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Micro-simulation analysis of social protection interventions in Vanuatu

Key points

- A combined package of benefits to children under 5 and older people over 65, costing 1.2% of GDP, would reduce Vanuatu's poverty gap by 20%.
- Either a universal child benefit on its own or a universal pension on its own would have pro-poor impact, with the child benefit being slightly more pro-poor, and having marginally higher poverty-reducing efficiency.
- A categorical cash transfer (targeted to everyone in a particular age-group, such as older people or young children) can reduce poverty more efficiently than a poverty-targeted transfer.
- The efficiency of categorical versus poverty-targeted approaches depends on trade-offs between targeting costs and errors.

Introduction

Micro-simulation models are tools for evidence-based analysis of social policy interventions. Rooted in representative household surveys of a country's population, the models paint a picture of income, expenditure and poverty levels. They enable researchers to simulate the impact of existing and potential new social policy interventions. This brief summarises the results of a baseline micro-simulation analysis for Vanuatu, analysing the impact of various social protection interventions on income levels, poverty headcounts and poverty gaps, nationally and by demographic group (Samson 2012). The models employ Household Income and Expenditure Survey (HIES) data from Vanuatu's 2008 HIES.

Social protection: costs and impacts on poverty

The models analyse variations on categorically targeted cash transfers to children and older people (see Figure 1). The least expensive package—providing a benefit equal to 10% of the poverty line to all children under 5 and 25% of the poverty line to all older people over 65—costs 0.4% of GDP, or 1.4% of government expenditure, in Vanuatu. This is a low amount, mainly because the relatively low poverty line in Vanuatu leads to a low modelled benefit level. Overall, this least expensive social protection package reduces Vanuatu's poverty gap by 7%, the poverty gap for households with young children by 10% and the poverty gap for households with older people by 17%.

Doubling the benefits package—to 20% of the poverty line for young children and 50% of the poverty line for older people—doubles the costs, but still only to a low figure of 0.7% of GDP. Tripling the package to 30% of the poverty line for young children and 100% of the poverty line for older people leads to roughly proportional increases in costs and poverty reducing impacts.

The cost is 1.2% of GDP in Vanuatu (well below the middle of the range for developing country spending on social assistance), and this would reduce the poverty gap by 20%. The micro-simulation exercise thus demonstrates the feasibility of starting with a small but affordable package of benefits and scaling up as resources and political support will allow.

The micro-simulation exercise also separately tested two singular cash transfer benefits in Vanuatu: a child benefit equal to 30% of the poverty line for all children under 5 years of age; and a social pension equal to 100% of the poverty line for all people 65 years of age and older. The child benefit costs around 0.7% of GDP and the stand-alone social pension around 0.5% of GDP; correspondingly the poverty gap reduction from the social pension alone (8%) is less than the impact of a child benefit on its own (11%). However, it is notable that the social pension would reduce the poverty gap of those households with over-65s by an impressive 48%.

Figure 1. Cost and poverty impact of five different social protection packages

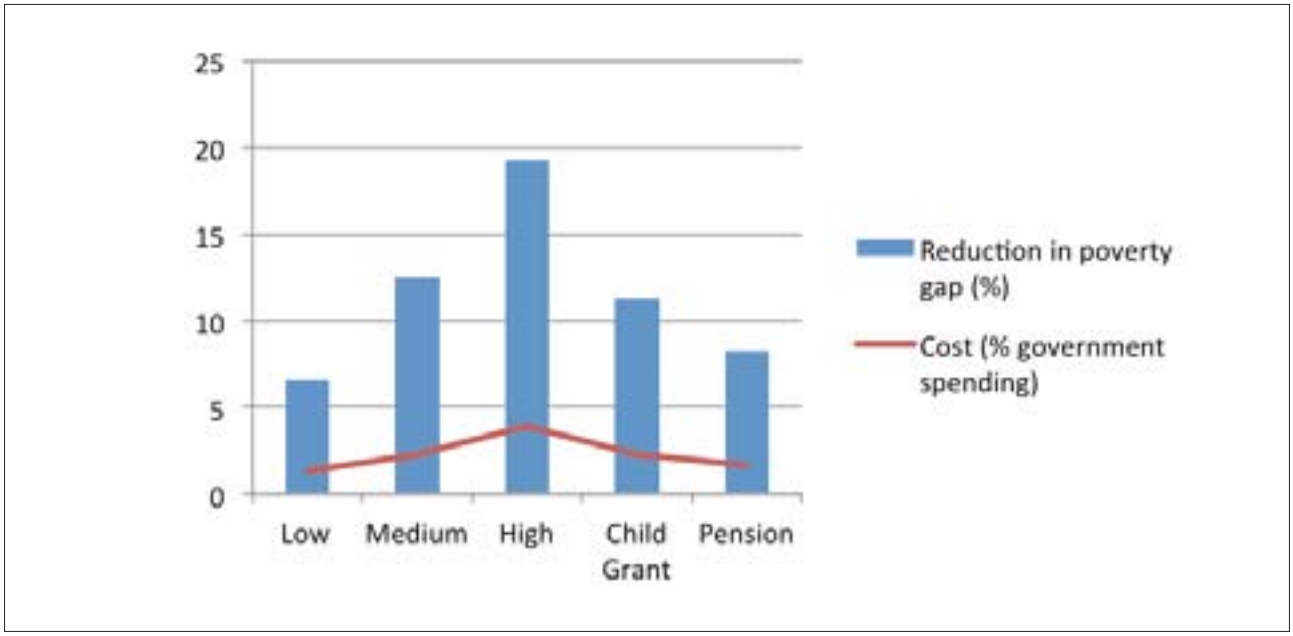
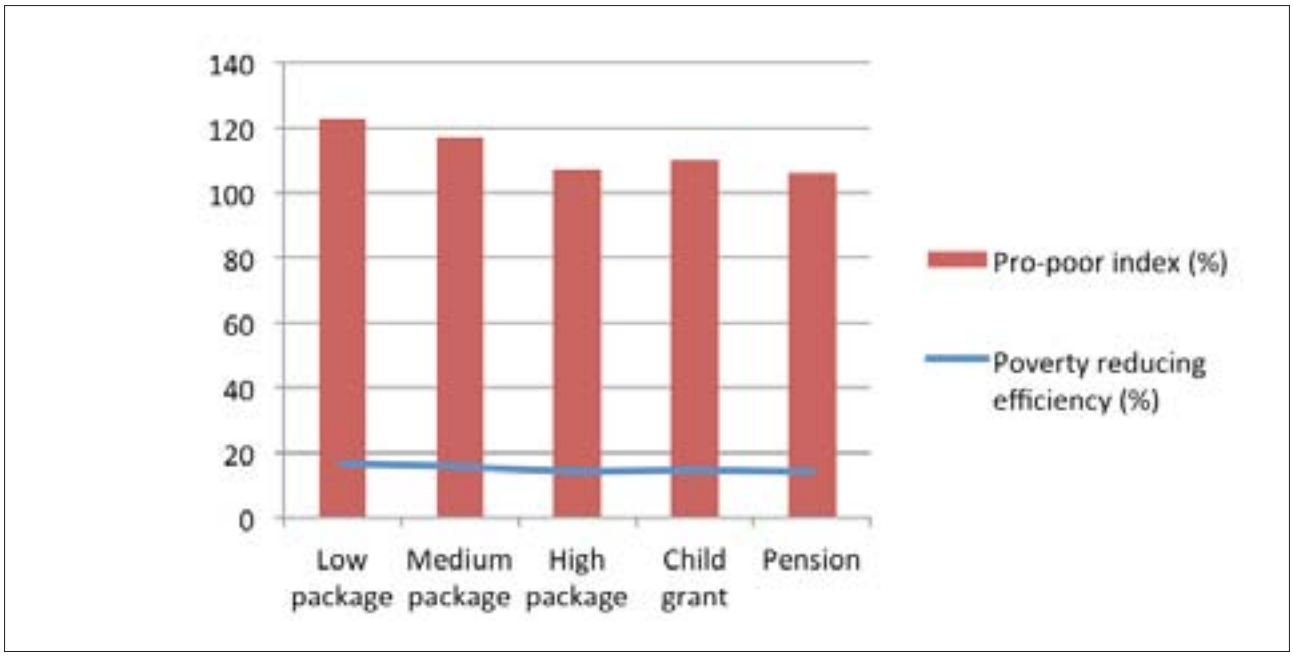


Figure 2. Poverty reducing efficiency and pro-poor impact



Comparing poverty reduction efficiency and impact

Poverty reducing efficiency and pro-poor indexing measure the efficiency and impact of social protection interventions. Poverty reducing efficiency looks at how much the poverty gap is reduced per unit of social protection expenditure. Pro-poor impact can be indexed by dividing poverty-reducing efficiency by the national household poverty rate. A benefit to everyone will have a neutral index value of 100%. The more the index value exceeds 100%, the greater the pro-poor impact.

As Figure 2 shows, the poverty-reducing efficiency of the combined packages falls slightly as their value increases, since the grants are now large enough to lift more people out of poverty, but the packages remain pro-poor. In each case, the poverty reduction impact is much larger than would be the case with a benefit to everyone.

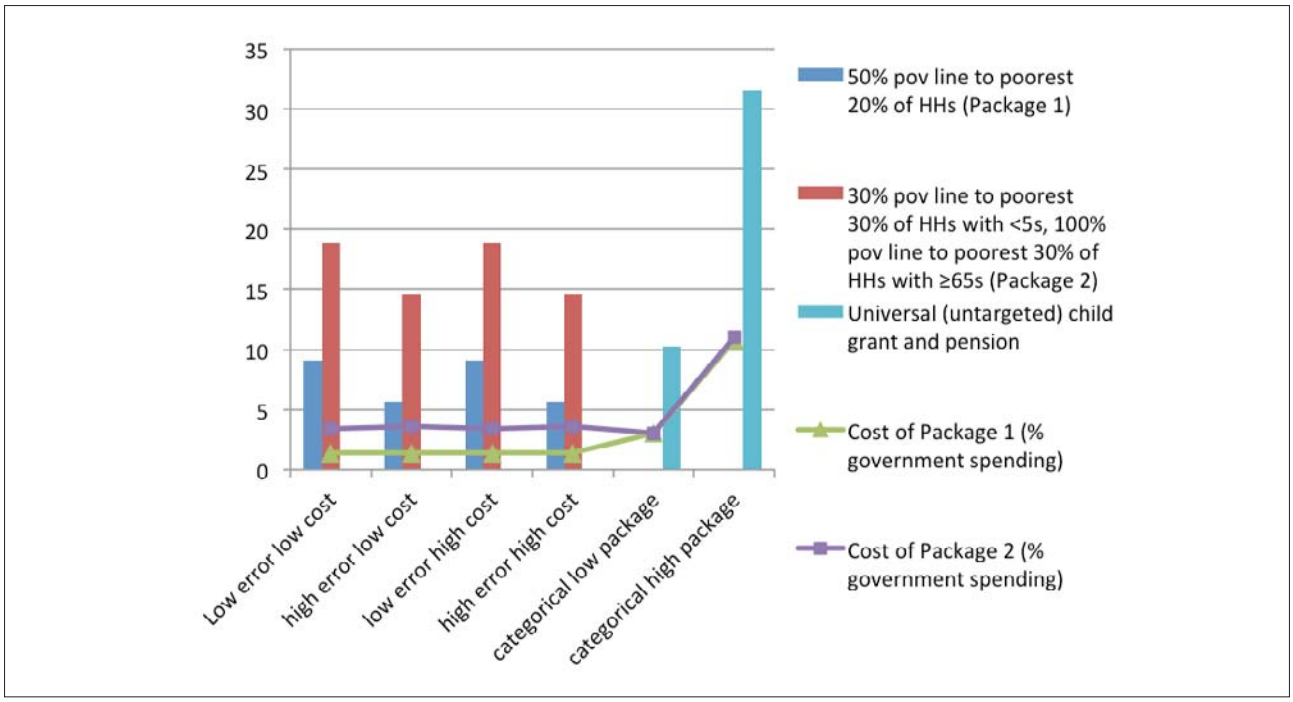
These categorical benefits, while not directly targeting the poor, reach poor households proportionally more than the distribution of poor households in the population because households with young children or older people tend to be much poorer than other households. The child benefit alone has a greater pro-poor impact, and its poverty-reducing efficiency is higher than those of the most generous of the three combined packages. On the other hand, the poverty-reducing efficiency and impact of the social pension are lower than any of the other interventions because households with people 65 or older are only slightly poorer than other households and less represented overall in the population.

Categorical or poverty-targeted?

The micro-simulation analysis also evaluated two types of poverty-targeted cash transfers for Vanuatu, testing different assumptions about targeting costs and errors (see Figure 3):

- Package 1: benefits equal to 50% of the poverty line targeted to the poorest 20% of households; and
- Package 2: benefits targeted to children (30% of the poverty line) and older people (100% of the poverty line) in the poorest 30% of households.

Figure 3. Per cent reduction in the poverty gap of different targeting options and packages[1]



Not surprisingly, effective targeting with low costs and low errors yielded the highest possible efficiency in poverty reduction. However, this is an overly optimistic scenario—minimising targeting errors of inclusion and exclusion requires an expensive mechanism with a range of costs, including administrative, individual, social, political, economic and others.

A more realistic trade-off involves choosing between a low-cost targeting mechanism that yields relatively high targeting errors and a higher-cost mechanism that minimises errors. In this context, a purely categorical package of benefits reduces poverty more efficiently than in at least one of these 'realistic' scenarios, which demonstrates that a categorical cash transfer may reduce poverty in a country more efficiently than a poverty-targeted transfer. The critical determining factors are targeting effectiveness (measured by inclusion and exclusion errors) and the full costs of targeting. The fourth option—targeting with high costs and high errors—not surprisingly performed the worst.

In the absence of credible evidence on targeting costs and likely errors—evidence that does not exist for Pacific countries—it is not possible to precisely identify which targeting approach will be most effective and efficient in Vanuatu. However, this analysis underscores the importance of paying attention to targeting costs and errors, because they determine the relative efficiency of categorical versus poverty-targeted approaches.

References:

Samson, M 2012, 'Micro-simulation analysis of social protection interventions in the Pacific', AusAID, Canberra, Australia

Endnotes:

1 Poverty gap reductions do not reflect differences in administrative costs because the costs shown in all cases are those of the actual benefits, and administrative costs are treated as a separate layer. This means the poverty gap is reduced by the same amount in high cost and low cost scenarios: what changes is the poverty reducing efficiency.

Images on first page from left to right: Solomon Islands, July 2007. Gizo Island tsunami recovery. Christaina Edned and nephews Kamoa (2) and Liam (4). Photo: Rob Maccoll for AusAID

Social welfare beneficiaries receive training on their new Westpac bank cards in Fiji. Photo: Mere Senikau/Pacific Financial Inclusion Program