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Better Than its Reputation?
The Incidence of Social Transfers
And Education Fee Exemptions in Vietnam

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Henrik Hansen[*] and Le Dang Trung[†]

Abstract

Together with high economic growth, redistribution of public funds has been an important topic for both researchers and policy makers over the last few years. Since 1997 there have been at least six analyses on the incidence of public transfer programs all using the 1992/93 and 1997/98 household surveys (VLSSs). The general conclusion in these studies is that the social transfer system is regressive, and that it does not provide effective social protection to the majority of the poor. With the availability of new data, namely, the 2002 and 2004 household surveys (VHLSSs), the incidence analysis can be updated. We seek answers to the following questions: what is the incidence of the redistribution programs? Are they targeted to the poor? What are the roles of these programs in poverty dynamics? In doing so, we challenge many of the previous studies. We raise concerns about (1) the choice of the counterfactual welfare measure, and (2) the appropriateness of the household survey data for doing the analyses.

In the analysis, we look at two types of transfers: social insurance and social protection, and two types of education fee exemptions: tuition fee exemptions and school contribution fee exemption. The results give a somewhat different picture of the distribution of social transfers than the studies based on the 1992/93 and 1997/98 household surveys. Fist of all, social transfers are not regressive in 2004. Second, the transfers had a sizeable impact on the level of poverty in both 2002 and 2004 and, furthermore, provided protection against falling into poverty in that period.

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1. Introduction

Vietnam is in many ways a remarkable country. At present, most observers praise the macroeconomic performance of Vietnam during the last twenty years. The economy has been growing rapidly and the growth has been accompanied by a reduction in poverty that appears second to none. From 1993 to 2004 the average annual growth rate in per capita GDP was 5.9 percent while the poverty headcount rate fell from 58 to 20 percent implying a growth elasticity of 1.6 over the period. Hence, growth has been high and inclusive in Vietnam.

One reason for the inclusiveness is an active policy of redistribution of public funds across provinces in Vietnam. The extent of redistribution is illustrated in Figure 1, in which net transfers per capita (within provinces) to and from the central government in 2003 is plotted against province level poverty headcount rates in 2002. It is clear that the growth centers, with low poverty rates, transfer large amounts to the central government, which subsequently supports the poorer provinces, mainly in the Central Highlands and the Northern Uplands.

Figure 1: Provincial Poverty Rates in 2002 and Net Government Transfers To and From Provinces in 2003
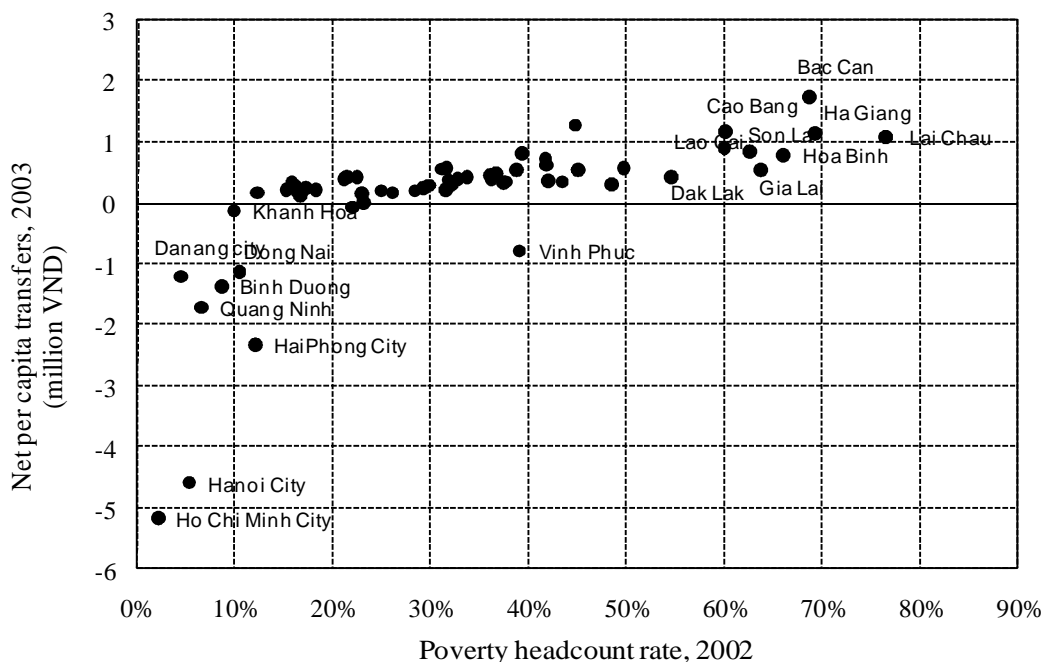
Notes: Net transfers are calculated as the difference between the actual spending of a province (both current and capital expenditures) and the tax revenue raised on its territory.
Source: World Bank (2004).

Despite this large inter-provincial redistribution, there is a general perception of poorly targeted redistributive transfers at the household level. That is, direct government support to households in the form of social transfers has been found to be either regressive or only mildly progressive in studies of the social safety net in Vietnam. Preston (1999) provides a thorough description of the institutional background and the public expenditure on social transfers in the 1990s. He concludes that Vietnam in the 1990s was divided into a minority group in the formal sector that had a well developed social security system and a majority, mostly

rural, group with little, and clearly insufficient, social protection. This conclusion seems to be representative of all studies of the social transfer system in Vietnam.

In another study, by Prescott (1997), the incidence of social insurance transfers and social protection transfers are analyzed at the household level using the household survey 1992/93 VLSS. Prescott finds that social transfers, as such, are not pro-poor. The social insurance system (covering public sector workers) is regressive as it mainly benefits the more well-off households both in terms of the value of transfers and as a share of total consumption expenditure. Moreover, the coverage of the social protection program, which is mildly progressive, is very low and the size of the transfers is small compared to the social insurance transfers. Prescott concludes that a significant reallocation of the budget from social insurance to social protection is required to improve the poverty orientation in social transfers.

Household level incidence analyses, based on the 1992/93 and 1997/98 VLSSs are also presented in the most comprehensive studies of social transfers in Vietnam by van de Walle (2004a, b). van de Walle first addresses the issue of behavioral responses to social transfers by estimating the marginal propensity to consume out of transfer income. The result of the econometric analysis is that households benefiting from social transfers only increase consumption expenditure by half of the transfer. This leads van de Walle to define a counterfactual consumption measure—in which half of the value of transfers is subtracted from actual per capita consumption—which she subsequently uses in the incidence analyses. Based on a detailed analysis of several transfers van de Walle concludes that transfers to households are negligible and coverage is weak. Moreover, although transfers in 1998 are progressive they are not particularly well targeted as the poor receive less in absolute amounts than the non-poor. Furthermore, in an analysis of the dynamic incidence of transfers van de Walle comes to the conclusion that social transfers had, at most, a very small impact on the large decline in poverty from 58 percent in 1993 to 37 percent in 1998. Also, the transfers did not provide protection against falling into poverty between 1993 and 1998.

In addition to the four studies above, the World Bank (2002) and Justino (2005) briefly report some of van de Walle's results. Both studies conclude that the social transfer system is regressive, and that it does not provide effective social protection to the majority of the poor.

In this chapter we provide an update of the incidence analysis of social transfers to 2004 using the household surveys 2002 and 2004 VHLSS. In doing this we also challenge many of the conclusions in the previous studies. Our dispute is based on three arguments. First of all, the choice of counterfactual welfare measure, where van de Walle (2004a, b) use observed per capita consumption net of half the per capita transfer because households only spend half of the social transfers on consumption goods, has a decisive impact on the distribution of transfers as the social insurance benefits are quite large. In our econometric analysis we find that households seem to fully consume the transfers and this leads us to consider a counterfactual welfare measure defined as per capita consumption net of (all of) the per capita transfer. Comparing the results of using the two counterfactual welfare measures we find that the distribution of social insurance transfers changes from a U-shape, in which the absolute value of the transfers mostly benefit the poorest and the richest quintiles, to a regressive distribution. Hence, conclusions about the incidence of the social insurance transfers depend on the choice of welfare measure. The more recent data supports the counterfactual leading to a reasonably progressive U-shaped distribution of social insurance transfers. However, we cannot reject the alternative.

The choice of counterfactual also impacts on the dynamic incidence analysis. In contrast to van de Walle's finding of no protection from falling into poverty between 1993 and 1998, our results indicate that the social transfers had sizable effects on the poverty levels in 2002 and 2004 and, furthermore, provided significant protection against falling into poverty.

Second, while we agree with the critique of the social transfer system in terms of too limited resources for social protection transfers, resources have increased slightly since 1998 to reach 16 percent of the poorest individuals in 2004. Yet, this is still a low incidence. However, we find it difficult to do an in-depth analysis of the incidence of the social protection transfers. The problem is two-fold: The household surveys are designed to provide a cost-effective overall picture of 'typical' households in Vietnam in the sense that the samples are fairly small and the stratification is purely geographical. This means that the relatively small groups of extremely poor, as defined by the Government of Vietnam, are not well represented in the surveys. This may lead to a downward bias in the estimated transfers to the poorest group. Furthermore, the social protection program includes transfers to individuals with a historical merit (*i.e.*, people with a revolutionary merit and their relatives). Such beneficiaries receive transfers independently of their level of income and consumption. As we cannot distinguish between means tested transfers and 'war compensation transfers' in the social protection program it is impossible to make firm conclusions about the targeting of the program.

Finally, the social transfer system is only one part of the direct government support to households. Another, substantial, support is provided as exemptions from education-related user fees. Based on the data in the 2004 VHLSS it is possible to estimate the total value of education fee exemptions granted to households. The total value of education fee exemptions is three times larger than the total expenditures on social protection. Hence, to get a more complete picture of the redistributive transfer policies in Vietnam one should include the incidence of education fee exemptions.[1] Our incidence analysis of the fee exemptions shows that this support is progressive and fairly well targeted, considering that the fee exemption programs use both direct and categorical targeting.

In the Vietnamese household surveys it is possible to get information on the reason for education fee exemptions at the household level. We use this information to define a set of directly poverty oriented education fee exemptions by separating out fee exemptions granted for other reasons, including 'war compensation grants'. The division into directly poverty oriented fee exemptions and other fee exemptions shows that the former are clearly pro-poor in terms of coverage. The main problem with the program is that the government cannot control the size of the subsidy, and there is a clear tendency for richer households to pay higher education fees, thereby benefiting from larger subsidies when they are exempted from the fees.

In an analysis of the incidence of the joint government support system, including both social transfers and education fee exemptions, the results show that about one-quarter of the Vietnamese people are affected by the joint support program. Of these, roughly 19 million people, some 37 percent (7 million) are in the poorest quintile of the counterfactual per capita consumption expenditure distribution. Moreover, 75 percent (14 million) of the beneficiaries live in the rural areas of Vietnam. Hence, if one considers a social safety net as a system that includes both direct money transfers (increasing household income) and fee exemptions (lower-

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[1] van de Walle (2004b) looks at the coverage of education fee exemptions. But it is not possible to estimate the value of the fee exemption in the 1997/98 VLSS, therefore, she cannot carry out a complete incidence analysis.

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ing household expenditure) then the above conclusion of a division into an urban minority of well secured people and a large rural majority of poorly covered people is no longer evident.

A third part of the direct government support to households is the set of National Targeted Programs (NTPs), of which the Hunger Eradication and Poverty Reduction (HEPR) program is the best known. The NTPs provide a wide range of support options for the poor, however, not much in terms of direct transfers apart from education fee exemptions, which we cover. Therefore, we do not look at the targeting of the NTPs in the present chapter. Instead, we refer to Nguyen (1999), Nguyen (2003), Shaffer and Nguyen (2004) and UNDP-MOLISA (2004) for analyses of targeting and impact of the HEPR.

The chapter is structured as follows. Section 2 briefly describes the institutional setting and the total expenditures for social transfers and education fee exemptions. In Section 3, we estimate the marginal propensity to consume out of transfer income and education fee exemptions. Next, in Section 4 we analyze the distribution of social transfers and education fee exemptions across individual welfare levels using counterfactual measures of per capita consumption expenditure as the welfare indicator. The dynamic incidence of social transfers from 2002 to 2004 is analyzed in Section 4. Finally, Section 5 concludes and provides a few policy recommendations.

2. A Public Expenditure View on Social Transfers and Education Fee Exemption

In this section we first describe the social insurance and social protection systems to establish an overall view of the public expenditures on these programs, the institutions and the intended beneficiaries. Second, we provide a brief description of the education system focusing on direct subsidies to households in the form of tuition fee exemptions and school contribution fee exemptions (in brief 'education fee exemptions').

2.1 Social transfers

In 2002 the Government of Vietnam spent 13.2 trillion VND of the state budget on expenditures classified as social insurance. This amounts to 10 percent of the total budget. As most of social insurance expenditure are current expenditure (12.8 trillion VND), the social insurance expenditure took up 16 percent of the total current expenditure budget that year. This makes social insurance the second largest current expenditure component in the state budget only exceeded by education and training expenditure, which constitutes 21 percent of the current expenditure budget.[2]

The largest single component of the social insurance expenditure is the social insurance system, which provides cash transfers for old-age in the form of pension, early retirement and survivorship. In addition, the scheme also covers maternity, sickness related to work accidents and occupational diseases. The social insurance system started as a government retirement program already in 1947. Until 1995 the system was fully state-funded and included only public servants, employees of state owned enterprises (SOEs), the armed forces and members of the Communist Party's organizations. In 1995 it was reformed to a modern social insurance system by the establishment of the Vietnam Social Insurance (VSI) program. The

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[2] Expenditure classified under "Transport, Storage and Communication" makes up a larger fraction of the total expenditure (14 percent). However, this is almost entirely capital expenditure.

VSI is an independent entity directly under the Prime Minister, which is managed by the Ministry for Labor, Invalids and Social Affairs (MOLISA) and funded by pay-roll taxes with contributions from both employers and employees (15% and 5% of basic salary, respectively) and by contributions from the state budget.

With the establishment of the VSI the coverage was extended from the narrow state and party related employees to compulsory membership of all employees of non-SOEs with 10 workers or more and all employees of foreign invested enterprises and foreign organizations. Subsequently, the program has been enlarged to offer voluntary membership to all formal sector workers not included in the mandatory membership group. However, the total coverage of the VSI is still small. At the end of the 1990s and the beginning of the 2000s the VSI covered only some 14 percent of the labor force (MOLISA, 1999 and World Bank, 2004).

During a transition period in which the VSI is building up resources individuals who retired before 1 January 1995 are still covered directly from the state budget. In 2004, about one million individuals received monthly pensions directly from the state budget while almost 322 thousand individuals were covered by the VSI. But, as expected, the recent statistics show a slow decrease in the number of people covered by the state budget and an increase in the number of people covered by the VSI.

Pensions from the new social insurance system are provided on a pay-as-you-go basis and the size of monthly pension benefit is directly related to a weighted average of the monthly salary and the number of years an employee has been contributing to the VSI program. For employees contributing up to 15 years the monthly pension benefit is 45 percent of the average monthly salary. The monthly benefit gradually increases to a maximum of 75 percent of the average monthly salary after 30 years of contributions to the program.[3] Currently the pension age is 55 for women and 60 years for men. Employees in some special hazardous occupations may retire five years before the general retirement ages.

Clearly, the social insurance program is not a poverty oriented welfare program as such; it is a standard social insurance scheme that mainly provides old-age, disability and survivors' benefits to its members. Hence, when looking at redistributive government transfers the main problem in relation to this program appears to be the small coverage of workers combined with the large contribution from the state budget.

In addition to the social insurance program, Vietnam has a social protection program transferring social allowances based on specific eligibility criteria. The social protection program is organized in several social guarantee funds (SGFs) of which the three most important are "the Social Guarantee Fund for War Affected Groups", "the Social Guarantee Fund for Regular Relief" and "the Contingency Fund for Pre-Harvest Starvation and Disaster Relief". The specification of beneficiaries and the benefit levels for those covered by the SGF for War Affected Groups are specified in Decree 210/2004/ND-CP while beneficiaries and benefit levels for the two relief funds are specified in Decree 07/2000/ND-CP. Extracts from the two decrees are given in Appendix 1.

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[3] The calculation of the average monthly salary depends on the employment situation as there is a distinction between state and non-state employment. For an employee who has been in the state salary system throughout, the average monthly wage is based on the last 5 years of employment. Otherwise, the average monthly salary is based on the whole period in which the employee has been contributing to the pension scheme. Needless to say this discriminates private sector employees as the calculations do not appear to take account of inflation.

The Social Guarantee Fund for War Affected Groups (or the Social Guarantee Fund for Veterans, War Invalids and Others Who Have Contributed to National Liberation Struggles) supports war veterans and relatives of people that were killed or disabled in the Revolutionary cause (see Appendix 1).[4] Thus, a means testing of the beneficiaries from this fund does not involve the level of welfare in terms of consumption or income. Hence, in some sense it would seem more appropriate if the transfers from this fund were classified as part of a 'war compensation program' rather that a part of the social protection system.

In contrast, The Social Guarantee Fund for Regular Relief provides monthly benefit support to three groups of individuals that are regarded as being extremely poor and unable to support themselves. The three groups are the lonely elderly, orphaned children having no support from relatives, and the poor disabled people (Appendix 1 and MOLISA, 1999). The eligible beneficiaries are identified by local authorities and while a minimum allowance for each group is specified by the government the local authorities are encouraged to increase the allowances if sources are available. This means that actual transfers to the beneficiaries vary somewhat across provinces, with higher benefit levels in relatively well-off provinces. MOLISA (1999) reports that more than one million people were eligible for regular social allowances in the late 1990s but only one in five received assistance. Due to lack of updated data, it is not clear if this rate of coverage has improved since 1999.

Besides the regular allowances the regular relief fund also finances centers for rehabilitation of social evils groups; drug addicts, prostitutes, and HIV/Aids positive. As for the recurrent regular relief, the coverage in the late 1990s was low and it is unclear if it has increased in recent years.

The third fund, the Contingency Fund for Pre-Harvest Starvation and Disaster Relief, has a completely different purpose compared to the two other funds as it provides short-term support to victims of natural disasters and to households that may suffer extreme hunger between harvests. The hunger relief is given in the form of food aid or cash to buy food. The benefit amount is determined by the local authorities and may vary. In 1999 the support amounted to 25-30 thousand VND per person per month (MOLISA, 1999). The emergency relief to households in disaster struck areas is given for injury relief, funeral fees and assistance for repairing or restoring seriously damaged houses. Also for the disaster relief, the benefit level is determined by local authorities (Appendix 1). In 1999 the official level of support was about one million VND per household for restoring houses; one million VND for funeral assistance; and 200-500 thousand VND for injury relief (MOLISA, 1999).

Preston (1999) points to an important practical problem in covering both disaster relief and pre-harvest starvation in one fund. Due to the unforeseeable nature of natural disasters, the support to poor households suffering from pre-harvest starvation varies substantially across regions and years as this support is used as a buffer with large support in years without natural disasters and low support in years in which a disaster occurs. In terms of redistribution and targeting of the poor this means that the incidence of these transfers may well vary greatly from one year to the next; at least within the lower income quintiles.

Because of lack of updated data on the social insurance system and the social protection program we use the 2002 and 2004 household surveys (VHLSS) to estimate the total expendi-

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[4] Relatives include widows, parents, parents-in-law, children, and even other dependent individuals who are not family related.

tures on social transfers. Information on both social insurance and social protection is available at the household level. However, for social insurance transfers we cannot separate state payments from VSI payments and, likewise, we cannot identify benefits from the individual funds in the social protection program. To facilitate comparison the transfers in both years are measured in real January 2004 prices.[5]

In both surveys, a few households report extraordinary large social transfers. We identify such outlying observations using an iterative outlier detection algorithm suggested in Hadi (1992, 1994) and subsequently omit these observations from the estimation of total social transfers.[6] This strategy of removing the extreme observations will be followed throughout. Needless to say, omitting the extreme observations will have a large impact on the distributional results that are the core of the analysis in this chapter. But we are convinced that these observations are results of misunderstandings or misreporting.

Table 1 reports the total benefits received by the households using the survey sampling weights to estimate the total expenditure on social insurance and social protection. The estimated total social transfers in 2002 amounts to 11.7 trillion VND (10.8 trillion VND in 2002 prices).[7] Almost 85 percent of the total expenditures are social insurance transfers. The social insurance transfers have a heavy urban bias as 44 percent went to individuals in urban households while these individuals only make up 23 percent of the population. In contrast, of the 1.8 trillion VND received as social protection transfers, about 1.5 trillion VND were benefiting households in the rural areas. Both of these biases are expected. The social insurance system is focused on former public employees and former employees in large enterprises, both of which are mainly located in urban areas. Moreover, as the regular relief fund is focused on natural disasters and pre-harvest starvation, the main beneficiaries from this fund will be in the rural areas.

Table 1: Social Transfers from 2002 and 2004 VHLSS

	2002 VHLSS			2004 VHLSS		
	Rural	Urban	Total	Rural	Urban	Total
Social insurance	5524.5	4397.9	9922.5	7601.0	7538.0	15139.0
	(55.7)	(44.3)	(100.0)	(50.2)	(49.8)	(100.0)
Social protection	1484.9	330.1	1814.9	1819.6	321.2	2140.7
	(81.8)	(18.2)	(100.0)	(85.0)	(15.0)	(100.0)
Memo item:						
Population structure (percent)	72.5	27.5	100.0	70.2	29.8	100.0

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[5] Social insurance transfers are from question m5d1c2t103 in VHLSS 2002 and from question m4d1c2_3 in VHLSS 2004. Social protection transfers are from questions m5d1c2t104 and m4d1c2_4, respectively. The transfers in 2002 are first deflated to real January 2002 prices using regional and monthly deflators provided with the 2002 VHLSS data. Subsequently the 2002 transfers are inflated to January 2004 prices using the consumer price index from GSO.

[6] The outliers are identified using the algorithm developed in Hadi (1992, 1994) with a one percent significance level for outlier cutoff. Only non-zero values of the transfers are considered in the algorithm.

[7] The estimated total expenditure is 1.9 trillion VND smaller than the current expenditure on social insurance as reported in the State Budget (SRV, 2005). Given (i) the sampling uncertainty of the estimate, (ii) the fact that the expenditure estimated in the survey does not include administrative costs, and (iii) that transfers in the survey period are not exactly covering the fiscal year 2002, we do not find this discrepancy to be too alarming. However, it is important to keep in mind that the discrepancy may be caused by a systematic misrepresentation or omission of some beneficiaries in the household surveys.

Social insurance increased by more than 50 percent in real terms from 2002 to 2004. This is a large increase even considering the rapid growth of the Vietnamese economy.[8] The bulk of the increase in social insurance transfers went to households in the urban areas, thereby increasing the urban bias in these transfers. Part of the increase in the urban area may be explained by the urbanization in the period, illustrated by the change in the composition of the population in the bottom part of Table 1.

The increase in social protection benefits was more modest (18 percent) resulting in a decrease in the share of social protection in total social transfers from 15 to 12 percent. Hence, in relative terms, the direct poverty orientation in the social expenditures has decreased, even though the expenditures have increased in real terms.

2.2. The Education system and rules for education fee exemption

The education sector, as seen from a public expenditure perspective, has been described recently in SRV (2005) while other aspects of the sector, in particular, the long run policies, are given in SRV (2003). Here, we therefore focus on issues of relevance for understanding the system of education fee exemptions, and refer to the SRV (2003, 2005) reports for detailed descriptions of education policies, expenditures and service delivery issues.

The school system in Vietnam has four basic levels: pre-primary, primary, lower secondary and upper secondary. Primary and lower secondary schooling can be followed by vocational training while higher education in the form of college and university degrees is possible after upper secondary school. The overall responsibility for the education sector lies in Ministry of Education and Training (MOET) but the system is decentralized such that communes and districts manage the first three levels of schooling (pre-primary to lower secondary) and provinces manage upper secondary schools. Vocational training is managed by MOLISA while higher education is directly under MOET. The decentralization includes state budget management whereby the relevant local authorities are responsible for budget allocations to finance local educational activities. In 2002, some 98 percent of education expenditures (excluding vocational training) were administered by local authorities (SRV, 2005).

Total education expenses are partly covered by community contributions (user fees). These contributions are regarded as state budget revenues. They are collected and retained by the local educational institutions to finance the local educational activities. The main community contributions are tuition fees, examination fees, and contributions for school construction.

The distribution of total education expenditure across public and community contributions is shown in Table 2. The share of contributions is increasing with the level of schooling. One reason for the low share of user payment at the primary level is that almost all households are exempted from tuition fees at this level, though parents still have to pay other fees and contributions. Moreover, it is interesting to note that the share of community contributions in total expenditure has fallen steadily over time at all levels of schooling.

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[8] The growth rate in real GDP was 15.6 percent from 2002 to 2004. (Based on data from World Bank, 2005).

Table 2: Funding Sources of Education Expenditures (percent)

Sub-sector	1993	1998	2002
Primary			
State subsidy	45	55	73
Contributions and direct expenditures by parents	55	45	27
Lower secondary			
State subsidy	34	62	59
Contributions and direct expenditures by parents	66	38	41
Upper secondary			
State subsidy	40	47	52
Contributions and direct expenditures by parents	60	53	48

Source: SRV (2005).

The importance of community contributions in the funding of the education sector has created a tension in the education policies as it is recognized that user fees is one of the obstacles for increasing school participation among the poorest groups. Therefore, the Government has expressed commitment to provide free primary education for all by 2015 and, according to the plans in SRV (2003), the community contributions to lower secondary education will be kept almost constant in real terms from 2003 to 2015 resulting in a sharp decline in the share of community contributions in total expenditures.

More important for the present study, the Government has established policies for tuition fee and school contribution exemptions and reductions. The policies are typically managed at the local level through targeted programs. Several groups of students are intended to be exempted from paying tuition fees and other contributions.[9] The list of students includes war veterans and children of people who were killed or disabled in the Revolutionary cause; minority people; people living in extremely difficult areas; and invalids.[10]

The list of intended beneficiaries shows that education fee exemption is based on categorical targeting as poor households are targeted indirectly through the high incidence of poverty among ethnic minority groups and the high incidence of poverty in extremely difficult areas. Moreover, as for social protection, education fee exemption can be based on historical merits rather than a means based assessment.

A more direct poverty orientation in is stated in the National Plan for Education for All where the Government commits to grant "exemption of user cost for students from poor families and other disabled groups" at the lower secondary level (SRV, 2003, p. 63). However, it is not clear when and how this commitment will be introduced and administered.

To our knowledge there are no official statistics on the total value of education fee exemptions. Therefore, we rely on the information in the 2004 VHLSS to estimate such numbers. In the survey, each individual who participated in the education system during the last twelve

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[9] Some education fee exemptions are given in Decree No. 88/2001/ND-CP of November 22, 2001.

[10] Education fee exemption is also granted to poor students in non-formal education (literacy and complementary programs for out-of-school youth and young adults with low educational skills). However, the non-formal education program is small and not covered in the present study.

months before the interview is asked about the amount of school fees and the amount of other contributions the household paid regardless of whether or not the individual was granted education fee exemption. A second question asks if the individual was exempted from paying education fees and other school contributions and if so there is a follow-up question about the rate of reduction. The rate of education fee exemption varies in the range from 0 to 100 percent.

As for the social transfers, some households report rather extreme values of education fee exemptions. Therefore, we also apply the Hadi (1992, 1994) outlier detection algorithm for education fee exemptions and compute totals for the sample excluding the outliers.

Table 3 shows the estimated value of education fee exemptions in 2004 by type of fee and by rural/urban area. Tuition fee exemptions and school contribution fee exemptions both exceed total expenditure on social protection whereby the education fee exemption program is more than three times the size of the social protection program in terms of resources transferred to the households. This is the reason why we argue that this program should be evaluated alongside social transfers in assessments of redistributive transfers in Vietnam.[11]

Table 3: Total Value of Education Fee Exemptions from 2004 VHLSS

	Rural		Urban		Total
	Exemption	Percent of row total	Exemption	Percent of row total	
Tuition fee exemption					
Primary	71.9	(89.2)	8.7	(10.8)	80.6
Lower secondary	1,075.8	(78.1)	302.4	(21.9)	1,378.2
Upper secondary	833.0	(73.4)	301.7	(26.6)	1,134.8
Unspecified	233.9	(61.6)	145.6	(38.4)	379.5
Total	2,214.6	(74.5)	758.5	(25.5)	2,973.0
Contribution fee exemption					
Primary	1,538.2	(88.8)	193.4	(11.2)	1,731.6
Lower secondary	1,109.1	(83.9)	212.4	(16.1)	1,321.5
Upper secondary	557.7	(79.7)	141.8	(20.3)	699.5
Unspecified	231.8	(91.6)	21.2	(8.4)	253.0
Total	3,436.8	(85.8)	568.8	(14.2)	4,005.6

Note: All monetary values are in billion VND, January 2004 prices.
Source: Own calculations based on 2004 VHLSS.

Both tuition fee and contribution fee exemptions have a small rural bias as the rural share of fee exemptions is higher than the population share. The bias is present at all levels of schooling, the only exception being the unspecified tuition fee exemptions.

There are virtually no tuition fee exemptions at the primary school level. The reason is that tuition is now free of charge at the primary level in all public schools. Hence, most of the tuition fee exemption expenditures benefit students in lower and upper secondary schools, with

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[11] Some of the previous studies of social transfers in Vietnam (van de Walle, 2004b; the World Bank, 2002 and Justino, 2005) include scholarships in the analyses of social transfers, noting that the number of scholarships is very small. This is not surprising as scholarships are typically granted to students with special merits. In the 2004 VHLSS the total estimated value of scholarships is only 565 billion VND, so we do not include scholarships in the present analysis.

slightly higher total benefits at the lower secondary level (46 and 38 percent of the total value of fee exemptions, respectively). In contrast, for contribution fee exemptions the largest share benefits primary level students (43 percent) followed by lower secondary students (33 percent) and a much smaller part to upper secondary students (17 percent). Consequently, based on aggregate numbers, education fee exemptions may well be pro-poor as large shares of the benefits are targeted towards the 'right' groups: primary and lower secondary students in the rural area.

In the following sections we move beyond the totals to look at the incidence of the social transfers and education fee exemptions using the 2002 and 2004 household surveys. In the analysis of education fee exemptions we exclude tuition fee exemptions granted to primary level students as these exemptions are in all likelihood granted for quite special reasons given that primary level tuition is free of charge in public schools.

3. The behavioral response to social transfers and education fee exemptions

When looking into the incidence of the social transfers and education fee exemptions a key issue is the computation of a counterfactual welfare indicator. The problem is not so much in the definition of the welfare indicator as most studies use either total income or total consumption expenditure. The problem is rather how to define and compute the counterfactual. Most conventional benefit incidence analyses are "non-behavioral" in the sense that they assume there is no substitution of any kind in response to a transfer (see e.g., Demery, 2003). Hence, in the absence of transfers households would simply consume an amount equal to the observed total expenditure less the monetary value of the transfer. Whether such a 'pre-intervention' expenditure measure is an appropriate counterfactual to take for assessing the incidence of public spending is a recurrent theme in incidence analyses. For the assumption to be acceptable, the observed distribution of income and expenditure must be unaffected by the public program that is analyzed. This is rarely the case. Yet, the public transfers analyzed in this chapter are relatively small in the sense that the total transfers constitute a small share the total income generation. Hence, relative prices are probably not sensitive to changes in social transfers and education fee exemptions.

Even in the absence of price effects there may be behavioral responses to social transfers at the household level. In particular, a transfer may increase savings rather than expenditures; it may reduce the labor supply; or it may affect private transfers such as remittances and private borrowing and lending. Ravallion, van de Walle and Gautam (1995) suggests a simple way of estimating the behavioral response to transfers at the household level by estimation of the marginal propensity to consume out of transfers in a reduced form expenditure regression.[12] van de Walle (2004a) uses that approach in her analysis of Vietnam's public safety net in the 1990s. In this study we also follow the suggestion and estimate the marginal propensity of consume out of social transfers (*mpct*) and the marginal propensity to consume out of education fee exemptions (*mpce*) using household level panel data.

3.1. The model and results for social transfers

Given repeated observations for a set of households, a reduced form consumption model can be formulated as

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[12] See also van de Walle (2003) for a succinct description of the method.

$$E_{it} = T_{it}b + X_{it}g + a_i + l_t + e_{it}, \tag{1}$$

where E_{it} is real expenditure in household i at time t, T_{it} is the transfer to household i at time t, and X_{it} are observed household characteristics. The unobservable characteristics are split into a time invariant household specific latent factor a_i; a common time varying latent factor l_i, and an idiosyncratic term e_{it}, as in most panel data analyses.

The parameter of interest, b, is a direct measure of the marginal propensity to consume out of transfer income, which is assumed to be the same for all households in equation (1). Estimation of this parameter is complicated by possible endogeneity problems that have to be dealt with. Endogeneity of transfers may arise because of targeting of transfers towards certain households with chronic problems that may lead to persistently low expenditures (e.g., households with invalids or gravely disabled members). Such targeting implies a negative correlation between transfers and the latent household specific factor ($\text{cov}(T_{it}, a_i) < 0$), which will cause a downward bias in the least squares estimator. A second problem is that some of the social protection transfers are designed to be responses to shocks (natural disasters). Such transfers will be correlated with the idiosyncratic components ($\text{cov}(T_{it}, e_{it}) < 0$) if the natural disaster has an impact on expenditures as one would expect for poor, credit constrained households. This correlation will also lead to a downward bias in the least squares estimator.

In the regressions reported below we deal with the endogeneity problems by transforming the regression model using changes from 2002 to 2004 (*i.e.*, the model is estimated in first differences). This transformation annihilates the household specific latent factors and hence the first cause of bias. Subsequently, we take account of the second endogeneity problem by applying an instrumental variable estimator.

The data are the panel component of the two surveys 2002 and 2004 VHLSS that includes 3,935 households. The dependent variable is real total household expenditure measured in January 2004 prices and the transfer variable is the sum of social insurance and social protection benefits both of which are measured at the household level.

The set of conditioning variables included in the regression models consists of basic measures of household composition and education. Information about land assets and occupation of household members could also have been included. However, it is important to keep in mind that by using changes from 2002 to 2004 all time invariant household attributes are implicitly included and annihilated by the difference transformation.[13] Summary statistics for the variables included in the regressions are given in Table A1 in Appendix 2.

Table 4 reports our basic regression results for the social transfers. In regression (1), changes in transfers is the only regressor apart from the intercept and, hence, this is the standard difference-in-difference estimator. The estimated *mpct* is about one-third in regression (1). Next, in regression (2) the control variables are added to take account of observable time varying differences between households. In general, the signs and magnitudes of the control variables are sensible; household consumption expenditure is increasing in household size, but not linearly; the presence of children in a household has a negative effect on expenditure, given the household size, and consumption expenditure is increasing in the level of education of the household members. The most interesting result in regression (2) is that inclusion of the con-

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[13] Needless to say, this is also the case for other time invariant factors such as province, district and commune information.

trols leads to a large drop in the *mpct* estimate, down to around one-fifth. Finally, when applying the GMM estimator in regression (3) the estimated *mpct* is 1.

Table 4: The Estimated Marginal Propensity to Consume out of Social Transfers

Dependent variable: Real household expenditure, 1.000 VND January 2004 prices.

	Social insurance and social protection			Only Social insurance		
Regression	(1)	(2)	(3)	(4)	(5)	(6)
Estimator	LS	LS	GMM	LS	LS	GMM
Transfer	0.328	0.197	0.988	0.315	0.196	1.028
	(3.29)	(2.49)	(2.14)	(3.18)	(2.48)	(2.20)
Size of household		3,388	3,580		3,395	3,623
		(6.33)	(6.72)		(6.34)	(6.74)
Size of household squared		-78	-81		-78	-84
		(1.75)	(1.83)		(1.76)	(1.90)
Gender of household head		1,080	1,017		1,092	1,091
		(1.36)	(1.29)		(1.38)	(1.37)
Household members who are						
Children 0-5		-1,059	-1,229		-1,060	-1,241
		(2.20)	(2.62)		(2.21)	(2.64)
Children 6-10		-782	-818		-787	-839
		(2.28)	(2.54)		(2.29)	(2.60)
Primary-educated		-144	-208		-144	-198
		(0.54)	(0.82)		(0.54)	(0.78)
Secondary-educated		389	336		387	329
		(1.45)	(1.27)		(1.44)	(1.24)
High-school-educated		1,453	1,058		1,450	1,035
		(3.41)	(2.43)		(3.40)	(2.36)
Vocationally educated		2,825	2,334		2,826	2,337
		(4.85)	(4.09)		(4.85)	(4.11)
Professionally educated		3,455	3,217		3,454	3,194
		(5.25)	(4.79)		(5.24)	(4.75)
University-educated		3,744	3,270		3,758	3,337
		(4.09)	(3.33)		(4.12)	(3.41)
Constant	3,231	3,033	2,920	3,240	3,037	2,924
	(15.67)	(15.48)	(13.87)	(15.71)	(15.49)	(13.96)
Observations	3,935	3,935	3,935	3,935	3,935	3,935
RESET test (*p*-value)	0.72	0.43	0.71	0.75	0.44	0.79
First stage *F*-statistic[a]			50.28			46.96
Hansen *J*-test[b] (*p*-value)			0.43			0.48

Notes: The dependent variable and all regressors are given as changes from 2002 to 2004. All regressions use sample weights from the 2002 VHLSS survey. Cluster robust *t*-statistics in parentheses. Instruments used in regressions (3) and (6): Change in number of females above 55; change in number of males above 60; initial number of females above 55; and initial number of males above 60. [a]The first stage *F*-statistic is the Cragg-Donald test statistic for instrument relevance. [b]The Hansen *J*-test is the over-identifying restriction test.
Source: Own calculations based on the 2002 and 2004 VHLSS.

In the GMM regression we use four instrumental variables; the changes in the number of males above 60 and females above 55 years of age from 2002 to 2004 (*i.e.*, the change in the number of pension age members in the household) and the initial number of males over 60

and females over 55 years of age (*i.e.*, the number of pension age members in the household in 2002). The choice of pension age household members as instruments is guided by two observations. First of all the change in the number of pension age members is in most cases predictable at the household level. Entering the pension age is clearly predictable and leaving pension age is often predictable within a certain time interval even if the precise dating is unknown. The predictability of the change means that households should smooth consumption across this event whereby it is not a shock to household expenditure. This makes the variables valid instruments. Second, movements into and out of the pension age is associated with changes in pension transfers for individuals covered by the social insurance program as explained in Section 2. Hence, there is reason to assume that changes in pension age individuals are correlated with changes in social insurance transfers, at least for some households, making the variables relevant instruments. The first stage *F*-statistic reported for regression (3) in Table 4 confirms the assumption of relevant instruments while the test of over-identifying restrictions, the *J*-test, does not reject the validity of the instruments.

van de Walle (2004a) reports similar regressions based on the panel data component in the two household surveys 1993 and 1998 VLSS. However, she finds much smaller discrepancies between the three estimators and concludes that an *mpct* around 0.5 is reasonable as it is within the 95 percent confidence bound in all three regressions. This is in fairly sharp contrast to our results, as they seem to imply an *mpct* quite close to one.

There are some differences in the choice of conditioning variables between van de Walle (2004a) and our model. However, the main dissimilarities are in the use of GMM rather than TSLS and, in particular, in the choice of instruments in the IV-regression. Specifically, van de Walle uses the initial value of transfers as the sole instrument for the changes in transfers while we use the four instruments discussed above. We have also estimated models in which the initial value of transfers is included as an instrument. The results show that this instrument is irrelevant in our model formulation. This is in all likelihood caused by the large changes in the Vietnamese economy and changes in the administration of transfers from the mid 1990s to the early/mid 2000s.

In order to look more into the robustness of our results we re-estimate the three regression models using only social insurance benefits as the transfer variable.[14] As shown in Section 2, the social insurance benefits are by far the largest transfers and changes in social insurance transfers are more closely associated with changes in the number of pension age household members than the total transfers used in regressions (1)-(3) in Table 4. The results, when using only the social insurance transfers, are given as regressions (4)-(6) in Table 4. The latter estimates are very similar to the estimates in regressions (1)-(3) in which all transfers are included.

Finally, because of the aforementioned extreme transfer values in the surveys we identify outlying transfer observations, again using the Hadi algorithm, as explained in Section 2. Subsequently, all models in Table 4 are re-estimated based on a sub-sample that excludes the outliers. The results of the re-estimations, given in Table 5, indicate that our basic results are not driven by the extreme transfer observations. Hence, both robustness checks support our basic result.

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[14] While 912 households in our sample received at least one of the transfers only 539 households received social insurance transfers.

Table 5: The Estimated Marginal Propensity to Consume out of Social Transfers:
Robustness to Outliers

Dependent variable: Real household expenditure, 1.000 VND January 2004 prices.

	Social insurance and social protection			Only Social insurance		
Regression	(1)	(2)	(3)	(4)	(5)	(6)
Estimator	LS	LS	GMM	LS	LS	GMM
Transfer	0.397	0.207	1.038	0.384	0.212	1.103
	(2.62)	(1.74)	(1.99)	(2.49)	(1.74)	(2.04)
Size of household		3,408	3,575	3,236	3,038	2,980
		(6.37)	(6.73)		(6.38)	(6.75)
Size of household squared		-79	-80		-80	-83
		(1.78)	(1.80)		(1.79)	(1.88)
Gender of household head		1,148	1,096		1,160	1,173
		(1.44)	(1.39)		(1.45)	(1.47)
Household members who are						
Children 0-5		-1,077	-1,255		-1,078	-1,274
		(2.24)	(2.64)		(2.24)	(2.67)
Children 6-10		-786	-821		-790	-840
		(2.30)	(2.55)		(2.31)	(2.61)
Primary-educated		-142	-193		-143	-192
		(0.54)	(0.76)		(0.54)	(0.76)
Secondary-educated		379	320		376	302
		(1.41)	(1.21)		(1.40)	(1.13)
High-school-educated		1,472	1,047		1,470	1,023
		(3.40)	(2.33)		(3.39)	(2.25)
Vocationally educated		2,810	2,355		2,794	2,340
		(4.79)	(4.15)		(4.77)	(4.13)
Professionally educated		3,515	3,141		3,515	3,122
		(5.29)	(4.39)		(5.29)	(4.36)
University-educated		3,738	3,476		3,746	3,519
		(3.99)	(3.57)		(4.01)	(3.61)
Constant	3,227	3,035	2,974	3,236	3,038	2,980
	(15.65)	(15.52)	(14.69)	(15.69)	(15.52)	(14.79)
Observations[a]	3,923	3,923	3,923	3,925	3,925	3,925
RESET test (*p*-value)	0.43	0.41	0.59	0.39	0.41	0.65
First stage *F*-statistic			68.6			63.07
Hansen *J*-test (*p*-value)			0.34			0.37

Notes: See the notes to Table 2. [a]Outliers in the transfer variables have been identified using Hadi's (1992,1994) iterative outlier detection procedure and these regressor outliers are omitted from the regressions.
Source: Own calculations based on the 2002 and 2004 VHLSS.

3.2. The model and results for education fee exemptions

In the estimation of the marginal propensity to consume out of education fee exemptions (*mpce*) we use the same models and the same set of estimators as for social transfers. However, there is an important difference in the treatment of social transfers and education fee exemptions in the household surveys. All education fees and contributions paid by the household are included in total consumption expenditure (*E*). But when a household is granted exemption from a fee this expenditure is not included in total expenditure even though the stu-

dent is consuming the education good. This means that the 'true' measure of household consumption (E_{it}^*) is the sum of observed consumption expenditure (E_{it}) and the value of the education fee exemption (S_{it}):

$$E_{it}^* = E_{it} + S_{it} \qquad (2)$$

As our regression model for the true household expenditure is

$$E_{it}^* = S_{it}b + X_{it}g + a_i + l_t + e_{it}, \qquad (3)$$

we can use equation (2) to substitute for the true household expenditure, resulting in the model

$$E_{it} = S_{it}(b-1) + X_{it}g + a_i + l_t + e_{it}. \qquad (4)$$

Hence, in the education fee exemption regressions a parameter estimate of 0 corresponds to an *mpce* of 1 and an estimate of, say, -0.5 corresponds to an *mpce* of 0.5.[15]

Table 6 reports our results for education fee exemptions. The fee exemption regressor is the sum of the monetary values of tuition fee exemption and contribution fee exemption. Both fee exemptions are measured at the household level in January 2004 prices. Regressions (1) to (3) in Table 6 corresponds to the first three regressions in Table 4. In all three regressions we find an estimated coefficient of zero, indicating that the *mpce* is one.

In the GMM regression we cannot use the most relevant household composition variables as in the regressions for social transfers because children have a direct influence on consumption expenditure. Instead, we use the initial levels of the tuition fee exemption and the contribution fee exemption as instruments. This implies an assumption of predetermined education fee exemptions ($E(e_{it} \mid S_{it}) = 0$), which we do not find unreasonable even though we would have preferred a more structural approach to the choice of instruments. Judged by the *F*-test for instrument relevance and the *J*-test for over-identifying restrictions the chosen instruments are (highly) relevant and not invalid.

Table A1 in Appendix 2 reveals that some of the changes in education fee exemptions are even more out of the ordinary than the extreme changes in social transfers. Therefore, we, again, identify and exclude outlying observations using the Hadi algorithm and re-run the estimations. The results of the re-estimations are reported as regressions (4)-(6) in Table 6. Exclusion of the outliers does not change the basic result of an *mpce* of one.

In sum, our regressions point to a marginal propensity to consume out of both social transfers and education fee exemptions of one. However, the *mpct* is not precisely determined, so even though the point estimate is one, we cannot reject the hypothesis that the true value is only one-half as found in van de Walle (2004a). In fact, based on the GMM results in Tables 2 and 3 the *mpct* can be anywhere from about 0.1 to more than 1. This means that the social transfer

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[15] Another way to think of this result is to consider a household that is granted tuition fee exemption. If the consumption of that household is unchanged (*mpce* = 0) then the observed household expenditure will drop by the value of the fee exemption. If the households chooses to spend exactly what is saved on tuition (*mpce* = 1) then the observed household expenditure will return to the pre tuition fee exemption level.

incidence results presented in the subsequent sections must be interpreted with great caution. In contrast, all regressions using education fee exemptions in Table 6 firmly rejects an *mpce* below 0.9. Therefore, we have more confidence in using an *mpce* of one in the incidence analysis of the education fee exemptions.

Table 6: The Estimated Marginal Propensity to Consume out of Education Fee Exemption

Dependent variable: Real household expenditure, 1.000 VND January 2004 prices.

	All observations			Omitting outliers		
Regression	(1)	(2)	(3)	(4)	(5)	(6)
Estimator	LS	LS	GMM	LS	LS	GMM
Education reduction/exemption	0.005	-0.019	0.032	0.062	0.014	0.033
	(0.15)	(0.61)	(1.37)	(2.43)	(0.65)	(1.44)
Size of household		3,377	3,360		3,391	3,389
		(6.28)	(6.27)		(6.27)	(6.27)
Size of household squared		-76	-75		-79	-79
		(1.69)	(1.68)		(1.73)	(1.74)
Gender of household head		1,099	1,113		1,118	1,118
		(1.39)	(1.41)		(1.41)	(1.41)
Household members who are						
Children 0-5		-1,056	-1,046		-1,062	-1,053
		(2.19)	(2.18)		(2.20)	(2.19)
Children 6-10		-790	-788		-735	-732
		(2.29)	(2.28)		(2.16)	(2.15)
Primary-educated		-150	-151		-126	-125
		(0.56)	(0.56)		(0.47)	(0.47)
Secondary-educated		388	390		389	387
		(1.44)	(1.45)		(1.45)	(1.44)
High-school-educated		1,505	1,516		1,474	1,480
		(3.56)	(3.58)		(3.47)	(3.49)
Vocationally educated		2,889	2,887		2,854	2,859
		(4.96)	(4.98)		(4.88)	(4.90)
Professionally educated		3,566	3,486		3,499	3,482
		(5.22)	(5.05)		(5.10)	(5.05)
University-educated		3,824	3,855		3,888	3,901
		(4.36)	(4.35)		(4.40)	(4.41)
Constant	3,318	3,083	3,070	3333	3,103	3,099
	(15.94)	(15.55)	(15.78)	(16.06)	(15.78)	(16.13)
Observations	3,935	3,935	3,935	3,908	3,908	3,908
RESET test (*p*-value)	0.11	0.43	0.42	0.37	0.43	0.43
First stage *F*-statistic			739.6			3,952
Hansen *J*-test (*p*-value)			0.90			0.90

Notes: The dependent variable and all regressors are given as changes from 2002 to 2004. All regressions use sample weights from the 2002 VHLSS survey. Cluster robust *t*-statistics in parentheses. Instruments used in regressions (3) and (6): Initial tuition fee exemptions and initial school contribution fee exemptions. See the notes to Tables 2 and 3 for explanations of the test statistics and the outlier detection.
Source: Own calculations based on the 2002 and 2004 VHLSS.

4. The incidence of social transfers and education fee exemptions in 2004

In the incidence analysis, we use the information from the 2004 VHLSS about the transfers and education fee exemptions that households received during the last twelve months since the date of interview. Based on this information we calculate per capita transfers and per capita education fee exemptions as the household benefit divided by the household size. This implies that all members of a household will benefit from, say, pensions, if one member receives that kind of transfer and, likewise, all members benefit from, say, tuition fee exemptions, if such exemptions are granted to a student the household. These per capita measures correspond to the computation of real per capita consumption expenditure in the survey.

Our basic measure of welfare is total per capita consumption expenditure as it is measured in the 2004 VHLSS. In the incidence analysis we compute two counterfactual welfare measures, one for social transfers and one for education fee exemptions, based on the results in section 3. Hence, for social transfers we use per capita consumption expenditure net of per capita social transfers as the preferred counterfactual welfare measure (*i.e.*, an *mpct* of one). For education fee exemption we use the actual per capita consumption expenditure, which is implying an *mpce* of one. However, we also look into the robustness of our results by assuming an *mpct* of 0.5. Using the lower marginal propensity to consume out of transfers, we obtain results that are directly comparable with the analyses reported in van de Walle (2004a,b), the World Bank (2002) and Justino (2005).

In the incidence tables the population is divided into quintiles based on the counterfactual per capita consumption expenditure and the within quintile average transfer/fee exemption is given. In addition, we also decompose the average transfer/fee exemption in order to obtain a more detailed analysis of the social transfer and education fee exemption programs. Specifically, we use the decomposition

$$\bar{T}_q = \frac{1}{N_q}\sum_{i=1}^{N_q}T_{qi} = \left(\frac{R_q}{N_q}\right)\left(\frac{B_q}{R_q}\right)\left(\frac{1}{B_q}\sum_{i=1}^{B_q}T_{qi}\right), \quad q=1,\mathbf{K},5, \tag{5}$$

where $\bar{T}_q$ is the average transfer/fee exemption in quintile q, N_q is the number of individuals in the quintile, R_q is the number of individuals in the quintile who are in the reference (or target) population, and B_q is the number of individuals the quintile who actually receive a transfer or are granted education fee exemption (the beneficiaries). Finally, the summation in the last factor is only over the non-zero social transfers and education fee exemptions, so this is the average transfer/fee exemption to the beneficiaries.[16]

Looking across the quintiles, the first factor on the right-hand side of equation (5), (R_q/N_q), is the distribution of the reference population within the total population. That distribution shows to what extent the social transfer and education fee exemption programs are "designed" to be targeted towards the poorer individuals from the outset. In the definition of the reference populations we do not include information about the level of per capita consumption. Instead, we aim at capturing broader criteria. In particular, we mainly use information about the age of household members even though more precise criteria could be used.

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[16] The decomposition can be given generally as a product of conditional expectations,

$\mathrm{E}(T_q|C_q) = \mathrm{E}(T_q|B_q,R_q,C_q)\,\mathrm{E}(B_q|R_q,C_q)\,\mathrm{E}(R_q|C_q)$. Hence, each factor in (5) has a well defined population mean.

The second factor is the coverage rate for each program (B_q/R_q). The distribution across quintiles illustrates if the coverage rate varies with the expenditure level, which may indicate good or bad targeting in the administration of the programs. The product of the reference population rate and the coverage rate is the conventional incidence (B_q/N_q) of the program.

Finally, as the third factor is the average transfer or education fee exemption for the beneficiaries the distribution across quintiles shows if the poorer beneficiaries get higher transfers than the richer beneficiaries or vice versa.

The decomposition in equation (5) also applies when transfers and education fee exemptions as expressed as shares of per capita consumption expenditures. Therefore, in the tables below, we only report the average of the share of transfers and education fee exemptions in total consumption expenditure for the beneficiaries. When computing these shares we use the actual per capita consumption expenditure throughout.

In addition to the decomposition of the average transfer we also report results for the two sub-populations "Rural Vietnam" and "Urban Vietnam". The reason for our interest in this split is given from Table 1 and Table 3, in which one finds a clear urban bias in the largest program; social insurance, and a (smaller) rural bias in the three programs; social protection, tuition fee exemption and contribution fee exemption.

Finally, we stress, again, that all results are based on data in which we have removed extreme transfer and education fee exemption observations using the Hadi (1992, 1994) algorithm.

4.1. Social transfers

The incidence of social insurance transfers is shown in Table 7. The distribution of social insurance is 'U-shaped' in the sense that the poorest and the richest quintiles are the prime beneficiaries of the program in terms of average transfers. The average transfer to the poorest quintile is about 350 thousand VND per capita per year, while it is about 230 thousand VND to the richest quintile. Average transfers to the three middle quintiles are just above one-third of the average transfer to the poorest quintile. Using the conventional measure of redistribution, one finds that the social insurance transfers are progressive as the share of transfers in total expenditure is highest in the poorest quintile (10 percent). The share of transfers in total expenditure drops to around 2.5 percent in the second and third quintiles and just below 2 percent in the two richest quintiles.

In the decomposition of the average transfers we use the population of all pension-age individuals as the reference population (*i.e.*, females above 55 years of age and males above 60). This is clearly not a precise approximation as only a small fraction of the pension-age population is covered by the social insurance system. However, the 2004 VHLSS does not include information about pre-retirement occupation, so we cannot distinguish social insurance members from non-members in the survey. Another, problem with the definition of the reference group is that short term support for sickness and maternity is given to individuals in the working age population who are covered by the program. We find this problem to be of minor importance as the total benefits given for short term support are small relative to the pension transfers. Moreover, the distribution of the pension-age population across the welfare distribution is interesting in its own right as it illustrates if a broader (unitary) pension system will be pro-poor. Finally, the incidence, calculated as the product of the reference population and the coverage rate is not affected by the error in the definition of the reference population.

Table 7: Incidence of Social Insurance

| | Quintiles | | | | | |
| | (Poorest) | | | | (Richest) | |
	Q1	Q2	Q3	Q4	Q5	All
All Vietnam			*Mpct = 1*			
Average transfer	349.39	117.03	135.64	127.88	228.34	191.66
Reference population	41.21	32.53	29.82	32.45	31.37	33.47
Coverage rate	39.44	21.47	28.14	24.49	37.83	30.73
Average transfer to recipients	2149.77	1675.96	1616.67	1608.8	1924.23	1862.88
Average share of expenditure	61.93	35.13	29.53	23.09	15.89	36.39
Rural Vietnam						
Average transfer	327.77	77.10	78.20	73.22	86.24	128.54
Reference population	41.52	32.77	29.15	29.20	29.91	32.51
Coverage rate	37.00	20.16	21.38	19.26	21.64	24.79
Average transfer to recipients	2133.89	1166.93	1254.78	1302.37	1332.55	1594.77
Average share of expenditure	64.70	31.14	26.97	24.37	16.64	40.02
Urban Vietnam						
Average transfer	669.02	327.46	263.87	251.59	330.53	368.59
Reference population	42.84	38.28	32.99	36.36	28.18	35.73
Coverage rate	57.99	39.67	40.92	34.68	54.43	45.61
Average transfer to recipients	2693.28	2156.06	1954.94	1995.08	2154.46	2261.49
Average share of expenditure	56.75	30.60	22.39	17.65	12.29	31.77
All Vietnam			*Mpct = 0.5*			
Average transfer	153.55	135.94	136.08	205.88	326.85	191.66
Reference population	38.37	32.61	30.13	33.99	32.27	33.47
Coverage rate	23.83	24.03	27.75	32.64	46.49	30.73
Average transfer to recipients	1679.03	1734.51	1627.18	1856.02	2178.51	1862.88
Average share of expenditure	63	45.4	35.43	30.96	20	36.39
Rural Vietnam						
Average transfer	136.47	109.36	101.97	145.86	149.03	128.54
Reference population	39.50	31.49	30.10	30.39	31.07	32.51
Coverage rate	21.87	22.90	21.42	28.39	30.18	24.79
Average transfer to recipients	1580.11	1516.17	1581.44	1690.64	1589.70	1594.77
Average share of expenditure	63.80	44.67	38.08	33.15	22.19	40.02
Urban Vietnam						
Average transfer	371.81	314.13	334.13	384.08	439.24	368.59
Reference population	38.82	38.70	33.58	38.06	29.54	35.73
Coverage rate	41.44	39.83	44.85	44.75	60.67	45.61
Average transfer to recipients	2311.29	2038.32	2218.81	2255.37	2450.46	2261.49
Average share of expenditure	60.15	35.74	28.20	22.26	14.84	31.77

Notes: The quintiles are based on actual per capita consumption expenditure less per capita social insurance and per capita social protection transfers. All monetary values are given in 1.000 VND, January 2004 prices. Rates and shares are given as percentages.
Source: Own calculations based on 2004 VHLSS.

The distribution of the pension-age population across the expenditure quintiles demonstrates that a general unitary pension scheme will only be mildly pro-poor. About 40 percent of the individuals in the poorest quintile live in households with a pension-age member. In the four richer quintiles the share is close to 30 percent with no systematic tendency to either increase

or decrease across quintiles. Thus, while the poor may often be old-age people one cannot conclude that old-age people are often poor, as it is sometimes done in other studies.

The coverage rate is the prime explanation for the U-shaped distribution of the social insurance transfers. The coverage rate is highest in the poorest quintile (40 percent) followed by the richest quintile (38 percent), and somewhat lower rates for the three middle quintiles (21-28 percent). Combining the reference population and the coverage rate we find a U-shaped distribution of the incidence as the rate is 16 percent in the poorest quintile, 12 percent in the richest quintile and about 8 percent in the three middle quintiles.

Another cause of the U-shaped distribution can be found in the distribution of the size of the transfers to the beneficiaries. The individuals in the poorest quintile benefit most while the richest quintile comes in second. On average, the recipients in the lowest quintile receive slightly more than 2.1 million VDN per capita per year. This is as surprisingly large amount considering the official GSO poverty line of 2.077 million VND (January 2004 prices), and it implies that the average recipient in the lowest quintile is non-poor—after the transfer—given our estimate of the marginal propensity to consume out of transfers.[17] The size and importance of the transfer is underlined by the share of the transfer in total expenditure. In the poorest quintile the share is almost two-thirds; in the second quintile (receiving somewhat less) the share is more than one-third and even in the fourth quintile the share is close to one-quarter.

The decomposition of the individuals into Rural and Urban Vietnam does not change the over-all picture of redistribution. However, the urban bias in the system is clear when looking both at the coverage rates and the average transfer to the recipients. While the coverage rates for Rural Vietnam are close to the overall averages in the four lowest quintiles and much smaller for the richest quintile (22 percent compared to 38 percent), the coverage rates in Urban Vietnam are much higher. In the poorest and richest quintiles in Urban Vietnam, the coverage rates are above 50 percent, leading to incidence rates of 25 percent in the poorest quintile and 15 percent in the richest quintile. Moreover, average transfers to the recipients are much higher in Urban Vietnam compared to Rural Vietnam. The latter result is not surprising considering the urban bias in the selection into the security system and the proportionality of benefits and past wages.

Given the large share of state funding in the social security system and the relatively small amount of resources allocated to the social protection system and the national targeted programs, one may ask if the present social insurance system is too generous. Nevertheless, the system does reach the poorest households and the system has a clearly progressive redistributive profile, given the choice of counterfactual per capita consumption expenditure.

In the bottom part of Table 7 the distribution of social insurance transfers is repeated using the alternative welfare indicator that is preferred by van de Walle (2004a, b), the World Bank (2003) and Justino (2005). The alternative welfare indicator results in a much less progressive distribution of the social insurance transfers. This is not surprising considering the size of the transfers to the recipients. In particular, the change causes a shift in the transfers away from the bottom quintile and towards the two top quintiles both in terms of coverage rate, transfer to recipients and, hence, also the overall average transfer to the quintile populations.

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[17] When looking at the average transfers to recipients it is important to remember that a household may have more than one beneficiary. As already mentioned, the numbers we report are the average per capita transfers based on information about total social insurance transfers to households.

Turning next to the social protection system, we report the results of the incidence analysis in Table 8. As expected, the sizes of the average social protection transfers are of a much smaller magnitude than the social insurance transfers. The social protection transfers are clearly progressive, but not as much as one would expect given the design of the regular relief program. In particular, the average transfer to the poorest quintile is only five times the average transfer to the richest quintile.

As explained in Section 2, the social protection program includes support to disaster-struck areas and, in theory, this could be anywhere in Vietnam. This is the reason why we have chosen to let the reference population be the whole population such that we simply report the reference population fraction as 100 percent. This means that the coverage rate is the incidence of the social protection transfers. The social protection program supports 17 percent of the population in the poorest quintile. This is not a large fraction considering that the GSO poverty rate for 2004 is just below 20 percent. However, it is important to recall the limited resources for the social protection program and that the regular relief transfers are only given to the extremely poor.

The most problematic result in Table 8 is the distribution of transfers to the recipients, which is increasing from the poorest to the richest quintile. Even if the transfers to the more well-off households are caused by natural disaster shocks it is hard to understand why the transfers to these households should be larger than transfers to the poorer households in the area.

The split into Rural and Urban Vietnam confirms the rural bias in the program; the average rural household receives twice the amount transferred to the average urban household. This difference is explained by the average incidence which is twice the size in the rural area compared to the urban area, while the average transfers to the recipients are roughly the same. The incidence in the poorest quintile in Rural Vietnam is higher than for All Vietnam, but it is still only 20 percent; four times the incidence of the richest quintile in Rural Vietnam. In Urban Vietnam the targeting of the social protection program appears to be a little better as only small fractions of the individuals in the richer quintiles receive transfers. Still, in both sub-populations we find the tendency of a positive association between welfare and transfers for the beneficiaries.

Using the alternative welfare indicator (the bottom part of Table 8) causes changes in the incidence of social protection transfers that are analogues to the results for social insurance transfers. The targeting towards the poorest individuals is worse than in the base case and the overall program is thus less progressive. However, the results for social protection appear to be less sensitive to the choice of counterfactual welfare measure relative to the social insurance transfers.

There are two, potentially serious, problems in our, and previous, assessments of the social protection program. The first problem is that the extremely poor, *i.e.*, the lonely elderly, orphans below 16, and severe invalids who cannot live on their own, are not well covered in multi-purpose household surveys like the 2004 VHLSS. This problem may cause a negative bias in the estimated incidence in the lowest quintile. However, this does not explain the relatively high incidence and the high transfers to beneficiaries in the richer quintiles.

Table 8: Incidence of Social Protection

	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	All
			Quintiles			
All Vietnam			*mpct = 1*			
Average transfer	49.11	31.3	20.04	24.4	10.69	27.11
Reference population	100	100	100	100	100	100
Coverage rate	16.88	8.63	5.14	5.81	2.90	7.87
Average transfer to recipients	290.93	362.79	390.29	420.06	368.76	344.44
Average share of expenditure	13.9	11.62	9.84	7.97	4.07	11.27
Rural Vietnam						
Average transfer	54.40	31.02	25.58	20.09	22.74	30.77
Reference population	100	100	100	100	100	100
Coverage rate	19.26	10.10	6.10	5.13	5.30	9.18
Average transfer to recipients	282.45	307.18	419.45	391.29	428.89	335.17
Average share of expenditure	14.02	10.83	11.97	9.10	6.87	11.67
Urban Vietnam						
Average transfer	26.83	29.05	6.51	9.36	6.71	15.70
Reference population	100	100	100	100	100	100
Coverage rate	9.65	7.19	2.21	3.24	1.56	4.77
Average transfer to recipients	278.02	404.07	293.97	288.68	431.20	329.00
Average share of expenditure	9.85	7.69	4.40	3.21	2.77	7.33
All Vietnam			*mpct = 0.5*			
Average transfer	35.63	29.89	25.79	32.5	11.74	27.11
Reference population	100	100	100	100	100	100
Coverage rate	15.41	8.16	5.94	6.79	3.05	7.87
Average transfer to recipients	231.22	366.56	433.89	478.3	384.95	344.44
Average share of expenditure	12.71	12.81	11.56	9.03	4.32	11.27
Rural Vietnam						
Average transfer	37.19	29.04	27.56	31.68	28.38	30.77
Reference population	100	100	100	100	100	100
Coverage rate	17.30	9.93	6.02	6.77	5.86	9.18
Average transfer to recipients	214.92	292.33	457.67	467.60	483.97	335.17
Average share of expenditure	12.56	11.17	14.19	11.05	7.99	11.67
Urban Vietnam						
Average transfer	21.96	24.82	14.22	9.24	8.24	15.70
Reference population	100	100	100	100	100	100
Coverage rate	9.07	5.97	3.28	3.88	1.67	4.77
Average transfer to recipients	242.11	415.84	433.33	238.25	494.30	329.00
Average share of expenditure	9.72	8.22	6.61	2.71	3.21	7.33

Notes: The quintiles are based on actual per capita consumption expenditure less per capita social insurance and per capita social protection transfers. All monetary values are given in 1.000 VND, January 2004 prices. Rates and shares are given as percentages.
Source: Own calculations based on the 2004 VHLSS.

But this may be explained by the second problem; our inability to separate transfers from the Social Guarantee Fund for War Affected Groups and transfers from the two other social protection funds. Consider, for example, a Vietnam Mother Hero. She receives 8.5 million VND a year from the state. In a household of 4, this is a transfer of 2.125 million VND per person

per year, which is independent of household income. As we have no information about the relative size of the total transfers from the three social protection funds, we cannot exclude the possibility that the distribution of social protection transfers in Table 8 is to a large extent showing the distribution of war heroes and relatives of people with Revolutionary merit. The simplest, and best, way to overcome the identification problem is to have publicly available statistics for transfers from each of the social protection funds and, possibly, to include questions about the cause for social transfers in future household surveys, much in the same way as it is done for education fee exemption.

4.2 Education fee exemptions

The results for tuition fee exemptions and contribution fee exemptions are given in Table 9 and Table 10, respectively. In both tables the quintiles are based on the distribution of actual per capita consumption expenditure, as explained above.

From Table 9 it is clear that the tuition fee exemption program provides fairly large support to all but the richest quintile. The average tuition fee exemption is largest for the middle quintile (50 thousand VND) followed by the poorest quintile. But the second and fourth quintiles benefit almost as much as the poorest quintiles.[18] The reason for the particular distributional shape of the tuition fee exemptions is an interesting combination of the reference population, the coverage rate and the size of the fee exemptions granted to the beneficiaries.

As we are only including tuition fee exemptions granted to students in lower secondary school and above, the reference population is defined as individuals in households in which at least one member is studying at the lover secondary level or above. The distribution of the reference population across per capita consumption groups confirms the frequently found pattern that child education is increasing with welfare. In the poorest quintile, only 16 percent of the individuals live in a household where at least one child is attending lower secondary school or above. This share jumps to 29 percent in the second quintile and then increases steadily to almost 50 percent in the richest quintile. Thus, as is well known, support programs for education above the primary level have an inherent tendency to be regressive.[19]

The coverage rate is working to equalize the skewed distribution of the reference group as 33 percent of the individuals in households with above-primary level students in the poorest quintiles benefit from tuition fee exemptions. The coverage rate is only 12-13 percent in the second and third quintiles and it drops to very low numbers in the top quintiles. The net result of the difference in the distributions of the reference group and the coverage rate is a fairly flat incidence distribution with about 5 percent of the individuals benefiting in the three poorest quintiles; dropping to 2.5 and 1.2 in the two richest quintiles. Hence, in that sense the targeting of the program is not too bad.

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[18] In terms of expenditure shares, the distribution of tuition fee exemptions is mildly progressive, though.

[19] Needless to say, in the present set-up we cannot evaluate the impact of tuition fee exemptions on school attendance for the poorest quintiles. If this effect is large, the relevant reference group should have been all children in the age group 11-18, and the relevant analysis would have been the increase in school attendance. We are, however, analyzing the incidence conditional on the impact in the present study.

Table 9: Incidence of Tuition Fee Exemptions

	Quintiles					
	(Poorest)				(Richest)	
	Q1	Q2	Q3	Q4	Q5	All
All Vietnam	*All tuition fee exemptions*					
Average exemption	40.73	35.21	51.31	36.22	16.36	35.97
Reference population	15.61	29.06	36.04	41.95	47.22	33.97
Coverage rate	33.42	13.15	12.74	5.88	2.55	10.19
Average exemption for recipients	780.49	921.57	1117.62	1468.88	1357.64	1039.36
Average share of expenditure	49.53	36.93	32.37	30.2	17.4	37.2
Rural Vietnam						
Average exemption	36.69	35.13	33.16	49.99	24.05	35.81
Reference population	13.80	24.43	32.79	39.30	44.18	30.90
Coverage rate	37.54	15.31	11.59	11.28	4.21	12.31
Average exemption for recipients	708.4	938.94	872.64	1128.23	1292.53	941.57
Average share of expenditure	48.56	43.31	29.94	30.89	23.44	37.23
Urban Vietnam						
Average exemption	56.64	53.01	35.95	12.07	14.19	34.38
Reference population	26.28	40.84	45.45	46.93	50.88	42.07
Coverage rate	18.34	8.65	5.55	1.42	0.71	5.66
Average exemption for recipients	1175.15	1499.66	1425.41	1806.73	3952.99	1443.45
Average share of expenditure	45.20	33.11	22.78	23.33	29.08	35.15
All Vietnam	*Directly poverty related tuition fee exemptions*					
Average exemption	37.71	22.73	24.07	13.99	2.97	20.29
Reference population	15.26	28.48	35.9	41.79	47.42	33.77
Coverage rate	29.34	8.76	5.65	2.51	0.73	6.15
Average exemption for recipients	842.22	911.44	1186.57	1335.94	863.78	976.53
Average share of expenditure	53.83	37.05	34.1	28.63	12.54	42.05
Rural Vietnam						
Average exemption	35.35	27.05	17.48	23.13	6.41	21.89
Reference population	13.8	24.43	32.79	39.3	44.18	30.9
Coverage rate	34.67	11.32	5.42	5.34	1.62	7.86
Average exemption for recipients	739.07	978.49	983.64	1101.57	892.44	901.11
Average share of expenditure	50.58	45.76	34	29.57	17.01	41.44
Urban Vietnam						
Average exemption	39.79	30.42	8.21	0	0	15.69
Reference population	26.28	40.84	45.45	46.93	50.88	42.07
Coverage rate	11.75	3.76	1.53	0	0	2.53
Average exemption for recipients	1288.47	1982.5	1179.54	0	0	1474.17
Average share of expenditure	53.94	43.25	17.19	0	0	46.05

Notes: The quintiles are based on actual per capita consumption expenditure. All monetary values are given in 1.000 VND, January 2004 prices. Rates and shares are given as percentages.
Source: Own calculations based on the 2004 VHLSS.

Next, the value of the tuition fee exemptions to the beneficiaries is clearly skewed towards the richer quintiles. The average tuition fee exemption is only 780 thousand VND in the poorest quintile, rising to almost the double (1,469 thousand VND) in the fourth quintile. The reason for the skew distribution of the fee exemption value to the beneficiaries is that students in rich households are in more expensive schools than students in poorer households,

i.e., school expenditures are in general rising with household income. Behrman and Knowles (1999) find a positive relationship between school expenditure and school quality in Vietnam based on data from 1996. If that result still holds in 2004, as one would expect, then school fee transfers to the beneficiaries would seem to be a better choice than school fee exemptions as it would be possible to put a cap on transfers, making the richer households pay for higher quality choices.

The split into Urban and Rural Vietnam shows an urban bias in the fee exemptions. This bias is caused by higher school participation rates in the urban areas and higher values of fee exemptions to beneficiaries. The bias is to some extent offset by the coverage rates. The average coverage rate is 12 percent in the rural areas, while it is only 6 percent in the urban areas. In particular, almost 38 percent of the reference population the poorest quintile in Rural Vietnam benefit from tuition fee exemptions. Yet, the reference population is only 14 percent of the population in that quintile, so the incidence is still low.

In the Vietnamese household surveys, beneficiaries of education fee exemption are asked about the reason for the fee exemption. This provides an opportunity to look closer at the incidence of directly poverty oriented education fee exemptions. Specifically, we have gathered four of the nine possible reasons into a group of poverty oriented fee exemptions. The four reasons are (i) "being a poor household", (ii) "having a difficult situation" (iii) "belonging to an ethnic minority group", and (iv) "living in remote, especially difficult area".[20] As seen, we include both direct targeting of the poor and categorical targeting in the definition of direct poverty oriented education fee exemption.

The bottom part of Table 9 reports the incidence results when only the direct poverty oriented tuition fee exemptions are included. First of all, we find that only about half (56 percent) of the value of tuition fee exemptions are granted for reasons of poverty. Second, the poverty related tuition fee exemption is much better targeted towards the poorer household than the total. The coverage rate in the poorest quintile is 29 percent, almost equal to the coverage rate for the total tuition fee exemptions. However, the coverage rates for the richer quintiles are significantly lower. The fairly small, but still measurable, coverage rates in the top quintiles are probably caused by the categorical targeting of the poor. This is confirmed by the rural/urban split which shows that no individuals in the top two quintiles in Urban Vietnam benefit from poverty related tuition fee exemptions. Moreover, in the rural areas the value of the tuition fee exemptions to the beneficiaries is fairly constant, with only a mild tendency to increase with income. Interestingly, the sample split also shows that the maximum value of the tuition fee exemption to the beneficiaries in the rural area (1,101 thousand VND to the fourth quintile) is lower than the value in all of the urban quintiles. Schooling above the primary level is more expensive in the urban areas and this is reflected in the fee exemptions.

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[20] The other possible reasons for education fee exemption are (v) "being a fallen combatant relative", (vi) being in a disabled, sick veteran policy household, (vii) being a primary student, (viii) no tuition required, and (ix) other reasons.

Table 10: Incidence of Contribution Fee Exemption

	Quintiles					
	(Poorest)				(Richest)	
	Q1	Q2	Q3	Q4	Q5	All
All Vietnam	*All contribution fee exemptions*					
Average exemption	100.47	59.07	46.97	17.88	15.38	47.96
Reference population	81.71	80.53	79.51	75.71	75.54	78.60
Coverage rate	18.75	9.52	6.39	2.81	1.67	8.00
Average exemption for recipients	655.94	770.61	924.05	841.97	1222.83	762.43
Average share of expenditure	45.33	31.89	27.14	18.06	14.1	36.03
Rural Vietnam						
Average exemption	103.77	70.31	45.12	49.61	15.83	56.93
Reference population	82.89	81.36	79.52	79.18	72.85	79.16
Coverage rate	20.42	10.73	7.43	6.15	2.95	9.75
Average exemption for recipients	613.15	805.07	763.77	1018.02	736.55	737.64
Average share of expenditure	45.21	37.17	26.56	27.52	12.3	36.47
Urban Vietnam						
Average exemption	62.43	17.9	23.58	4.77	17.72	25.29
Reference population	74.66	75.88	80.8	77.07	76.64	77.01
Coverage rate	11.75	2.82	2.37	0.46	0.66	3.56
Average exemption for recipients	711.85	835.84	1229.26	1353.97	3502.27	923.13
Average share of expenditure	33.86	17.79	19.24	16.01	24.24	28.49
All Vietnam	*Directly poverty related contribution fee exemptions*					
Average exemption	92.29	47.06	26.78	8.75	5.44	36.07
Reference population	81.94	80.23	79.48	75.74	75.64	78.61
Coverage rate	16.77	7.14	3.38	1.45	0.61	6.04
Average exemption for recipients	671.64	820.95	997.74	795.22	1182.27	760.25
Average share of expenditure	47.48	33.53	29.96	18.02	14.84	40.13
Rural Vietnam						
Average exemption	98.47	49.98	34.1	26.17	7.26	43.2
Reference population	82.89	81.36	79.52	79.18	72.85	79.16
Coverage rate	18.39	7.83	5.02	2.96	1.22	7.29
Average exemption for recipients	646.12	784.41	853.59	1116.41	816.19	748.87
Average share of expenditure	48.27	35.99	29.97	30.21	14.89	40.53
Urban Vietnam						
Average exemption	61.16	4.04	7.48	0	4.41	15.43
Reference population	74.66	75.88	80.8	77.07	76.64	77.01
Coverage rate	9.91	0.74	0.97	0	0.19	2.31
Average exemption for recipients	826.4	716.94	957.66	0	3000	866.83
Average share of expenditure	40.77	16.07	13.84	0	14.94	36.41

Notes: The quintiles are based on actual per capita consumption expenditure. All monetary values are given in 1.000 VND, January 2004 prices. Rates and shares are given as percentages.
Source: Own calculations based on the 2004 VHLSS.

The contribution fee exemptions, shown in Table 10, are also progressive, both as a share of consumption expenditure and in terms of average fee exemption values. The latter is in contrast to the three other types of support, in which there was no clear progression in the average values. In addition, there is a fairly clear poverty orientation as the average exemption value in the poorest quintile is almost twice the size of the value in the second quintile.

The decomposition of the average contribution fee exemptions shows that they need not be poverty oriented as the reference population is 75-82 percent in all quintiles, with the lower quintiles having only marginally higher shares. The reason for the relatively uniform distribution is that all students are included in the reference population, *i.e.*, we include primary level students as these are not automatically exempted from contribution fees. The coverage rates for contribution fee exemptions are much lower than tuition fee exemptions, but because of the larger reference population, the overall incidence is much higher in the poorest quintile (7 percent for contribution fee exemptions versus 2.6 percent for tuition fee exemptions). Next, the value of the fee exemption is increasing with per capita consumption expenditure. Hence, the poverty orientation is again caused by the coverage rate, and reduced by the value of the contribution fee exemption granted to the beneficiaries. Finally, also for contribution fee exemptions we find that it constitutes a large share of total per capita consumption expenditure for the poorer beneficiaries, and even for middle income beneficiaries (the third and fourth quintiles). So, education fee exemptions are important subsidies both to the poorer households in Vietnam and to some middle income households.

The rural/urban split is again interesting as it shows a rural bias, reflecting the total values in Table 3. This is caused both by higher reference population rates in the two poorest rural quintiles compared to the two poorest urban quintiles and by (much) higher coverage rates.[21]

Moving to the directly poverty oriented contribution fee exemptions in the bottom part of Table 10 we find that these fee exemptions take up 75 percent of the total value of contribution fee exemptions. This explains why the distribution of all contribution fee exemptions is more progressive than all tuition fee exemptions. It also explains the relatively minor differences between the distributions of directly poverty oriented contribution fee exemptions and all contribution fee exemptions. Yet, the coverage rates for the richest three quintiles decrease significantly (in relative terms), while the decrease in the coverage rates in the two poorest quintiles is relatively small, reflecting the poverty orientation. An 'oddity' in the results is the large fee exemption granted to 0.2 percent of the richest urban quintile, but this result does not qualitatively change the picture of fairly good targeting in the urban area, in which only the poorest quintile has a coverage rate above one percent.

Overall, both tuition fee exemptions and contribution fee exemptions are progressive, and fairly well targeted, given that the programs use both direct and categorical targeting. The division into poverty oriented fee exemptions and other fee exemptions shows that the poverty related exemptions are mainly benefiting the poorer households in terms of coverage. The main problem with the program is that the government cannot control the size of the subsidy, and there is a clear tendency for richer households to pay higher education fees, thereby benefiting from larger support when they are exempted from the fees. As already noted, one solution could be to replace the fee exemption system by a transfer system. This would make it possible to have a maximum subsidy controlled by the government. An additional benefit from an administrative change is that it would increase the transparency of the support program as the subsidies would be on the budget as expenditures, rather than in the current system in which the subsidies are revenues foregone.

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[21] There is a difference between these quintiles both in terms of consumption expenditure, as the poorest urban households are richer than the poorest rural households, and in terms of the number of children as poorer rural households, in general, have more children than poorer urban households.

4.3. The joint incidence of social transfers and education fee exemptions

We end this section by looking at the joint incidence of social transfers and education fee exemptions. In the combined analysis we use the counterfactual welfare measure from the social transfer analysis. That is, the welfare distribution is based on actual per capita consumption expenditure net of per capita transfers. Clearly, this will influence the incidence of education fee exemptions, but the choice of counterfactual is consistent with assuming that both of the marginal propensities to consume are equal to one.

As the sum of the transfers and education fee exemptions potentially targets all individuals in the population we do not look at the reference population or the coverage rate. Instead, we report the combination of the two, which is the incidence of the support. Moreover, we report the estimated total number of people benefiting from the government support systems.

Table 11 presents the incidence of the joint support system, which is clearly progressive when the subsidies are measured as shares of per capita consumption and in terms of actual support the poorest quintile receives most followed by the richest quintile. About 44 percent of the individuals in the poorest quintile are covered by some form of support and, on average, these beneficiaries receive 1.2 million VND, which is just around half of the poverty line in 2004. The incidence is 23 percent in the second quintile and falling slightly in the richer quintiles. The decline in the incidences is, again, counteracted by increasing subsidies to the beneficiaries from the second to the fifth quintile.

Table 11: Incidence of Social Transfers and Education Fee Exemptions

	Quintiles					
	(Poorest)				(Richest)	
	Q1	Q2	Q3	Q4	Q5	All
All Vietnam						
Average subsidy	541.73	242.6	244.83	214.98	262.69	301.37
Incidence	43.79	23.19	19.06	16.47	15.03	23.51
Average subsidy for recipients	1237.25	1046.33	1284.6	1305.3	1747.38	1282.03
Average share of expenditure	49.71	32.45	29.47	22.24	15.24	34.77
Beneficiary population size	6.969	3.691	3.033	2.622	2.393	18.708
Rural Vietnam						
Average subsidy	531.5	216.42	186.41	180.67	145.02	252.05
Incidence	45.23	25.27	18.58	16.24	13.55	23.78
Average subsidy for recipients	1175.11	856.33	1003	1112.6	1070.31	1059.97
Average share of expenditure	50.66	32.58	28.11	25.77	15.25	35.86
Beneficiary population size	5.353	2.990	2.198	1.920	1.602	14.062
Urban Vietnam						
Average subsidy	813.64	444.37	312.19	279.79	369.09	443.97
Incidence	39.92	23.93	17.86	15.77	16.08	22.72
Average subsidy for recipients	2037.94	1857.31	1748.1	1773.7	2295.06	1954.07
Average share of expenditure	50.05	30.17	21.18	16.29	13.41	31.45
Beneficiary population size	1.634	0.981	0.730	0.643	0.658	4.647

Notes: The quintiles are based on actual per capita consumption expenditure less per capita social insurance and per capita social protection transfers. All monetary values are given in 1.000 VND, January 2004 prices. Rates and shares are given as percentages. The beneficiary population size is given in millions.
Source: Own calculations based on the 2004 VHLSS.

The estimates show that almost 24 percent of the whole population benefits from the joint government support. When the share is converted to actual numbers it shows that almost 19 million people are supported by either social transfers or education fee exemptions. Almost 40 percent of the people covered are in the poorest quintile and more than half (57 percent) are in the bottom 40 percent of the per capita consumption distribution.

It is also interesting to look at the distribution of beneficiaries across Rural and Urban Vietnam. Some 75 percent of the beneficiaries (14 million people) live in the rural areas, so the joint system has a small rural bias in terms of population shares. Yet, in 2004, about 90 percent of the poor live in the rural area so in that sense one may say there is an urban bias in the benefits. The split also shows that the average beneficiary in the urban area gets twice the support of an average rural beneficiary. This reflects that social insurance benefits and education fee exemptions are higher in the urban areas. However, when looking at the joint system of direct household support from the government the alleged division of benefits into a minority group in the formal (urban) sector with generous support and a majority (rural) group with insufficient support, is no longer evident. Once more, this does not imply that the targeting of government support cannot, and should not, be improved.

5. Social Transfers and Poverty 2002-2004

Up to this point the distinction between poor and non-poor individuals has only been made implicitly by noting that the poorest quintile in the distribution of actual consumption expenditure corresponds almost exactly to the individuals below the poverty line. In this section we take a more direct approach by looking at the impact of social transfers on changes in poverty from 2002 to 2004 using the official GSO poverty line to identify the poor.[22] The way we measure the impact of social transfers on poverty is based on a suggestion in Ravallion, van de Walle and Gautam (1995) which was applied to Vietnamese data by van de Walle (2004a,b). The idea is basically to compare actual poverty levels and transition matrices to counterfactual poverty levels and transition matrices. In this section we only look at one counterfactual by simulating the poverty situation in Vietnam in 2002 and 2004 without social transfers.

In the estimation of poverty transition matrices we use the panel data part of the 2002 and the 2004 VHLSS, which is the same data we used in the regressions in Section 3. To verify that this sub-sample of the two surveys is representative for the Vietnamese population with respect to the incidence of poverty we first compare the official poverty incidence estimates with the estimates obtained when using the panel data and the 2002 VHLSS sampling weights. This is done in Table 12 and, as seen, the differences between the official poverty incidence estimates and the sub-sample estimates are, in general, reasonably small, and they are statistically insignificant when considering the sampling variation in the panel sample. Thus, we believe the following results are representative for the whole population.

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[22] The GSO poverty line is based on the cost of basic needs approach (2100 calories per person per day). In 2004 the poverty line was 2.077 million VND (January 2004 prices).

Table 12: Poverty Incidence in Vietnam

	2002		2004	
	Official estimates	Panel estimates	Official estimates	Panel estimates
All Vietnam	28.9	29.5 (1.1)	19.5	20.5 (0.9)
Rural Vietnam	35.6	34.9 (1.3)	25.0	24.3 (1.1)
Urban Vietnam	6.6	7.5 (1.7)	3.6	5.1 (1.5)

Notes: The official poverty incidence estimates are from GSO. The panel estimates are based on the 3935 households that were interviewed in both household surveys. The estimates are weighed using the 2002 VHLSS sample weights. Standard errors of the panel estimates, taking account of stratification and clustering, are given in parentheses.
Source: GSO and own calculations based on the 2002 and 2004 VHLSS.

Table 13: Poverty Transitions 2002 to 2004

	Based on observed consumption expenditure in 2002 and 2004			Based on consumption expenditure less social transfers in 2002 and 2004		
	2004			2004		
2002	Poor	Non-poor	Total	Poor	Non-poor	Total
All Vietnam						
Poor	16.5	13.0	29.5	25.4	13.9	39.3
Non-poor	4.0	66.5	70.5	5.7	55.0	60.7
Total	20.5	79.5	100.0	31.1	68.9	100.00
Rural Vietnam						
Poor	19.6	15.3	34.9	28.7	15.6	44.3
Non-poor	4.8	60.4	65.2	6.1	49.6	55.7
Total	24.3	75. 7	100.0	34.8	65.2	100.00
Urban Vietnam						
Poor	3.8	3.7	7.5	11.8	7.1	18.9
Non-poor	1.3	91.2	92.5	4.4	76.8	81.1
Total	5.1	94.9	100.0	16.2	83.9	100.00

Notes: The poverty headcount ratios are calculated using VHLSS 2002 sampling weights.
Source: Own calculations based on 2002 and 2004 VHLSS.

Table 14: Test of Protection and Promotion

	All Vietnam	Rural Vietnam	Urban Vietnam
Protection	1.7	1.3	3.1
	(3.44)	(2.59)	(8.35)
Promotion	-0.9	-0.3	-3.4
	(1.14)	(0.33)	(6.65)

Notes: Protection is the difference between the counterfactual and actual transitions non-poor-to-poor. Promotion is the difference between the actual and the counterfactual transitions poor-to-non-poor. *z*-values are reported in parentheses. The limiting distribution of the z-values is the standard normal.
Source: Own calculations based on Table 13.

In Table 13 we report poverty transition matrices for all of Vietnam and for the two sup-populations, Rural Vietnam and Urban Vietnam. The transition matrices on the left hand side are based on the observed per capita consumption expenditure while the transition matrices on the right hand side are based on the counterfactual measure; per capita consumption expenditure net of per capital social transfers.

In the absence of social transfers poverty would have been about 10-11 percentage points higher both in 2002 and 2004. This is a tall number. In particular, for the urban area—where actual poverty is fairly low—poverty would have been three times higher in 2004 without social transfers. In that sense, it seems fair to conclude that social transfers have had a large impact on poverty in Vietnam in 2002 and 2004. This is in stark contrast to the findings for 1993 and 1998 in van de Walle (2004b).

The above observations could have been made without the use of transition matrices. The added information in the poverty transition matrices is that it is possible to analyze if the social transfers are protecting individuals from falling into poverty or promoting individuals to escape poverty.

Ravallion, van de Walle and Gautam (1995) define protection from poverty as the difference in the movement from non-poor to poor across the actual and the counterfactual welfare measures. This movement is given as the share of the population that was non-poor in the initial year (2002) and poor in the end year (2004). In the base case (with social transfers) 4.0 percent of the population move from non-poor to poor; in the counterfactual case that share is 5.7 percent. The difference in these shares is an estimate of the protection against poverty caused by the social transfers. It simply implies that 1.7 percent of the population who are non-poor both in 2002 and 2004 would instead have fallen into poverty between 2002 and 2004 in the absence of social transfers. The estimated protection and tests of significance of the estimate are given in Table 14. As seen, social transfers have a significant protection effect. The protection effect is particularly large in the urban areas, in which we find a difference between the transition rates of 3.1 percentage points. This is a strong indication of the protection provided by the social insurance system.

Promotion out of poverty is defined analogously to protection by comparing the movement from poor to non-poor in the transition matrices. For promotion we find, in all three samples, that the movement out of poverty is larger in the counterfactual simulation than the actual case, resulting in negative promotion effects. So, fewer people are escaping poverty with social transfers than without transfers. The negative effect is, however, only significant for the urban area. The negative promotion effect is explained by the fact that many non-poor people benefit from social transfers in 2002. In the absence of social transfers they would have been below the poverty line in 2002 and, because of the large overall decrease in poverty from 2002 to 2004, a large fraction of these individuals would have escaped poverty on their own, *i.e.*, without social transfer assistance.

As the social insurance and social protection programs are aimed at protection against poverty, we conclude that the programs are reasonably successful. Obviously, this does not imply that the programs could not have been better.

6. Conclusion and policy implementations

This chapter has updated previous analyses of the incidence of social transfers at the household level using the household survey 2004 VHLSS. The main results of the analysis paint a somewhat different picture of the distribution of social transfers than the studies based on the 1992/93 and 1997/98 household surveys. First of all, social transfers are not regressive in 2004. Second, the transfers had a sizeable impact on the level of poverty in both 2002 and 2004 and, furthermore, provided protection against falling into poverty in that period. The most important reason for the new results is a change in the counterfactual welfare measure used to estimate the distribution of social transfers across the welfare distribution.

In the analysis, we look at two types of transfers: social insurance and social protection, and two types of education fee exemptions: tuition fee exemptions and school contribution fee exemption. The latter are not a part of the social transfer system but we argue that education fee exemptions are an important part of direct government support to the households and that, in other fiscal systems, this kind of support would often be included in social transfers.

The social insurance system is shown to provide most support to the poorest and the richest quintiles in the welfare distribution. As such, even though it is progressive (in the relative sense) it is not pro-poor. The reason is that the social insurance system in Vietnam is not intended to be pro-poor. Starting from a government retirement system, it has evolved into a standard social insurance system providing protection for its members from age and disability related stoppage or substantial reduction of earnings. Membership of the system has expanded over the years to offer either mandatory or voluntary coverage for all formal sector workers. The main problem with the system is a low coverage; even of formal sector workers, combined with a very large funding directly from the state budget. Therefore, the government should do more to encourage private sector employees to participate in the system, possibly by changing the benefit formula, and it should also work towards ensuring fulfillment of payment obligations from the insured members and their employers (public as well as private). At the same time the government should gradually reduce the state budget financing of the system.

The social protection program has very limited resources that should probably be increased somewhat in the future. The targeting of the social protection transfers appears to be reasonably pro-poor, but we are unwilling to make firm conclusions. The main problem is a difficulty in identifying the beneficiaries because the social protection program covers four distinct groups of supposed beneficiaries. Support for the extremely poor, poor people struck by natural disasters and people starving between harvests should clearly be targeted towards individuals in the lowest quintile of the welfare distribution. But beneficiaries from 'war compensation' support need not be poor as the transfers to this group of people is based on historical merits; not on a income or consumption based means testing. As we have no information about the reason for the transfer in the 2004 VHLSS we cannot separate needs tested transfers from war compensation. Since the identification problem is not only a problem in the household surveys but also causes some difficulties in understanding the public expenditure on social protection we suggest that war compensation transfers are clearly identified in the state budget (this should cause no problem as the transfers are from a special social guarantee fund), and ideally completely separated from the social protection transfers.

Education fee exemptions are also, in general, progressive, in particular the contribution fee exemptions. Also for education fee exemptions there is a mix of reasons for granting the exemption of which several are not poverty related. In the 2004 household survey we are able to

identify poverty related education fee exemptions and the incidence analysis of this sub-set of exemptions shows a clear poverty orientation. The main problem with the education fee exemptions is that the monetary value of the exemptions is increasing with the welfare level. This positive association can be explained by the fact that richer households have children in more expensive schools compared to poorer households. If there is a positive relationship between price an quality, as found in Behrman and Knowles (1999), then parents of children in more expensive schools should pay for their choice of higher school quality even when they are granted education fee exemption. One solution could be to change the support system from a tax reduction to a transfer. This would allow the central government to regulate the transfer amount and, thereby, get control of the actual support to the households. In addition, this change would increase the transparency of the support system by putting the expenditure on the state budget.

Acknowledgements

Appendix 1. Regulation on social allowances

In this appendix we list the precise descriptions of the target beneficiaries and the transfer amounts as they are given from the Government of Vietnam. The current regulations on social allowances are presented in Decree 07/2000/ND-CP of the Government. The regulations on the allowances and subsidies to those contributed to Vietnam's revolutions are stated in Decree 210/2004/ND-CP of the Government.

From Decree 07/2000/ND-CP notices can be drawn as follows:

I. Regular social allowances
A - Targeted beneficiaries:
1. Orphan children aged less than 16 and children who cannot survive on their own.
2. Elderly people aged above 60 who live alone and old people who do not have relatives to rely on and who cannot live on their own.
3. Severe invalids who do not have income or who cannot live on their own.
4. Mental patients who live alone or in poor families that cannot afford the living costs.

B – Regulations on the transfer amount:
1. The minimum amount the beneficiaries are given by commune authority is VND 45,000 per person per month.
2. In State social institutions the minimum amount is VND 100,000/person/month. For children less than 18 months of age the minimum amount of VND 150,000/child/month.

II. Irregular social allowances (once)
A - Targeted beneficiaries:
Those who fall into difficult situations due to unexpected disasters or other unforeseen events can be given social allowances. Concretely, those people include:
1. Households who have family member(s) that died or is missing.
2. Households whose houses are heavily damaged.
3. Households who lose production equipment and fall into hunger.
4. People who are heavily injured.

5. People who live in hunger in the between-crop periods.
6. Homeless beggars who are planned to return home.

B – Transfer amount:

The amount of irregular social allowance is decided by the provincial Peoples Committee and may vary.

Regulations on allowances and subsidies to those contributed to Vietnam revolutions (Decree No. 210/2004/ND-CP)

Details about the benefit rates are presented in the appendices of the Decree as follows:

(APPENDIX 1)

Monthly rates of allowances for those who contributed to Vietnam revolutions

Measurement unit: VND thousand

No	Targeted beneficiaries	Regular allowances	Minor allowances
01	People took part in the revolution before 1945		
	- Migrant	250	60/ 1 year old
	- Non-migrant	540	
	- Family relatives of those (former soldiers) who took part in the revolution before 1945 receive monthly allowances when the former soldiers die.	292	
	- Those who are family relatives of those (former soldiers) who took part in the revolution before 1945 and live alone receive monthly allowances when the former soldiers die.	495	
02	- Those who participated in the early periods of the Revolution August 1945.		292
03	Relatives of martyr		
	- Death allowances for relatives of one martyr	292	
	- Death allowances for relatives of more than one martyr	495	
	- Death allowances for relatives of a martyr who have no one to lean on	495	
04	Vietnam Mother heroes	710	
05	Military heroes, labor heroes during the war periods	250	
06	- Invalid former soldiers and people who are treated as invalid former soldiers		
	+ Those who lose more than 81% working capacity		150
	+ Those that lose more than 81% working capacity and bear a heavy wound		292
	- Those who serve invalid soldiers, people treated as invalid		
	+ Those who lose more than 81% working capacity	292	
	+ Those that lose more than 81% working capacity and bear a heavy wound	380	
	- Relative of invalid soldiers, people treated as invalid soldiers receive monthly allowance when the soldiers die	175	
	- Relatives of invalid soldiers, people treated as invalid soldiers who live alone receive monthly allowances when the soldiers die	390	
07	- Soldiers bear a job accident		
	+ Those who lose more than 81% working capacity		150
	+ Those who lose more than 81% working capacity and bear a heavy wound.		292
	- Those who servers soldiers sick due to a job accident		
	+ Those who lose more than 81% working capacity	292	

No	Targeted beneficiaries	Regular allow-ances	Minor allow-ances
	+ Those who lose more than 81% working capacity and bear a heavy wound.	380	
	- Relatives of soldiers sick (lose more than 61% working capacity) due to a job accident receive monthly allowances when the soldiers die	175	
	- Relatives of soldiers sick (lose more than 61% working capacity) due to a job accident receive monthly when the soldiers die and they live alone	390	
08	- Soldier patients		
	+ Those who lose more than 81% working capacity		150
	+ Those that lose more than 81% working capacity and bear a heavy wound.		292
	+ Those who lose 61% - 70% working capacity	489	
	+ Those who lose 71% - 80% working capacity	564	
	+ Those who lose 81% - 90% working capacity	677	
	+ Those who lose 91% - 100% working capacity	752	
	- Those who serve soldier patients		
	+ Those who lose more than 81% working capacity	292	
	+ Those who lose more than 81% working capacity and bear a heavy wound.	380	
	- Relatives of sick soldiers receive monthly allowances when the soldiers die	175	
	- Relatives of sick soldiers who live alone receive monthly allowances when the soldiers die	390	
09	Soldiers who are sick due to the job		
	+ Those who lose 41% - 50% working capacity	300	
	+ Those who lose 51% - 60% working capacity	376	
10	- Those who assisted the Revolution before August 1945		
	+ Monthly allowances	292	
	+ Allowances for lonely people	495	
	- Those who assisted the revolutions during the war		
	+ Monthly allowances	175	
	+ Allowances for lonely people, solitaries	390	
11	Monthly educational allowances	292	

(APPENDIX 2)

Monthly allowances for invalid soldiers and people treated as invalid soldiers

Measurement unit: VND thousand

No	Working capacity loss - %	Rates of allowances	No	Working capacity loss - %	Rates of allowances
01	21%	197	41	61%	573
02	22%	207	42	62%	583
03	23%	216	43	63%	592
04	24%	226	44	64%	602
05	25%	235	45	65%	611
06	26%	244	46	66%	620
07	27%	254	47	67%	630
08	28%	263	48	68%	639
09	29%	273	49	69%	649
10	30%	282	50	70%	658
11	31%	291	51	71%	667
12	32%	301	52	72%	677
13	33%	310	53	73%	686
14	34%	320	54	74%	696
15	35%	329	55	75%	705
16	36%	338	46	76%	714
17	37%	348	57	77%	724
18	38%	357	58	78%	733
19	39%	367	59	79%	743
20	40%	376	60	80%	752
21	41%	385	61	81%	761
22	42%	395	62	82%	771
23	43%	404	63	83%	780
24	44%	414	64	84%	790
25	45%	423	65	85%	799
26	46%	432	66	86%	808
27	47%	442	67	87%	818
28	48%	451	68	88%	827
29	49%	461	69	89%	837
30	50%	470	70	90%	846
31	51%	479	71	91%	855
32	52%	489	72	92%	865
33	53%	498	73	93%	874
34	54%	508	74	94%	884
35	55%	517	75	95%	893
36	56%	526	76	96%	902
37	57%	536	77	97%	912
38	58%	545	78	98%	921
39	59%	555	79	99%	930
40	60%	564	80	100%	940

(APPENDIX 3)

Monthly allowances for soldiers who are sick due to a job accident

Measurement unit: VND thousand

No	Working capacity loss - %	Rates of allow-ances	No	Working capacity loss - %	Rates of al-lowances
01	21%	158	41	61%	459
02	22%	165	42	62%	466
03	23%	173	43	63%	474
04	24%	180	44	64%	481
05	25%	188	45	65%	489
06	26%	195	46	66%	496
07	27%	203	47	67%	504
08	28%	210	48	68%	511
09	29%	218	49	69%	519
10	30%	225	50	70%	526
11	31%	233	51	71%	534
12	32%	240	52	72%	541
13	33%	248	53	73%	549
14	34%	255	54	74%	556
15	35%	263	55	75%	564
16	36%	271	46	76%	571
17	37%	278	57	77%	579
18	38%	286	58	78%	586
19	39%	293	59	79%	594
20	40%	301	60	80%	602
21	41%	308	61	81%	609
22	42%	316	62	82%	617
23	43%	323	63	83%	624
24	44%	331	64	84%	632
25	45%	338	65	85%	639
26	46%	346	66	86%	647
27	47%	353	67	87%	654
28	48%	361	68	88%	662
29	49%	368	69	89%	669
30	50%	376	70	90%	677
31	51%	383	71	91%	684
32	52%	391	72	92%	692
33	53%	398	73	93%	699
34	54%	406	74	94%	707
35	55%	414	75	95%	714
36	56%	421	76	96%	722
37	57%	429	77	97%	729
38	58%	436	78	98%	737
39	59%	444	79	99%	744
40	60%	451	80	100%	752

Appendix 2. Summary statistics

Table A1: Summary Statistics for the Variables in the Regressions in Section 3.

Variable	Overall Mean	Overall Standard deviation	Mean of non-zero observations	Sd. of non-zero observations	Number of non-zero observations	Minimum	Maximum
Real household expenditure	3,320	10,177	3,320	10,177	3,935	-154,481	108,954
Social insurance benefits	252	2,349	1,804	6,057	539	-50,529	50,443
Social protection benefits	18	700	141	1,950	516	-13,996	7,817
Sum social insurance and social protection	270	2,344	1,172	4,771	912	-50,529	50,443
Tuition fee exemption	228	4,430	3,952	18.078	217	-70,307	107,537
Contribution fee exemption	126	2,644	1,454	8.892	362	-62,060	65,946
Sum of fee exemptions	354	5,691	3,052	16.483	470	-132,367	107,537
Household size	-0.103	1.202	-0.254	1.883	1590	-10	7
Gender of household head	0.013	0.233	0.241	0.973	214	-1	1
Children 0-5	-0.032	0.541	-0.142	1.123	921	-3	3
Children 6-10	-0.086	0.593	-0.283	1.049	1214	-3	3
Primary-educated	-0.020	1.118	-0.038	1.534	2106	-7	6
Secondary-educated	-0.018	0.978	-0.042	1.500	1668	-5	5
High-school-educated	-0.004	0.654	-0.017	1.324	924	-4	5
Vocationally educated	0.082	0.418	0.788	1.059	410	-2	4
Professionally educated	0.031	0.382	0.318	1.185	379	-4	2
University-educated	0.020	0.323	0.290	1.191	260	-3	3
Females above age 55	0.022	0.322	0.231	1.025	366	-2	2
Males above age 60	0.010	0.249	0.164	0.989	243	-1	1

Notes: All variables are measured as changes from 2002 to 2004. Monetary values are measured in 1,000 VND, January 2004 prices. The means and standard deviations are weighted using the sample inflation factors from 2002 VHLSS.

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