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Evaluating Targeting Efficiency of Government Programmes

International Comparisons

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Abstract

This paper suggests how the targeting efficiency of government programmes may be better assessed. Using the 'pro-poor policy' (PPP) index developed by authors, the study investigates the pro-poorness of not only government programmes geared to the poorest segment of the population, but also basic service delivery in education, health and infrastructure. This paper also shows that the targeting efficiency for a particular socioeconomic group should be judged on the basis of a 'total-group PPP index', to capture the impact of operating a programme within the group. Using micro-unit data from household surveys, the paper presents a comparative analysis for Thailand, Russia, Vietnam and 15 African countries.

Keywords: targeting, pro-poor growth, poverty
JEL classification: C15, I32

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1 Introduction

For about the last two decades, the consensus has been that economic growth is necessary but not, by itself, sufficient for the alleviation of poverty. Additional elements are required. First, poor households need to build up their asset base in order to participate in the growth process. Second, growth needs to be broad-based to reach all segments of society, including the poor. Third, short-term public assistance measures are required to protect vulnerable groups of society, because it takes time for the needy to benefit from the impact of a policy or strategy.

Implementing this agenda to reduce poverty requires methods or tools that can effectively reach poor households or individuals. This may be accomplished by public spending on items like universal education, which can reach wide sections of society, including the poor. Alternatively, it can be achieved through a direct transfer of resources to the poor. However, in practice, problems commonly arise because of scarcity of resources. With fixed budgets, governments are often forced to direct resources to specific groups of households or individuals. Targeting specific groups will achieve the maximum impact from a given budget or minimize the costs of achieving a given impact. This attraction is particularly strong for transfer programmes that constitute safety nets, because such transfers provide a benefit that is largely a private good for recipient households.

While targeting has its own merits, there are a number of methods that can provide resources to a particular group. The existing literature largely focuses on individual programmes, with comparative analyses tending to cover a single region or method of intervention (Grosh 1994; Braithwaite et al. 2000; Bigman and Fofack 2000; Rawlings et al. 2001). A partial approach of this kind is not helpful for making broader assessments about the effectiveness of different targeting methods. This chapter attempts to provide a general framework for evaluating the targeting efficiency of government welfare programmes and to draw lessons from developing country experiences that are relevant for policy making.

A government programme may be defined as pro-poor if it provides greater absolute benefits to the poor compared to the non-poor. Suppose there are two programmes, *A* and *B,* incurring the same cost. Then *A* will be more pro-poor than *B* if it leads to greater poverty reduction than *B.* Utilizing this definition, Kakwani and Son (2005) developed a new index called the ‘Pro-Poor Policy’ (PPP) index, which measures the pro-poorness of government programmes as well as of basic service delivery in education, health and infrastructure.

The PPP index is derived as the ratio of actual poverty reduction from a government programme to the poverty reduction that would have been achieved if every individual

in society received exactly the same benefits from the programme. The PPP index provides a means of assessing the targeting efficiency of government programmes. Furthermore, Kakwani and Son (2005) developed two subtypes of PPP indices by socioeconomic groups, namely 'within-group' and 'total-group' PPP indices. While the within-group PPP index measures the pro-poorness of a programme within a group, the total-group PPP index captures the impact of operating a programme in a group on its pro-poorness at the national level. The argument is based on the premise that the targeting efficiency of a particular group should be judged on the basis of a total-group PPP index.[1] Using micro data from household surveys, the proposed methodology is applied to Thailand, the Russian Federation, Vietnam and 15 African countries.

The chapter is organized as follows. The first section presents a brief non-technical description of the methodology proposed by Kakwani and Son (2005). It outlines the poverty measures used in the chapter; the definition of the PPP index; the values of the PPP index attainable under perfect targeting; and the PPP index by socioeconomic groups. More technical details are reported in Kakwani and Son (2005). The following section presents empirical results for Thailand, Russia, and Vietnam. The penultimate section provides empirical results for 15 African countries, and the final section summarizes the major findings.

2 Methodology

2.1 Poverty measure

We measure the pro-poorness of a government policy by measuring its impact on poverty. Policy *A* is more pro-poor than policy *B* if it achieves a greater reduction in aggregate poverty for a given cost. Aggregate poverty can be measured in a variety of ways. In this chapter, we focus on the Foster et al. (1984) class of additively separable poverty measures. These include the headcount ratio (the percentage of people living below a poverty threshold); the poverty gap ratio, capturing the depth of poverty; and the severity of poverty index. The evaluation of a poverty reduction policy depends on the choice of poverty measure. For instance, addressing the headcount ratio will require policies different than those for addressing the poverty gap or the severity of poverty index. The headcount ratio is a crude measure of poverty because it completely ignores the gaps in incomes from the poverty line and the distribution of income among the poor. The severity of poverty index has all the desirable properties.

[1] It is possible that a programme may be well-targeted within group but may not be considered well-targeted at the national level because of disparity in incomes between groups.

2.2 Pro-poor policy index

Suppose that a welfare transfer from the government leads to an increase in recipients' income or consumption. Then there will be a reduction in poverty due to the increase in income. We define a government programme to be pro-poor if the poor receive greater absolute benefits than the non-poor. This means that a pro-poor government programme should achieve greater poverty reduction than a programme in which everyone receives exactly the same benefit. The PPP index is defined as the ratio of the actual poverty reduction from the programme to the poverty reduction that would have been achieved if every individual in the society received the average benefit from the programme. A programme is called pro-poor (or anti-poor) when the PPP index is greater (or less) than unity. The larger the value of the PPP index, the greater is the degree of pro-poorness of the programme.

To calculate the PPP index, a programme does not have to involve cash transfers. In fact, a large number of government programmes involve education, health and other social benefits which do not provide cash to individuals, but nevertheless contribute to their standard of living. Hence, it can be assumed that if a person uses a government service then they receive some notional cash. If all individuals who utilize a government service are assumed to receive the same notional cash benefits then we can calculate the PPP index.

2.3 Perfect targeting

The PPP index achieves its lowest value of zero if the government programme does not reduce any poverty at all, which will happen when all benefits go to the non-poor. This is considered to be the extreme situation of imperfect targeting. Conversely, perfect targeting may be defined as a situation where only the poor benefit, and all the benefits are proportional to the income shortfall from the poverty line. Kakwani and Son (2005) define two different values of the PPP index obtainable under perfect targeting, depending upon how the poverty line is defined. In one scenario every household has a different poverty line depending on household composition and the prices faced by that household. In our empirical study of Thailand, the official poverty line varies with households, whereas for Vietnam the poverty line is fixed for all households. In each case, the value of the PPP index under perfect targeting is defined differently.

In practice, it is not possible to achieve perfect targeting because it is difficult to obtain accurate information on household income or consumption. We generally resort to proxy targeting by geographical region or other socioeconomic characteristic of households. In this study, the targeting efficiency of a programme is judged on the basis of the value of the PPP index. The value of the PPP index under perfect targeting may be used as a benchmark to assess the targeting performance of government programmes. This methodology can also be used for ex-ante formulation of new government programmes.

2.4 PPP index by socioeconomic groups

Taking the analysis a step further, a decomposition methodology is proposed to explain the PPP index in terms of two factors: the within-group PPP index, and the total-group PPP index. Suppose there are *k* mutually exclusive socioeconomic groups. The within-group PPP index measures the degree of pro-poorness of a programme within the *k*th group. It does not tell us whether targeting the *k*th group will necessarily lead to a pro-poor outcome at the national level. Since our objective is to achieve the maximum reduction of poverty at the national level, we need to see the impact of targeting the *k*th group on national poverty. To capture this effect, another PPP index for the *k*th group is proposed, called the total-group PPP index.

The total-group PPP index shows that the pro-poor policy index for the whole country is the weighted average of the pro-poor policy indices for individual groups, with weights proportional to the share of benefits received by each group. To reduce poverty at national level, applying the government programme to some groups will be more efficient than to others. This efficiency can be captured by the value of the total-group PPP index; the larger the value of the total-group PPP index the more efficient is that group in reducing national poverty. On the whole, the methodology presented can help us to identify the efficient groups from the viewpoint of improving targeting efficiency.

3 Case studies I: Thailand, Russia and Vietnam

In this section, we apply our methodology to Thailand, Russia and Vietnam. The PPP index is applied to Thailand and Russia to capture the extent to which the welfare schemes of those governments benefit the poor. For Vietnam the PPP index reflects the degree to which basic services, including education and health, are used effectively by its population.

For all three countries, the data is taken from household surveys, and the analysis is based on per capita consumption. The surveys are nationwide and cover the periods 2000, 2002 and 1997-98 for Thailand, Russia and Vietnam, respectively. The poverty lines are country-specific. A single average national poverty line is used for Vietnam, but the Thai and Russian poverty lines differ across households because they take into account the different needs of household members by gender and age, as well as spatial variations in the cost of living.[2]

[2] For a detailed discussion of Thailand and Russian poverty lines, see Kakwani (2003, 2004).

3.1 Welfare programmes in Thailand and Russia

Thailand

In recent years, the Thai government has implemented a few social welfare programmes, including social pensions for the elderly, low-income medical cards, health insurance cards, and free school lunch programmes. These are means-tested and have been designed to target low-income groups. In this section, we use the PPP index to examine whether these welfare programmes have benefited poor people.

Table 1 presents the PPP index for Thailand's social welfare programmes.[3] As can be seen from the table, all four welfare programmes have a PPP index value greater than 1. Hence, we may conclude that all four welfare programmes benefit the poor more than the non-poor. Overall, the poor have greater access to these government welfare programmes than the non-poor. Interestingly, the welfare programmes for low-income medical cards and free school lunches have higher PPP index values with respect to the severity of poverty measure. Since the severity of poverty measure gives greater weight to the ultra-poor, this indicates that the absolute benefits of low-income medical cards and free school lunches flow to the ultra-poor more than to the moderately poor.

We also calculated the PPP index for a hypothetical universal pension system. Suppose that every elderly person over 65 years of age receives a pension from the government. Is this scenario more pro-poor than the actual pension system? The PPP index indicates that although a universal pension scheme for the elderly is pro-poor—and is even more beneficial to the ultra-poor—the present pension system is far more pro-poor than the universal one. This implies that the current means-tested pension system yields more benefits to the poor than a universal pension system for those aged 65 years or more.[4]

Table 1: Pro-poor policy index for welfare programmes in Thailand, 2000

Welfare schemes	Poverty gap ratio	Severity of poverty
Social pension for the elderly	1.68	1.54
Low-income medical cards	2.02	2.12
Health insurance cards	1.29	1.25
Free school lunches	2.02	2.06
Perfect targeting	6.77	10.31
Universal social pensions (for elderly over 65 years of age)	1.21	1.24

Source: Authors' calculation based on Thailand's Household Socioeconomic Survey 2000 (National Statistics Office 2000).

[3] The PPP index was not calculated here for the headcount ratio because it required estimating the density function at the poverty line which could not be done without making parametric assumptions. Moreover, the headcount ratio is a crude measure of poverty. Our focus is on the poverty gap ratio and the severity of poverty index, which are more satisfactory measures.

[4] This analysis, takes no account of the administrative costs involved in providing mean-tested pensions.

Perfect targeting is the ideal policy for poverty reduction. In practice, it is not feasible to operate such a policy because: (i) the administrative cost is very high, and (ii) it is difficult to obtain accurate information on individuals' income or consumption, particularly in countries with large informal sectors. If the government in Thailand had succeeded in implementing perfect targeting, the PPP index would have been 6.8 for the poverty gap and 10.3 for the severity of poverty measure. Thus, although pro-poor, the Thai welfare programmes have much lower values than the values that would have been obtained with perfect targeting. This suggests that there is scope for improving the targeting efficiency of the Thai welfare programmes.

In the previous section, we mentioned two types of PPP indices by groups: the within-group PPP index and the total-group PPP index. As stated, the former measures the pro-poorness of a programme within the *k*th group, whereas the latter captures the impact of operating a programme in the *k*th group on its pro-poorness at the national level. The results for Thailand are presented in Table 2. The total-group PPP index reveals that the welfare programmes are more pro-poor in the rural areas than in the urban areas. In fact healthcare cards and free school lunches are not pro-poor in the urban areas, indicating that the government expenditures on these programmes in the urban areas did not benefit the poor more than the non-poor. It is, however, interesting to note that the within-group PPP index shows that all programmes are more pro-poor in the urban areas than in the rural areas. Thus, the total-group and within-group indices present opposite results. The main reason for this is that welfare programmes in Thailand are better targeted within the urban areas than within the rural areas. Since the concentration of poor is higher in the rural areas, the impact of targeting the rural areas turns out to be more pro-poor at the national level. Thus, the two indices provide us with two different types of information about targeting. If our objective is to reduce poverty at the national level, then the efficiency of targeting a particular group should be judged on the basis of the total-group PPP index.

Table 2: Pro-poor policy index by urban and rural areas in Thailand, 2000

	Total-group PPP index		Within-group PPP index	
Welfare schemes	urban	rural	urban	rural
		Poverty gap ratio		
Social pension for the elderly	1.13	1.76	4.41	1.31
Low-income medical cards	1.44	2.10	5.60	1.56
Health insurance cards	0.70	1.39	2.72	1.03
Free school lunches	0.81	2.21	3.15	1.64
		Severity of poverty		
Social pension for the elderly	1.18	1.60	5.42	1.17
Low-income medical cards	1.34	2.23	6.18	1.63
Health insurance cards	0.61	1.36	2.83	0.99
Free school lunches	0.73	2.27	3.37	1.66

Source: Authors' calculation based on Thailand's Household Socioeconomic Survey 2000 (National Statistics Office 2000).

Russia

Russia has a well-developed social benefits system, of which old-age pension is the largest component. Table 3 shows that out of the total population of 143.3 million, 53.6 million (37.4 per cent) are receiving some kind of government benefit.[5] Thus, the Russian social benefits system is very large in terms of population coverage. The old-age pension is the largest welfare programme, with 26.32 million recipients. The second largest programme is child allowance, benefiting 17.42 million children. The disability pension is given to 3.19 million people.

Table 3: Russian welfare systems in 2002

Welfare benefits	Beneficiaries (million)	Percentage share	Cost per month (billion rubles)	Percentage share
Old-age pension	26.32	49.08	38.74	82.79
Disability pension	3.19	5.96	3.61	7.71
Loss of breadwinner pension	1.64	3.05	1.27	2.72
Social pension	0.27	0.5	0.26	0.56
Care for children under 18	0.84	1.57	0.41	0.88
Child allowance	17.42	32.49	1.45	3.09
Unemployment benefit	0.45	0.84	0.31	0.65
Other benefits	0.95	1.77	0.2	0.42
Scholarship	2.55	4.76	0.55	1.17
All benefits	53.6	100	46.89	100

Source: Authors' calculation based on Russian Family Budget Survey 2002.

The Russian government spends 46.8 billion rubles per month on welfare programmes (excluding administrative costs), of which 38.74 billion rubles pay for pensions. Expenditure on child allowances is only 1.45 billion rubles, which equates to only 83.1 rubles per month per child. As the incidence of poverty among children is very severe, the child allowance is too small to have a significant impact on poverty among children. Overall, the average benefit level is equal to 326.5 rubles per person per month. The average lower poverty line for Russia is 1055.9 rubles per person per month, so the government pays average benefits equal to one third of the poverty line.[6]

To what extent do government benefits go to the poor compared to the non-poor in Russia? The PPP index values in Table 4 provide empirical estimates of the pro-poorness of each of the government welfare programmes that are currently implemented in Russia. As can be seen from the table, all benefits taken together have PPP values far greater than 1. Thus, we may conclude that the welfare system in Russia tends to benefit the poor more than the non-poor. More importantly, the absolute benefits of the welfare

[5] Some persons receive more than one benefit at the same time: the number is small and has been neglected here.

[6] The poverty line in Russia is not constant across households, so we calculated the average poverty line across individuals in all households.

Table 4: PPP indices for Russian welfare system in 2002

Types of government benefits	Poverty gap ratio	Severity of poverty
Old-age pension	2.20	4.13
Disability pension	2.18	4.16
Loss-of-breadwinner pension	2.09	2.40
Social pension	2.22	2.80
Care for children under 18 months	1.78	1.87
Child (under 16 years) allowance	1.19	0.79
Unemployment benefits	2.22	3.80
Other benefits	1.74	2.75
Scholarship	0.90	0.62
All benefits	2.14	3.90
Perfect targeting	3.02	5.71

Source: Authors' calculation based on Russian Family Budget Survey 2002.

system do indeed flow more to the ultra-poor than to the poor, as suggested by the higher value of PPP index (equal to 3.90) for the severity of poverty measure.[7] Table 4 also reveals that if the Russian government had implemented perfect targeting, the PPP index would have been 3.02 and 5.71 for the poverty gap ratio and the severity of poverty index, respectively. This suggests that although Russian welfare programmes are not perfectly targeted to the poor, the deviation from perfect targeting is not large.

Results for the severity of poverty index indicate that child allowances, (given to those aged below 16 years) and scholarships are not particularly pro-poor. This is evident from the fact that the PPP indices of these two programmes fall far below unity for the severity of poverty measure, suggesting that the absolute benefits of these programmes do not flow to the ultra-poor. It further suggests that these programmes may require better targeting than the current system in order to favour those far below the poverty threshold.

3.2 Health services in Vietnam

Over the past decade or so, Vietnam has enjoyed a significant improvement in its standard of living as a result of its impressive performance in growth and poverty reduction. More importantly, growth has been pro-poor, benefiting the poor proportionally more than the non-poor (Kakwani and Son 2004). In this context, it is interesting to examine whether, along with a rising standard of living and pro-poor growth, poor people benefit from the provision of health services in Vietnam.

Table 5 presents the PPP index for utilization of various health facilities in Vietnam. The results show that only community health centres have a PPP index value greater

[7] Note that the PPP index for all benefits is the weighted average of the PPP indices for all 9 welfare programmes, with the weight proportional to the share of benefits accruing to people of each programme presented in the third column of Table 3.

than 1. This suggests that the poor have greater access to community health centres than the non-poor and that community health centres play an important role in providing basic health services to the poor in Vietnam. Unfortunately, community health centres do not provide quality health services because they are generally poorly staffed and equipped. So the poor do not receive quality healthcare treatment.

Public hospitals in Vietnam provide higher quality care and are mainly used by individuals with health insurance. Utilization of government hospitals has a PPP index value far less than 1, implying that public hospitals provide greater benefits to the non-poor than to the poor. Thus, the poor have less access to the quality health services provided by public hospitals.

It is not surprising that the provision of health insurance is not pro-poor because those covered by health insurance have access to government hospitals. Moreover, coverage under the health insurance programme is more extensive for better off individuals. Having health insurance is positively correlated with the individuals' income; while the coverage rate is 9.2 per cent in the bottom income quartile, 24.5 per cent have health insurance in the top income quartile.

The results presented in Table 5 indicate that pharmacy utilization is almost pro-poor (0.96 for the poverty gap ratio). It is reasonable to assume that more highly educated individuals—and hence presumably those more aware of the risks of self-medication—avoid pharmacy visits. Pharmacy utilization therefore appears to be an inferior good for the high-income group since rich individuals go to public hospitals for their healthcare. On the other hand, pharmacy visits are a normal good for poor households.

Table 5: Pro-poor policy index for health services in Vietnam, 1997-98 (poverty gap ratio)

		Total-Group PPP index		Within-Group PPP index	
Health facilities	Vietnam	urban	rural	urban	rural
			Poverty gap ratio		
Government hospitals	0.62	0.07	0.91	0.34	0.74
Commune health centres	1.17	0.27	1.23	1.38	1.00
Regional polyclinics	0.84	0.42	0.98	2.14	0.79
Eastern medicine facilities	0.96	0.04	1.15	0.21	0.94
Pharmacies	0.96	0.26	1.16	1.29	0.94
Private doctors	0.79	0.12	0.98	0.59	0.80
Health insurance	0.50	0.08	0.79	0.40	0.64
Perfect targeting	2.86				

Source: authors' calculation based on Vietnam Living Standard Survey 1997-98.

Note: The PPP index for the severity of poverty index was calculated but not presented in this chapter. Nevertheless, the results are similar to those for the poverty gap ratio.

The total-group PPP index values in Table 5 also reveal that three health facilities—community health centres, pharmacies, and Eastern medicine facilities—are more pro-poor in rural areas than in urban areas. This suggests that government subsidies on these health services in the rural areas do benefit poor people more than the non-poor. In addition, the within-group PPP index indicates that, within the urban sector, sick and injured individuals from poor households receive far less benefits from healthcare facilities such as government hospitals and Eastern medicine facilities. By comparison, in rural areas the poor benefit more from community health centres, Eastern medicine facilities and pharmacies.

3.3 Educational services in Vietnam

In this subsection, we apply our PPP index methodology to assess educational services in Vietnam. Our prime objective is to discover the extent to which public education at primary and secondary levels is pro-poor. We also attempt to find out whether free universal education will benefit the poor more than the non-poor.

Table 6 reveals that public primary education benefits the poor more than the non-poor, and is even more pro-poor for the ultra-poor. This conclusion is consistent with the fact that net primary school enrolment increased from 87 to 91 per cent over the period 1993-98 (Nguyen 2002). Changes in the allocation of public spending on education in the 1990s could have further favoured lower levels of education. The share of public spending on education going to the poor increased from 16.5 per cent in 1993 to 18.1 per cent in 1998 (ibid.). Although public primary schools are pro-poor, other types of schools at the same level are very anti-poor. In other words, primary schools that are semi-public or sponsored by the private sector benefit better off children more than poor ones. This suggests that educational subsidies given to these types of schools are likely to benefit the non-poor more than the poor. Table 6 also shows that lower secondary education in Vietnam is not pro-poor, as indicated by the PPP index. This finding emerges consistently, irrespective of school type. At the lower secondary level, net enrolment rates more than doubled between 1993 and 1998, from 30 per cent to 62 per cent. However, for the population as a whole, 38 per cent of children aged 11-14 years old were not enrolled in lower secondary school, while 66 per cent of the poorest children in this age range were not enrolled in primary school. The disparity in enrolment rates between the richest and poorest quintiles has been highly significant over the years.

As expected, the PPP index shows that upper secondary schools in Vietnam have far more children from better off households than from poor households. This is true for all types of schools at this level. No children from poor households were enrolled in the upper secondary level schools sponsored by the private sector. Over the period 1993-98, children from the poorest quintile experienced an increase in enrolment in upper secondary schools from 1 to 5 per cent, as compared to an increase from 21 to 64 per cent for the richest quintile (Nguyen 2002).

Table 6: Pro-poor policy index for education service in Vietnam, 1997-98

School types	Primary	Lower Secondary	Upper Secondary
		Poverty gap ratio	
Public	1.29	0.79	0.37
Semi-public	0.55	0.15	0.23
Sponsored	0.63	0.51	0.00
		Severity of poverty	
Public	1.31	0.65	0.23
Semi-public	0.19	0.08	0.09
Sponsored	0.14	0.26	0.00

Source: Authors' calculation based on Vietnam Living Standard Survey 1997-98.

Note: The figures in the table do not separate the benefits of public and private expenditures going to individuals. However, they tell us which services additional public subsidies should go.

Table 7: Pro-poor policy index if universal education is provided in Vietnam

	Poverty gap ratio	Severity of poverty
Primary	1.28	1.33
Lower secondary	1.08	1.06
Upper secondary	0.91	0.85

Source: Authors' calculation based on Vietnam Living Standard Survey 1997-98.

We now use the PPP index to compare universal education with the current system. Table 7 shows that universal education at primary and lower secondary levels in Vietnam would provide more benefits to poor children than to the non-poor. The degree of pro-poorness of universal access to primary education among children aged 6 to 10 years old is almost as high as actually achieved by the current education system. Similarly, if lower secondary education is made universal for children aged between 11 and 14 years, the outcome is pro-poor. This contrasts with the actual current situation. The PPP index is 0.79 for lower secondary education, compared to 1.08 if lower secondary education were universal. At higher levels, universal provision is not likely to deliver pro-poor outcomes, as indicated by a PPP index for upper secondary schooling of less than unity. Although, universal education at higher levels would not be pro-poor, it would encourage poor individuals aged between 15 and 17 to enrol for upper secondary schooling and hence obtain greater access to higher education compared to the current situation in Vietnam.

3.4 Basic infrastructure services in Vietnam

Infrastructure services make significant contributions to people's wellbeing. Basic services, such as piped water and sanitation (for example, sewerage systems and flushing toilets), have a direct impact on health status and overall wellbeing. Access to other services, such as electricity and telephones, helps households increase their prospects for income generation. A number of studies reveal that household access to basic services has a high and negative correlation with poverty.

As shown in Table 8, the benefits generated from all types of basic services accrue to the non-poor more than to the poor in Vietnam. Poor households in general have much

greater access to piped water and electricity than sanitary systems; the PPP index for water and electricity are 0.86 and 0.80, respectively, when measured by the poverty gap ratio, compared to only 0.10 for sanitary facilities. As suggested in Table 8, the benefits from sanitary services (waste collection and flushing toilets in this case) are highly skewed in favour of the non-poor. The benefits of all types of basic services are lower for the severity of poverty measure, suggesting that the ultra-poor have even less access to infrastructure services than the poor.

Table 8: Pro-poor policy index for basic infrastructure service in Vietnam, 1997-98

Access to basic infrastructure services	Poverty gap ratio	Severity of poverty
Electricity	0.80	0.71
Piped and tap water	0.86	0.81
Collected waste	0.10	0.07
Sanitary toilets	0.10	0.05

Source: Authors' calculation based on Vietnam Living Standard Survey 1997-98.

4 Case studies II: 15 African countries

This section makes use of household micro datasets from 15 African countries obtained from the African Household Survey Data Bank of the World Bank. The countries and years of the survey are: Burundi 1998, Burkina Faso 1998, Ivory Coast 1998, Cameroon 1996, Ethiopia 2000, Ghana 1998, Guinea 1994, Gambia 1998, Kenya 1997, Madagascar 2001, Mozambique 1996, Malawi 1997, Nigeria 1996, Uganda 1999, and Zambia in 1998. National poverty lines for the 15 countries are obtained from various poverty assessment reports. These poverty lines were originally very crude and did not take account of the different needs of household members by age and gender. Moreover, the poverty lines were not adjusted for the economies of scale which exist in large households. To overcome these shortcomings, Kakwani and Subbarao (2005) made some modifications to the national poverty lines, taking into account the different needs of household members and economies of scale.

4.1 Targeting children: targeting versus universal

According to Coady et al. (2002), more than a quarter of targeted programmes in all developing countries had regressive benefit incidence. For instance, they found that the poorest 40 per cent received less than 40 per cent of poverty alleviation budget expenditures. Such ineffective targeting of poor households suggests that the overall impact of such spending on poverty has been smaller than it could have been. Moreover, the administrative cost of implementing any targeted programme is very high. Much of the budget is spent on simply getting the resources to poor families. Consequently, the cost per unit of income transferred can be substantial. Transfer programmes are administratively complex as they require resources to undertake targeting of transfers and to monitor the recipients' actions. In this context, one might argue for a scenario of universal transfers.

In this section, we estimate the PPP indices under a universal transfer programme for children aged between 5 and 16 years old. Under such a programme, every child in this age group is assumed to receive a fixed transfer irrespective poverty status. The results are presented in Figures 21.1 and 21.2 and Table 9. From Figures 21.1 and 21.2, we

Figure 1: Pro-poor policy indices under universal transfers and perfect targeting (poverty gap ratio)

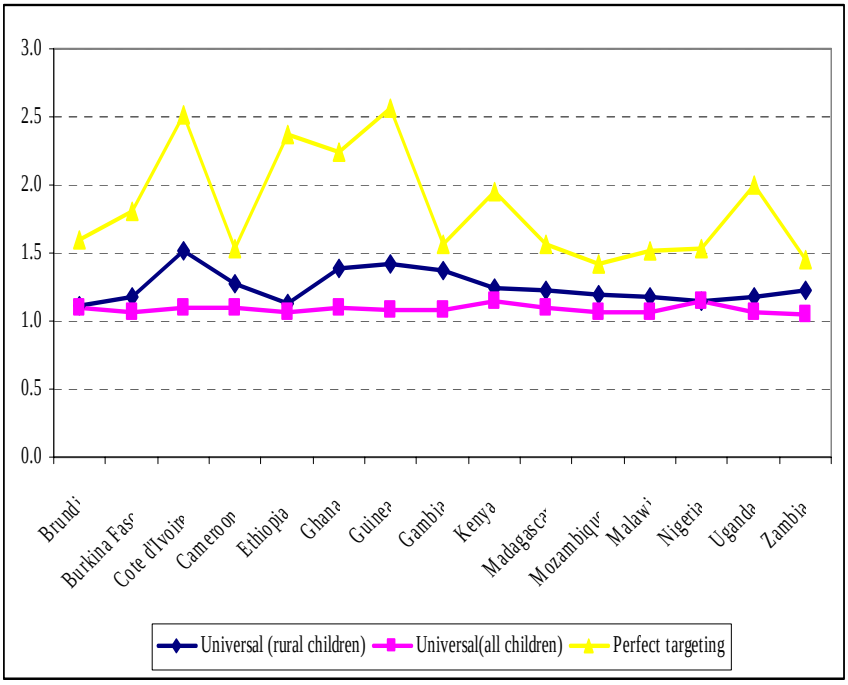
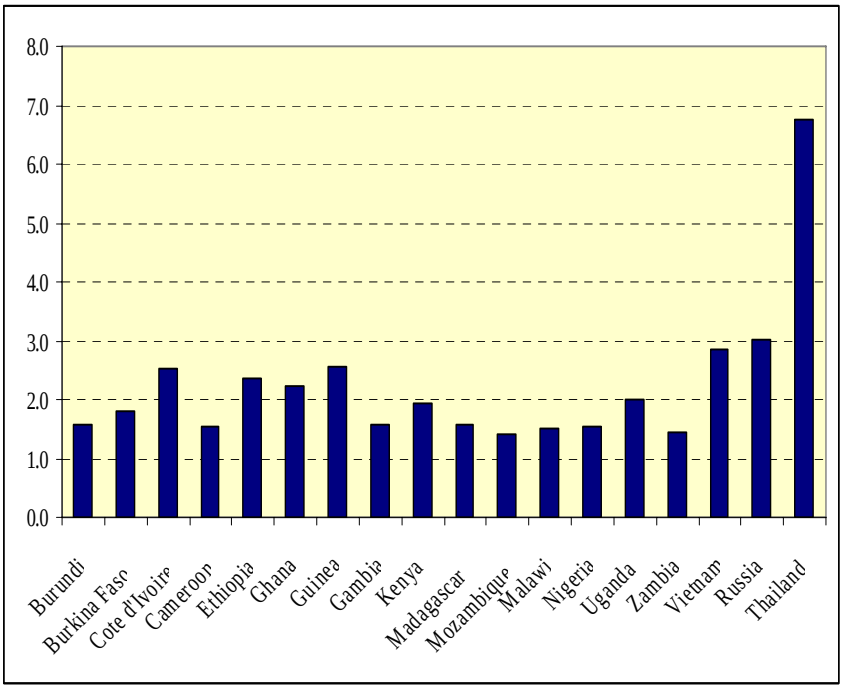


Figure 2: PPP indices under perfect targeting for 18 countries (poverty gap ratio)



note that the PPP index values with perfect targeting are quite small for the 15 African countries compared to the PPP index values in Thailand, Russia, and Vietnam. In fact, the PPP indices with perfect targeting differ little from the indices associated with universal transfers. This suggests that perfect targeting may not be needed in cases such as these 15 African countries, where poverty is extremely high.

Table 9 carries two important messages. First, the results indicate that universal transfers will provide more absolute benefits to children from poor families than those from non-poor families. Second, a universal transfer scheme is likely to bring about an even more pro-poor outcome if implemented in rural areas where most poor children live. One exception is in the case of Nigeria where, in contrast, poverty is widespread in both urban and rural areas.

One possible criticism is that we do not have an actual scenario which allows targeted transfers to be compared with universal transfers. Nevertheless, the main implication emerging from the PPP index is that if a transfer is given to every child aged between 5-16 years old, it is likely to provide more absolute benefits to poor children, particularly in rural areas. Furthermore, the analysis suggests that universal targeting of children may not be a bad policy option, particularly in rural areas. It may be more cost effective, as targeting only a small subgroup of children requires a high level of administrative costs to be devoted to identifying the poor.

Table 9: Pro-poor policy index for universal transfers to rural and urban areas

Country	Poverty gap ratio				Severity of poverty			
	Universal targeting			*Perfect targeting*	*Universal targeting*			*Perfect targeting*
	rural	urban	total		rural	urban	total	
Burundi	1.12	0.28	1.09	1.59	1.16	0.23	1.12	2.11
Burkina Faso	1.18	0.43	1.07	1.81	1.21	0.38	1.08	2.53
Cote d'Ivoire	1.51	0.60	1.10	2.51	1.63	0.45	1.09	3.63
Cameroon	1.28	0.60	1.09	1.54	1.32	0.50	1.08	2.05
Ethiopia	1.13	0.73	1.07	2.37	1.14	0.74	1.09	3.42
Ghana	1.39	0.54	1.09	2.24	1.47	0.42	1.10	3.03
Guinea	1.42	0.37	1.08	2.56	1.47	0.31	1.10	3.40
Gambia	1.37	0.65	1.08	1.56	1.56	0.39	1.08	2.00
Kenya	1.25	0.29	1.14	1.95	1.27	0.18	1.16	2.53
Madagascar	1.22	0.65	1.09	1.57	1.29	0.57	1.13	1.95
Mozambique	1.19	0.62	1.07	1.42	1.24	0.59	1.11	1.77
Malawi	1.17	0.18	1.07	1.52	1.21	0.09	1.09	1.93
Nigeria	1.14	1.13	1.14	1.54	1.12	1.21	1.16	1.91
Uganda	1.17	0.25	1.06	2.00	1.20	0.19	1.08	2.75
Zambia	1.23	0.76	1.05	1.45	1.34	0.57	1.06	1.80

Source: Authors' calculation based on 15 African household surveys.

5 Conclusions

Kakawni and Son (2005) proposed a new index called the pro-poor policy (PPP) index. This index measures the pro-poorness of government welfare programmes and basic service delivery in education, health and infrastructure. It is an attempt to introduce a methodology for assessing the techniques of targeting in order to make them more effective.

The conclusion reached was that the targeting efficiency of a particular group should be judged on the basis of the total-group PPP index. If our objective is to reduce poverty, then social transfer programmes should be designed so that they lead to the maximum reduction in poverty under given resource constraints. To achieve this objective, perfect targeting is the ideal solution. Two prerequisites are necessary: the poor get all the benefits; and the benefits given to the poor are proportional to their income shortfalls from the poverty line. To implement such a programme, we must have detailed information of people's income or consumption expenditure. Such detailed information and the administrative ability to use it are, of course, not present in most developing countries. Therefore, policymakers have to resort to a form of proxy targeting in which transfers are based on easily identifiable household characteristics. However, proxy targeting can never achieve complete targeting success. This study attempts to assess the targeting efficiency of government programmes by discovering how good is proxy targeting compared to perfect targeting. Government programmes may be defined as pro-poor if they provide greater benefits to the poor than to the non-poor.

Using micro household data, the methodology was applied to Thailand, Russia, Vietnam and 15 African countries. The major conclusions emerging from our empirical analysis can be synthesized as follows. First, all four welfare programmes implemented recently by the Thai government were found to be pro-poor. In particular, welfare programmes designed to help the very poor—including low-income medical cards and free school lunches—were shown to be highly pro-poor, benefiting the ultra-poor more than the poor. In addition, a universal pension for those over 65 years of age was found to be less pro-poor than the present old-age pension system. This suggests that the Thai government should continue with its present old-age pension scheme.

Second, the study found that the welfare system in Russia tends to benefit the poor more than the non-poor. Moreover, the absolute benefits of the welfare system flow more to the ultra-poor than to the poor, as suggested by the PPP index value for the severity of poverty index, which is higher than that for the poverty gap ratio. The study found the Russian welfare programmes to be reasonably well-targeted, as is evident from the fact that the PPP indices of welfare programmes are quite close to (but still lower than) the index value expected with perfect targeting. The study also found that the child allowance and scholarship programmes are not pro-poor for the ultra-poor in particular.

This suggests that these programmes may require better targeting than the current system in order to favour those living far below the poverty threshold.

Third, basic services—health and education—in Vietnam were found to be mostly anti-poor. Although government hospitals provide the highest quality of healthcare, the poor are much less likely to use them. This is not true for community health centres, which appear to provide more services to individuals from poor households. Unfortunately, community health centres do not provide quality health services because they are poorly staffed and equipped. Thus, on the whole, the poor in Vietnam have less access to quality healthcare. Public primary schools were found to be pro-poor—this was due partly to the increase in public spending on education for the poor in the 1990s. However, secondary education is not pro-poor. This suggests that Vietnam's universal education at primary and lower secondary levels could provide more benefits to students from poor households, although this is not true for higher levels of education.

Fourth, simulations of universal transfers to school-age children in 15 African countries indicate that universal transfers provide more absolute benefits to children from poor families than to those from non-poor families. In addition, a universal transfer scheme was found to be likely to have an even more pro-poor outcome if implemented in the rural areas, where most poor children reside. This finding is true for all the countries except Nigeria, where poverty is widespread in both urban and rural areas.

Finally, the study found that in the 15 African countries, the value of PPP index with perfect targeting was quite small compared to the index values for Thailand, Russia and Vietnam. The index value of perfect targeting for Thailand was far greater than for Russia and Vietnam. For the African countries the PPP indices under perfect targeting differed little from the indices corresponding to universal provision. Therefore, we conclude that perfect targeting is not necessary for cases such as these 15 African countries where poverty is extremely high.

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