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False positives or hidden dimensions: what can monetary and multidimensional measurement tell us about child poverty in Vietnam?

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A widely used division between poverty measures based on conceptual underpinnings and analytical outcomes is that of monetary versus multidimensional measures. Comparisons of the use and outcomes of the two methods have shown that they predominantly provide different pictures of poverty in terms of size, rank and group. This article contributes to the long-standing and ongoing debate on poverty measurement by comparing the use of monetary and multidimensional poverty approaches, with a special focus on children in Vietnam and extending the empirical analysis beyond conventional methods. In addition to investigating whether poverty outcomes or groups of identified poor children differ when using the two different poverty measures, we also investigated the drivers underlying these differences. Findings confirm a considerable degree of mismatch: both poverty measures proved to be inadequate proxies for the other and factors underlying the identification by either one or both of the measures differed.

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Key words: child poverty, poverty measurement, Vietnam, multidimensional poverty, capability approach

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Introduction

The debate on the definition, conceptualisation and measurement of poverty is long-standing and remains ongoing. A division of poverty approaches that is often made within this debate is that of monetary versus multidimensional approaches, each with their own advantages and shortcomings (see Laderchi, Saith & Stewart, 2003). While some scholars focus on the discussion on the theoretical and ideological underpinnings of these approaches, others have investigated the issue from an empirical or analytical perspective. As a result, it is widely established that different approaches do not only differ in terms of their conceptual foundations (see e.g., Laderchi, 1997; Laderchi et al., 2003) but also with respect to empirical outcomes (see e.g., Baulch & Masset, 2003; Klasen, 2000; Maltzahn & Durrheim, 2007; Nolan & Whelan, 2009). Despite the range of evidence on the topic, the majority of empirical studies have not moved beyond the notion that the degree of overlap in poverty outcomes is limited and biased towards different groups in society. Modest analysis has been undertaken to assess the factors and dynamics underlying this limited degree of overlap.

The issue of child poverty remains hidden and under-prioritised, despite the wide acknowledgement that children deserve a special focus within the poverty and development debate and that child-focused policy analyses are crucial in order to account for children's special situations (see Ben-Arieh, 2000; Minujin, Delamonica, Gonzalez & Davidziuk, 2005; Roelen, Gassmann & de Neubourg, 2009). Poverty is an undesirable and, to many, an unacceptable phenomenon. An extensive body of research has shown that the hardship of poverty is even more undesirable when it concerns children, due to its far-reaching short-term and long-run negative implications in terms of health, education and labour market outcomes (see Brooks-Gunn & Duncan, 1997; Duncan & Brooks-Gunn, 1997, 2000; Haveman & Wolfe, 1995). Children living in poverty

are also more likely to grow up to become poor adults (Corak, 2006; Esping-Andersen & Sarasa, 2002). In order to adequately analyse and investigate the issue of child poverty, child-focused approaches are required. Reasons for the need for child-specific poverty approaches include children's special position within the household structure, their high dependency on others for the distribution of basic needs and their different basic needs requirements (see Minujin et al., 2005; Waddington, 2004; White, Leavy & Masters, 2003).

Despite the existing range of literature on the measurement of child poverty using monetary and multidimensional methods, an in-depth analysis of whether and how the use of the two measures leads to different results with respect to child poverty is, to our knowledge, limited. In the present study, the use of two distinct poverty approaches were analysed with respect to children. We used the Vietnam Household Living Standards Survey (VHLSS) 2006 to investigate the size, rank and group differences when measuring child poverty using monetary versus multidimensional approaches. Also investigated were the underlying drivers that could explain potential differences in outcomes.

In this article, we first discuss previous research on the mismatch between monetary and multidimensional poverty measurement. Next, the data, methodology and child poverty approaches used in our study are described in detail. The third section contains a comparison of monetary and multidimensional child poverty outcomes in terms of size and ranking, which is followed by a more in-depth analysis of the extent to which one poverty measure could serve as a proxy for the other. Next, we investigate the characteristics and micro-determinants associated with a child's risk of being identified as exclusively monetary or multidimensionally poor or as both. Finally, we present conclusions based on the findings of the study, suggest policy implications and discuss options for further research.

Monetary and multidimensional child poverty

The division between monetary and multidimensional concepts is commonly made within the area of poverty measurement, and the analysis of one or both types of approaches has been the subject of numerous previous studies. Some scholars have focused their research on the underlying conceptual and theoretical foundations of poverty measures (see e.g., Laderchi, 1997; Laderchi et al., 2003; Nussbaum, 1992, 2000; Ravallion, 1994; Sen, 1976, 1982, 1993; Thorbecke, 2008). Others have analysed poverty measurement from a primarily empirical or applied perspective (see e.g. Baulch & Masset, 2003; Bradshaw & Finch, 2003; Bourguignon & Chakravarty, 2003; Klasen, 2000; Menchini & Redmond, 2009; Perry, 2002; Wagle, 2009), largely focusing on the investigation of similarities or differences of poverty outcomes using different types of poverty measurements. Findings from these studies have generally suggested that the use of monetary and multidimensional poverty measures results in different pictures of poverty, pointing towards a modest, even limited, overlap of results (see Bastos, Fernandes & Passos, 2004; Klasen, 2000; Laderchi, 1997; Perry, 2002; Sahn & Stifel, 2003; Wagle, 2009). While monetary definitions refer to the measurement of poverty on the basis of income or expenditures, multidimensional measurement incorporates a broad base of attributes that are assumed to reflect the complex state of poverty.

Money-metric poverty measurement was and remains the most commonly used method for poverty analysis worldwide (Laderchi et al., 2003; Layte, Nolan & Whelan, 2001; Redmond, 2008), and is based on the rationale that if individuals have a certain degree of purchasing power, they will be able to fulfil their basic needs (Thorbecke, 2008; Tsui, 2002). However, there are a number of drawbacks to the monetary approach, especially in terms of the measurement of child poverty. Its underlying rationale assumes that all attributes for the fulfilment of basic needs can be purchased in markets and expressed in monetary terms, but in many instances, those markets either do not exist or they function imperfectly (Bourguignon & Chakravarty, 2003; Thorbecke, 2008; Tsui, 2002); also, monetary values cannot be assigned to specific attributes (Hulme & McKay, 2008; Thorbecke, 2008). Furthermore, that individuals or households have sufficient income to purchase a basic basket of goods does not directly imply that it will in fact be spent on that basket of goods (Thorbecke, 2008). Also, income or consumption is predominantly measured at the household level, which does not capture intra-household distribution (Hulme & McKay, 2008) and makes one rely on equivalence scale methods to infer conclusions for individuals within households, including children. Lastly, children are not economic actors themselves and are therefore unable to generate income to sustain their own livelihood. Monetary indicators can thus not serve as an adequate reflection of children's state of poverty (White et al., 2003).

As a response to these conceptual and technical drawbacks, alternative general poverty approaches have been developed in a multidimensional sphere (Maltzahn & Durrheim, 2007). Consequently, the field of multidimensional poverty measurement has seen a wide expansion, including Sen's capability approach (1976, 1982), basic needs approaches (Streeten, 1981, 1984) and social exclusion methods (Marlier, Atkinson, Cantillon & Nolan, 2007). Recent child poverty studies have also focused more on the multidimensional aspects of poverty (see Bradshaw, Hoelscher & Richardson, 2006; Gordon, Nandy, Pantazis,

Pemberton & Townsend, 2003ab; Noble, Wright & Cluver, 2006; Richardson,Hoelscher & Bradshaw, 2008). Although the development of multidimensional poverty measurement largely resulted from the conceptual and theoretical drawbacks inherent in the monetary poverty approach (Maltzahn & Durrheim, 2007), the multidimensional poverty measurement is also subject to a number of challenges. Central to the construction of a multidimensional poverty measurement is the translation of a concept into an operational measure (Wagle, 2009) and inherent choices related to the conceptual framework, domains and indicators (Alkire & Foster, 2008; Klasen, 2000; Laderchi, 1997; Roelen et al., 2009). These choices are normative and subject to value judgements and, when made implicitly, they make multidimensional poverty estimates susceptible to misinterpretation (Roelen et al., 2009) and controversy (Klasen, 2000). Other contentious issues that need to be tackled when constructing a multidimensional poverty measure include the weighting scheme for domains and indicators as well as the construction of an aggregate poverty index (see Alkire & Foster, 2008; Klasen, 2000; Nolan & Whelan, 2007).

Empirical research has focused primarily on the analysis of size and group differences using different poverty approaches, following both the Townsend tradition, which aims to measure the degree of deprivation as a result of lack of purchasing power, and theories of justice, capabilities and basic needs, which aim to measure poverty beyond the realm of economic resources (see Baulch & Masset, 2003; Bradshaw & Finch, 2003; Klasen, 2000; Perry, 2002; Wagle, 2009). Given a few exceptions (see Maltzahn & Durrheim, 2007; Menchini & Redmond, 2009), previous studies have indicated that monetary poverty is weakly correlated with alternative dimensions of poverty and, thus, not an appropriate proxy for poverty in multidimensional terms (de Neubourg, Roelen & Gassmann, 2009). Its far-reaching policy implication is an important reason that this research topic has been the subject of a range of previous work and remains to be of utmost interest and importance (Laderchi et al., 2003). If different approaches to poverty indeed draw different pictures of poverty and capture different groups of poor people, the policy response to poverty is highly respondent to the poverty measure used (Bradshaw & Finch, 2003; de Neubourg et al., 2009; Laderchi, 1997; Sahn & Stifel, 2003).

Evidence with respect to child poverty and the mismatch of poverty approaches is scarce. Menchini and Redmond (2009) investigated the issue of poverty and deprivation among children in Eastern Europe and Central Asia and, in contrast to the majority of studies, found that consumption is an adequate proxy for other areas of deprivation. Their conclusions are based on risk ratio estimates pointing towards an increased risk of being deprived in non-monetary areas of well-being when experiencing monetary poverty. Bastos et al. (2004) also found differences in outcomes when using an income or deprivation perspective for the measurement of child poverty in Portugal, but they did not draw any conclusions with respect to the implications for the academic or policy debate. The aim of our study was to extend this debate by comparing child poverty outcomes in Vietnam on the basis of an absolute monetary approach, following the World Bank and the Government Statistical Office (GSO) methodology (Vietnam Development Report [VDR], 2008), with a country-specific multidimensional approach that aims to be a direct measure of child poverty beyond the realm of economic resources.

Data and methodology

Data

The data used for this study came from the VHLSS in 2006. This household survey was based on the former Vietnam Living Standards Survey (VLSS) but employed a bigger sample size. The VLSS was conducted in 1993 and 1998, and since 2002, the VHLSS has been conducted every second year by the GSO, following the World Bank's Living Standards Measurement Survey methodology. The VHLSS survey samples from 2002 to 2010 were drawn from a master sample, which is a random sample of the 1999 Population Census enumeration areas. The VHLSS 2006 surveyed 9,189 households with 39,071 individuals, including 10,696 children under the age of 16. It provides microdata at the level of both the household and its individual members on a range of issues related to children's well-being and poverty as well as social protection.

A notable limitation of the VHLSS is its sampling method which causes a substantial group in the society to be omitted from the sample and the subsequent data (Evans & Harkness, 2008). The sample used for the surveys was constructed on the basis of the official lists of registered households in communes and urban wards in Vietnam that had lived in the enumeration area for at least 6 months (Pincus & Sender, 2006, 2008). This implies that households or individuals that had recently migrated were not included in the sampling frame (Edmonds & Turk, 2004). Furthermore, due to the strict household registration system, or *ho khau* system, even after 6 months, many migrant households and individuals do not satisfy the necessary criteria for registration and remain unregistered (Pincus & Sender, 2006, 2008). The omission of these migrant groups is not only an important issue to point out because of their suspected significant size, but even more so because of the denial of social and public services that they experience due to their 'unregistered' status. The structural

exclusion of the unregistered migrant group from the data will most likely lead to underestimations of (child) poverty.

Monetary and multidimensional measures of child poverty

As we have argued, a clear understanding of the child poverty approaches at hand is crucial for a sound and solid poverty analysis and interpretation of results (Roelen et al., 2009). Here, we outline the different measures of poverty in Vietnam used in this study.

The *monetary poverty* method builds on per capita expenditures[1] as underlying welfare measure. The monetary poverty line was established by the GSO and the World Bank and is generally referred to as the official poverty line. In 2006, it lies at 2559 Vietnamese đồng (VND) per day, capturing the cost of food and non-food basket (VDR, 2008).[2] The estimates for child poverty incidence and depth follow the Foster–Greer–Thorbecke (FGT) class of poverty measures and can be denoted as follows:

$$P = \frac{1}{N}\sum_{i=1}^{q}\left[\frac{(z - y_i)}{z}\right]^{\alpha} \quad (1)$$

where N represents the total population, q represents the population below the poverty line, z denotes the poverty line and y_i is the individual's income. If $\alpha = 0$, the equation denotes the poverty headcount ratio, and if $\alpha = 1$, the equation represents the poverty gap ratio (Ravallion, 1994).[3]

The *multidimensional poverty* method used in the present study is a child-specific, outcome-focused and country-specific approach that considers non-monetary aspects of deprivation which are especially relevant for children. This method was specially developed to identify poverty among children in Vietnam (see Roelen et al., 2009; Roelen, Gassmann & de Neubourg, 2010) and included the items education, health, child labour and water and sanitation, among others. A total of six domains and nine indicators within these domains (see Appendix, Table A2) were selected on the basis of stakeholder discussions, previous research and data availability, and they were considered to appropriately reflect the poverty status of children in Vietnam (Roelen et al., 2009, 2010).[4] It should be noted that domains and indicators were not selected to capture lack of purchasing power, commodities or activities due to the lack of economic resources, along the lines of Townsend (1979) or Mack and Lansley (1985). Instead, the theoretical framework for this multidimensional child poverty approach followed Rawls' theory of justice (1971) and Sen's capability approach (1985, 1993). As such, it recognises that financial resources are just one of several means through which one can achieve certain outcomes or obtain a specific level of well-being (see Bourguignon & Chakravarty, 2003; Deutsch & Silber; 2005, Klasen, 2000; Thorbecke, 2008; Tsui, 2002; Wagle, 2009), and questions the very premise that monetary indicators of poverty can serve as a proxy for multidimensional poverty (see Laderchi et al., 2003).

The aggregation of the indicator and domain poverty rates to arrive at the overall child poverty rate follows a combination of the union and dual cut-off identification strategy (Roelen et al., 2010). Other studies employing count poverty methods include Gordon et al. (2003ab), Förster (2005), Santos and Ura (2008), Ahmed and Gassmann (2010) and the recent Multidimensional Poverty Index by Alkire and Santos (2010). Given the widespread acknowledgement of the tension between '[. . .] the power of sophisticated methods [. . .] and the transparency required to serve the needs of policy makers and inform public debate' (Nolan & Whelan, 2009: 25), the method explicitly followed an intuitive rather than a statistically sophisticated technique. A child was classified as domain deprived if he/she did not meet the threshold of at least one of the indicators within the specific domain, also known as the union approach (Atkinson, 2003). The overall poverty headcount was determined by deprivation in at least two domains, also known as the dual cut-off identification strategy (Alkire & Foster, 2008). Depth of poverty was measured by the normalised deprivation score, dividing the total number of observed deprivations by the maximum number of observable deprivations per individual child (Roelen et al., 2010). The poverty gap ratio was represented as a percentage of the maximum number of observable deprivations.

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1 Per capita expenditures were calculated based on equal weights for each household member. Robustness checks were performed to test the sensitivity of poverty outcomes when accounting for household size and composition and economies of scale by means of different equivalence scales (see Table A1 in the Appendix). Although we found considerable size differences, rankings across demographic groups were quite robust. As there is no theoretical consensus about the choice of equivalence scales (Deaton & Zaidi, 2002), and the study focused on the analysis of group rather than size differences between poverty measures, we preferred to maintain consistency with previously published monetary poverty figures by GSO and the World Bank (VDR, 2008) and thus employed the per capita method.

2 The cost component of the food basket is based on a daily intake of 2100 calories per person per day (VDR 2008).

3 The FGT-class of poverty measures also includes the poverty severity index which is calculated by assuming $\alpha = 2$ and thereby giving greater weight to larger shortfalls of income (Ravallion, 1994). This measure was not used in this study.

4 Given the extensive and thorough development process preceding the multidimensional approach, further elaboration on the selection of indicators and establishment of thresholds would be beyond the scope of this article. The reader is referred to the original articles for a detailed discussion.

The percentage of children falling below the specified threshold per indicator was denoted as the *indicator poverty rate*:

$$IV = \frac{\sum_{i=1}^{n} I_i}{n} \quad (2)$$

where n stands for all children for which the indicator is observable and I_i represents a dichotomous variable with a value of 1 if the child was below the indicator threshold and was thus deprived and a value of 0 if the child met the threshold and was not deprived. The *domain poverty rate* reflects the rate of children experiencing deprivation within a specific domain as a percentage of children for whom the indicators within that domain are observable. The domain poverty rate is given by:

$$DV = \frac{\sum_{i=1}^{n} D_i}{n} \quad (3)$$

where n represents all children for which the indicators are observable and D_i stands for domain poverty, a dichotomous variable with a value of 1 if the child suffered deprivation within the specific domain and a value of 0 if the child did not suffer deprivation. A child was considered to be domain poor if he or she experienced indicator poverty for at least one indicator within that domain:

$$D_1 = 1 \quad \text{if} \quad \sum_{i=1}^{d} I_i \geq 1 \quad (4)$$

where d stands for the total number of indicators identified per domain.

The rates for *child poverty* can be written as follows:

$$ChildPov = \frac{\sum_{i=1}^{N} Pov_i}{N} \quad (5)$$

where N represents the full sample size of children aged 0–15, and Pov_i represents a dichotomous variable with a value of 1 if a child suffers child poverty:

$$Pov_i = 1 \quad \text{if} \quad \sum_{i=1}^{D} D_i \geq 2 \quad (6)$$

where D stands for the total number of domains within the specific approach. The depth of child poverty was consequently calculated by dividing the number of observed indicators of poverty by the maximum number of observable indicators for each individual child:

$$Gap_i = \frac{\sum_{i=1}^{p} I_i}{\sum_{i=1}^{P} I_i} \times 100 \quad (7)$$

where p stands for the total number of indicators for which the child was considered to be poor, and P represents the maximum number of observable indicators for the individual child. The aggregate *child poverty gap ratio* can be written as follows:

$$ChildGap = \frac{\sum_{i=1}^{N} Gap_i}{N} \quad (8)$$

Methods of analysis

The methods used for the investigation of the research question included cross tabulations, receiver operating characteristic (ROC) curves, Venn diagrams and multinomial regression.

A ROC curve is a method to visualise the performance of a test to discriminate between two populations (Minot & Baulch, 2004). In our study, this method allowed us to assess the targeting efficiency when using the monetary poverty measure to identify children who are multidimensionally poor. The outcomes provide an indication of the extent to which the monetary poverty method would be suitable as a proxy for multidimensional poverty. The application of ROC curves for poverty analysis to date has been fairly limited. Minot and Baulch (2004), and Wodon (1997) are among the few scholars who have used this specific method to assess targeting performance of different poverty indicators.

Cross tabulations and Venn diagrams were used in the study to assess and visualise the degree of overlap of children identified as monetary and/or multidimensionally poor. Although cross tabulations are fairly common for the analysis of overlap or mismatch of poverty measures (see e.g., Bastos et al., 2004; Baulch & Masset, 2003; Klasen, 2000; Whelan, Layte & Maitre, 2004), Venn diagrams are less commonly used. Lastly, multinomial regression enabled the investigation of underlying drivers or dynamics that cause children to be identified as multidimensionally and/or monetary poor. The identification of child poverty using two distinct poverty measures leads to four mutually exclusive groups in the population, making multinomial regression the appropriate method for analysis (see also Whelan et al., 2004).

Size and rank differences and the association between monetary and multidimensional child poverty

The comparative analysis of poverty measurement using monetary and multidimensional approaches focuses on size, rank and group differences. Size refers to overall poverty figures, indicating the magnitude of poverty for the different groups in the society. Rank

Table 1. Size differences – monetary and multidimensional child poverty.

	Monetary child poverty rate	Multidimensional child poverty rate
Total	22.62	30.72

Source: Authors' calculations from Vietnam Household Living Standards Survey 2006, (N = 10,696).

refers to the ranking of groups according to their poverty status on the basis of either one of the approaches, and group differences refer to whether the same or different children are captured by the two poverty approaches.

A comparison of the magnitude (or size) of child poverty in Vietnam is presented in Table 1. It can be observed that 23 per cent of all children below 16 years of age were identified as monetary poor, compared with a poverty incidence rate of 31 per cent for multidimensional poverty. These size differences are considerable but can be considered as largely arbitrary due to their dependence on the construction of the welfare measure, assumptions about intra-household distribution and economies of scale and the setting of the poverty line. Although all elements in the construction of a monetary poverty measure are often the result of a long and thorough process, it remains subjective and open to debate.

In order to focus the remainder of the analysis and discussion on group differences, the size differences in poverty were removed by artificially equalising the monetary and multidimensional poverty rates (Nolan & Whelan, 2009). The monetary poverty line was raised to such a level of per capita income[5] for it to capture the same proportion of poor children as the multidimensional approach. Table 2 presents an unconditional child poverty profile and poverty ranks for various demographic groups in Vietnam.

Demographic decomposition showed that the relative rankings in terms of gender, area and ethnicity were similar on the basis of monetary and multidimensional poverty, although the extent to which particular groups were identified as relatively more or less deprived in comparison with other groups in society depended on the particular poverty approach used. Regional poverty estimates, however, indicated that the monetary and multidimensional approaches ranked regions differently. Both methods identified the North West region as the region with the highest incidence and depth of child poverty, but regional rankings differed greatly when other regions were considered. Most notable is the Mekong River Delta region which had second to the last poverty incidence in terms of monetary poverty but second highest poverty incidence and depth in terms of multidimensional poverty.

Rank differences were also found with respect to the decomposition by age group. According to the monetary poverty measure, the children belonging to the oldest age bracket have the lowest poverty risk and experience the smallest poverty gap. The picture with respect to multidimensional poverty is almost reversed, indicating that children in the oldest age bracket are among the most deprived. Note that the monetary poverty was based purely on data at the household level, while the multidimensional poverty method in part captured individual children's situation. The underlying indicators and the different age groups that the different methods captured form an explanation for these different poverty rates by age group. Child labour, for example, is an issue particularly pertinent to children in older age brackets but was included only in the multidimensional measure of poverty. Furthermore, it should be noted that not all indicators could be meaningfully observed for all children across all age brackets (see Table A2), and this should be kept in mind when interpreting poverty estimates.[6]

Further comparative analysis of the two child poverty approaches analysed the extent to which one approach was able to differentiate poverty in terms of the other approach. Correlation coefficients in Table 3 point towards a limited degree of association between monetary poverty and multidimensional poverty and poverty in its underlying domains.

Correlation coefficients between the various indicators of monetary and multidimensional poverty are all significant but at fairly low to medium levels of correlation, ranging from 0.032 to 0.361.[7] The limited degree of correlation between monetary and multidimensional poverty indicators has also been found in earlier studies. Klasen (2000) found limited correlation between income and deprivation measures in South Africa. Furthermore, in a review of different poverty studies in OECD countries, both Perry (2002) and Layte et al. (2001) concluded that the association between poverty and another measure of deprivation is much weaker than has often been assumed.

The present study further explored the explanatory power of the monetary poverty method to assess multidimensional poverty, and vice versa, by the use

[5] The original level of the monetary poverty line was 2,559.850 VND; the adjusted monetary poverty line is 2,905.000 VND.

[6] Following Alkire and Foster (2008) and Alkire and Santos (2010), the assumption was that a child was not deprived if the respective indicator could not be observed.

[7] Judgements about the size of correlation coefficients are based on 'Cohen's benchmarks' of interpreting effect size estimates, indicating that a coefficient of 0.10 denotes a small effect, 0.30 denotes a medium effect and 0.5 represents a large effect (Valentine & Cooper, 2003).

Table 2. Child poverty profile and rank differences.

	Monetary child poverty rate	Monetary child poverty gap ratio	Multidimensional child poverty rate	Multidimensional child poverty gap ratio
Gender				
Male	30.1 (1)	8.2 (1)	30.5 (1)	18.5
Female	31.4 (2)	8.4 (2)	31.0 (2)	18.5
Area				
Urban	8.9*** (1)	1.9*** (1)	11.3*** (1)	8.8*** (1)
Rural	37.0*** (2)	10.1*** (2)	36.3*** (2)	21.0*** (2)
Region				
Red River Delta	21.5*** (3)	4.2*** (3)	9.7*** (1)	8.2*** (1)
North East	43.5*** (5)	12.0*** (5)	36.2*** (5)	21.0*** (6)
North West	69.5*** (8)	24.7*** (8)	63.1*** (8)	38.7*** (8)
North Central Coast	47.0*** (7)	14.2*** (6)	25.8*** (4)	14.2*** (4)
South Central Coast	26.0*** (4)	5.6*** (4)	18.5*** (2)	11.1*** (2)
Central Highlands	45.2*** (6)	15.3*** (7)	39.3*** (6)	20.9*** (5)
South East	12.9*** (1)	3.4*** (1)	20.2*** (3)	13.5*** (3)
Mekong River Delta	21.3*** (2)	4.0*** (2)	56.3*** (7)	27.3*** (7)
Ethnicity				
Kinh/Chinese ethnicity	22.1*** (1)	4.8*** (1)	24.1*** (1)	13.9*** (1)
Other ethnicity	71.8*** (2)	24.8*** (2)	62.3*** (2)	34.1*** (2)
Age group				
0–2	33.5*** (4)	10.1*** (5)	27.9*** (2)	24.0*** (5)
3–4	36.7*** (6)	10.4*** (6)	41.6*** (6)	27.0*** (6)
5	34.3*** (5)	10.0*** (4)	38.4*** (4)	18.5*** (3)
6–10	33.5*** (3)	9.3*** (3)	25.8*** (1)	14.3*** (1)
11–14	27.8*** (2)	6.8*** (2)	29.5*** (3)	17.2*** (2)
15	21.3*** (1)	4.8*** (1)	40.4*** (5)	20.8*** (4)
Total	30.7	8.3	30.7	18.5

Source: Authors' calculations from Vietnam Household Living Standards Survey, 2006, ($N = 10{,}696$).
*** <0.001, significance level chi-squared group equality of means.

Table 3. Correlation monetary and multidimensional poverty.

	Monetary poverty	Per capita expenditures
Multidimensional poverty	0.316*	
Multidimensional normalised poverty score		–0.362*
Education poverty	0.169*	
Health poverty	0.134*	
Shelter poverty	0.269*	
Water and sanitation poverty	0.361*	
Labour poverty	0.142*	
Social inclusion and protection poverty	0.032*	

Source: Authors' calculations from Vietnam Household Living Standards Survey 2006
Notes: The correlation between per capita expenditures and multidimensional poverty score is calculated by means of the Pearson correlation coefficient; and the correlation between monetary poverty and multidimensional poverty as well as domain poverty is calculated using the Phi correlation coefficient. Correlation coefficients referring to domain poverty are calculated for the sample of children for which the specific domain poverty was also observable.
* denotes significance at 1 per cent level.

of ROC curves. ROC curves graphically depict the performance of a test to discriminate between two populations (Minot & Baulch, 2004). The *x*-axis of an ROC graph depicts the 'false positives' (1-specificity) or the inclusion error (Wodon, 1997: 2084). In our analysis, this refers to the identification of children who are not multidimensionally poor as being monetary poor. The *y*-axis depicts the 'true positives' (sensitivity) or correct identification (Wodon, 1997), referring in this case to multidimensionally poor children also being identified as monetary poor. The false positives and true positives are depicted along a continuum of probability cut-offs, which refers to poverty risks or the probability to be poor in this case. An ROC curve depicted by a 45-degree line indicates a model with no explanatory power, that is, the chances of being identified or not as monetary poor are equal, regardless of the actual probability of being multidimensionally poor. An ROC curve bowed towards the upper left corner of the graph indicates a model with larger predictive power, as the rate of true positives increases at a relatively higher rate than the rate of false positives. The area under the ROC curve indicates the efficiency of the diagnostic test. An area with a value of 1 indicates a perfect test, while an area of 0.5 points to a model without any predictive value (the 45-degree line). It should be noted that the perfect test is almost impossible to achieve and that there will be an optimal curve with a lower value reflecting the upper limit at which a higher degree of false positives is linked to a lower degree of false negatives. Figure 1 presents an ROC curve for the use of the monetary poverty measure to explain multidimensional child poverty.

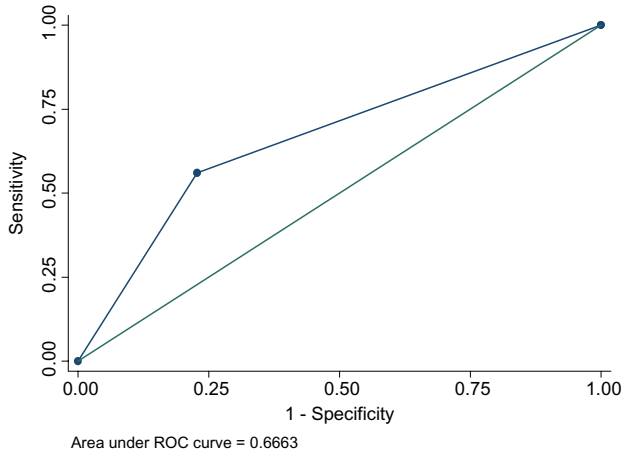

Figure 1. Receiver operating characteristic (ROC) curve for monetary poverty as a test for multidimensional poverty.
Source: Authors' calculations from Vietnam Household Living Standards Survey 2006.
ROC, receiver operating characteristic.

The ROC curve in Figure 1 points towards the limited power of the monetary poverty measure to predict or proxy multidimensional poverty. The area under the ROC curve is 0.67, suggesting little explanatory power.[8] The bowed ROC curve is split up into two segments, the lower part capturing the children who were identified by monetary poverty and the upper segment representing all others. Considering the values of the *x*- and *y*-axes at the point where the curvature changes, it can be observed that monetary poverty captures approximately 20 per cent false positives and 55 per cent true positives. In other words, if the monetary poverty measure were used to predict multidimensional child poverty, the probability of being rightly identified as such by the monetary approach would be around 55 per cent. By the same token, there is a chance of approximately 20 per cent of being identified as poor by the monetary poverty approach when not multidimensionally poor.

Results were similar when testing the use of the multidimensional poverty measure as a proxy for monetary poverty. The area under the ROC curve is also 0.67, indicating that the multidimensional poverty measure is not able to differentiate well between children who are monetary poor or not. Less than half of all children who are monetary poor were identified as poor using the multidimensional poverty measure, while a considerable proportion of children who are not monetary poor would be identified as poor. Based on the results from the ROC analysis as well as the earlier mentioned findings, it is evident that monetary and multidimensional child poverty are not closely related and that one poverty measure is not adequately able to differentiate child poverty in terms of the other measure, which contradicts findings in the study by Menchini and Redmond (2009).

Groups of poverty

An analysis of the groups of children identified as poor by the monetary and multidimensional poverty approaches provides insight into the extent to which the poverty measures captured the same or different groups of children. Figure 2 presents the percentages of children identified by the monetary and/or multidimensional poverty approach in a Venn diagram. Such an analysis of the overlap of monetary and multidimensional child poverty identifies four so-called 'poverty groups'. Group A consists of those children who were identified as being multidimensionally poor only; Group B consists of those children who were identified as being monetary poor only; Group AB are those children who were identified as being poor by both approaches; and Group C are the non-poor children.

Results in Figure 2 indicate that the degree of overlap between children identified as poor in monetary and multidimensional terms is limited. It can be observed that 46 per cent of all children were identified as poor by the multidimensional and/or the monetary poverty approach, but only 16 per cent of all children were captured by both approaches. While 15 per cent of all children were identified only as multidimensionally poor, 15 per cent were considered to be poor only according to the monetary approach. Similar analyses in previous studies have reached similar conclusions.

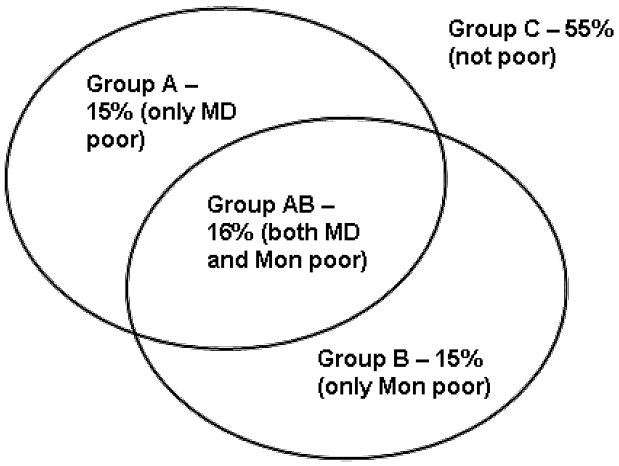

Figure 2. Venn diagram, multidimensional and monetary child poverty.
Source: Authors' calculations from Vietnam Household Living Standards Survey 2006.
MD, multidimensionally; Mon, monetary.

[8] Judgements about the degree of explanatory power of ROC findings are based on similar analyses in Minot and Baulch (2004) and Wodon (1997).

Table 4. Domain poverty rates by poverty group.

	Group A	Group B	Group AB	Group C
	Only multidimensionally poor	Only monetary poor	Multidimensionally and monetary poor	Non-poor
	Domain poverty rate	Domain poverty rate	Domain poverty rate	Non-poor
Domains				
Education	35.9	4.1	36.7	–
Health	12.1	3.6	13.6	–
Shelter	58.5	3.1	67.2	–
Water and sanitation	88.7	55.9	95.8	–
Child labour	18.1	0.9	18.7	–
Social inclusion and protection	16.9	3.2	10.6	–
No domain (only monetary poor)	–	29.3	–	–
Total	14.7	14.7	16.0	54.5

Source: Authors' calculations from Vietnam Household Living Standards Survey 2006.

Bastos et al. (2004) found that there was limited overlap between quartiles of children identified as poor using a monetary child poverty index and a multidimensional child deprivation index. Similarly, Klasen (2000) found a large degree of misidentification of the poor, with considerable groups of people that are identified only by either the monetary or multidimensional poverty measures.

To gain further insight into the characteristics of the specific poverty groups, the differences in underlying poverty indicators were examined. Table 4 presents the proportion of children in each poverty group who suffered poverty in each domain.[9]

Estimates for group B reveal that more than 70 per cent of all children in this group were suffering from poverty in one domain in addition to being monetary poor. Poverty in the water and sanitation domain was most prevalent for all poverty groups. The large majority of Group A and Group AB children suffered poverty in this domain, while this amounted to 56 per cent for children in Group B. The domain with the second largest incidence rates in Groups A and AB was shelter, with incidence rates between 59 and 67 per cent. Remarkably, the estimates indicate that only a small proportion of Group B children, 3 per cent, suffered from poverty with respect to shelter. Poverty incidence rates for other domains hovered around the same level, with the exception of child labour which amounted to only 1 per cent. This relatively low percentage of children suffering child labour in Group B is intuitively understandable, as child labour might be a source of income and is inversely related to monetary poverty. The proportions of domain poverty incidence for Groups A and AB do not display diverging trends that could be thought to specifically 'drive' the group's poverty status, although incidence rates are generally at a higher level for Group AB. To gain a more detailed insight into the degree of poverty of Group AB, the depth of poverty was considered. Figure 3 compares the depth of multidimensional poverty for Groups A and AB as well as monetary poverty for Groups B and AB.

The bar graph clearly indicates that the children in Group AB were poorer in monetary as well as multidimensional terms than were children who were identified as being poor by only one poverty measure. As such, these children can be considered as 'ultra-poor'. They have little means to cope and experience greater, as well as deeper, poverty in terms of both income and domain poverty.

Drivers of poverty mismatch

Although these notions on size and group differences provide a valuable contribution to the ongoing debate on poverty measurement, the question of which specific factors increase or decrease children's risk of being identified as poor by neither, one or both poverty measures remain. Characteristics of the household head or the household that the child lives in may result in a specific family life strategy that is able to mitigate the effects of low income on children and prevent a child from being multidimensionally poor despite being monetary poor (Bastos et al., 2004). By the same token, the child's specific living conditions might increase his or her risk of being poor in multidimensional terms, despite not being identified as monetary poor, or even cause him or her to be ultra-poor. Multinomial regres-

[9] Note that the percentages in the column for Group B add up to 100 per cent as children in this group can theoretically only suffer deprivation in either one domain or no domain. If they suffer deprivation in more domains, they would have been identified as multidimensionally poor. The percentages in the columns for Groups A and AB do not add up to 100 per cent, as children in these groups can suffer deprivation in multiple domains.

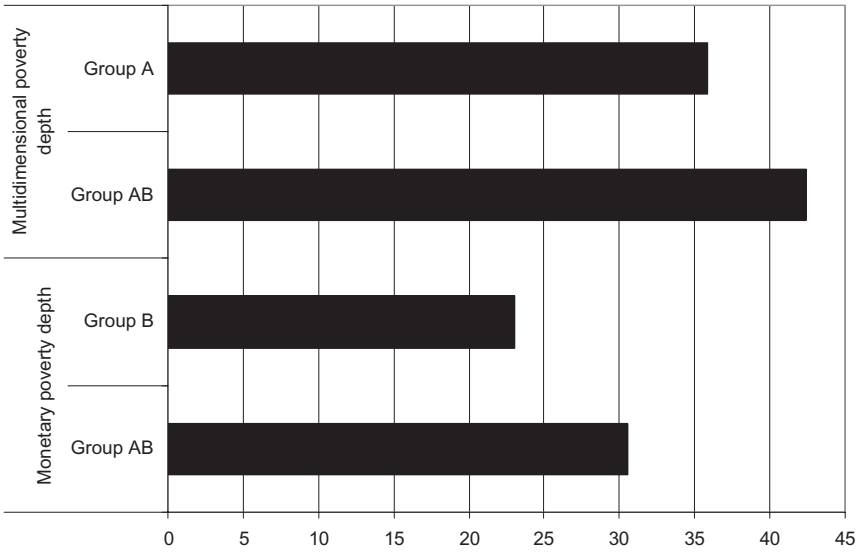

Figure 3. Monetary and multidimensional poverty depth by poverty group.
Source: Authors' calculations from Vietnam Household Living Standards Survey 2006.

sion was used to further analyse the impact of characteristics of the individual child, household head, household and locations on the probability for a child to belong to either one of these poverty groups, controlling for the other characteristics. Table 5 reports the relative risks of belonging to either poverty groups AB, A or B in relation to Group C (non-poor). If the reported relative risk for a certain poverty group is larger than 1, the specific characteristic increases the probability that a child will belong to that poverty group rather than be non-poor and belong to reference Group C.

The association found between a number of micro-determinants and their impact on a child's risk of belonging to a specific poverty group can provide an indication of the underlying drivers of the identification of child poverty by both or either of the approaches. Children who faced the highest risk of being both monetary and multidimensionally poor were those living in households headed by single or uneducated individuals, living in households with a large proportion of children, or were located in rural areas and mountainous regions. As children characterised by these factors were identified as poor by both poverty measures, they could be considered to be 'ultra-poor' and the most vulnerable group of society. Their situation provides them with few options for mitigating the effects of poverty, and they could be considered a special focus group in terms of targeting poverty reduction policies. Findings also point towards factors that increase a child's risk of being identified as multidimensionally poor but do not impact or even decrease the probability of being identified as monetary poor, and vice versa. While children in households with widowed heads are especially prone to experience only multidimensional poverty, children in households with separated heads have a relatively higher risk of being only monetary poor. Widowed heads of households seem to be better equipped to protect their children from monetary poverty than from multidimensional poverty. An underlying explanation for this difference could be monetary social welfare schemes that provide benefits to widows, which make children in such households less vulnerable to poverty in monetary terms but not with respect to other areas of well-being. However, cultural attitudes towards lone-parent households resulting from widowhood or separation and the degree of social acceptance of these situations might also play a role. Specific monetary welfare schemes might also explain the relatively higher multidimensional poverty risk for children living in households headed by unemployed or retired workers, while they have a lesser risk of being monetary poor. The findings also have implications in terms of regional identification of poverty, especially with respect to the Mekong River Delta region. Results clearly show that children living in this region have a lower risk of being only monetary poor than not being poor at all. However, the risk of being only multidimensionally poor was six times higher than of not being poor. Clearly, geographical issues are an important factor in making children more or less prone to experiencing multidimensional poverty despite income levels above the monetary poverty line.

Conclusion

This study investigated whether the use of monetary and multidimensional poverty measures results in

Table 5. Multinomial regression poverty groups.

	Multinomial models		
	AB	A	B
	b/(se)	b/(se)	b/(se)
Child characteristics			
Child is female	1.1045 (0.0730)	1.0156 (0.0640)	1.0636 (0.0677)
Age of child	0.9867 (0.0095)	1.0476*** (0.0105)	0.9424*** (0.0086)
Household head characteristics			
Household head is female	0.4800*** (0.0637)	0.5803*** (0.0667)	0.5845*** (0.0738)
Age of household head	0.9961 (0.0037)	0.9930 (0.0036)	10.071 (0.0038)
Household head is single	6.8513*** (–23.625)	2.6343** (0.9754)	3.5046*** (–11.904)
Household head is widowed	13.233 (0.2203)	1.4449* (0.2145)	0.9978 (0.1684)
Household head is divorced	2.1841* (0.7613)	0.6391 (0.2813)	0.7080 (0.3117)
Household head is separated	12.818 (0.7473)	3.2453** (–12.680)	4.2990*** (–16.828)
Household head has no education	2.4341*** (0.2100)	1.2053* (0.1041)	1.6026*** (0.1453)
Household head has secondary education	0.4256*** (0.0403)	0.6931*** (0.0581)	0.4812*** (0.0387)
Household head has post secondary education	0.1229*** (0.0273)	0.4873*** (0.0629)	0.1154*** (0.0224)
Household head is unemployed or retired	2.8740*** (0.4170)	4.0829*** (0.5301)	0.6134** (0.1061)
Household head is government/ defence staff	0.3505** (0.1135)	0.6977 (0.1674)	0.2409** (0.0869)
Household head is skilled professional	0.3912*** (0.0453)	0.8406* (0.0708)	0.6434*** (0.0561)
Household characteristics			
Household belongs to ethnic minority	0.0784*** (0.0082)	0.2721*** (0.0299)	0.1700*** (0.0184)
Presence of household members in ill-health in working age (16–59)	10.199 (0.0508)	1.2244*** (0.0547)	0.9360 (0.0477)
Presence of children 5–11 years old	0.7207* (0.1051)	0.7322* (0.0998)	11.788 (0.1705)
Presence of children >11 years	0.7947 (0.1267)	0.6627** (0.1027)	13.077 (0.2050)
<25%	0.6261** (0.0897)	0.6906** (0.0799)	0.6953* (0.0987)
40–50%	1.5260*** (0.1743)	10.188 (0.1080)	1.4788*** (0.1642)
>50%	2.4724*** (0.2303)	1.2840** (0.1075)	1.8754*** (0.1711)
Locational characteristics			
Household is located in rural area	5.5023*** (0.7301)	3.0361*** (0.2816)	2.3204*** (0.2465)
Red River Delta	0.7408 (0.1279)	0.5401*** (0.0891)	1.4598** (0.1761)
North East	1.4187* (0.2243)	1.5871** (0.2488)	10.958 (0.1506)
North West	3.5652*** (0.7379)	2.8400*** (0.6247)	14.012 (0.2872)
North Central Coast	2.4682*** (0.3804)	12.128 (0.1965)	2.6514*** (0.3260)
Central Highlands	1.8978*** (0.3091)	1.9933*** (0.3212)	12.180 (0.1736)
South East	0.7919 (0.1292)	1.4535* (0.2143)	0.2881*** (0.0464)
Mekong River Delta	2.5359*** (0.3660)	6.6252*** (0.8730)	0.3079*** (0.0500)
Pseudo R-Square	0.2508		
Chi-square	6.6e + 03		
p	0.0000		

Source: Authors' calculations from Vietnam Household Living Standards Survey 2006.
Note: Reference categories are household head is married, household head has primary education, household head is an unskilled worker, 25–39 per cent proportion of children in household, region is South Central Coast.
* 10%, ** 5%, *** 1%.

size, rank and group differences with respect to child poverty. Further investigated were the factors and underlying drivers that cause children to be captured by neither, one or both of the poverty measures. The empirical findings illustrate that the underlying conceptual and theoretical differences between child poverty approaches are matched by diverging empirical outcomes. The analysis in the study clearly points towards size and rank differences in poverty outcomes and the conclusion that the monetary poverty approach cannot serve as a proxy for multidimensional poverty, and vice versa. The degree of correlation between monetary and multidimensional poverty as well as monetary poverty and poverty in separate domains proves to be limited. ROC analysis indicates that the monetary child poverty measure is a poor predictor of multidimensional child poverty, and vice versa. Furthermore, we found that the mismatch in the identification of child poverty using both approaches is considerable, with the existence of a large group of children exclusively identified as multidimensionally poor and a group of children who were captured by the monetary measure only. Children who were identified as both monetary and multidimensionally poor could be considered to be ultra-poor, as their depth of monetary and multidimensional poverty was larger than the poverty depth of children identified by only one of the poverty measures. Analysis of the mutually exclusive poverty groups as formed by the monetary and multidimensional approaches allowed for the identification of specific factors that increase a child's

risk of being identified as exclusively multidimensionally poor, exclusively monetary poor or both.

The discussion in this article contributes to the debate on options and limitations of the monetary and multidimensional approaches with respect to child poverty analysis. The findings contradict previous research by Menchini and Redmond (2009) on the use of monetary and multidimensional-based child poverty measures, which can be partly attributed to the methods of analysis used and are supportive of the complementary use of poverty measures rather than reliance on a single child poverty approach. A poverty analysis based on a combination of approaches can overcome the danger that a poverty analysis hinges on a one-sided conception of poverty. It provides a diversified picture of poverty, revealing that poverty outcomes are, in part, dependent on the underlying conceptual and theoretical assumptions about poverty. It also allows for the identification of the groups of poor captured by either one or both of the poverty approaches and an analysis of their specific characteristics. The investigation of the characteristics and micro-determinants of the ultra-poor as well as those that are captured by only one of the child poverty approaches is what moves the current analysis beyond existing research. As this analysis is based on a single case study, replications in other contexts are required to allow for more generic findings. Having acknowledged this need for further research to build more solid evidence, previous findings in studies examining the wider remit of poverty mismatch do suggest that results in this article hold beyond the specific case of child poverty in Vietnam.

The general finding of considerable poverty mismatch and the fact that different groups of society are affected differently by this mismatch has important implications for the policy debate. The value of the present study is twofold. First, findings suggest that policy monitoring and evaluation efforts can lead to different conclusions when based on a single poverty approach. The choice of a specific poverty approach could be used to the advantage of a specific policy and bias results in favour of the policy under consideration, and vice versa. This could hold at the general level or at the level of specific demographic groups. An evaluation on the basis of monetary poverty would suggest that early adolescents hold the smallest poverty risk and would praise policies directed towards this specific group. Multidimensional poverty estimates, however, point towards a different picture and rather signal a failure of such policies.

Second, the analysis reveals that targeting of policies on the basis of monetary poverty potentially has perverse effects for those identified as multidimensionally poor, and vice versa. Targeting purely based on the identification of a single poverty measure automatically implies that those individuals only identified as poor by another measure are excluded. Set in a context where social benefits are awarded on the basis of means testing, this analysis suggests that considerable groups of vulnerable children in Vietnam will be excluded from social policies. This analysis makes a strong case for the revision of those targeting practices to extend coverage in order to reach more vulnerable children, regardless of whether their deprivation is monetary or non-monetary in nature. Findings suggest that specific demographic groups in society are more or less prone to being identified as poor by only one or both of the approaches, implying that policies targeted on a single measure of poverty are biased towards specific demographic groups of children. The awareness that different child poverty approaches have the potential to identify different groups of children as being poor is important for conscious and sound policy design as well as transparent policy monitoring and evaluation. A combined use of approaches for poverty analysis, explicitly including an investigation of the overlap of poverty according to different models, reduces the potential bias resulting from the use of a single poverty approach.

Furthermore, findings suggest that there are a number of underlying characteristics of children which influence the probability that they will be identified by either one or both of the poverty approaches. Knowledge and awareness of these underlying factors is another important issue in terms of policy design. Children living in the Mekong River Delta, for example, would benefit from policies if geographical targeting was designed on the basis of multidimensional child poverty estimates, but would be excluded if monetary child poverty was used as a yardstick. By the same token, the impoverished and disadvantaged position of ethnic minorities is so outspoken that targeting along those lines might go a long way towards reaching children who are deprived in both monetary and multidimensional terms. An in-depth analysis of the characteristics impacting the probability of being identified by either one or more poverty measures provides a more detailed understanding of the demographic groups at risk and the underlying processes contributing to that risk.

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Appendix

Table A1. Sensitivity analysis for different equivalence scales.

	Child poverty rate			
	Per capita	Equivalence scale 1	Equivalence scale 2	Equivalence scale 3
Gender				
Male	30.1 (1)	7.4 (2)	2.2 (2)	11.1 (1)
Female	31.4 (2)	7.3 (1)	1.8 (1)	11.2 (2)
Area				
Urban	8.9*** (1)	1.0*** (1)	0*** (1)	2.3*** (1)
Rural	37.0*** (2)	9.2*** (2)	2.6*** (2)	13.7*** (2)
Region				
Red River Delta	21.5*** (3)	2.6*** (1)	0.1*** (1)	4.6*** (2)
North East	43.5*** (5)	11.8*** (5)	1.8*** (5)	15.9*** (5)
North West	69.5*** (8)	27.7*** (8)	11.0*** (8)	36.7*** (8)
North Central Coast	47.0*** (7)	12.6*** (6)	4.1*** (6)	20.3*** (6)
South Central Coast	26.0*** (4)	4.0*** (4)	0.9*** (3)	6.8*** (4)
Central Highlands	45.2*** (6)	14.4*** (7)	4.9*** (7)	22.6*** (7)
South East	12.9*** (1)	3.1*** (3)	1.2*** (4)	3.9*** (1)
Mekong River Delta	21.3*** (2)	3.0*** (2)	0.4*** (2)	5.0*** (3)
Ethnicity				
Kinh/Chinese ethnicity	22.1*** (1)	3.3*** (1)	0.6*** (1)	5.5*** (1)
Other ethnicity	71.8*** (2)	26.9*** (2)	8.9*** (2)	37.9*** (2)
Age group				
0–2	33.5*** (4)	10.8*** (6)	3.4*** (6)	15.2*** (5)
3–4	36.7*** (6)	10.4*** (5)	2.6*** (5)	15.4*** (6)
5	34.3*** (5)	9.1*** (4)	2.4*** (4)	13.3*** (4)
6–10	33.5*** (3)	7.9*** (3)	2.3*** (3)	12.1*** (3)
11–14	27.8*** (2)	5.4*** (2)	1.3*** (2)	8.8*** (2)
15	21.3*** (1)	4.3*** (1)	0.8*** (1)	5.6*** (1)
Total	30.7	7.4	2.0	11.1

Source: Authors' calculations from Vietnam Household Living Standards Survey 2006, (N = 10,696).
Note: Equivalence scale 1 represents a poor country according to Deaton and Zaidi (2002), with weight of 1 for each adult, 0.3 for each child and no economies of scale assumed (AE = (A + 0.3K)^1). Equivalence scale 2 follows the Organization for Economic Cooperation and Development modified scale with weight of 1 for the first adult, 0.5 for every additional adult, 0.3 for each child and no further economies of scale (AE = (A + 0.5(A – 1) + 0.3K)^1). Equivalence scale 3 represents a middle-income country according to Deaton and Zaidi (2002), with weight of 1 for each adult and weight of 0.5 for each child (AE = (A + 0.3K)^1).
*** <0.001, significance level chi-squared group equality of means.

Table A2. Domains and indicators of the multidimensional child poverty approach.

Education poverty
Enrolment poverty rate
• Children of age 5 not attending pre-school as a percentage of all children at age 5
• Children aged 6–10 not attending primary school as a percentage of all children aged 6–10
• Children aged 11–15 not attending lower secondary school as a percentage of all children aged 11–15
Completion poverty rate
• Children aged 11–15 who have not completed primary education as a percentage of all children aged 11–15
Health poverty
Health visit poverty rate
• Children aged 2–4 who have not visited a professional health facility at least once in the last 12 months as a percentage of all children aged 2–4
Shelter poverty
Electricity poverty rate
• Children living in a dwelling without electricity as a percentage of all children aged 0–15
Housing poverty rate
• Children not living in proper housing as a percentage of all children aged 0–15
Water and sanitation poverty
Sanitation poverty rate
• Children living in a dwelling without a hygienic sanitation facility as a percentage of all children aged 0–15
Water poverty rate
• Children not drinking safe drinking water as a percentage of all children aged 0–15
Child labour
Child labour rate
• Children aged 6–15 who have worked for an employer or in household production in the last 12 months as a percentage of all children aged 6–15
Social inclusion and protection poverty
Caregiver poverty rate
• Children aged 0–15 living in households with heads who do not work due to disablement or old age