Exclusion by design:

An assessment of the effectiveness of the proxy means test poverty targeting mechanism

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Abstract

This paper assesses the effectiveness of the proxy means test (PMT) targeting methodology. It brings together international evidence to show that it is both inaccurate and arbitrary. The mechanism suffers from high in-built design errors, additional errors introduced during implementation, and infrequent surveys, meaning that it cannot respond to the dynamic nature of household incomes. It also generates conflict and divisions within communities, ultimately weakening their cohesion. The paper argues that the PMT is embedded within a neoliberal paradigm that favours low taxation and limited social spending and concludes by noting that only by increasing investment in inclusive lifecycle national social protection systems can all of those living in poverty effectively access social security.

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Executive Summary

In recent years, the proxy means test (PMT) has become the targeting methodology of choice across many low and middle income countries. It has many powerful advocates who claim that it 'can accurately and cost-effectively target the chronic poor.' Yet, this is not the experience of communities around the world who experience the proxy means test as arbitrary and inaccurate.

The aim of this paper is to describe the PMT and assess whether it is, in fact, an accurate and effective targeting mechanism, in line with the claims of its advocates. The paper is based on an analysis of a range of quantitative datasets, a comprehensive literature review, and first-hand experience and research by the authors.

While conventional means tests assess eligibility for social assistance schemes by verifying whether an individual's or household's *actual* financial resources fall below a predetermined threshold, the PMT attempts to *predict* a household's level of welfare. The indicators of welfare used in a PMT are derived from statistical analysis of national household survey datasets and are usually based on demographics, human capital, type of housing, durable goods, and productive assets.

A range of studies have reported that PMTs generate high exclusion errors, ranging from around 50 per cent to 93 per cent. These errors are confirmed by qualitative research, with many studies reporting complaints by community members who find many of those living in extreme poverty excluded by the PMT, while many they regard as affluent are included. The errors from the PMT derive from a range of sources:

- A key failing of the proxy means test is that it incorporates high in-built design errors. While the proxies used are meant to predict household incomes, the accuracy of PMT formulae is relatively limited, even when assessed against the same household survey from which they were derived. Most PMTs used in developing countries only explain around half of the variation in consumption between households so that, by design, they only weakly predict a household's level of poverty. As a result, design errors are high: for example, when a programme is targeted at the poorest 10 per cent of the population, the in-built exclusion error tends to be around 60 per cent, while it is around 50 per cent at 20 per cent coverage. The selection of recipients is also arbitrary.
- Further errors are introduced into the PMT during implementation. While it is often assumed that it is relatively easy to survey households and accurately collect information, in reality surveys are challenging to implement, introducing further errors into the PMT. There are many examples of enumerators taking short-cuts when undertaking surveys and it is also common for respondents to be less than truthful.
- Household composition, income and consumption are all highly dynamic yet PMT surveys are usually undertaken infrequently, often every five years or more. As a result, the accuracy of PMT surveys degrades rapidly, introducing further significant errors into the targeting process. Many households that may have been 'correctly targeted' initially may become 'inclusion errors' in future years, as a result of improved circumstances. However, anyone falling into poverty between surveys would be excluded from accessing social protection no matter how challenging their circumstances. Indeed, the static nature of the PMT methodology means that programmes using it cannot function as safety nets.

Despite the high errors associated with PMTs, there are no examples of effective grievance mechanisms that would allow people to appeal their exclusion. If people could appeal their exclusion on the basis of their poverty, the high errors would mean that over

half of the intended beneficiaries would be eligible to appeal. As a result, if appeals mechanisms are put in place, they tend to be restricted so that the key problem – the design error within the PMT – cannot be challenged.

There is good evidence that proxy means tests cause social conflict in communities, weakening their cohesion, largely as a result of people's perception of them as lotteries. Community members cannot understand why some people living in poverty are selected while others who are equally deserving are excluded. The cohesion of communities is one of their strongest assets. It should, therefore, be of concern that governments and development agencies actively undermine this cohesion by generating division and conflict through the use of a proxy means test.

PMTs are embedded within a neoliberal paradigm, which prioritises low taxation and limited social spending and, therefore, favours targeting those living in extreme poverty as a means of reducing costs. Indeed, PMTs would not be required within a more effective and inclusive – albeit more expensive – approach to social security and is inimical towards the Social Protection Floor approach which is based on progressively realising the right to social security for all. The PMT is, in effect, contrary to a rights-based approach to social protection. A basic fact in targeting is that higher coverage of programmes reduces the exclusion of those living in poverty. So, inclusive schemes are always going to be more effective in reaching those living in poverty than schemes targeted at the 'poor.'

In conclusion, even though the PMT methodology is often promoted as a sophisticated and effective targeting mechanism for social assistance programmes for the 'poor,' it is nothing of the sort. In contrast, it is best understood as a ***rationing*** mechanism, attempting to select households in a context of limited resources in a moderately 'pro-poor' manner, while excluding the majority of those in need. The PMT is a great example of how targeting 'the poor' results in poor quality programmes. Ultimately, the most effective means of combatting exclusion errors and reaching those living in poverty is to build comprehensive and inclusive lifecycle national social protection systems. This implies a shift of paradigm from a narrow poverty targeted neoliberal model of social protection to one that recognizes the value of social investment and redistribution, with governments significantly increasing their social protection spending and expanding coverage.

Acronyms

APIS	Annual Poverty Indicators Survey (Philippines)
BISP	Benazir Income Support Programme (Pakistan)
BLT	Bantuan Langsung Tunai (Indonesia)
CT-OVC	Cash Transfer for Orphans and Vulnerable Children (Kenya)
EICV3	Integrated Household Living Conditions Survey 3 (Rwanda)
GHS	General Household Survey (South Africa)
HSNP	Hunger Safety Net Programme (Kenya)
ID	Identification/Identity/Identifier
NISR	National Institute of Statistics Rwanda
PKH	Program Keluarga Harapan (Indonesia)
PMT	Proxy Means Test
SMERU	Social Monitoring and Early Response Unit (Indonesia)
TNP2K	The National Team for the Acceleration of Poverty Reduction (Indonesia)
TSA	Targeted Social Assistance
WMS	Welfare Monitoring Survey (Georgia)

1. Introduction

In recent years, a growing number of developing countries have adopted the proxy means test (PMT) methodology to select beneficiaries for their social assistance schemes, believing it to be the best mechanism available for identifying households living in poverty. The methodology has powerful and influential advocates, with a range of publications arguing its many supposed merits: for example, a recent publication by the World Bank to promote the proxy means test claims that it 'can accurately and cost-effectively target the chronic poor'[1] (del Ninno and Mills, 2015:20).

Yet, this belief in the PMT's accuracy is frequently not shared by those subjected to the mechanism. As a local government official implementing Kenya's Cash Transfer for Orphans and Vulnerable Children (CT-OVC) explained – when reflecting on the high level of inaccuracy of the PMT – the methodology was 'beyond understanding' (Cosgrove et al, 2011). Many experience the PMT as a form of lottery or put the result down to luck or the random choice of a computer. For example, in Nicaragua, Adato and Roopnaraine (2004) noted:

'...the targeting process as a whole is poorly understood at the community level in both geographical- and household-targeted communities. When asked why some households were beneficiaries and others not, informants offered a range of explanations, from divine intervention to a random lottery. For example, one informant from a geographically-targeted community noted: *"Well, some people wonder why they weren't targeted even though they live in this same area. So we tell them that the Bible says that many are called but few are chosen."*'

The aim of this paper is to provide a simple explanation of the PMT and assess whether it is an accurate and effective targeting mechanism, in line with the claims of its advocates. We will show that, in reality, the PMT exhibits significant weaknesses and its characterisation as a lottery is a reasonable assessment of its efficacy. This paper builds on an earlier more detailed report published by Australian Aid which offered an initial assessment of the PMT – see Kidd and Wylde (2011) – while offering additional insights and evidence.

2. Description of the proxy means test methodology

Conventional means tests assess eligibility for social assistance schemes by verifying whether an individual's or household's *actual* financial resources fall below a predetermined threshold. The PMT methodology, on the other hand, tries to *predict* a household's level of welfare using a statistical model. It was developed to address the concern that undertaking a conventional means test based on measuring incomes would be difficult in developing countries, since only a small proportion of the population are in the formal economy, meaning that governments cannot easily obtain information on their incomes.

The indicators – or 'proxies' – used in a PMT formula and their weights are derived from statistical analysis of national household survey datasets.[2] They are meant to correlate

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[1] See also Leite (2014) who makes the same claim.

[2] The most common approach is linear regression with ordinary least squares (OLS) using household consumption as the dependent variable. The independent variables in a PMT formula are usually chosen on the basis of an iterative process that evaluates their predictive power, that is, how closely they are correlated with household consumption. Other techniques for

well with poverty and are usually based on: demographics (such as age and number of people in the household); human capital (such as level of education of the household head); type of housing (such as the type of roof, walls, floor and toilet); durable goods (such as whether a household has a radio, refrigerator or television); and productive assets (such as whether a household owns animals or land). Since the PMT requires much less information to be collected from households than would be required to undertake an accurate means test among those in the informal and subsistence economy, it is cheaper to implement than a conventional means test. It is also argued that, when compared to reporting on incomes, households would be less able to manipulate their responses, since the information provided would be easy to verify.

Once the formula has been designed, a survey of households is undertaken to collect the information required for calculating their PMT scores. In some countries, this is undertaken as a census with enumerators visiting as many households as possible nationwide or within a particular region: in Pakistan, for example, the Benazir Income Support Programme (BISP) managed to interview 85 per cent of households while, in Indonesia, only 40 per cent of households were covered. It is often expected that a survey of a single household will take around 20 minutes, so that an individual surveyor can reach around eight households per day (when travel time, revision of the survey form and quality assurance are taken into account). Alternatively, as in Georgia, households can apply for a programme on an on-demand basis and are subsequently visited by an enumerator who assesses them using the scorecard. This is a more intensive and, therefore, expensive process.

3. Accuracy of the proxy means test

Despite the significant level of advocacy in favour of the proxy means test, there is surprisingly little robust evidence on its targeting effectiveness. However, results are emerging from a growing number of countries around the world on the level of exclusion and inclusion errors generated by proxy means tests, following their implementation, all of which are very high:

- In Indonesia, Alatas *et al* (2016) found that 93 per cent of the poorest 5 per cent of households in the *Program Keluarga Harapan* (PKH) conditional cash transfer scheme were excluded.
- In Northern Kenya, a recent study by Oxford Policy Management has indicated that the targeting of the Hunger Safety Net Programme (HSNP) is only slightly better than random selection, with 62 per cent of the target population of the poorest 26 per cent of households excluded[3] (Silva-Leander and Merttens, 2016).
- In Mexico, the exclusion error on the *Oportunidades* programme was estimated to be around 70 per cent, against an intended coverage of the poorest 20 per cent of the population (Veras et al, 2007).
- In Cambodia, around 56 per cent of households living in poverty were excluded by the ID-Poor PMT targeting mechanism (World Bank, 2011).

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determining weights such as principal component analysis or quantile regressions are less often used in practice. This paper focuses mostly on regression-based PMTs.

[3] Ironically, Oxford Policy Management were also the institution that recommended the use of the PMT (Hurrell and Sabates-Wheeler 2011) although Development Pathways had argued for moving to a lifecycle mechanism, which would have been just as effective in reaching those living in extreme poverty – given that almost everyone in the area was already in extreme poverty – and much better understood and accepted by communities (Cosgrove *et al* 2011).

- In Ecuador, around 60 per cent of those living in extreme poverty – the poorest 8 per cent of the population – were excluded by the *Bono de Desarrollo* Programme, despite the programme reaching around 20 per cent of the population.[4]

One of the most accurate proxy means test belongs to the Targeted Social Assistance (TSA) programme in Georgia, where the exclusion error is 'only' around 50 per cent, when measured against the intended coverage of reaching the poorest 15 per cent of households (Kidd and Gelders, 2016a). However, when the accuracy of the TSA is assessed against household income rather than consumption, targeting accuracy falls considerably: Figure 1 shows how the coverage of the poorest deciles of the population is very low – with an exclusion error of around 66 per cent - when assessed against income.

Figure 1: Coverage of the Targeted Social Assistance (TSA) programme in Georgia in 2013, when measured against consumption and income deciles
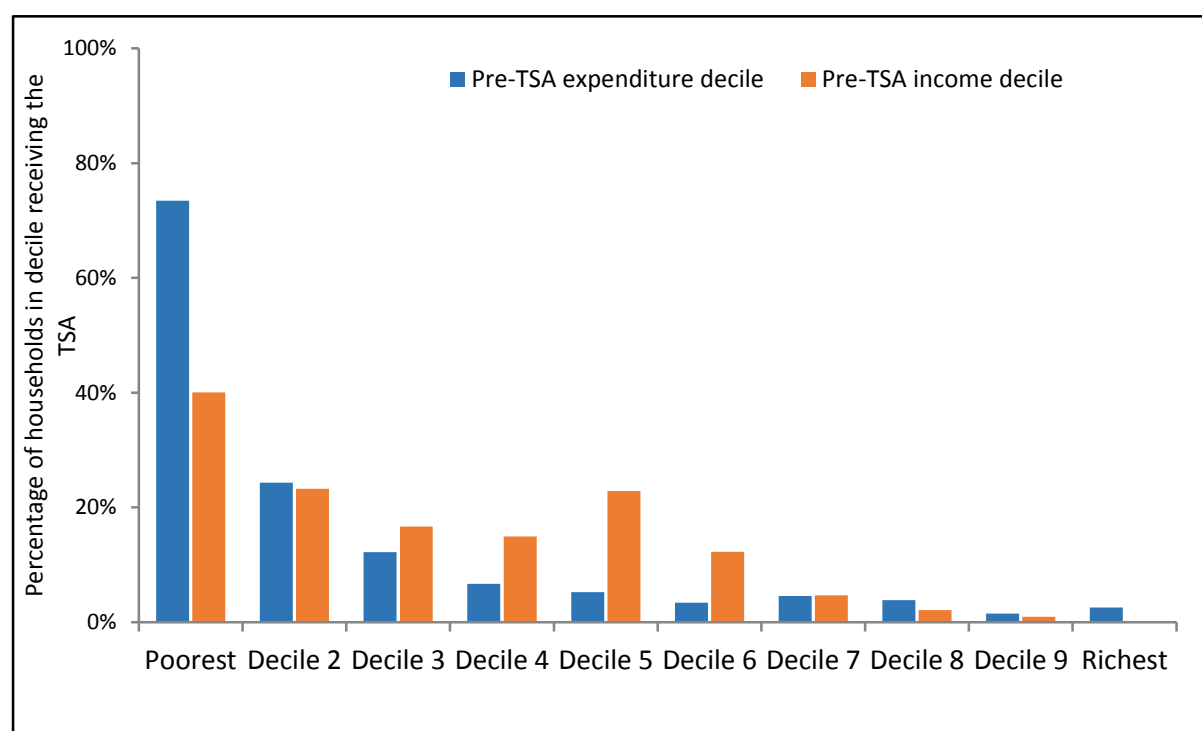
Source: Kidd and Gelders (2016a).

In Indonesia, the World Bank undertook a pilot targeting exercise to demonstrate the effectiveness of the proxy means test mechanism (Alatas et al, 2012). As indicated by Figure 2, the PMT excluded 51 per cent of the intended target group of the 30 per cent poorest households, alongside significant leakage to those in the richest 70 per cent of households, thereby indicating its inefficacy in addressing so-called inclusion errors. So, it would appear that, even when administered at a local scale with significant resources, the PMT is still highly inaccurate.

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[4] http://www.planv.com.ec/historias/sociedad/6-cada-10-pobres-extremos-no-reciben-el-bono. Accessed on 6th October 2016.

Figure 2: Coverage by consumption deciles of a pilot PMT in Indonesia, with coverage aimed at the 30 per cent poorest households
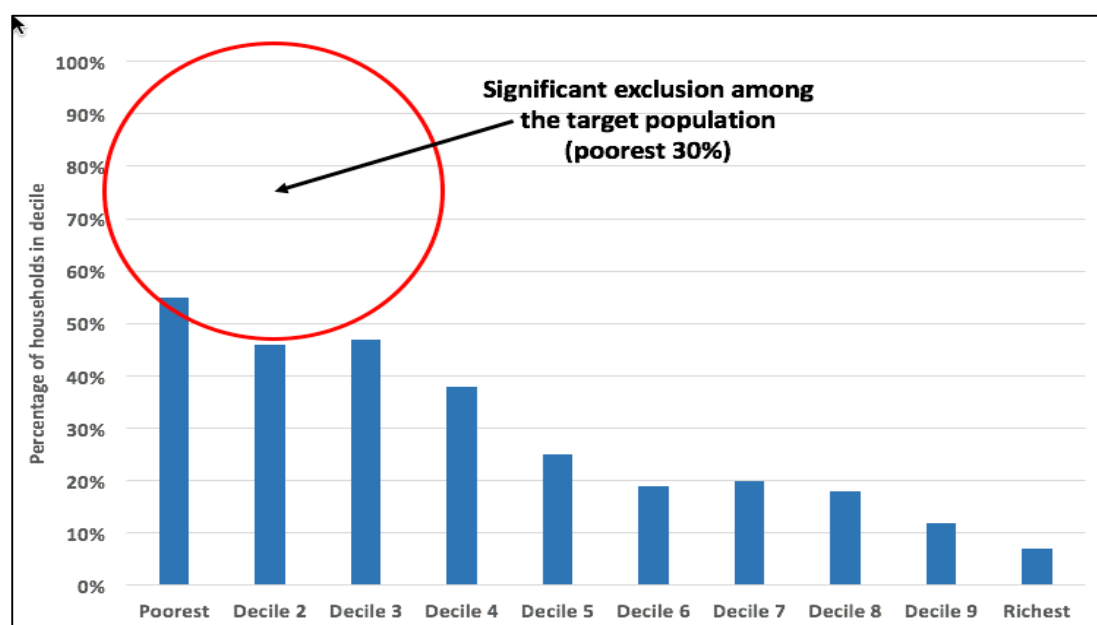
Note: This diagram has been reproduced by the authors from World Bank (2012).

Communities, unsurprisingly, also perceive the PMT to be inaccurate. In our own research in Zambia, we met many people who were clearly living in extreme poverty and fulfilled the criteria for the country's Social Cash Transfer programme but could not understand how they had been rejected by the 'computer.' In Pakistan, while 58 per cent of beneficiaries of the Benazir Income Support Programme (BISP) believed the targeting mechanism to be accurate and fair, among non-beneficiaries only 17 per cent had the same perception (Cheema et al 2014). The following quotes give a flavour of how community members perceive the PMT:

- In Mexico, a doctor told Adato *et al* (2000): 'Frankly, I don't know how they got the data for *Progresa* because there are families here in this community who are poor, poor. There are large families that do not have support from *Progresa* and we have proof. I have been here eight years and know the entire community inside-out ... and I've found that there are many poor people who do not have *Progresa* and we do not know why they have been left outside the program.'
- In Pakistan, a female member of a focus group commented on the Benazir Income Support Programme (BISP): 'I don't know... everyone deserves the money. Even though I am sure there are a lot of poor people who are getting the BISP money, there are also a lot of rich people who are getting the BISP cash. So yes a lot of deserving people are left out' (Cheema *et al,* 2014).
- Also in Pakistan, a male informant noted: 'Everyone knows that selection of beneficiaries was carried out by external people so no one blames anyone in the village. It is just considered luck of those who got selected' (Cheema *et al,* 2014).
- In northern Kenya, Fitzgibbon (2014) reported that there was 'bafflement as to what basis the computer had selected people.' She cited one informant: 'See this old lady she is totally blind and lives by herself with no family; when we ranked households in this village she was number 1 (the poorest) yet she is not on the list.'

So, why is the Proxy Means Test so inaccurate? The following section outlines some of the main challenges with the methodology.

4. Sources of error in the Proxy Means Test Methodology

There are three main sources of error in the proxy means test: 1) in-built design errors; 2) implementation errors; and, 3) the static nature of the instrument. Each is discussed in turn.

4.1 In-built design errors in the PMT

A key failing of the proxy means test is that it incorporates high in-built design errors. The PMT formulae are developed using statistical models derived from national household surveys yet, despite what is commonly believed, as Box 1 explains, household surveys themselves are not completely accurate. Furthermore, while the proxies identified are meant to predict household incomes, the accuracy of the formulae developed is relatively limited, even when assessed against the same household survey from which they were derived. One common goodness-of-fit measure that can assess the accuracies of PMT formulae is the 'R-squared',[5] which is the percentage of variation in household consumption that is explained by the PMT model. The value of the R-squared is always between 0 and 100 per cent, with larger values indicating that the PMT is better at predicting household consumption. In reality, the majority of PMTs used in developing countries have R-squared values between 40 per cent and 60 per cent; in other words, around half of the variation in consumption between households remains unexplained. This means that, by design, PMTs only weakly predict a household's level of poverty.

Box 1: The household survey – a further source of design error

The PMT methodology makes the implicit assumption that national household surveys are accurate. Yet, most economists and statisticians know this not to be the case. The level of error in household reporting varies between surveys and also by methodologies. For example, using a recall method for measuring consumption will lead to a different result to when a diary is used. Furthermore, some household surveys may be dated, so, when the proxies are identified, they may no longer reflect current realities in the country. Furthermore, as Kidd and Wylde (2011) explain, different assumptions used in the analysis of the household survey can significantly change the results of the PMT. It is not known exactly how much the challenges with household surveys contribute to the design errors in the PMT.

However, not all PMTs use correlations with consumption to develop the proxies. For example, a recent PMT in Kenya – developed by the World Bank with the assistance of the University of Manchester – has used a seven-year-old national demographic census, which contains no information on consumption (Villa, 2016). Instead, the analyst used Principal Component Analysis to identify the proxies.[6] A similar method has been used by Oxford Policy Management in Zambia, using a national household survey while ignoring the consumption data (Beazley and Carraro, 2013). Analysis undertaken by Development Pathways has indicated that, when measured against consumption, both PMTs have higher errors than more conventional regression-based models.

As a result of its low predictive power, the exclusion and inclusion errors built into the design of PMTs are high. Figure 3 shows typical in-built design targeting errors for PMTs across a range of countries. Since these simulations use the same datasets that were used to design the PMT, one would expect a better performance than in out-of-sample real world

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[5] Also known in statistics as the coefficient of determination.

[6] Principal Component Analysis attempts to use observable data to measure unobserved, underlying phenomenon or traits rather than correlating assets against information on consumption data.

tests.[7] Yet, the figure shows that, for example, when a programme is targeted at the poorest 10 per cent, the in-built design exclusion error tends to be around 60 per cent (in other words, around 60 per cent of the target group are excluded from the scheme). Errors fall as the coverage increases so, at 20 per cent coverage, design errors are around 50 per cent. These findings are in line with those found by advocates of the PMT. In fact, in Pakistan, the World Bank (2009) predicted exclusion errors of 88 per cent for a PMT targeted at the poorest 10 per cent yet still managed to persuade the Government of Pakistan to adopt the PMT methodology while taking a large loan for the Benazir Income Support Programme to support its implementation.[8]

Figure 3: Simulated targeting errors of the PMT at different levels of programme coverage
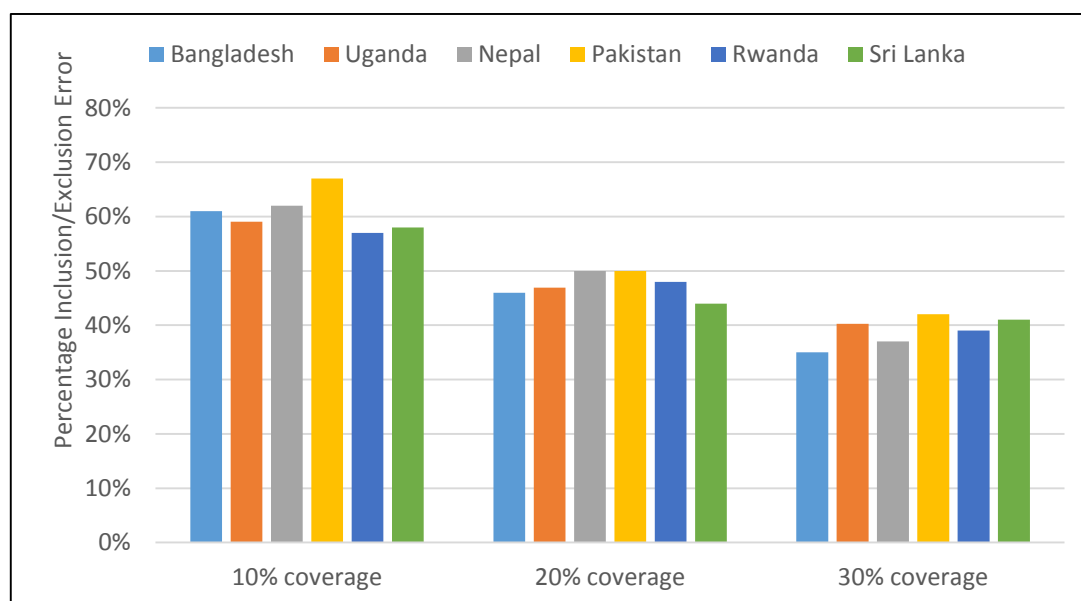
Source: The information used in this figure has been taken from Kidd et al (2010), Kidd and Wylde (2011) and Kidd et al (2011) as well as additional analysis undertaken by the authors.

These design errors can also be represented by examining which deciles of the population would be covered by a programme using a PMT. Figure 4 shows the predicted coverage of each consumption decile for a putative programme in Rwanda targeted at the poorest 10 per cent of the population, using a proxy means test developed by the World Bank (Wylde and Sabates-Wheeler, 2014). It shows that around 60 per cent of the target group would be excluded by design, while many recipients would be distributed across the wealthier deciles.

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[7] Unless otherwise indicated, we define targeting errors as the percentage of households whose eligibility status is misclassified by the proxy means test and who would therefore be incorrectly included or excluded by the social protection programme. Households are classified as eligible if they belong to the poorest *N* per cent of households, with *N* being equal to the share of households targeted by the programme. For example, if a programme aims to reach the poorest 5 per cent of households, the targeting error refers to those households in the bottom 5 per cent of the income or consumption distribution who are excluded from the programme by the PMT. Using this measure, inclusion and exclusion errors should be the same.

[8] Kidd and Wylde (2011) explain how the World Bank were mistaken in their assessment. The real design error was around 67 per cent.

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Figure 4: Coverage across consumption deciles of a proxy means test in Rwanda, for the poorest 10 per cent, based on in-built design errors
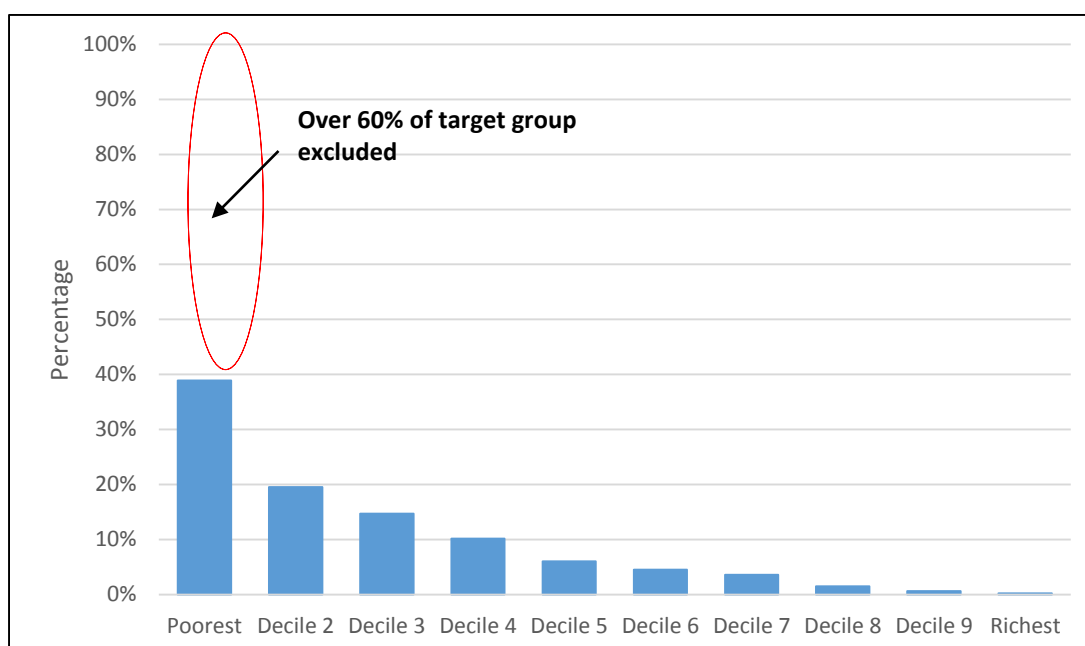
Source: analysis by the authors of the EICV3 data set in Rwanda.

Not only is the PMT inaccurate by design, it is also arbitrary in its selection. Figure 5 sets out a scatter-graph in which each household in Rwanda is mapped with a blue dot according to its ranking of consumption predicted by the PMT alongside its actual consumption as recorded in the national household survey for 2010/11. If the PMT could perfectly predict a household's level of consumption, all households would be lined up along a diagonal from the bottom left corner to the top right. The reality is very different, with households scattered across the graph. The black lines indicate the situation if a programme were targeted at the poorest 20 per cent. All those to the left of the vertical black line would be predicted by the PMT to be in the poorest 20 per cent of the population and would be included in the programme. However, in reality, the poorest 20 per cent of households are those under the horizontal black line. So, the diagram shows which households are the 'inclusion errors' and which are the exclusion 'errors,' as well as the relatively small number that are correctly targeted. It should be borne in mind that the PMT used here would be regarded as high-performing, since it has a R-squared value of 0.603.

> **Box 2: Explanation of how the analysis of errors underestimates the real design error**
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> When analysis is undertaken of the design errors in the PMT, the reported exclusion and inclusion errors are usually underestimates. The estimated errors are often based on the same household survey and dataset used to construct the PMT and, therefore, would naturally perform better than if the test had been undertaken using a different dataset from within the same country. The better performance is the result of the weights of the PMTs being 'trained' for the specific dataset. In reality, it is rare to see PMT performance analysis undertaken using a different survey.

Figure 5: A scattergraph showing the distribution of households in Rwanda when ranked against actual consumption and consumption predicted by the PMT
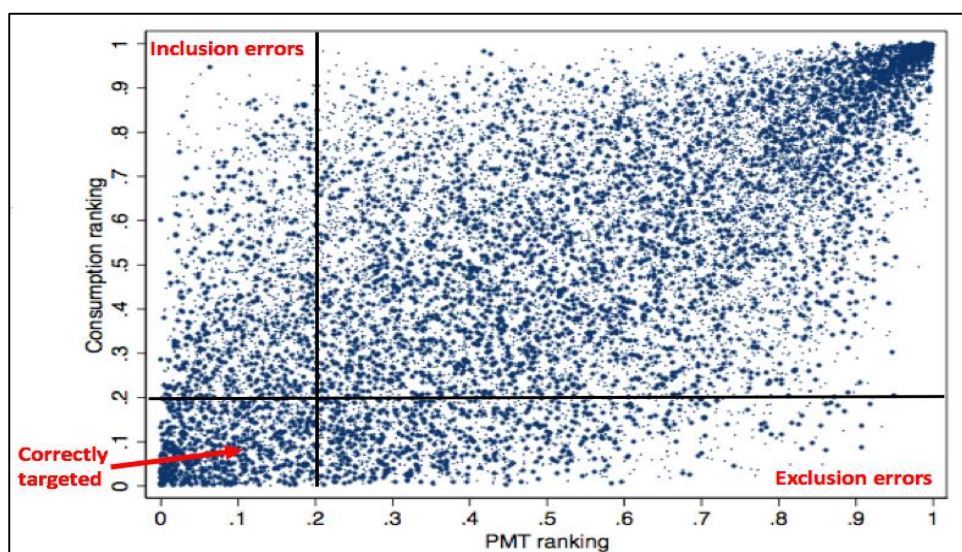
Source: analysis by the authors of the EICV4 data set in Rwanda.

Note: Larger blue dots indicate multiple households.

To be fair to advocates of the PMT, many would argue that the majority of households identified by the mechanism as being in the poorest 20 per cent of the population are, in fact, in the poorest 40 per cent (and, indeed, in the Rwanda example, that is the case for 75 per cent of those identified). Therefore, they would claim that the PMT is generally pro-poor. Yet, as Figure 6 indicates, if the 40th percentile is used to assess the targeting effectiveness of the PMT, we also need to examine the proportion of households in the poorest 40 per cent that are excluded by the PMT (those within the red box on the right). In the case of Rwanda, this would be 63 per cent of households in the poorest 40 per cent, indicating a very significant level of exclusion.

Figure 6: Scattergraph indicating how the PMT functions as a rationing mechanism, using the example of Rwanda
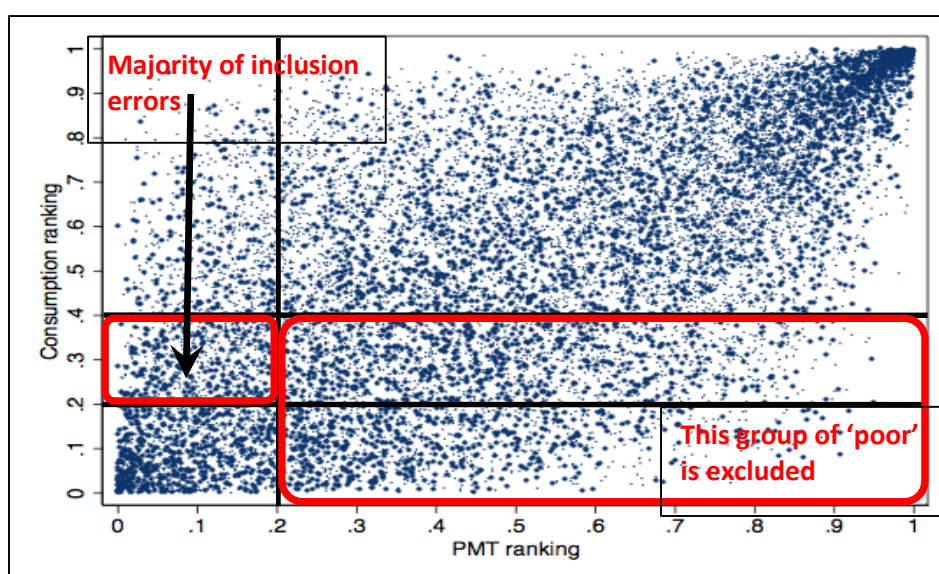
Source: analysis by the authors of the EICV4 data set in Rwanda.

There is a range of reasons for the poor predictive power of the PMT, not least the fact that assets are not necessarily a great predictor of household incomes. For instance, each type of asset is normally given an equal weighting in the PMT formula, irrespective of its age or quality. So, a new high definition television with a 40-inch screen would generate the same score as an ancient black and white one. In fact, in Zambia, community members claimed that some people had taken broken refrigerators and televisions from rubbish tips to use as ornaments in their houses and, as a consequence, had been penalised by the PMT. In northern Kenya, an informant told Fitzgibbon (2014) that 'Poor people in towns may have radios or televisions because they got them from someone else or when they had some money but they may not work or be used because the person cannot pay the electricity.' Furthermore, the education level of the household head is always assessed as the same value, irrespective of age: so, a frail older person with a university degree, who could no longer work, would find it difficult to be identified as 'poor' even though the degree no longer has any value in the labour market.[9]

Indeed, assets often indicate a household's past rather than present income. For example, assets – such as a refrigerator – may have been purchased when a household was wealthier but, following a crisis that results in a dramatic loss of income, the household would be penalised if the assets were retained. In Zambia, we met a couple aged over 80 years who cared for their disabled son aged around 60 years. They had virtually no income but had been excluded by the PMT almost certainly because they still lived in the house that they built when they were economically active: it had a concrete floor, tiled roof and brick walls and they did not want to move. Yet, to be identified as 'poor' by the PMT, they would have had to move to a grass-roofed house with wooden walls and dirt floor. In effect, the PMT demands that, if people want to be selected for social protection programmes after experiencing a crisis, they must divest themselves of their assets to live in very poor conditions. Those wishing to retain their dignity – by, for example, continuing to live in decent accommodation – will be severely penalised by PMTs by being excluded from social protection programmes.

In many PMTs, it is common to include a geographic variable to increase their predictive power. This reflects the fact that some areas of a country are better-off than others and, if a household lives in a better-off area, it is more likely, on average, to have a higher income than a household living in a poorer area. Yet, this means that households are no longer assessed on their own merits, but on the wellbeing of others living in their region. So, if two households are exactly the same in all respects apart from their area of residence, the household in the poorer area of the country will have a greater likelihood of being selected by the PMT than the household in the better-off region.

> **Box 3: Higher errors are found among the poorest**
>
> In most cases, linear models and Ordinary Least Square (OLS) estimates are used to construct the weights of a PMT. OLS models are designed to best fit the middle of distributions rather than the tails. PMT errors, therefore, are higher at both ends of the consumption distribution, which is a challenge since the PMT is meant to identify the poorest. So, the predicted values tend to be biased towards the mean (bunched together), while those at the bottom (the poorest) of the distribution have their predicted income overestimated, and those at the top (the rich) have it underestimated.

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[9] The age of the household head is often included in the regressions, which would partly control for older household heads. But, PMTs never incorporate an interaction between age and education, to give a different weight on education for each age. A similar argument could be made for the depreciation in the value of household possessions.

4.2. Errors resulting from the implementation of PMTs

Design errors are not the only source of error in PMTs. Further errors are introduced during implementation. Advocates of the PMT often give the impression that it is relatively easy to survey households and accurately collect the information that is required to compute a PMT formula. In reality, however, surveys are challenging and many errors can be introduced into the PMT mechanism during implementation. As Figure 7 indicates, in Indonesia, SMERU (2011) found that an average of 14.7 per cent of the cells in the 2011 PMT scorecard were filled in inaccurately, rising to over 37 per cent in one area.

Figure 7: Proportion of cells filled in inaccurately in Indonesia's 2011 PMT survey across different regions
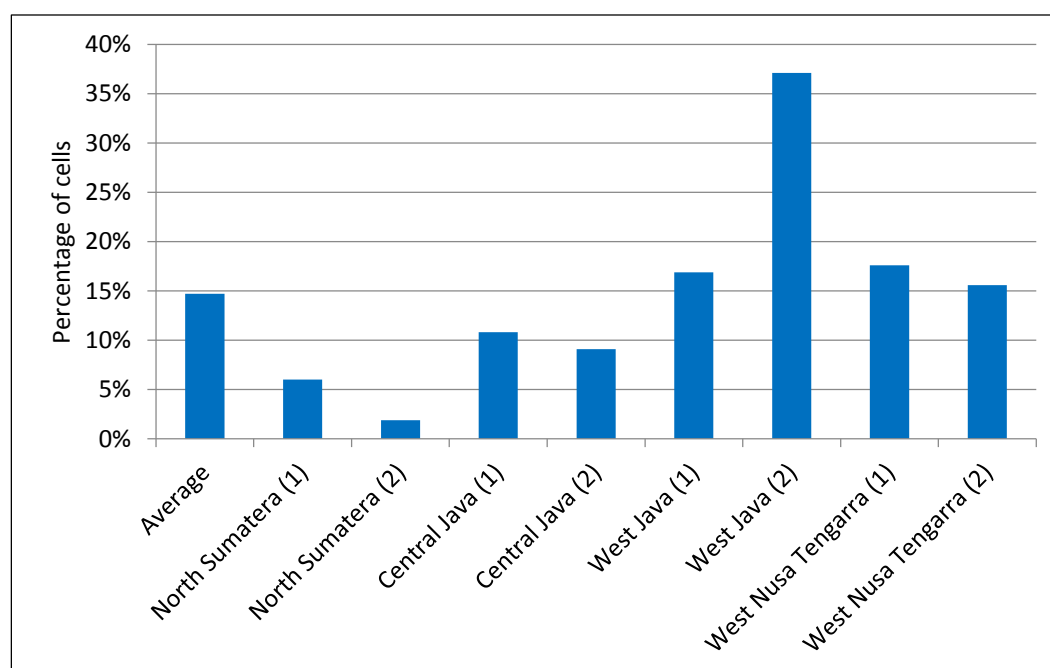
Source: SMERU (2011)

There are many reasons for these inaccuracies (which are explained in more detail in Kidd and Wylde, 2011). Enumerators may not be well-trained so are more prone to errors. They often do not verify the proxies – although they are meant to be 'objectively verifiable' – due to lack of time or because they are not allowed into houses. Indeed, there are many examples of enumerators saving time and effort by interviewing people in groups, in public places, with no verification of the answers. Even within the same household, men and women can give different answers and it is not uncommon for children to be interviewed. In fact, in Cambodia, a proxy means test was undertaken using children as respondents – in the belief that they would be less likely to lie than their parents – although Filmer and Schady (2008) described the process as 'somewhat ad hoc,' while 30 per cent of the forms were not even completed.

Further errors occur during implementation as a result of respondents falsifying their answers. While PMT advocates believe that the complexity of the mechanism reduces the ability of households to deceive surveyors, there are many examples of respondents quickly understanding how to fix their answers. In Zambia, many people we spoke to already knew that admitting to the possession of articles such as televisions and fridges would reduce their chances of receiving the Social Cash Transfer. And, while a PMT survey may fool people once, by the second or third survey, they will understand how to

Exclusion by design: An assessment of the effectiveness of the proxy means test poverty targeting mechanism

tailor their answers to fix their score. As a senior government official noted in northern Kenya: 'During the first PMT survey, those who honestly answered the questions were penalised; now, during the second survey, everyone will become dishonest.'

In fact, it is often not possible to verify some proxies, even if the basis of proxies in the PMT is that they should be verifiable. For example, if someone claims to have only primary education, it is not possible to prove otherwise; and, if animals are held many miles away, enumerators are unable to count them for themselves and can only trust the answers of the respondents.

Errors can also be introduced as a result of bias by enumerators. In Cambodia, for instance, local enumerators were used to survey households using a scorecard. Yet, when the same households were re-surveyed by independent and more highly-trained enumerators, the World Bank (2011) found that the local enumerators had given higher PMT scores to over 90 per cent of households, thereby increasing the number of beneficiaries in their villages (possibly, so that their villages could receive more benefits). Figure 8 shows the distribution of the scores for the same households, comparing the results from both the community and independent enumerators: it clearly indicates that the community enumerators exaggerated the scores.

Figure 8: Distribution of PMT scores in Cambodia's IDPoor, comparing surveys by independent and community enumerators of the same households
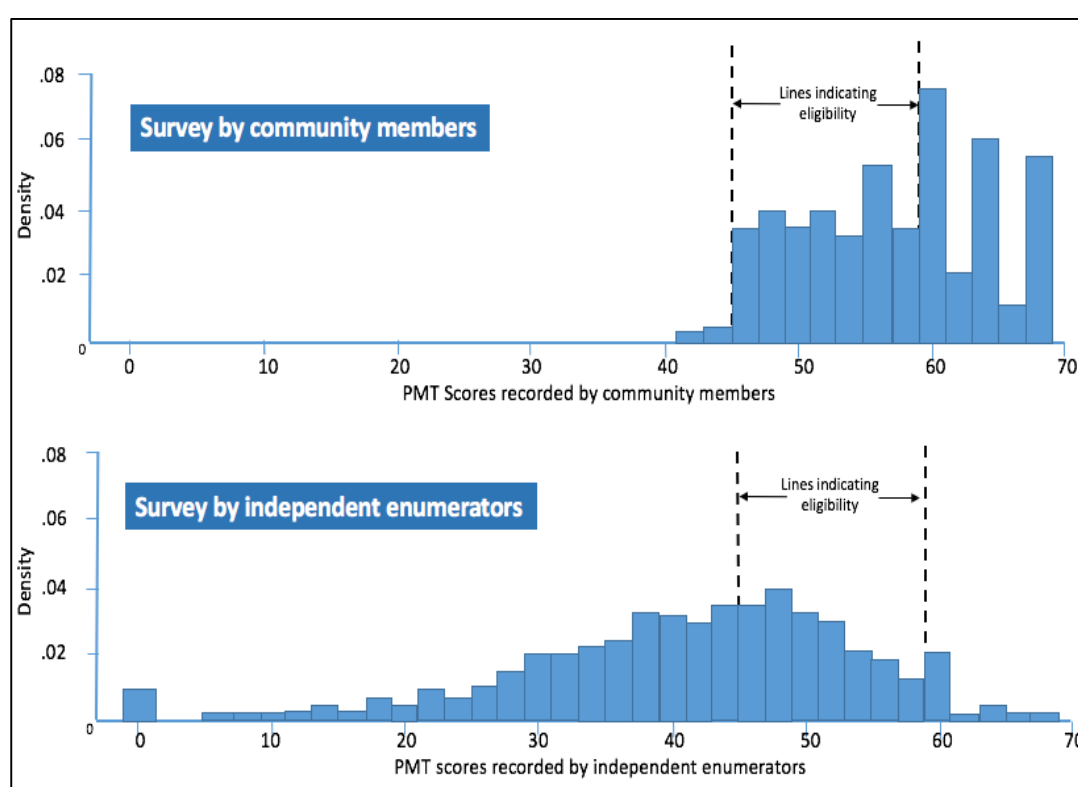
Source: World Bank (2011).

A further challenge during implementation is that many deserving households can be missed by enumerators. During PMT surveys, the enumerators may not be able to find houses, in particular in squatter settlements or remote rural areas. In Lusaka (Zambia), enumerators took so long to find houses that they often surveyed only three households

per day. As a result, they eventually ran out of time, leaving a high proportion of households unsurveyed.

PMTs depend on effective communications, so that people know when surveys are happening. Often people do not hear about the survey and, as a result, are not around when enumerators arrive at their house; and, if the enumerators do not return, they are missed out. In urban Mexico, around 25 per cent of eligible households did not hear about the *Progresa* programme so did not apply and a further 14 per cent did not know where to register (Coady and Parker, 2005). Often, those not at home when the enumerators arrive are more vulnerable families, such as day labourers in Nicaragua (Adato and Roopnaraine, 2004). And, when on-demand registration is undertaken, people may find it difficult to travel to the appropriate office: in urban Mexico, possession of a car increased the chances of households being accepted on to *Progresa*, presumably because car-owners were better able to travel to the registration centres (Coady and Parker, 2005).

Further information on errors during the implementation of PMTs can be found in Kidd and Wylde (2011) and Kidd (2014). As the errors described in Section 3 indicate, although there is no robust evidence on the impact of implementation errors on the overall accuracy of PMTs, it is likely to be significant.

4.3. Errors resulting from the infrequency of recertification of PMTs

Household composition, income and consumption are all highly dynamic. Those living under the poverty line one year are not the same group as those living under the poverty line the next. Figure 9 illustrates the level of change in household incomes that is found in developing countries. It shows where households were located across consumption quintiles in Rwanda (in 2010/11) and Uganda (2011/12) and where they were located three years later in Rwanda and two years later in Uganda. It shows significant movement, with almost half of households moving out of the poorest 20 per cent of the population in a short period. At the same time, as families are hit by crises, many suffer significant falls in income, with some even dropping from the richest quintile to the poorest. This pattern of income dynamics is not unusual at all in developing countries: for example, in Georgia, around 64 per cent of those in the poorest quintile in 2013 were not in the poorest quintile in 2009 (Kidd and Gelders, 2016a) while, in Vietnam, around 35 per cent of those that were in the poorest quintile in 2010 had moved into a more affluent quintile by 2012 (Kidd et al, 2016).

Figure 9: Patterns of consumption dynamics in Rwanda and Uganda
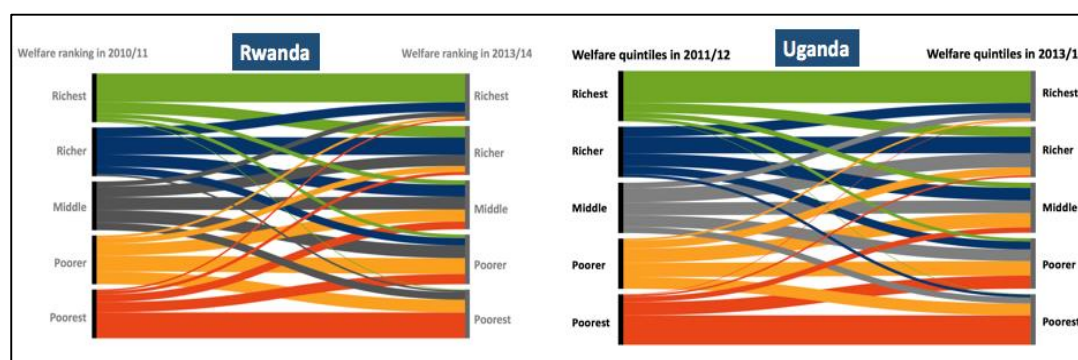

Source: NISR (2016) and Kidd and Gelders (2016b).

In a context of continually changing household composition, consumption and incomes, the accuracy of PMT surveys degrades rapidly, introducing further significant

errors into the targeting process. Many of those households that may have been 'correctly targeted' in the first year are likely to be 'inclusion errors' in future years, as a result of improved circumstances. However, anyone falling into poverty between surveys – perhaps due to a crisis such as unemployment, disability, ill-health, death of a breadwinner or even the birth of a child – is excluded from accessing social protection no matter how challenging their circumstances. In Pakistan's Benazir Income Support Programme (BISP), for example, only 22 per cent of beneficiaries were living in poverty across each of three survey years (2011, 2013 and 2014), 20 per cent were never under the poverty line while almost 60 per cent spent one or two of the three years in poverty, remaining on the programme when above the poverty line (Cheema et al, 2015). On the other hand, the vast majority of the population spending some time living in poverty over the same period were unable to access BISP.

Figure 10 illustrates the challenges posed by changes in household composition, income, consumption and assets. It uses a panel dataset in Uganda to show who – in red – would be accurately selected by a PMT targeting the poorest 20 per cent of households in 2011 (in the left hand graph). The right hand graph indicates where those same households would be in 2013, if they were retargeted. Only 55 per cent of those accurately targeted in 2011 would still be accurately targeted in 2013: around 38 per cent would no longer be in the poorest 20 per cent in terms of expenditure, while 21 per cent would have PMT scores above the cut-off. Many other households – in blue – would be newly eligible for the programme by 2013, both in terms of consumption and their PMT score, but would not be included, unless there were a new registration process.

Figure 10: Scattergraphs showing how households accurately targeted in 2011 would be targeted using the same PMT in 2013 (Uganda)
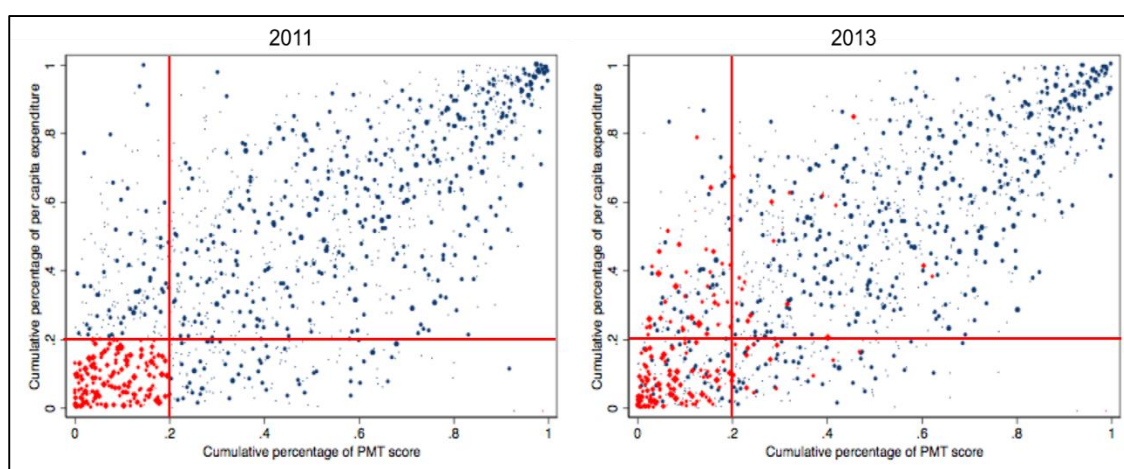
Source: Analysis undertaken by the authors using UNPS 2011/12 and UNPS 2013/14 datasets. See: Kidd and Bailey-Athias (2016).

However, despite the reality of significant changes in household incomes over short periods of time, it is very rare for PMT surveys to be repeated on a frequent basis. Governments often perceive PMT surveys to be expensive: for example, the 2009 PMT survey in Pakistan and the 2011 survey in Indonesia both cost around US$60 million, while the 2015 survey in Indonesia cost US$100 million.[10] Indeed, some PMT surveys are very expensive: for example, Kenya's HSNP programme spent around US$10 million to survey only 380,000 households while achieving – as indicated earlier – not much better than

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[10] While these costs may seem high, they are, in reality, low when compared to the costs of implementing a more effective and robust targeting mechanism in a developing country.

random selection (Fitzgibbon, 2014). As a result of the perceived high costs of PMT surveys, governments are reluctant to repeat them. Pakistan, for example, has not undertaken a PMT survey since 2009; in Indonesia, there was a four-year gap between the surveys of 2011 and 2015; while, in some areas of Mexico, registration for the *Oportunidades* programme had not been repeated for more than 10 years (Zoletto, 2011).

Furthermore, both the infrequency of information and the static nature of the PMT means that programmes using a PMT cannot function as safety nets. Since PMTs measure assets and other 'stable' characteristics such as education levels, the PMT is a very static mechanism. Even if it allowed people to apply for a social protection programme whenever they experienced a crisis, they are unlikely to be identified as 'poor' because their proxies may not have changed, despite a significant fall in income. As discussed earlier, they would have to first divest themselves of many of their assets before they could be recognized as eligible. Yet, their loss of the assets would mean that their ability to recover from the crisis would be compromised. So, although the World Bank refer to social assistance programmes using PMTs as 'social safety nets,' they are nothing of the sort (see Kidd, 2012). A safety net should be available as soon as people experience a crisis: in contrast, a social assistance programme using a PMT will continue to exclude people who have fallen into poverty until their assets have been depleted, which may take time. Social assistance using PMTs is, in effect, Poor Relief – in other words, a programme for those who are already living in poverty – and nothing more (and is similar to the approach used by developed countries in the 19th Century).

Advocates of PMTs have recently begun to claim that they can introduce 'dynamic targeting' into PMTs.[11] By this they mean introducing on-demand applications to PMT rather than using one-off censuses. Yet, this will not solve the problem. It does not address the in-built design errors nor the challenges of errors introduced during implementation; and, it will further increase the costs of implementing the PMT, with no guarantee that it will be more accurate. Furthermore, as discussed earlier, even if households have been hit by a crisis and apply for a programme using a PMT, their assets are unlikely to have changed and so they would continue to be excluded. And, it would mean selecting households using data collected at different times: for example, if mandatory recertification of all households is only undertaken every five years, a targeting list using supposedly 'dynamic targeting' would be a mix of data from households assessed at any time over a five-year period, meaning that like would not be compared with like.

5. Grievance mechanisms for PMTs

Given the very high errors associated with the PMT methodology, one might assume that an appeals process should be introduced to allow them to be corrected. Unfortunately, this is not the case. With the PMT, it is not possible, in practice, to put in place effective grievance mechanisms that allow those living in poverty to appeal their exclusion. If people could appeal their exclusion on the basis of their poverty, the high level of exclusion error would mean that over half of the intended beneficiaries would be eligible to appeal. In effect, the appeal process would turn into a further application process, since it would be so large. Consequently, programmes using PMTs tend to restrict the appeal mechanism so that the design errors within the PMT mechanism itself are not challenged. For example, in the Philippines' *Pantawid Pamilya* programme, if people living in extreme poverty appeal because they were judged by the proxy means test to be ineligible, their only option is to be re-surveyed, which is likely to give the same result as before (Kidd, 2014).

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[11] Cf. Leite (n.d.) at: http://pubdocs.worldbank.org/en/897101464039057078/SPLCC-2016-SNCC-D4S1-Leite-Social-Registry.pdf

6. PMTs and the weakening of community cohesion

There is good evidence that proxy means tests cause social conflict in communities, weakening their cohesion (despite this being one of the main assets of communities which should be strengthened rather than debilitated).[12] This is largely due to the inaccuracy and relatively arbitrary nature of the PMT methodology. Community members cannot understand why some people living in poverty are selected while others are excluded. In Mexico and Nicaragua, non-recipients – many of whom are living in poverty – have remonstrated about their feelings of despair, frustration, envy, resentment and jealousy. In Mexico, Nicaragua and Indonesia, non-recipients have withdrawn their labour from voluntary community activities.[13] There is evidence of direct conflict: for example, in some communities in Mexico, when recipients of the *Progresa* programme were cleaning the streets, the non-recipients threw rubbish; in others, fences mended by recipients were subsequently knocked down by non-recipients (Adato, 2000). In Kenya's CT-OVC programme, the absence of significant discord in communities following the selection of recipients using a proxy means test was due to programme administrators deceiving those excluded by telling them that they would be incorporated into the programme in the near future when, in reality, this was not going to happen (Calder et al, 2011).

Widjaja (2009) found significant challenges in Indonesia when the *Bantuan Langsung Tunai* (BLT) programme– which used a proxy means test – was rolled out (see Figure 11). Protests about the selection process took place in around 30 per cent of villages. Indeed, Cameron and Shah (2011) found that crime increased by 5.8 per cent as a result of the PMT. In a community visited by Hannigan (2010), the initial distribution of the Indonesia PKH programme – again, using a proxy means test – provoked stone throwing and the burning down of a building. Similar problems have been found in Lebanon where the introduction of proxy means testing led to riots in some refugee camps (Kidd and Wylde, 2011). In Lesotho, Kardan (2014) found that the PMT 'created a great deal of tensions in the communities between beneficiaries and non-beneficiaries due to people's limited knowledge of the selection criteria, their own sense of entitlement and the perceived exclusion of many deserving households.' In fact, it has been reported that the houses of village chiefs were burnt down (which has not happened with the country's universal pension, since this is a very popular and non-divisive programme).[14] Often, when people living in extreme poverty are excluded by PMTs, they accuse programme staff of stealing their money, since they cannot understand the reasons for their exclusion.

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[12] See Adato (2000), Adato et al. (2000), Adato and Roopnaraine (2004), Widjaja (2009), Huber *et al* (2009), Hannigan (2010), Kidd and Wylde (2011), Cameron and Shah (2011) and Hossain (2012).

[13] See Adato (2000), Adato et al. (2000), Adato and Roopnaraine (2004) and Hannigan (2010).

[14] Sharlene Ramkissoon (personal communication).

Figure 11: Incidence of conflict and other challenges during Indonesia's BLT programme
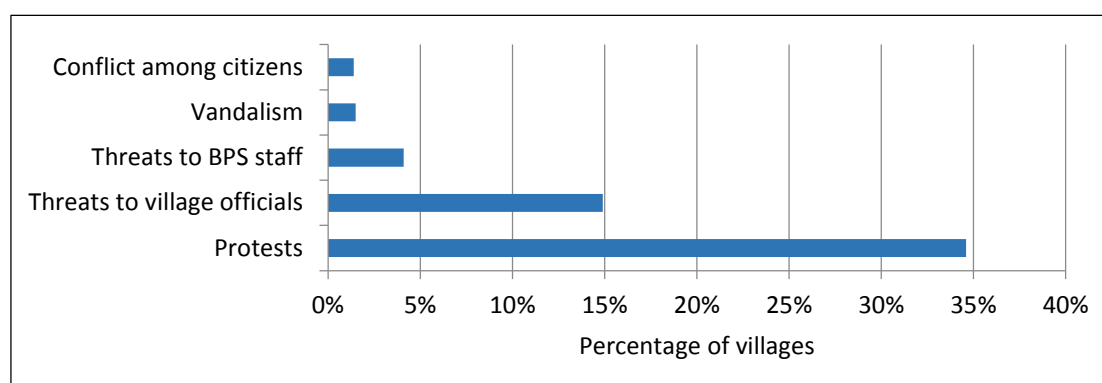
Source: Widjaja (2009).

There are instances of communities attempting to subvert the PMT mechanism by redistributing benefits to everyone. In Indonesia, for example, it is normal practice for the benefits from the Raskin scheme – which provides rice vouchers to those living in poverty – to be distributed on a universal basis by community leaders (TNP2K, 2013).

The cohesion of communities is one of their strongest assets. It should, therefore, be of concern that governments and development agencies actively undermine this cohesion by generating division and conflict through the use of a proxy means test. The recent introduction into Bangladesh of the proxy means test by the World Bank should be a significant worry, since the conflict it will generate could fan the flames of political discord. In contrast, of course, entitlement schemes – which are accessible by everyone – strengthen communities while also building the national social contract.

7. The paradigm underlying the PMT

PMTs are embedded within a neoliberal paradigm, which prioritises low taxation and limited social spending and, therefore, favours targeting those living in extreme poverty as a means of reducing costs. As the World Bank (2015) states: 'The historical [...] evidence suggests that the forces pushing for better targeting are more regularly motivated by cutting entitlement bills and ensuring financial sustainability than by helping the poor.' Indeed, Martin Ravallion (2016) has expressed his concerns about the 'fetish' of poverty targeting, exemplified by the obsession with addressing inclusion errors while much less concern is shown about the exclusion of those living in poverty. The PMT would not be needed within a more effective and inclusive – albeit more expensive – approach to social security.

In effect, the PMT is inimical towards the Social Protection Floor approach which is based on progressively realising the right to social security for all. The arbitrariness of the PMT means that it cannot be rights-based since, to a large extent, it is chance that drives selection within the PMT rather than evidence. However, effective alternatives to PMTs are only possible once governments realise the value of investing in social security as a core component of a market economy: by expanding expenditure, coverage can be broadened and programmes can become much more effective.

Indeed, a basic fact in targeting is that higher coverage of programmes reduces the exclusion of those living in poverty (see Kidd 2013 for further discussion). So, by increasing the coverage of social assistance schemes – through higher investment – the exclusion of those living in poverty will be reduced, whether or not a proxy means test is

used. Ultimately, inclusive entitlement schemes – which are very different in their approach to social assistance programmes for the 'poor' – will be most effective in including those living in the greatest poverty. As an illustration of this principle, Figure 12 compares the targeting effectiveness of: a) Georgia's universal old age pension; b) South Africa's Child Support Grant, which reaches 62 per cent of children and selects beneficiaries using a simple unverified means test; and, c) the Philippines *Pantawid* scheme which is targeted at the poorest 23 per cent of households (and is one of the most effective PMTs in the world). As can be observed, the universal scheme is by far the most effective in reaching those living in the greatest poverty, the high coverage Child Support Grant has minimal exclusion of this group, while the *Pantawid* scheme is by far the least effective despite being the only programme targeted at those living in extreme poverty.

Figure 12: Targeting effectiveness of Georgia's universal old age pension, South Africa's Child Support Grant, and the Philippines Pantawid programme
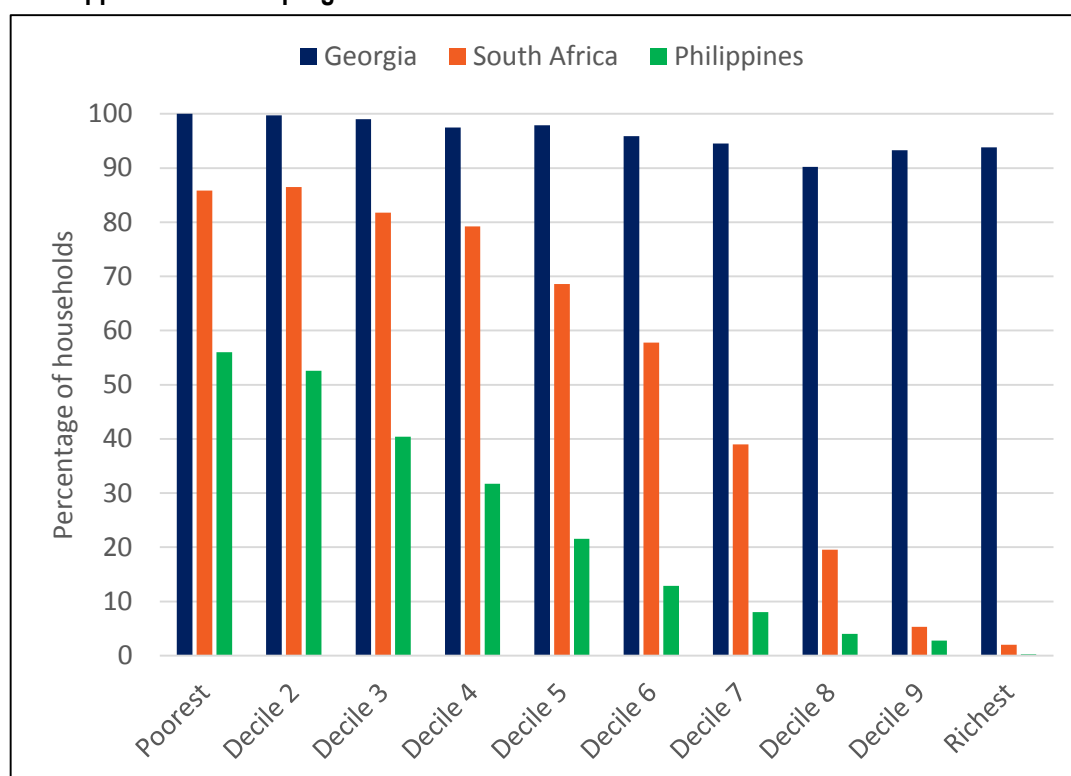
Sources: Analysis undertaken by Development Pathways of the WMS dataset (2013) in Georgia, the GHS (2015) dataset in South Africa, and the APIS (2014) dataset in the Philippines.

If governments choose to remain within a narrow poverty-targeting paradigm and retain the PMT, its effectiveness can be improved to a certain extent. But, these improvements will require significant increases in administrative spending. For example, by collecting more information on applicants – such as on their income or subjective assessments of their wellbeing – government officials could triangulate this additional information with the PMT score to test whether it makes sense. Well-trained officials could be given the authority to override the results of the PMT when they are clearly incorrect, which already happens unofficially in some countries, such as Fiji (Kidd, 2014). Recertification of the PMT could be undertaken much more frequently, in combination with the collection of additional information and override mechanisms. And, governments could invest in robust grievance mechanisms that allow people to appeal on the basis of their real incomes – and against the PMT design errors – instead of being subjected merely to a repeat of the PMT survey. Nonetheless, PMTs will always generate large errors: as indicated earlier, even though Georgia has significantly enhanced its PMT, it still has

exclusion errors of 50 per cent in its Targeted Social Assistance programme.[15]

9. Conclusion

Even though its advocates promote the PMT as a sophisticated and effective targeting mechanism for social assistance programmes for the 'poor,' it is nothing of the sort. In contrast, the PMT is best understood as a ***rationing*** mechanism. When resources are limited, it tends to select a higher proportion of poorer households than better-off households, rationing the benefits in a generally pro-poor manner. But, a majority of the poorest households remain excluded from the programme. In effect, as experienced by community members, it is a lottery in which the poorer a household, the more lottery tickets it has. Even so, those living in the greatest poverty rarely have more than a 40 per cent chance of receiving benefits, while better-off households, who also have lottery tickets, can still be winners.[16] The PMT is certainly not compliant with a human rights approach to the identification of beneficiaries since it cannot ensure that most people, including the most vulnerable, are able to access social security. Indeed, through its 'exclusion by design,' it usually guarantees that the majority of those in need will miss out.

Many developing country governments have been convinced by PMT advocates to adopt the mechanism – often linked to acceptance of a loan – though its real level of inaccuracy and arbitrary performance is rarely disclosed to them, or is masked. It is highly uncommon for the type of analysis undertaken in this paper to be presented to policy-makers. Yet, analysts should be honest in their advice to policy makers, presenting their analysis in a comprehensive and open manner by showing both the weaknesses of their proposals as well as their strengths.

The PMT is a great example of Amartya Sen's (1995) argument that targeting 'the poor' results in poor quality programmes, in this case high errors alongside the exclusion of the majority of the target population. It is the political weakness and social exclusion of those living in extreme poverty that enables governments and donors to impose the PMT on vulnerable members of the population. Even when communities resist and complain, the PMT continues to be imposed, generating divisions and weakening social cohesion. Ultimately, it undermines social stability and the social contract.[17]

The most effective means of combatting exclusion errors is to build comprehensive and inclusive lifecycle national social protection systems. This implies a shift of paradigm from a narrow poverty targeted neoliberal model of social protection to one recognizing the value of social investment and redistribution, with governments significantly increasing their social protection spending and expanding coverage. Unless governments make this shift in thinking, targeting mechanisms such as the proxy means test will continue to prevail, excluding large numbers of vulnerable people living in poverty, while damaging community cohesion. The shift will also require greater integrity from those international institutions and consultants advising developing country governments, so that they move away from advocating for PMTs to offering robust evidence-based analysis, even if it contradicts their world view and ideological belief system. The reality is that most people in developing countries are living in poverty, and only through a commitment to inclusive social policies will sustainable transformation happen. This will imply, ultimately, rejecting poor quality targeting mechanisms such as the PMT.

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[15] See Baum et al (2016); Kidd and Gelders (2016a).

[16] We are indebted to Nicholas Freeland, who first made this analogy in a personal communication.

[17] See Kidd (2014) for further discussion.

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