefits to all elderly</i>						
Eligible Population (as % of total population)	9.9	7.8	11.0	15.9	20.8	26.1
Benefit (as % GDP per capita)*	12	12	12	12	12	12
Total Cost (as % of GDP)**	1.2	0.94	1.32	1.91	2.50	3.1
<i>Providing benefits to all elderly aged 70 and over</i>						
Eligible Population (as % of total population)	4.8	3.9	4.2	6.7	10.2	13.4
Benefit (% GDP per capita)	12	12	12	12	12	12
Total Cost (as % of GDP)	0.6	0.47	0.50	0.80	1.2	1.6
<i>Providing benefits to all elderly aged 80 and over</i>						
Eligible Population (as % of total population)	1.5	1.1	1.4	1.6	3.1	4.8
Benefit (% GDP per capita)	12	12	12	12	12	12
Total Cost (as % of GDP)	0.2	0.13	0.17	0.19	0.37	0.58

Notes: * 50 per cent of poverty line in 2004 is equal to 12 per cent of per-capita GDP in 2004;

** total cost is measured without considering any administrative and other related costs. Numbers are rounded.

Source: Own calculations.

Using a static approach proposed by Willmore (2007), we estimate the expected financial cost for carrying out a universal NCP scheme in Vietnam. Suppose that we will provide the same benefit as in 2004 (50 per cent of the official poverty line), which is about 12 per cent of per-capita GDP, to all the eligible elderly in three NCP scenarios. Our estimated results are shown in Table 6.

As the Vietnamese population ages, more elderly people would be beneficiaries of the NCP scheme, and thus the expected cost of the scheme would be increased, given the fixed benefit level at 12 per cent of per-capita GDP. As shown in Table 6, however, the expected costs of an NCP scheme in Vietnam would be as high as 3 per cent of GDP by 2050. They would be in line with the projections for many other developing countries, such as those in Schwarz (2003), United Nations (2007b). However, how to finance these expected costs is an important policy consideration,

given government's limited resources. Also, another important question is how much poverty could be reduced with such expected costs.

CONCLUDING REMARKS

Under rapid social and economic changes, an aging society produces a potential concern for public policy, particularly the welfare policies for protecting the elderly. Given current social and economic changes, as well as limited coverage of the social protection system, it is suggested that Vietnam have an appropriate social assistance scheme for protecting the elderly. A universal NCP scheme is recommended. By using the VHLSS 2004, we explored the potential role and impacts of such a scheme in reducing the elderly poverty in Vietnam. In general, we found that a universal NCP scheme would help to significantly reduce poverty rate and poverty gap of the elderly, though the magnitudes of poverty reduction for sub-groups of elderly would be noticeably different. We also found that, the proposed scheme would also help to reduce both poverty rate and poverty gap for the non-recipients at different levels. This is very important implication for choosing an appropriate universal NCP scheme for Vietnam, given social and economic contexts. Our estimation also indicated that the expected costs of the scheme would be in line with those of other developing countries with similar poverty and demographic characteristics.

As an indicative study, this chapter could present a number of findings about the potential and role of a universal NCP scheme for reducing elderly poverty in Vietnam. However, it obviously could not avoid some limitations. As mentioned earlier, the official measurement of poverty used in the chapter has some potential biases because it is established for the household as a whole rather than for particular individuals, and thus it is difficult to analyze the elderly's relative poverty and vulnerability in comparison with those of the rest of the population. Similarly, large households may bear less burdens than the official measure because of economies of scale in their expenditures for housing and other goods, and when this is accounted for along with the fact that elderly households are generally smaller, we may see a rise in elderly poverty relative to the rest of the population. In order to get more detailed information about the poverty of elderly people, a number of indicators, such as

family composition and control of family resources, need to be taken into account. Also, we need to have more comprehensive and dynamic approach to evaluate costs and benefits of such a scheme, so as to see how it would bring benefits to the poor people in Vietnam, especially the elderly, at reasonable and feasible costs. These drawbacks will be discussed in subsequent research.

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