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# Testing Vietnam's public safety net

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The paper examines the impact of Vietnam's main welfare programs on moving poor people out of poverty and protecting the non-poor from becoming poor. To explore the role that transfers played in the country's dramatic reduction of poverty in the 1990s, counterfactual consumption levels are estimated allowing for behavioral responses. The findings suggest that transfers helped only a few people escape poverty and protected even fewer from poverty. Hence, the public safety net was largely irrelevant to Vietnam's poverty reduction. A larger and better designed public safety net is crucial for the future. *Journal of Comparative Economics* 32 (4) (2004) 661–679. Development Research Group, World Bank, 1818 H Street NW, Washington, DC 20433, USA.

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## 1. Introduction

Vietnam has averaged yearly growth rates of 6 to 7 percent per capita since it began its reforms in the late 1980s. The country has also spread the benefits of this growth successfully in terms of a substantial reduction in poverty. By one well-accepted definition of the poverty line for Vietnam, the national headcount index declined from 58.2 percent in 1992

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to 37.4 percent in 1998 and from 66.4 to 45.5 percent in rural areas (Glewwe et al., 2002).<sup>1</sup> However, as these numbers attest, Vietnam remains a poor country. Its remarkable economic growth was achieved through widespread liberalization and privatization reforms that radically reversed the previous policies.

The reforms included opening up internal and external markets, freeing the agricultural terms of trade, and decollectivizing agricultural land. These fueled a boom in agricultural production that directly benefited the majority of Vietnam's poor, whose livelihoods depended on small-scale agriculture in the rural sector. However, these gains may be a one-off event and may now have been fully exploited so that agriculture cannot continue to sustain a rapidly increasing population and labor force. The rural population continues to be engaged primarily in agriculture and to be vulnerable to numerous daily hazards, such as illness, crop and animal diseases, unfavorable climatic conditions, increasing international price swings and trade restrictions. Occasionally, and perhaps with increasing frequency, devastating shocks, such as cyclones and severe flooding, destroy lives and livelihoods and eliminate the hope of escaping poverty (Beckman et al., 2002; Benson, 1997). Hence, a public safety net could play a crucial role in the future.

Vietnam has a considerable number of social transfer programs that might serve this role. This paper investigates the effectiveness of these existing social welfare programs in providing a genuine safety net. In principle, a safety net can reduce poverty either by protecting non-poor people from becoming poor or by promoting poor people out of poverty as stressed by Dreze and Sen (1989). With panel data, the paper investigates how successfully Vietnam's existing safety net performs both functions, following a method used by Ravallion et al. (1995). The availability of the Vietnam Living Standards Surveys (VLSS) for 1993 and 1998 allows comparisons over time, including longitudinal comparison for the same households.<sup>2</sup> This study uses panel data methods that are not applied often to developing countries in the literature.<sup>3</sup>

Elsewhere, van de Walle (2004) analyzes the incidence across households and communes of social welfare and poverty-related initiatives in Vietnam and finds that targeting was poor in general. However, the static incidence picture may be deceptive about the degree to which outlays, coverage, and changes over time are correlated to poverty-related shocks and to changes in exogenous variables. This paper investigates the responses of the public safety net to changing household circumstances in Vietnam in the 1990s. In addition to the continuing and enhanced exposure to uninsured risk during the transition period, total spending on selected transfers more than doubles between the two survey dates. Therefore, the setting provides an interesting quasi-experiment to determine who benefited from changes in outlays in a poor transition economy.

In exploring the dynamic performance of the safety net in Vietnam, a key concern is the definition of the poor. In common with much of the literature on poverty in developing countries, the paper uses household consumption expenditure per capita as its welfare

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<sup>1</sup> First order stochastic dominance indicates robustness to choice of poverty line and poverty measure.

<sup>2</sup> The 1993 survey spanned a full year starting in October 1992, and the 1998 survey began in December 1997 and lasted for a year. The surveys are referred to as the 1993 and 1998 surveys, respectively.

<sup>3</sup> The only previous applications have been to Hungary (Ravallion et al., 1995) and Russia (Lokshin and Ravallion, 2000).

measure. Although this represents a comprehensive consumption aggregate, the observed household consumption data reflect existing public transfers to some extent. Ignoring this fact clearly jeopardizes the conclusions drawn about the counterfactual situation without transfers and, hence, about the incidence of transfers. The paper implements a method for dealing directly with this concern. The next section provides an overview of the existing social protection and poverty programs in Vietnam. Section 3 discusses the data and derives an indicator of welfare that allows for behavioral responses to public transfers to construct the counterfactual welfare indicator. Results on the degree of protection and promotion afforded by the existing social safety net are examined in Section 4. Section 5 concludes the paper with policy implications.

## 2. Public responses to poverty and risk in Vietnam

Vietnam has a panoply of social welfare programs and initiatives that reflects a deep-seated and longstanding state ideology of combating inequality and raising the living standards of all regions and people. In addition, this ideology has created expectations among the population for social support. Since adopting the market economy, the regime's enduring legitimacy rests arguably on this political commitment and the perception that it is being achieved. However, these programs are often ad hoc, poorly funded, and reliant on scarce local resources. During the cooperative and collective period, communes took responsibility for the social and welfare needs of their members. Education and health services were provided in addition to assistance and social security when households faced difficult life-cycle changes and shocks (Kolko, 1997; Glewwe and Litvack, 1998). These services were financed largely by the cooperatives with some assistance from the central government.

After the cooperatives were disbanded in 1988, cuts in public social sector spending and various privatization and liberalization measures followed. Hence, the burden of obtaining social services shifted to households. Peasants are more likely to rely on informal mechanisms to deal with shocks. Although richer on average, peasant households in Vietnam are likely to be more vulnerable to downside risk because of these changes (Kolko, 1997; Glewwe and Litvack, 1998). User fees for health care services and all but primary schooling were introduced and medical costs increased. Overall, the reforms resulted in a considerable increase in total spending on out-of-pocket education and health costs.

These changes led to concerns about access by the poor to health and education and raised the specter of increasing social differentiation and income inequality. In response, the government took measures to redress these rising inequalities. Targeted exemptions from school fees were instituted; however, these provide limited relief because fees account for only a small share of total school-related expenditures (Behrman and Knowles, 1999). A compulsory health insurance scheme was introduced in 1993 to cover formal sector workers and current and retired civil servants. Another scheme intended to extend coverage to students, agricultural and informal sector workers on a voluntary basis was also instituted. However, Wagstaff and Pradhan (2003) find that the main participants in the schemes are better-off households. Poor households continue to be unable to insure themselves against severe health shocks.

The social protection system that has evolved since decollectivization is composed of several different initiatives that are centrally mandated but locally implemented so that they rely heavily on local resources (van de Walle, 1999). The Social Security System provides pensions and other employment-related social insurance payments, such as maternity and disability benefits to formal sector workers. This system has covered public servants and military personnel since 1947 and was extended to other formal sector employees in 1995 (MOLISA, 1999). These social insurance payments are subsidized heavily by the central budget, although they are intended to be funded exclusively from payroll taxes and employee contributions in the future. An analysis of the VLSS 1998 reveals that payments go to members of households accounting for 11.2 percent of the population nationally, with greater coverage in urban (18.3%) than in rural (9.4%) areas (van de Walle, 2004). Incidence is also found to be pro-poor in urban areas but much less so in rural areas where per capita amounts received are also much smaller.

Social subsidy transfers are available to compensate and assist those who contributed and suffered from the wars, i.e., disabled veterans, relatives of dead soldiers, and others who contributed to the revolution, from the Social Guarantee Fund for Veterans and War Invalids. Others unable to support themselves, including the disabled, orphans, and the elderly, are granted social subsidy transfers in theory under the Social Guarantee Fund for Regular Relief. However, scarce central public resources necessitate that implementation and coverage depend ultimately on local governments and their resources. The government claims that social subsidy transfers reach the poor. However, only 9.6 percent of the population live in households that report receiving social subsidies nationally and an only slightly higher percent at 10.2 in rural areas report obtaining this support. Payment amounts are highest for the poorest quintile in urban areas. Nonetheless, there is little evidence of targeting across the rest of the urban or rural distributions in which variation in percentages of recipients and amounts received is small (van de Walle, 2004).

The central government also offers a Contingency Fund for Pre-Harvest Starvation and Natural Disasters; its role is to minimize the consequences of natural calamities and other emergencies by dispensing disaster relief to regions and households. Following local covariate shocks, relief is provided by district and provincial authorities with the frequent assistance of Vietnam's Red Cross and the mass organizations. Field studies indicate that emphasis is placed primarily on surviving the emergency and a commonly used instrument is credit for disaster recovery (Beckman et al., 2002; Benson, 1997). Because institutional capacity and finances are limited, aid tends to be insufficient to put households back on their pre-crisis development path. Poor households, in particular, are prone to further impoverishment as a result (Beckman et al., 2002). Finally, several National Development Programs, which aim to reduce poverty, have been introduced, although their focus is more on promoting growth than on providing protection. National programs cover employment generation, reforestation, school and health fee exemptions, micro-credit schemes, and physical infrastructure investments. Whether or not the education scholarships reported in the VLSS 1998 are granted under one of the national programs is unclear. Relatively few scholarships appear to be allocated in that the survey sample identifies only 141 and the incidence is regressive (van de Walle, 2004).

In 1996, the government proposed a national hunger elimination and poverty reduction (HEPR) program to coordinate these programs and the accompanying resources under one

umbrella. Subsequently, many of these efforts have been consolidated under the HEPR national poverty program to better mobilize and coordinate antipoverty resources. Between 1998 and 2000, the government implemented the National Target Program on Poverty Alleviation and has recently prepared a Poverty Alleviation Strategy for 2001–2010 (MOLISA, 2001). These new initiatives have not appreciably changed the focus of past policies nor have they resulted in new funding from the central government. In essence, new poverty mandates and targets are imposed on ministries by HEPR without the benefit of additional funding or reductions in other mandated responsibilities (van de Walle, 1999; Nguyen, 1999). For all these programs, eligibility criteria, guidelines, and norms are dictated largely by the center, while implementation is chiefly the responsibility of the communes. Poverty and needs are determined locally following national norms but they are heavily influenced by the means and resources available locally. Communes initially draw up lists of eligible candidates for the different social protection programs based on needs.<sup>4</sup> The lists are collected, altered, and eventually approved and passed on by the districts and the provinces to the center. After review and negotiation between several Ministries in Hanoi, transfers are made to the provinces.

Transfers from the central government to the provinces are substantially redistributive (Rao et al., 1999). However, little oversight on the intra-provincial allocation of funds is observed currently and the degree of progressivity is much lower within provinces (Litvack and Rondinelli, 1999). Moreover, van de Walle (2004) finds poor overall targeting, uneven coverage, and horizontal inequality across communes. That review concludes that a rich-area bias results from weak within-province targeting of central resources, combined with the ability of better-off communes to mobilize more local funds to help their poor. To complete the review of the safety net's performance in Vietnam, this paper investigates how well transfer programs respond to the changing circumstances of households. The next section discusses the data and defines the welfare indicator.

### 3. Modeling consumption behavior in response to public transfers

The nationally representative 1993 and 1998 VLSS are multi-topic household consumption expenditure surveys covering 4800 households spread across 150 communes in 1993 and 6000 households living in 194 communes in 1998. A panel of 4308 households is contained in the surveys. In addition, a community questionnaire was administered in the communes in which the rural or small town households reside; it covered 120 and 156 communes in 1993 and 1998, respectively. The surveys include numerous modules covering aspects of living standards.<sup>5</sup> The 1998 survey contains considerably more information on government programs and policies than does the 1993 survey. Since the interest in this paper is with the dynamic performance of transfer programs, the focus is on transfer receipts for which a comparison can be made over time, namely education scholarships,

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<sup>4</sup> The lists contain either individuals or households depending on the program.

<sup>5</sup> World Bank (1995, 2000) provide detailed information on the surveys.

social insurance, and social subsidy funds.<sup>6</sup> Of course, the government intervenes in many other ways to increase social welfare, e.g., subsidizing micro-credit and various goods and providing disaster relief (MOLISA, 1999). However, the survey does not provide sufficient data to analyze these schemes. The paper focuses on the main national transfer programs.

The welfare indicator is defined as annual per capita consumption, including the value of own production and the use value of consumer durables with housing expenditures imputed (World Bank, 1995, 2000). Consumption expenditures and other monetary amounts are expressed in real January 1998 national prices, taking account both of inflation through the survey year and of variation in prices spatially. The 1998 survey attempted to improve the measurement of consumption while ensuring comparability across the two dates. Two total consumption expenditure measures, namely, the most comprehensive measure for 1998 and one that is comparable to the 1993 expenditure totals, are available. For all comparisons over time, the analysis uses the intertemporally comparable measures of consumption; however, the best 1998 measure is used in all other situations. The latter better captures tobacco consumption and the consumption value of own-produced non-food items, such as coal, wood, and flowers.

To ascertain whether programs reach the poor, the poor need to be identified by an appropriate indicator of welfare excluding the program support. Measured outcomes will depend on the choice of the indicator so that evaluating targeting will be sensitive to the welfare measure. Studies of the incidence of public spending typically subtract the entire amount of government transfer receipts from household income or consumption to approximate pre-intervention welfare so as to rank the population into quintiles, for example. Netting transfers out fully assumes that there is no replacement through savings, labor effort, schooling decisions, inter-household transfers, and other potential household behavioral responses. However, because of behavioral responses often in imperfect markets, the full benefits of transfers are not passed onto consumption. The opposite approach of treating post-transfer consumption as the welfare indicator is just as questionable. Ideally, one would like to subtract the intervention amount but add in the replacement income that households would have obtained had they not benefited from the intervention. This paper addresses these concerns by estimating the marginal propensity to consume out of social income, denoted PCSI, which is then used to determine the net gain to consumption from social transfers and to construct the counterfactual consumption level without intervention. In the following analysis, transfers consist of social insurance, social subsidies, and education scholarship receipts, which are the components of social income that can be identified from both surveys.

Consumption of household  $i$  at time  $t$ , denoted  $C_{it}$ , is assumed to be an additive function of public transfers, denoted  $T_{it}$ , observed household characteristics, denoted  $X_{it}$ , and latent factors that are time varying, denoted  $\delta_t$ , and also time invariant, denoted  $\eta_i$ . This gives:

$$C_{it} = \alpha + \beta T_{it} + \gamma X_{it} + \eta_i + \delta_t + \varepsilon_{it}, \quad (1)$$

where  $\varepsilon_{it}$  is an error component that varies between households and over time.

<sup>6</sup> In 1998, details are also available on whether the household received transfers from the poverty alleviation fund or NGOs but the amounts involved are negligible.

Estimating  $\beta$  raises an endogeneity concern due to the likely correlation between transfers and time invariant household characteristics, i.e.,  $\text{cov}(T_{it}\eta_i) \neq 0$ , which could result from purposive targeting to the long term poor. Endogeneity may also arise if transfers are correlated with time varying determinants of consumption, i.e.,  $\text{cov}(T_{it}\delta_t) \neq 0$  or  $\text{cov}(T_{it}\varepsilon_{it}) \neq 0$ . Such correlation would occur if transfers target those who suffer a shock or also if transfer eligibility changes, e.g., if a pension-receiving elderly household member dies. Some such changes may be observed in the data, others may not. In addition, heterogeneity of behavioral responses may imply that different household characteristics lead to different PCSI for different households.

A double-differencing model in which all variables are expressed in first differences purges the estimate of fixed effects and thus deals with the first source of endogeneity. Equation (1) becomes:

$$\Delta C_{it} = \beta \Delta T_{it} + \gamma \Delta X_{it} + \Delta \delta_t + \Delta \varepsilon_{it}. \quad (2)$$

With two rounds of data, the term  $\Delta \delta_t$  becomes an ordinary intercept term in a regression of the change in consumption on the change in transfers. This regression was initially run assuming that  $\gamma \Delta X_{it} = 0$ , i.e., characteristics do not change or do not have any effect, to provide the standard double-difference estimate of the impact of transfers on consumption. As the first column of Table 1 indicates, the estimate for  $\beta$  equals 0.45 with a heteroscedasticity and clustering-corrected  $t$ -statistic of 4.3. However, this double-difference estimate may still be affected by the dependence of the change in transfers on time varying characteristics. A difference regression of transfers on characteristics affirms this correlation, as the second column of Table 1 indicates. This regression controls for changes in household size and composition, in particular, the number of members in the age groups from 0 to 6 and from 7 to 16, the number of women and men over 55 and 60, respectively, which are the formal sector legal retirement ages, a change in the highest grade completed by the most educated member of the household, a change in the age and gender of the household head, and a change in the language of interview.<sup>7</sup> Transfers are found to respond significantly and negatively to increases in household size and to a change from Kinh to other interview language. Significant positive effects are found for increases in the number of small children, women aged over 55, the head's age, and a change from a male to a female head.

Therefore, the regression in the third column of Table 1 controls for changes in observable household characteristics in the double-difference model of consumption as a function of transfers. Changes in household size and in the language of the interview continue to have a significant negative impact, while an older head and a higher educational level have a significant positive influence on consumption. The  $\beta$  estimate is reduced somewhat to 0.37 but it continues to be highly significant. Nonetheless, a worry remains concerning time varying omitted variables that affect transfers. For example, a severe shock that trig-

<sup>7</sup> A majority of Vietnamese are Kinh speakers. However, about 20 percent of the population belong to 54 different ethnic minorities that have different mother tongues and typically worse living standards than the majority group (van de Walle and Gunewardena, 2001). Households had the option of being interviewed in a language other than the majority Kinh in both survey years. A change from the Kinh survey interview is likely to signify a change in the ethnicity and Kinh language ability of the head of household.

Table 1  
The propensity to consume out of transfers

	Consumption	Transfers	Consumption OLS	Consumption IV
Constant	827295.5** (14.09)	91469.6** (7.60)	764239.1** (12.95)	731514.9** (12.52)
Transfers	0.449** (4.33)	–	0.365** (3.63)	0.723** (3.65)
Household size		–36778.6** (4.43)	–196493.5** (6.45)	–183335.6** (5.88)
# kids 0–6		42238.1** (4.39)	–54743.1 (1.40)	–69854.3 (1.77)
# kids 7–16		8979.2 (1.27)	299.7 (0.01)	–2912.7 (0.10)
# females > 55		76191.5** (3.47)	–233757.2 (0.43)	–51015.5 (0.95)
# males > 60		48936.7 (1.56)	–54474.9 (0.60)	–71982.5 (0.80)
Highest grade completed		–1523.0 (0.44)	32247.1* (2.34)	32792.0* (2.39)
Age of head		2495.1** (3.55)	7224.8* (2.25)	6332.1* (1.96)
Language of interview		–60851.4** (2.78)	–460466.8** (3.42)	–438696.5** (3.26)
Gender of head		80669.7* (2.52)	74017.6 (0.83)	45157.1 (0.48)
$R^2$	0.011	0.036	0.058	0.051
RMSE	1.6e + 6	3.7e + 5	1.6e + 6	1.6e + 6
$F$ -stat.	18.78	5.59	22.01	21.73
Prob > $F$	0.0000	0.0000	0.0000	0.0000
$N$	4303	4275	4275	4275

Notes. (1) The  $t$ -statistics in parentheses are based on standard errors corrected for heteroskedasticity and clustering. (2) All regressions include a complete set of household fixed effects in levels because the models are estimated by regressing differences on differences.

\* Significance at the 5% level.

\*\* Idem., 1%.

gers a public response and affects household consumption may have occurred but it may not be measured in the data. To deal with this problem, an instrumental variable that can eliminate any such latent effects by identifying an exogenous source of variation in the change in transfers is needed.

One possible instrument is transfer receipts in the first period because it is correlated highly with the change in transfers, having a correlation coefficient of 0.5. The instrument is valid under the exclusion restriction that initial transfers are not correlated with the change in consumption, which is plausible. Column 4 presents the estimates with the change in transfers instrumented by initial transfers. The estimated  $\beta$  is 0.72. However, the validity of the instrument depends on the key untestable exclusion restriction that transfers in 1993 should not be an explanatory variable in Eq. (1), i.e.,  $\text{cov}(\varepsilon_{it}, T_{it-1}) = 0$ . If the ini-



tial level of transfers prevents households from falling into poverty or succeeds in putting them on a different growth path, this restriction would not hold.<sup>8</sup>

Finally, to test for possible heterogeneity in impacts, a simple OLS regression is run of the change in consumption against interactions between the change in transfers and household characteristics, with controls for time varying changes in characteristics and the change in transfers included.<sup>9</sup> In such a difference regression, permanent income is controlled for effectively. Only one of the interaction terms is statistically significant at the 5% level. The interaction of the change in transfers with the highest grade completed is positive and highly significant suggesting that transfers have a higher impact on consumption in more educated households, which seems counter intuitive. Controlling for other factors, better educated households may report data on consumption and transfers more accurately so that the interactive term accounts for data measurement errors. Alternatively, more highly educated people may think that transfers will be more permanent, either because they are more adept at keeping their transfers or because they have a better understanding of the way the system works. Nonetheless, a test of the joint significance of the interaction terms shows them to be insignificant as a group with an  $F(1, 150) = 1.34$ . Hence, the previous specifications without interaction terms are judged to yield appropriate estimates.

The following analysis assumes a PCSI of 0.5. Thus, consumption expenditures are taken to be net of half of the value of the transfer receipts that can be identified in the following analysis, unless otherwise noted.<sup>10</sup> None of the estimates obtained above are significantly different from 0.5. Although this is true for a range of parameter values around 0.5, the choice of 0.5 is naturally somewhat arbitrary.<sup>11</sup> Table 2 reports the sensitivity of quintile mean per capita expenditures and the incidence of mean per capita transfers across quintiles under different assumptions about the PCSI, namely, fully including, including half only, and fully excluding social incomes. Netting out transfers from the welfare indicator increases the progressivity of the incidence of transfers.

#### 4. Testing a safety net: protection or promotion?

From 1993 to 1998, total outlays on social welfare programs increased in Vietnam. The mean overall real per capita expenditures reported in the surveys rose from 51,443 to 116,641 dongs in 1998 prices, which amounts to a 127 percent proportionate increase.<sup>12</sup> As Table 3 indicates, the mean percentage of household expenditure represented by trans-

<sup>8</sup> If another instrument was available, an over-identification test could be implemented. However, there is no obvious candidate.

<sup>9</sup> This regression is not reported but is available from the author on request.

<sup>10</sup> Specifically, adjustment is made for half of the total of scholarships, social insurance, and subsidy funds for the 1993 data and half of that same total but adding poverty alleviation and NGO funds for the 1998 data.

<sup>11</sup> The  $t$ -statistics for the null that  $\beta$  equals 0.5 are 0.49, 1.34 and 1.13 for the estimated  $\beta$  parameters given in columns 1, 3 and 4 of Table 1, respectively.

<sup>12</sup> The expenditures refer only to programs covered in both VLSSs, namely, scholarships, social insurance, and social subsidies. Although all social programs are not included, these expenditures constitute most social income receipts.

Table 2  
Distribution of total transfers in 1998

Welfare indicator: 1998 quintiles	Per capita expenditures with transfers fully included (PCSI = 0)		Per capita expenditures net of half of transfers (PCSI = 0.5)		Per capita expenditures net of transfers (PCSI = 1)	
	Mean p.c. expenditures	Mean p.c. transfers	Mean p.c. expenditures	Mean p.c. transfers	Mean p.c. expenditures	Mean p.c. transfers
1	1,172,454	32,114	1,144,014	97,825	1,069,081	200,671
2	1,726,660	62,826	1,687,589	87,785	1,640,672	101,649
3	2,233,972	103,389	2,176,877	118,901	2,125,120	79,631
4	3,060,385	175,997	2,983,414	130,764	2,926,035	100,081
5	6,267,690	228,630	6,168,273	167,785	6,094,505	121,111
Total	2,892,607	120,612	2,832,301	120,612	2,771,995	120,612

*Notes.* (1) Quintiles are formed by ranking the population by household per capita expenditures under the different assumptions of the propensity to consume out of social transfers. (2) Transfers are those that can be identified in the 1998 VLSS, namely, social insurance and social subsidy funds, education scholarship, poverty alleviation, and NGO funds.

Table 3  
Changes in incidence over time

	1993 social transfers			1998 social transfers		
	dongs per capita	% of household expenditures	% of population	dongs per capita	% of household expenditures	% of population
<i>How did the initial poor fare?</i>						
1993 net quintile:						
1	34,330	4.8	22.1 (775)	76,197	5.8	16.3 (775)
2	39,166	3.4	19.7 (830)	90,452	5.0	17.0 (829)
3	43,492	2.9	21.7 (850)	101,858	5.5	21.2 (850)
4	54,532	2.8	23.4 (895)	130,822	5.4	21.6 (891)
5	85,654	2.5	24.2 (958)	184,128	0.6	23.2 (958)
Total	51,443	3.3	22.2 (4305)	116,641	4.5	19.8 (4303)
<i>How did the long-term poor fare?</i>						
Mean net quintile:						
1	35,041	4.6	24.2 (740)	80,468	7.1	16.5 (740)
2	32,952	2.8	19.4 (809)	78,878	5.1	17.9 (809)
3	50,290	3.6	21.3 (872)	117,442	6.0	22.2 (872)
4	58,657	3.0	23.8 (924)	139,395	5.5	20.5 (924)
5	77,257	2.5	22.5 (960)	166,996	1.5	22.0 (958)
Total	51,443	3.3	22.2 (4305)	116,641	4.5	19.8 (4303)
<i>How did the new poor fare?</i>						
1998 net quintile:						
1	38,652	4.1	23.0 (735)	91,545	3.2	17.6 (735)
2	35,299	3.1	21.8 (797)	89,965	5.8	18.1 (797)
3	51,934	3.5	22.7 (879)	114,218	5.6	22.3 (879)
4	50,131	3.0	21.0 (929)	116,325	4.3	19.3 (929)
5	76,857	2.9	22.6 (965)	171,121	3.4	21.8 (963)
Total	51,443	3.3	22.2 (4305)	116,641	4.5	19.8 (4303)

Notes. (1) Quintiles are national population quintiles constructed based on per capita expenditures net of half of social transfers. (2) The number of sample households in each quintile is given in parentheses. (3) Dong amounts are expressed on a per capita basis across the quintile populations.

fers rose from 3.3 to 4.5 percent between these years. Using a panel of households over time, the paper investigates the distribution of the increased public outlays on transfers to ascertain whether or not the gains protected people from poverty and also promoted people out of poverty. An important role for the public sector in a poor rural economy like Vietnam is to provide protection for those who are vulnerable to poverty due to uninsured shocks. However, static incidence is uninformative about whether transfers perform this safety net function. In addition, concluding that social programs are not well-targeted based on the static evidence does not address the responsiveness of outlays to poverty related shocks. Moreover, van de Walle (2004) finds evidence of considerable variability in amounts received from a given program in both 1993 and 1998. There is also much instability over time in who gets transfers. For example, out of a total of 744 and 769 panel households who received social insurance or social subsidy outlays in one of the two years, only 402 and 111 got them in both years. To discern whether the system was responsive to changing

household circumstances, this section examines the incidence of changes in social welfare incomes.

When using the panel to study the incidence of the changes in social income, a question arises concerning the ranking of poor households. Table 3 ranks them by three different definitions of welfare. The terms initial poor, new poor, and long-term poor are used to refer to the population ranked by per capita expenditures, net of half of transfers, in the initial period, in the later period, and averaged over both years. As Table 3 indicates, the proportional gains from expansion tend to be highest for the poorest quintile but neither decrease nor increase with expenditure across higher quintiles. However, the initial poor obtained the lowest absolute gains with a 122% proportionate increase in benefits for the bottom quintile and a 131% increase for the second lowest. The new poor had the highest proportionate gains at 137 and 155%, while the long-term poor fall somewhere in between at 130 and 139%. Per capita transfer amounts increased for all groups but the percentage of the population receiving transfers declined slightly from 22 to 20 percent. In addition, the proportion of people in the poorest quintile receiving transfers decreased even more by all three definitions. Hence, the evidence does not indicate that the poor were targeted specifically by the program expansion.

To investigate whether changes in transfers were responsive to poverty-related shocks, Table 4 presents information on mean changes in transfers received by panel households classified into a three by three matrix. Households ranked into terciles based on their initial 1993 level of per capita consumption, namely low, middle, or high, are cross-tabulated against the change in their consumption between the two dates. This change is categorized

Table 4  
The incidence of changes in transfers

	Fall in consumption	Consumption stayed the same	Large rise in consumption
Low initial consumption			
% receiving	34	27	27
transfer gain p.c.	111,901	246,476	241,658
<i>n</i>	80	506	848
Middle initial consumption			
% receiving	32	30	30
transfer gain p.c.	408,469	251,619	296,513
<i>n</i>	240	422	772
High initial consumption			
% receiving	33	36	32
transfer gain p.c.	481,618	343,329	367,991
<i>n</i>	496	221	720

Notes. (1) The population is ranked into three equal groups based on 1993 per capita expenditures, net of half of transfers, and cross-tabulated against the level of their change in consumption over time, net of half the change in transfers. (2) The first number gives the percentage of households in the cell who received transfers in 1998. The second number gives the per capita amount of the change in transfers received by those with positive receipts only. The final number gives the number of households in the cell. (3) Changes in transfers refer to changes in amounts received from social insurance, social subsidies, and school scholarships.

according to whether it fell, stayed more or less the same, or rose significantly during the period.<sup>13</sup> For example, 34 percent of those who were in the bottom third of the consumption distribution in 1993 and experienced a fall in their consumption over time, received transfers equal to 111,901 dong per person in recipient households. There is no evidence that the system responded to consumption shocks. Neither starting out poor nor experiencing negative consumption shocks appears to have elicited a response from social welfare programs. Indeed, the percentage of households that benefited from social incomes is relatively uniform across the cells in Table 4. The table reports that 32 percent of those households that enjoyed the highest initial consumption and the highest gains to consumption were beneficiaries compared to 34% of the worst off households. Among the poor, households that suffered a drop in consumption received the lowest per capita increase in public transfers of all households. However, public transfers appear to have compensated for decreases in consumption for households in the middle and high consumption groups. In general, these specific support programs seem to be fairly unresponsive to consumption shocks.

Location may be an important determinant of program participation as van de Walle (2004) argues. Variation across geographical areas may be obscuring patterns in Table 4. To check for this effect, a linear probability model was estimated of whether transfers were received in 1998 against initial per capita consumption expenditures and the change in per capita consumption. With commune effects included, transfers do not appear to respond either to initial consumption or to changes in consumption. Excluding commune effects, the results suggest that transfers respond perversely to initial consumption with a positive and significant coefficient,  $\beta = 1.12e-8$ ,  $t = 2.52$ , but that they do not respond to shocks. This suggests that households in richer communes benefit most from the change in transfers.

To investigate the role played by transfers in the impressive reduction in poverty that occurred over this period in Vietnam, the panel structure of the data is exploited. Following the approach proposed in Ravallion et al. (1995), the paper evaluates how well the safety net performed dynamically and distinguishes how well it protected households against poverty from how well it promoted households out of poverty. By comparing joint distributions of consumption expenditures, e.g., with and without policy changes, the approach defines tests of a policy's ability to protect the poor from poverty (PROT) and its ability to promote the poor out of poverty (PROM). To define these two tests, let  $x$  denote the welfare indicator belonging to the interval  $(0, x^{\max})$ .<sup>14</sup> Consider two possible joint distribution functions over dates 1 and 2, namely  $F(x_1, x_2)$  and  $G(x_1, x_2)$ .  $F(x_1, x_2)$  is the proportion of the population with less than  $x_1$  in period 1 and less than  $x_2$  in period 2, with a similar definition applying to  $G(x_1, x_2)$ . The corresponding marginal distributions are  $F_1(x_1) = F(x_1, x^{\max})$  and  $F_2(x_2) = F(x^{\max}, x_2)$ , with similar distributions for  $G$ .

The poverty line is defined as  $z$ , so that the proportion of the population who are poor in period 1 in the  $F$  distribution is  $F_1(z)$ , while a proportion  $F_2(z)$  are poor at date 2. By construction,  $F_2(z) - F(z, z)$  is the proportion of individuals in the  $F$  distribution who are

<sup>13</sup> Consumption in 1993 is net of half of transfers and changes in consumption are also net of half of the change in transfers.

<sup>14</sup> The following summarizes the tests proposed in Ravallion et al. (1995).

poor in the second period but were not poor in the first.  $F$  protects from poverty better than  $G$  if and only if  $F_2(z) - F(z, z) < G_2(z) - G(z, z)$ . The extent of protection allowed by  $F$  relative to  $G$  is measured by

$$\text{PROT}(z) = G_2(z) - G(z, z) - F_2(z) + F(z, z). \quad (3)$$

Analogously,  $F_1(z) - F(z, z)$  of the population were poor in the first period but are not in the second.  $F$  promotes the poor better than  $G$  if and only if  $F_1(z) - F(z, z) > G_1(z) - G(z, z)$ . Finally, the extent of promotion due to  $F$  relative to  $G$  is measured by

$$\text{PROM}(z) = F_1(z) - F(z, z) - G_1(z) + G(z, z). \quad (4)$$

In all cases, the marginal distributions in the first period are identical, i.e.,  $F_1(z) = G_1(z)$ , which is simply the pre-intervention distribution. Hence, promotion is equivalent to requiring that  $F(z, z) < G(z, z)$  so that PROM tests whether poverty is less persistent in the  $F$  distribution, with the persistently poor defined as households who were poor in both periods, to examine the promotion effect. The residual,  $F_2(z) - F(z, z)$ , can be interpreted as the amount of transient poverty, which is the protection effect.<sup>15</sup>

Table 5 presents the baseline joint distribution of consumption in the two years. Households are classified into four groups according to whether they were poor or non-poor in both years and whether they escaped or fell into poverty over the period. The table provides evidence of a large decrease in poverty; 27 percent of the population escaped poverty, while only 5 percent fell into poverty. In addition, 34 percent were persistently poor and 35 percent were never poor, indicating considerable persistent poverty during the period. To investigate the effect of transfers on poverty, it is necessary to simulate the counterfactual joint distribution without transfers. As in static incidence calculations, half of the transfers received in each respective year are subtracted from consumption in that year. The simulated joint distribution is reported in Table 6.

Table 5  
The baseline discrete joint distribution (%)

1993	1998		Total
	Poor	Non-poor	
Poor	33.54 (55.78)	26.58 (44.22)	60.12 100
Non-poor	4.84 (12.14)	35.04 (87.86)	39.88 100
Total	38.38	61.62	100

Notes. (1) The population is divided into poor and non-poor groups based on actual per capita expenditures at each date and cross-tabulated. (2) The first number in each cell gives the percentage of the total population that is in the row's poverty group in 1993 and the column's group in 1998. (3) The number in parentheses is the proportion of each row's population that is in each column's group in 1998, i.e., it measures the transition probability.

<sup>15</sup> With identical first-period marginal distributions, if both PROT and PROM are positive,  $F_2(z) < G_2(z)$ , i.e., the incidence of poverty is lower for the  $F$  distribution in period 2. The converse is not true because lower poverty in period 2 is possible with only one of PROT or PROM being positive.

Table 6  
Joint distribution without transfers (%)

1993	1998		Total
	Poor	Non-poor	
Poor	35.21 (57.63)	25.88 (42.37)	61.09 100
Non-poor	5.15 (13.24)	33.76 (86.76)	38.91 100
Total	40.36	59.64	100

*Notes.* (1) The population is divided into poor and non-poor groups based on their simulated per capita expenditures without transfer, i.e., minus half of transfers, at each date and cross-tabulated. (2) and (3), see Table 5. (4) The measures of protection and promotion are, respectively, PROT = 0.31(0.66) and PROM = 0.70(0.74). The  $z$ -scores, given in parentheses, have critical values of 1.96 (2.58) at the 5% (1%) level.

Table 7  
No change in transfers (%)

1993	1998		Total
	Poor	Non-poor	
Poor	34.23 (56.94)	25.89 (43.06)	60.12 100
Non-poor	5.19 (13.02)	34.69 (86.98)	39.88 100
Total	39.43	60.57	100

*Notes.* (1) The population is divided into poor and non-poor groups based on actual per capita expenditures for 1993 and the simulated 1998 distribution if there had been no change in transfers, i.e., per capita expenditures in 1998 minus half of the change in transfers, and cross-tabulated. (2) and (3), see Table 5. (4) The measures of protection and promotion are, respectively, PROT = 0.36(0.76) and PROM = 0.69(0.73). The  $z$ -scores, given in parentheses, have critical values of 1.96 (2.58) at the 5% (1%) level.

From a comparison of Tables 5 and 6, transfers are found to have only a negligible impact on poverty. Without transfers, one and two additional percent of the population would have been poor in 1993 and 1998, respectively. Furthermore, the measures of promotion and protection are not statistically significantly different from zero. Table 7 simulates the joint distribution if no changes in transfers had occurred between the two dates. The change in the proportion who fell into poverty identifies the degree of protection offered while the change in the proportion who escaped poverty indicates promotion. A comparison of the numbers in Tables 5 and 7 indicates that changes in transfers enabled slightly over one percentage of the population to escape poverty, while they protected about one percent from falling into poverty. However, the differences are again not statistically significant. Low spending relative to needs, low coverage, and poor targeting explain the negligible impacts of transfers and of changes in transfers on poverty.

To investigate whether better targeting could increase the impact on poverty incidence, Table 8 compares the current distribution relative to a simulated uniform allocation of actual 1998 social income across the entire population. This allocation would have a small

Table 8  
Actual 1998 distribution versus uniform allocation of 1998 transfers (%)

1993 actual	1998 simulated		Total actual
	Poor	Non-poor	
Poor	35.54 (92.61)	2.83 (7.39)	38.38 100
Non-poor	1.54 (2.49)	60.09 (97.51)	61.62 100
Total simulated	37.08	62.92	100

*Notes.* (1) The population is divided into poor and non-poor groups based on actual per capita expenditures for 1998 and the simulated 1998 distribution as if the five transfers that are identifiable in 1998 had been distributed uniformly across individuals and cross-tabulated. (2) and (3), see Table 5. (4) The estimated standard error for the percentage of the population escaping poverty is 0.3% and the estimated standard error for the percentage of the population falling into poverty is 0.2%.

Table 9  
Transfers targeted to the poor on equal per capita basis (%)

1993 actual	1998 simulated		Total actual
	Poor	Non-poor	
Poor	31.72 (82.66)	6.66 (17.34)	38.38 100
Non-poor	1.98 (3.21)	59.64 (96.79)	61.62 100
Total simulated	33.70	66.30	100

*Notes.* (1) The population is divided into poor and non-poor groups based on actual per capita expenditures for 1998 and the simulated 1998 distribution as if the five transfers that are identifiable in 1998 had been distributed on a per capita basis only to the poor and cross-tabulated. (2) and (3), see Table 5. (4) The estimated standard error for the percentage of the population escaping poverty is 0.4% and the estimated standard error for the percentage of the population falling into poverty is 0.2%.

but statistically significant additional impact on poverty; an additional 2.8 percent of the population or 7.4 percent of the poor under the actual allocation would escape poverty. Moreover, an additional 1.5% of the population or 2.5% of the non-poor would have fallen into poverty.

If 1998 transfers had been targeted to those below the poverty line only, the results in Table 9 indicate that outlays based on equal allocations to this group would be sufficient to bring 17% of the poor or 7% of the population out of poverty. Only 3 percent of the non-poor or 2% of the population would have fallen into poverty. Both of these changes are statistically significant. Of course, these calculations assume that implementing either targeting scheme is administratively feasible and costless.

Finally, returning to earlier concerns, Table 10 presents the joint distribution of the incidence of proportionate gains in social incomes. Measured by their 1998 welfare, non-poor households gain considerably. However, within the non-poor group, those who were initially poor gain even more with a 189 percentage change in transfers compared to a 125 percentage change for those who were non-poor in 1993. Once again, the evidence in



Table 10  
The incidence of proportionate changes in social incomes

1993	1998, % increase in transfers	
	Poor	Non-poor
Poor	102	189
Non-poor	54	125

*Notes.* (1) The population is divided into poor and non-poor groups based on their actual per capita expenditures at each date and cross-tabulated. (2) The numbers in the table represent percentage changes in the three transfers between the two dates.

Table 10 indicates that the programs do not protect households from falling into poverty very well; the initially non-poor who became poor in 1998 had the lowest percentage change in transfers at 54 percent. The paper has examined the evidence on the social welfare system's ability to protect households from becoming poor and to promote poor households out of poverty from several perspectives. All of the resulting evidence points to clear deficiencies in meeting this dual safety net role.

## 5. Conclusion

Although poverty fell dramatically in Vietnam between 1993 and 1998, this paper's analysis suggests that the government's safety net programs made only a negligible contribution to that favorable outcome. The paper finds that these programs did not fulfill a genuine safety net role by protecting those who faced falling living standards during this period, partially due to the low level of overall spending on these programs relative to needs. The evidence also indicates that a lack of responsiveness to changing household circumstances is a fundamental problem of Vietnam's current safety net.

Design changes in some existing programs, e.g., in targeting mechanisms, may enhance somewhat the safety net's impact on protection. In addition, as argued in van de Walle (2004), several reforms to Vietnam's current institutional arrangements for delivering social welfare programs could make the system much more effective in terms of reaching the poor and vulnerable at little extra cost. The current redistributive process, which ensures equalization of resources at the provincial level, could be restructured to enforce better redistribution to lower administrative levels. Imposing national norms for identifying the poor at local level, improving incentives and mandates for targeting the poor locally, and instituting administrative constraints and rules to implement centrally mandated social welfare programs could increase considerably the protection of Vietnam's poor and vulnerable households with only negligible additional funding or centralization. However, the ability to better respond to changing circumstances of households is also likely to require new programs that focus on providing the poor with insurance mechanisms. Arguably, the market economy has increased household vulnerability to risks in Vietnam. Incomes from production and labor supply are more variable even though they have a higher mean, while local risk-sharing arrangements have declined. Hence, costly behavioral responses are induced

to mitigate and reduce risk. In order to sustain poverty reduction in Vietnam in the future, the government must provide more effective safety nets.

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### References

- Beckman, Malin, Le, Van An, Le, Quang Bao, 2002. Living with the floods: Coping and adaptation strategies of households and local institutions in central Vietnam. Swedish University of Agricultural Sciences, Uppsala.
- Benson, Charlotte, 1997. The economic impact of natural disasters in Vietnam. ODI working paper No. 98. Overseas Development Institute, London.
- Behrman, Jere, Knowles, James, 1999. Household income and child schooling in Vietnam. *World Bank Economic Review* 13 (2), 211–256.
- Dreze, Jean, Sen, Amartya, 1989. *Hunger and Public Action*. Oxford Univ. Press, Oxford.
- Glewwe, Paul, Gragnolati, Michele, Zaman, Hassan, 2002. Who gained from Vietnam's boom in the 1990s?. *Economic Development and Cultural Change* 50 (4), 773–792.
- Glewwe, Paul, Litvack, Jennie, 1998. Provision of health care and education in transitional Asia: Key issues and lessons from Vietnam. Working paper No. 147. UNU/WIDER, Helsinki.
- Kolko, Gabriel, 1997. *Vietnam: Anatomy of a Peace*. Routledge, London.
- Litvack, Jennie, Rondinelli, Dennis (Eds.), 1999. *Market Reform in Vietnam: Building Institutions for Development*. Quorum Books, Westport, CT.
- Lokshin, Michael, Ravallion, Martin, 2000. Welfare impacts of Russia's 1998 financial crisis and the response of the public safety net. *Economics of Transition* 8 (2), 269–295.
- Ministry of Labor, Invalids and Social Affairs (MOLISA), 1999. *Statistics on Social Safety Net in Vietnam*. Labour and Social Affairs Publishing House, Hanoi.
- Ministry of Labor, Invalids and Social Affairs (MOLISA), 2001. *Poverty Alleviation Strategy: 2001–2010*. MOLISA, Hanoi.
- Nguyen, The Dzung, 1999. *Capacity Assessment for Vietnam's National Target Program for Hunger Eradication and Poverty Reduction: Program Assessment*. UNDP, Hanoi.
- Rao, Govinda, Bird, Richard, Litvack, Jennie, 1999. The changing requirements of fiscal relations: Fiscal decentralization in a unified state. In: Litvack, Jennie, Rondinelli, Dennis (Eds.), *Market Reform in Vietnam: Building Institutions for Development*. Quorum Books, Westport, CT.
- Ravallion, Martin, van de Walle, Dominique, Gautam, Madhur, 1995. Testing a social safety net. *Journal of Public Economics* 57, 175–199.
- van de Walle, Dominique, 1999. Safety nets in an emerging market economy. In: Litvack, Jennie, Rondinelli, Dennis (Eds.), *Market Reform in Vietnam: Building Institutions for Development*. Quorum Books, Westport, CT.
- van de Walle, Dominique, 2004. The static and dynamic incidence of Vietnam's public safety net. In: Glewwe, Paul, Agrawal, Nisha, Dollar, David (Eds.), *Economic Growth, Poverty and Household Welfare: Policy Lessons from Vietnam*. In: *World Bank Regional and Sectoral Studies*. World Bank, Washington, DC.
- van de Walle, Dominique, Gunewardena, Dileni, 2001. Sources of ethnic inequality in Vietnam. *Journal of Development Economics* 65 (1), 177–207.
- Wagstaff, Adam, Pradhan, Menno, 2003. *Evaluating the impacts of health insurance: Looking beyond the negative*. Development Research Group, World Bank, Washington, DC.

- World Bank, 1995. Vietnam Living Standards Survey (VLSS), 1992-3: Basic Information. World Bank, Development Research Group, Washington, DC.
- World Bank, 2000. Vietnam Living Standards Survey (VLSS), 1997-8: Basic Information. World Bank, Development Research Group, Washington DC.