Fiscal incidence of social spending in South Africa, 2006[1]

A report to National Treasury

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"...it should be emphasized that the impression of preciseness left by the (fiscal incidence) studies surveyed here is definitely questionable; the estimates obtained in these studies are at best approximations. In any study, the overall effective tax rate or the effective tax rates of those income classes that, from a political point of view, deserve more attention – the wealthy and the poor – can be changed considerably by altering the shifting assumptions or by using different consumption and income data." (De Wulf 1975: 75)

Introduction

This study investigates the incidence of social spending (here taken to be spending on school and tertiary education, social grants, health clinics, hospitals, and subsidised housing). Combined, spending on these items was R177 billion in 2006 (current value), more than 10% of GDP and 37.5% of total consolidated non-interest government spending.

Since the turn of the century, strong economic growth, sound fiscal policy, small debt service costs, improved revenue collection and a broadening tax base created the fiscal space that allowed government to increase consolidated public spending, which grew by just over half (52%) in real terms in the six years after 2000. Government expenditure increased to just over 27 per cent of GDP in 2007/08, while revenue stood at just over 28 per cent of GDP. Government is now concerned with assessing to what degree resources are directed to programmes that support its socio-economic objectives of reducing poverty and inequality, creating employment and enhancing economic growth. In addition to tracking expenditure and reporting on performance to assess the impact of expenditure, this requires determining whether resources are targeted to the areas of greatest need and to the most needy. Recent work on public expenditure analysis has focused on developing a range of micro-level tools that assist policy decision-makers in

assessing whether resources are being spent on the correct mix of goods, are well targeted to the poor and vulnerable, and are converted into actual services in an efficient manner. Expenditure incidence, as discussed in this report, is only one such a tool.

In 1999, National Treasury (then the Department of Finance) initiated research to investigate systematically which groups benefited from the budget. Such studies, referred to as incidence analyses, attempt to measure government's effectiveness in redistributing income and evaluate whether spending patterns are appropriately targeted to the poor. The first of these studies on expenditure incidence focused on about 60 per cent of expenditure – education, health, social grants, water provision and housing – between 1993 and 1997.[3] The study concluded that the first years after political transition saw a large and significant shift of social spending from the affluent to the more disadvantaged members of society. As a result of shifts in social spending from 1993 to 1997, social spending became relatively well targeted to poor people. Subsequently, another study conducted in 2004[4] assessed the extent of shifts in public spending and taxation between 1995 and 2000 and the targeting of spending. This second study concluded that, although shifts in targeting had slowed down compared to the transition period, spending was well targeted to the poor. This applied particularly to social assistance and to a lesser extent to school education and to health.

The objectives of the present study were to investigate expenditure incidence in education, tertiary education, health, social assistance, housing, water provision and electricity, and in particular to assess shifts in such incidence between 2000 and 2006. In addition, the study set out to compare the results of the previous incidence analyses with the new results, where data comparability permits. Unlike on the previous two occasions, there was not a tax incidence module attached to the expenditure incidence analysis. Thus the study was not constrained to apply to the same year as the Income and Expenditure Survey of 2005; rather, to incorporate the most recent data, the emphasis fell on 2006 as the end year.

The strong growth of the South African economy and of government revenue had allowed the government to expand social spending quite rapidly. The social spending items covered in this study increased from about R2 000 per person in 2000 to almost R2 800 in 2006, i.e. by 40% per capita (in constant 2000 Rand values). Social grants spending more than doubled in this short period. As social grants were the best targeted of all government social spending programmes, overall targeting of spending therefore also improved. Thus, as will be illustrated, the poorest 40% of the population increased their share of spending from 47.1% to 50.1%, which allowed spending per person for the poorest 40% to increase by more than R1 200 per year, an increment almost three times as large as for the richest 20% of the population.

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[3] Van der Berg 2000a & 2000b; also published as Van der Berg 2001a. For the tax incidence, see Simkins, Woolard & Thompson 2000.
[4] Completed in 2005 in various parts as Van der Berg 2005; Van der Berg et al. 2005; Simkins & Woolard 2005

The next section of this report focuses on the methodology used to arrive at the results, discussing ranking of the population by a welfare indicator, measuring access, measuring unit cost differentials, determining aggregate fiscal expenditure, and digression briefly to summarise the methodology applied to free basic services. This is followed by discussion of the results, starting at the aggregate level and focusing first on 2006 before making comparisons with 2000 and in some cases with 1995. The conclusion deals with the sensitivity of these results to the methodology employed and the data used; broad trends and findings; what appears to lie behind these trends; prospects; and limitations of the study.

The full quantitative results of the study are reported in appendices tables. In addition, an estimation of the order of magnitude of the incidence effect of free basic water is contained in Addendum A, while some background work for this broader study is collated in Addenda B1 to B4.

Methodology

Methodology: Overview

Expenditure incidence analysis is concerned with the value of the subsidies given to different groups of the population through the budget process. Analysing this requires the following steps:

- Ranking the population from poorest to richest by some welfare measure (e.g. per capita income), and then classifying them into groups (deciles or quintiles) based on this indicator. Ranking is of course not necessary if the issue of interest is not incidence by income group, but by another category (e.g. province, region or race, as in many earlier South African studies).
- Once the groups of interest have been identified, it is necessary to determine access to the specific social services studied. Such information is usually obtained from survey data.
- The unit costs of spending need to be determined to establish what value each service brings to the individuals concerned. In most international studies the implicit assumption is that all beneficiaries get the same unit value from each particular service, in which case it is adequate to simply apply the proportionate access to the total spending on that service.

The next sub-sections look at each of these issues in more detail in the context of this study, before attention turns to a methodology for determining the incidence of basic services.

Methodology: Ranking population by welfare indicator

The first part of the work involved an analysis of access to services using the Income and Expenditure Survey (IES) 2005, the General Household Survey (GHS) 2006 and other relevant surveys. This raised some questions about linking the distributional patterns from the IES2005 to the GHS2006 (the latter contains data on access to services, while the former contains income distribution data.) This part of the study involved analysing the survey data in order to estimate the availability and access of services for 2006, across

income groups and population groups. For 2006, there was one difficulty that did not exist in 2000. Whereas the IES2000 was linked to the Labour Force Survey (LFS) of the same year, there was no such a link between IES2005 and any other survey. This made it impossible to link access to services directly to the income distribution obtained from IES2005. Thus a major challenge was to link income distribution to access to services, in order to determine how services were distributed across the income distribution.

A relatively easy answer appeared to be at hand, viz. to use an asset index to proxy for the income ranking, a method that had already been used quite often in South Africa and internationally. This method takes recourse to an asset index to determine the ranking of households in a similar way as for the distribution of income, and to accept this as the welfare ranking of individuals and households, i.e. with the asset ranking proxying for the income ranking. The standard procedure is to derive the asset index for households using principal components analysis applied to a wide set of household assets. This asset index is then presumed to also reflect the distribution or at least the ranking of households across the income distribution. This method is relatively straightforward and could be applied without much problem to data from the General Household Survey (GHS) for 2006 (although such a method gives some deviations in ranking from that obtained using income, as became evident when correlating income and the asset index for 2000). However, a further problem arose in the case of incidence analysis, viz. that the income distribution to be analysed needed to be *before* the receipt of social grants, as such social grants were part of what was being studied, and could therefore not be considered as part of income. Determining pre-social grant income was unproblematic from the 2000 dataset that contained both income and information on social grants (assuming no behavioural changes induced by grants), but it became far more difficult if only a distribution of assets (wealth) was available. A way around that was to use the distribution of income as determined in the Income and Expenditure Survey (IES2005) and then to super-impose that on the ranking of individuals obtained from the GHS2006. In other words, the ranking of the wealth index was used, but that ranking was then applied to the income distribution as determined from the IES2005, in order to derive an imputed distribution of income for 2006. From such imputed income was then subtracted the value of social grants contained in surveys such as GHS2006, which contained no other income data. Thus it was possible in this roundabout manner to simulate a distribution of pre-social grant income that was relatively similar to the distribution that would have been obtained from the IES if the IES could have been used for such purposes. Visual inspection of most of the access shares of different quintiles between this distribution and the distribution that was derived from the simpler asset index before considering the distributional effect of the grants showed that the choice of welfare ranking had a significant effect only in the case of the social grants, as would be expected.

However, even this procedure still had an implicit assumption that the distribution of wealth or assets reflected such distribution *after* the receipt of social grants. Particularly in cases where beneficiaries had only recently obtained access to grants, their assets may not yet have fully reflected their economic status including such grants. Such an asset distribution therefore may to some extent also approximate the distribution of assets as it

would have been in the *absence* of social grants. An alternative was to assume that something between these two situations applied, i.e. that different weights needed to be attached to the post- and pre-transfer imputed income ranking derived from the asset index.[5]

All of this required much work on the different data sets and experimentation with the situation in 2000, when all these variables were available in two *linked* surveys, IES/LFS2000. Using the 2000 data set, one could interrogate the alternative assumptions to derive appropriate assumptions and weights for 2006.

Thus considerable difficulties needed to be dealt with before a proper income distribution, or income ranking to derive income deciles, could be obtained from the survey. However, the effect of grants was largely to change the ranking of individuals in the *lower* deciles of the population, and this had little impact on the rest of the distribution. The distribution of many of the services measured in this study differed relatively little across deciles 1 to 4. So a change in ranking derived in the manner explained above would not necessarily have had much influence on the distribution of access to other services, apart from the social grants. The above procedure was thus mainly important to determine access to social grants across the pre-transfer income distribution. One needed to understand in which deciles households were *before* payment of grants, and not *after* the payment of grants. Some households may have been in the third or fourth decile because they received grants, but would have been in the first or second decile before such grants were paid. If one wanted to understand the effect of the grants, one therefore needed to know how households were ranked *before* such grants were paid.

Note that, for international comparison purposes, deciles and quintiles as used here are deciles or quintiles of the population (numbers of individuals), not of households. This deviates from previous studies, which used deciles/quintiles of households, based on the then preference of the Department of Finance. Because of this change, figures cannot directly be compared to those for the previous studies, until these have also been converted to the same format.

It was possible also to derive the distribution of the population by race group across income groups[6]. This could then later be used to derive costs of services by race where the underlying cost data studied focused on income group (in the case of school education). However, in tertiary education, where the costs analysis initially focused on race group because of data constraints, the reverse process allowed allocation of these costs to the different income groups.

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[5] This is in fact also a procedure widely used in international studies, but for another reason: Behavioural change may undo some of the effects of grants, and in an overview of studies for the World Bank, Van de Walle (1999) concludes that it may be to the extent of 50% of the grant value. However, the difficulty for ranking is that it is now know how that coefficient varies over individual households.

[6] The term "income group" is here shorthand for the decile or quintile ranking obtained from using a particular welfare indicator, be that income or expenditure per capita, or asset ranking.
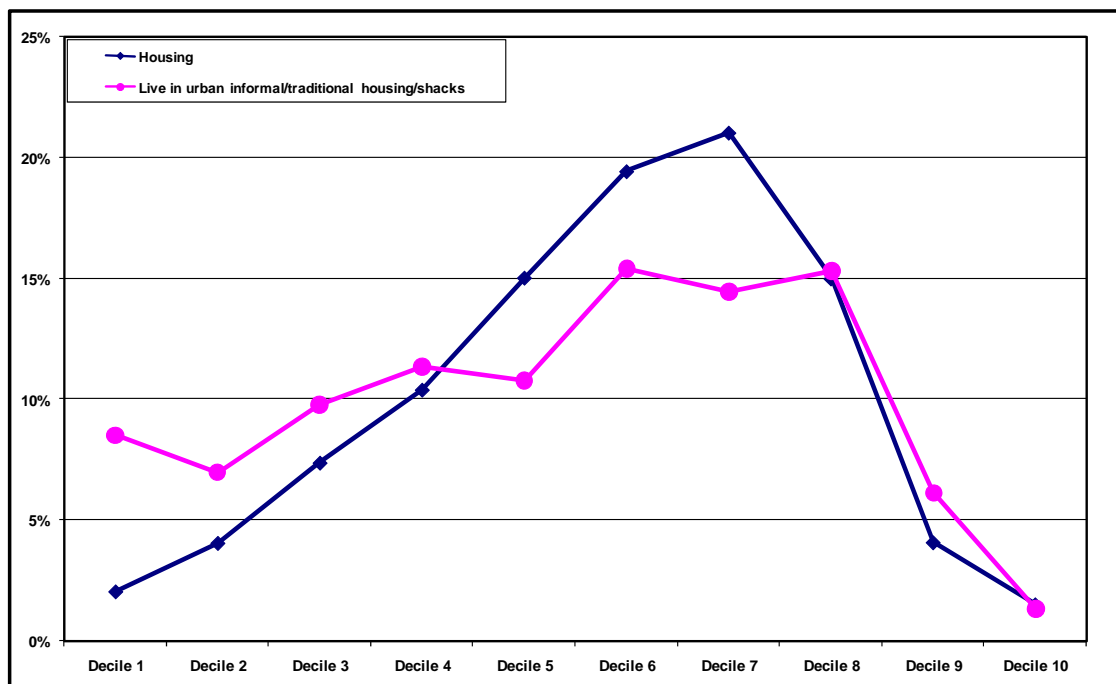
Methodology: Determining access to services

General trends in some access indicators are discussed in a separate document (Addendum B1). This analysis used comparable datasets to discern access trends, but it should be noted that the periods covered did not often coincide with the full interval studied for this paper, thus these trends could at best be used to determine recent trends and the stability of data series, not trends over the full period studied.

It is useful to give a brief summary here of the way in which access data were obtained, and the main patterns these showed, for the different social services studied:

- Social grants: This was the easiest information to obtain, as it simply required capturing from the surveys the distribution of beneficiaries of grants. The major issue to be considered here was that the ranking of households had to exclude grant income, as explained above. This effectively meant that many who were not among the very poorest were indeed placed in the poorest quintile when their grant incomes were subtracted. It was thus not surprising that, based on such a welfare ranking, social grants were accessed much more often by those in the bottom quintile rather than in Quintile 2.

- Schools: Here the datasets were able to give information on children attending both primary and secondary schools. Unlike in the previous study, the distinction between these levels did not play a major role in the calculations.

- Tertiary education: Access here again seemed relatively straightforward to measure. However, there were some problems. Firstly, the distinction between universities and technikons still existed in 2000, but not in 2006. Also, survey data were not consistent with official records, but were required to distribute spending by race as determined from official data across income groups. In addition, tertiary students often are no longer resident in their home of origin, so the socio-economic status (e.g. income or assets) recorded for them in the surveys may no longer have reflected that of their household of origin. Thus many of those recorded as being in the fourth or even the fifth quintile, i.e. the more affluent, may actually originally be from poor rural households, but now be resident in better, usually urban, circumstances. Thus there would be a bias to under-record targeting of the poor in tertiary education.

- Clinics and hospitals: The General Household Survey provided information on visits to various health facilities. Visits by members of Medical Aid schemes were ignored, on the basis that such recorded visits may have reflected confusion between public and private health facilities, or often were fully paid for by the patients concerned, i.e. were not subsidised by the state. For individual households, the information was incomplete, as the question only asked about the *last* visit. However, this still allowed an analysis of the patterns of usage of such facilities, and in particular ascertaining whether the patterns strongly differed across the income distribution. This was indeed the case, with more affluent patients being far less likely to visit public health facilities. In contrast, for poorer people residing in urban areas, proximity of hospitals made the latter more accessible, leading to a trend towards peak utilisation of these facilities in the poorer part of the urban population. This pattern was similar to that for housing subsidies. The major beneficiaries thus tended to be in Quintiles 3 and 4.

- Housing: The GHS allowed the beneficiaries of housing subsidies to be identified directly, by asking whether the house was obtained through a housing subsidy. Comparing this to the assumption made in previous studies, when such data were not yet available, showed that the assumption that was formerly used gave the correct pattern of benefits. This earlier assumption was that the distribution of beneficiaries of housing subsidies across the income distribution followed the same pattern as those households which were resident in urban areas but did not live in formal housing, and within the appropriate means test categories for housing subsidies. The pattern obtained by both the new question and the assumption used in earlier studies was that housing subsidies were largely going to the middle of the income distribution, viz. those people who were both urban and relatively poor (Figure 1). The very poor were more often rural and thus generally did not benefit from housing subsidies.

Figure 1: Distribution of housing subsidies using reported data versus former assumption on housing access, urban location and means test status, 2006

Most of the methodology focused on income group (quintiles), but in principle the same methodology would also be applied when dealing with race groups.

Methodology: Determining unit costs for a service

A separate and parallel process gathered fiscal expenditure data for the services concerned. In this case the major issue to address was whether the unit cost of services differed substantially and systematically across the income distribution or across population groups. International studies usually ignore such differences, even where they may exist. However, South Africa has a unique history of racial discrimination in unit subsidies, although the previous expenditure incidence studies had indicated that such

differences, which were very common during the apartheid years, largely had been eliminated. Nevertheless, given South Africa's history, it was considered necessary to gather fiscal expenditure data in ways that would allow for possible differences in unit costs across the distribution.
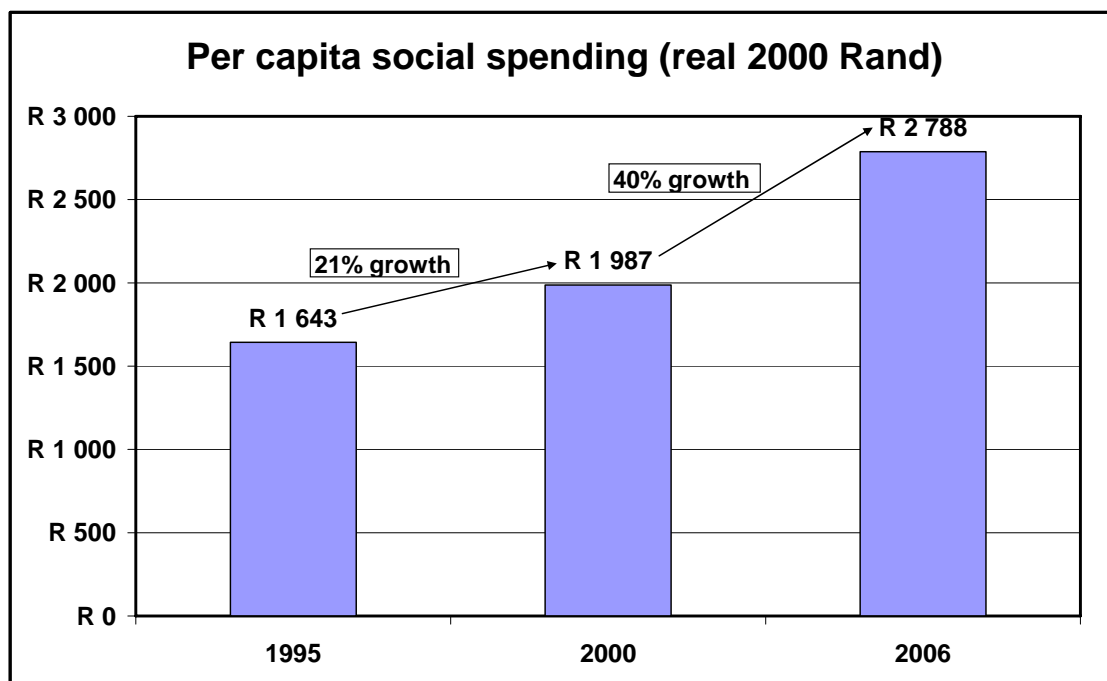
Methodology: Determining aggregate fiscal expenditure on social services

Aggregate fiscal data by service were obtained from a number of sources. The main and preferred option was to use official data obtained from Budget Reviews and Intergovernmental Fiscal Reviews. However, in some cases these did not contain data at the required level of disaggregation. Thus estimates of the distribution of health spending by category were used for health and hospital spending[7], spending on universities (and technikons for 2000) was taken from data provided by the National Department of Education, and the value of aggregate housing subsidies was obtained from the Department of Housing. The social spending included in this study covered 68% of consolidated general government expenditure on the social spending function, including by functional classification – 84% of spending on education (covering all ordinary school education and tertiary subsidies), 70% on health, 68% on social security and 64% on housing. (The functional classification includes social security spending funds, thus reducing these percentages.)

Figure 2 shows quite substantial real growth of the social spending included in this study since 2000. Overall, such spending increased more than 50% in the six years, with the strongest growth occurring with respect to social grant spending, which increased by 127%. There was also strong growth of spending on public clinics, by 67%. In contrast, other sectors grew less than the average rate, with tertiary education recording only 15% growth. Social spending per capita grew in real terms by 21% in 1995-2000 and a further 40% in 2000-2006, taking it to R2 788 (Figure 2).
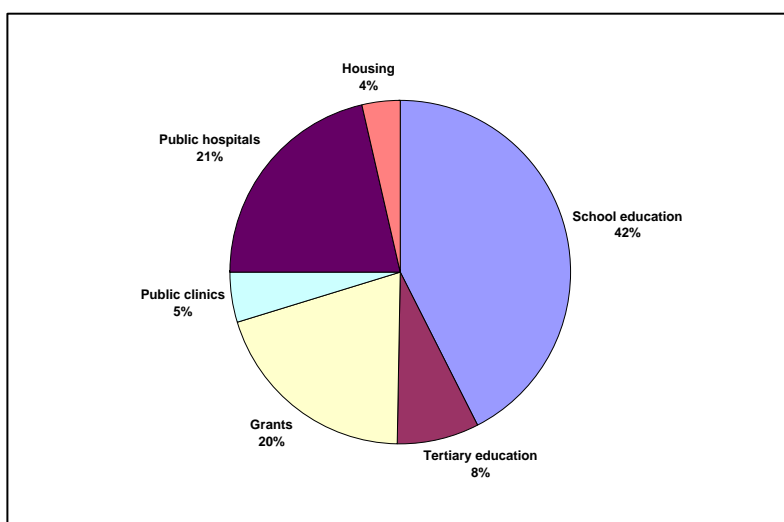
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[7] Mark Blecher of National Treasury kindly provided these

Figure 2: Growth of social expenditure per capita, 1995– 2006

The rapid growth of social grants sharply increased their share of aggregate social expenditure from 20% to 30% in the short six year period, with a consequent reduction in the share of most other sectors, notably school education (the largest social spending category), which declined from 42% to 38% of the total, and tertiary education, that declined to only 6% (Figure 3).

Figure 3: Composition of social spending covered in this study, 2000 and 2006

2000

Housing	3%
Public hospitals	18%
School education	38%
Public clinics	5%
Grants	30%
Tertiary education	6%

2006

Methodology: Free basic services

This study also set out to investigate the impact of the provision of free basic municipal services, namely water and electricity. This has a slightly different impact and works in a slightly different way than other services, due to cross-subsidisation of such basic services within municipal boundaries by the rich for the poor. The impact of this had to be measured. As had been indicated in the terms of reference, this part of the study could only be completed successfully if good data were available, as had been indicated would be the case but turned out not to be true (Addendum B2 to this report discusses this in some detail). Discussions with many officials, including National Treasury, indicated that no such data existed at the appropriate level of disaggregation required for arriving at a proper analysis of the impact of free basic services on the position of the poor and the non-poor. Nevertheless, two routes were followed to get to grips with the issue, at least at a case study level. Firstly, the aggregated national level data were investigated with the intention of measuring the orders of magnitude of the value of these services relative to all services, and specifically for poor households. Secondly, a dataset available for some Cape Town suburbs was used to show the impact of free basic water and the so-called Incremental Block Tariff (IBT) structure, which had already existed before the introduction of the free basic services. This is set out in Addendum A. From this, it transpired that the policy of free basic water along with the IBT were substantially redistributive within municipal boundaries. But the fiscal magnitude of this redistribution was quite small when compared, for instance, to the impact of social grants. Secondly, the introduction of free basic water did increase the benefits of those poor households who had access to metered water, but the larger part of this benefit pre-dated the introduction of this policy, through the IBT. Thirdly, though cheaper water could also potentially have increased the consumption of water by the poor, a study of the demand for water indicated that it is very price inelastic amongst the poor (Jansen & Schultz 2007), thus water consumption may not have been affected much and the major gains to the poor were largely the cost reduction. Fourthly, most of the very poor did not have access to metered water (they were often rural inhabitants or lived in informal housing), thus the gains were especially large amongst the third to sixth deciles of the income

distribution and not amongst the poorest two deciles. Fifthly, unlike other social services that were funded from the national budget through the tax system, basic services were funded at municipal level through municipal utilities which generally tried to break even or even make an operating profit. Thus it is safe to assume that free or lower cost services for the poor came from higher unit costs and therefore also aggregate costs for the rich. This was largely paid by households in the top decile. This transfer from the rich to the poor was quite substantial, but not compared to aggregate incomes. Sixthly, due to a modest negative price elasticity of water consumption amongst the rich, higher water tariffs also reduced their water consumption somewhat and thus acted as an instrument of water demand management.

Results

Results: Unit costs

Before turning to the results on social spending generally, the findings with respect to unit costs are first discussed. Spending in 2006 was no longer racially discriminatory. Levels of subsidies still differed across beneficiaries only in schools and in tertiary education. In school education, the costs of teacher salaries were higher in more advantaged schools because teachers in these schools were generally better qualified and more experienced, and because richer schools still had more non-teaching staff on their public payrolls. But on the other hand, the government's norms and standards policy allocated disproportionately more non-personnel spending to poorer schools, a policy that was accelerated with the introduction of no-fee schools. Also, with schools being open to all, spending per child differed little – whereas the average white child in the early 1990s obtained a subsidy for education of about 4.50 times as much as a black child, this disparity had largely been eliminated by 2006. The 20% advantage that remained per white child largely reflected historically better staffed schools and also a larger share in secondary schools, which are more heavily subsidised. Across the income distribution, for all practical purposes no differences in net education subsidies remained between schools attended by rich and by poor children.

The investigation into schools costs drew from two recent studies that involved members of the research team (Gustafsson & Patel 2006; the Van der Berg & Louw 2007). After adjustments to incorporate more recent changes (the extension of funding to poorer schools), it was easy to obtain the total costs per school quintile. To link the school quintiles to the household income distribution, three educational datasets were used: SACMEQ 2001, TIMSS 2003, and PIRLS 2006. First a ranking of individuals was obtained using an asset index as described before for the income distribution. Schools were then ranked into school quintiles using the average value of this SES (socio-economic status) indicator of the children in the school concerned. Then the distribution of individual children in population quintiles was obtained and matched to the school quintiles. This could then be used to allocate costs across the income distribution.

In tertiary education, subsidies paid to universities for students in the natural sciences were approximately two and a half times as large as for social science and humanities students. Consequently, because fewer black students attended natural sciences courses,

they made a smaller fiscal claim on the state, on average. They were at a disadvantage of almost 16% in terms of public subsidies to their universities compared to white students. (Special schemes to assist disadvantaged students, for instance through loan and bursary schemes through the National Student Financial Aid Scheme (NSFAS) that is referred to later, were not considered in this calculation, but see also the discussion later on the impact of the NSFAS.)

Results: Targeting of spending

Overall, social spending is now well targeted, as can be seen from the concentration ratio. This ratio is a measure similar to the Gini coefficient: It is positive when spending favours the rich, zero when spending is completely evenly distributed and negative when spending favours the poor. This ratio improved from –0.112 to –0.152 from 2000 to 2006 (Table 1), a considerable improvement to a level that indicates extremely good targeting of spending on the poor. To put these figures in perspective, in more than 30 developing countries where this measure had been calculated for spending on specific services, Yaqub (1999) obtained a mean value of 0.01 for all school education, and 0.39 for tertiary education. For South Africa, the indices were an impressive –0.13 for school education, but, for reasons which will be discussed, an extremely poor 0.64 for tertiary education. In health, where Yaqub encountered not a single example in his sample of a concentration index with a negative value, the South African index for health clinics was an impressive –0.26, and even for South African public hospitals the index of –0.10 was very good.

Table 1: Concentration ratios by social sector, 2000 and 2006

	2000	*2006*
School education	-0.121	*-0.128*
Tertiary education	0.528	*0.641*
All social grants	-0.371	*-0.359*
• Child support grants	-0.247	*-0.318*
• Disability grants	-0.291	*-0.288*
• Old-age pensions	-0.412	*-0.436*
Health	-0.118	*-0.137*
• Public clinics	-0.177	*-0.257*
• Public hospitals	-0.105	*-0.103*
Housing	0.160	*0.070*
Total across services	*-0.112*	*-0.152*

Why was South African social spending so well targeted? The reasons did not always have to do with good policy or delivery, though government had gone out of its way to ensure good targeting and access for the poor to social services. For social grants, the means test ensured targeting at poorer members of the population. In education, the fact that there were more children amongst the poor automatically meant that education spending benefited the poor more than proportionately. In health, the more affluent often

opted out of public health services, often because of quality concerns, thus the poor receive a larger share of health subsidies than expected.

Despite social spending being so well targeted, targeting within most individual social sectors had not much improved (see again Table 1). On the contrary, according to the measured concentration ratios by sector, two sectors saw a worsening of targeting:

- Spending on social grants became slightly less targeted. This perhaps derived from a weakening of the application of means testing (the less stringent means test criteria that were recently announced will strengthen this trend). But the more important reason was the increased weight of the child grants, which were far less targeted than the earlier dominant social old-age pensions.
- There was been a major worsening, according to the data, of the already poor targeting in tertiary education. However, this may also be a data issue, and in particular the issues referred to earlier with regard to measurement of targeting in tertiary education may have played a growing role here. This issue is returned to below.

Despite worsening of targeting in some individual social spending categories, overall targeting improved, largely driven by the increased weight of social grants referred to before, but also by some further improvements in targeting subsidies of public clinics, which improved the targeting of health spending. There was also some improvement of targeting of housing subsidies.

Targeting of all social spending is also shown by the concentration curves for social spending for the three years covered by this study, 1995, 2000 and 2006. The concentration curve is drawn similar to the Lorenz curve: First the population is ordered from poorest to richest by the welfare measure (in this case per capita income before social grants, i.e. actual incomes from which social grants have been subtracted before the per capita measure was calculated). Then the cumulative share of the social spending is shown against the cumulative share of population. Where the concentration curve lies above the diagonal, it implies a negative value for the concentration ratio that is calculated exactly as for the Gini coefficient, as the area between the curve and the diagonal, expressed as a share of the area below the diagonal. As can be seen in Figure 4, the curves for combined social spending have been above the diagonal in all three years, but the clear outward shift over time reflects improved targeting and a concentration ratio that is a growing negative number. The concentration curve can also be redrawn in difference terms as the vertical distance between the curve and the diagonal, and then rescaled, as in Figure 5. This shows, on a larger scale, the distance by which the concentration curve lies above (or below, in some other cases not shown here) the diagonal. This aggregate measure of targeting of spending clearly improved.

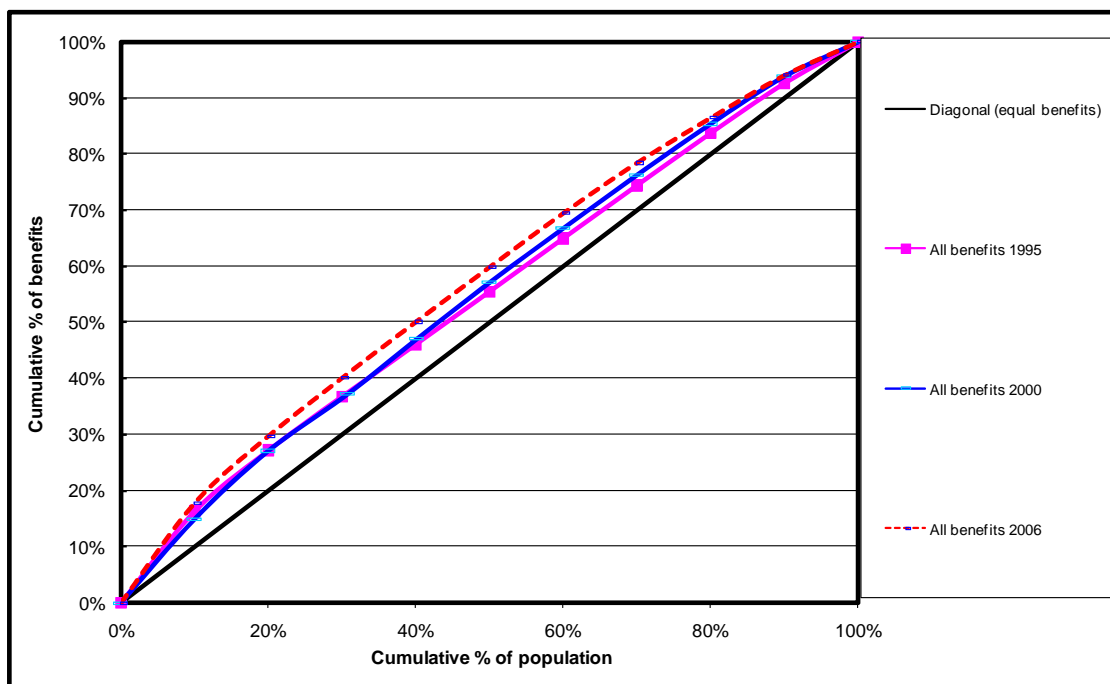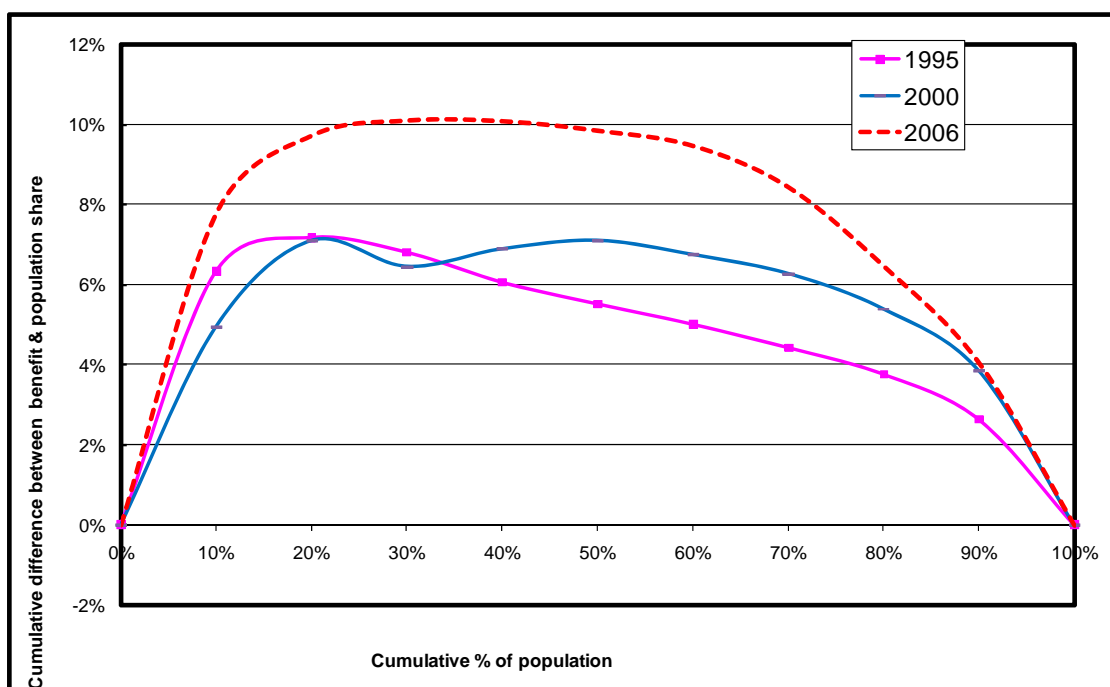**Figure 4: Concentration curves for total social spending, 1995, 2000 and 2006**

Figure 5: Concentration curves: Alternative presentation (distance above diagonal)

As indicated above, racial and other biases no longer affected the incidence of fiscal expenditure in 2006. Moreover, due to good access to services and good targeting of many services, the poor were not excluded from benefiting and were often even at an

advantage. Figure 6 shows that the poorest 40% of the population[8] received more than their share of the benefits of public spending: They got a full 50% of the value of all social spending. They benefited especially from spending on the three main social grant types (obtaining between 59% and 70% of such spending) and for public clinics (57%), to which they had good access, while the more affluent seldom visited such clinics. In school education (49%) and in public hospitals (45%) as well, the poor still obtained more than their share of subsidies. The two exceptions, though, were in housing and in tertiary education, where they received only 24% and 4% respectively of all subsidies. Housing subsidies were not well targeted at the poor because such subsidies largely went to urban residents, while the poorest people often resided in rural areas. In tertiary education, however, the extremely low proportion of subsidies estimated to go to the poor was the result of three factors:

- Firstly, weak performance of many schools attended by poor children effectively prevented many from completing school or obtaining endorsement in the matriculation exam. This limited their opportunity of attending tertiary institutions.
- Secondly, poor children who did perform well enough to qualify to enter tertiary education often lacked the financial resources to do so. The NSFAS assisted a lot, but the actual and opportunity cost of studying (not being able to earn) remained an impediment to many students.
- Thirdly, the data relating to access to tertiary education were probably biased. Estimates were based on household surveys, but many students were no longer resident in their families of origin, so this may have lead to a poor capturing of their home background in surveys.

Yet, despite the issues that made entry into tertiary education difficult, Table 2 shows the rapid expansion of tertiary access and performance (measured by degrees, diplomas and certificates awarded). It is also evident that this applied across race groups and the two broad fields of study. The increase in black enrolment in Natural Science courses of almost 50% in this six year period is particularly impressive; in terms of awards the growth was even greater. The loan and bursary support offered by NSFAS must have contributed in an important way to this increased access. NSFAS spending from public resources (including aid, but excluding funds obtained from repayment of loans) grew from R510 million in 2000 to R1 358 million in 2006, and the number of loans and bursaries awarded grew from 83 769 to 107 586. But despite the undoubted importance of this spending for improving access, the relatively small magnitude of NSFAS within broader social spending means that its social incidence impact is quite small: Under favourable assumptions it increases spending on the black population by about R29 per member of the population, an almost 30% addition to their benefits from tertiary
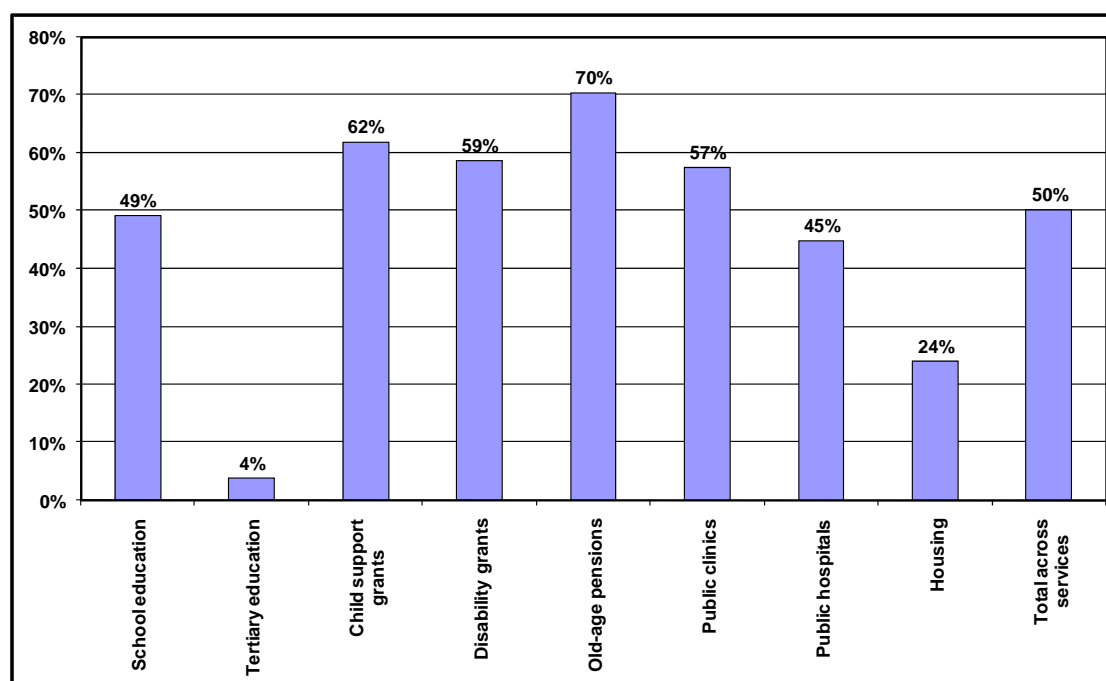
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[8] Note that in the preceding studies (reported in previous Budget Reviews), data were shown per quintile of *households*. The poorest 40% of households in those cases constituted almost 50% of the population. This study, however, follows the norm that has now internationally been adopted in studies of this kind, viz. to show incidence by the distribution of *population* rather than of households, i.e. quintiles now are equal sized in population.

education spending, but this increases their aggregate benefits from social spending by only 1½%. Moreover, only a minute part of this spending goes to the very poor.

Table 2: Access and performance in tertiary education by race and field of study, 2000 & 2006

Race	2000			2006		
	Full time Student enrolment (headcount)					
	Social Sciences	**Natural Sciences**	**Total**	**Social Sciences**	**Natural Sciences**	**Total**
Blacks	255 092	83 964	339 056	327 306	123 677	450 983
Coloureds	21 770	8 692	30 462	36 009	12 521	48 530
Indians	24 999	14 466	39 465	38 318	16 500	54 817
Whites	107 006	55 606	162 612	126 138	58 342	184 480
Total	408 867	162 728	571 594	527 770	211 040	738 810
	Degrees/diplomas/certificates awarded					
Blacks	39 683	9 416	49 099	52 731	17 239	69 970
Coloureds	3 143	1 314	4 457	5 610	2 200	7 810
Indians	3 714	2 264	5 978	5 210	2 896	8 106
Whites	21 379	11 159	32 538	25 321	13 196	38 517
Total	67 19	24 153	92 072	88 872	35 531	124 403

Figure 6: Share of spending received by the poorest 40 % of the population by social spending category, 2006
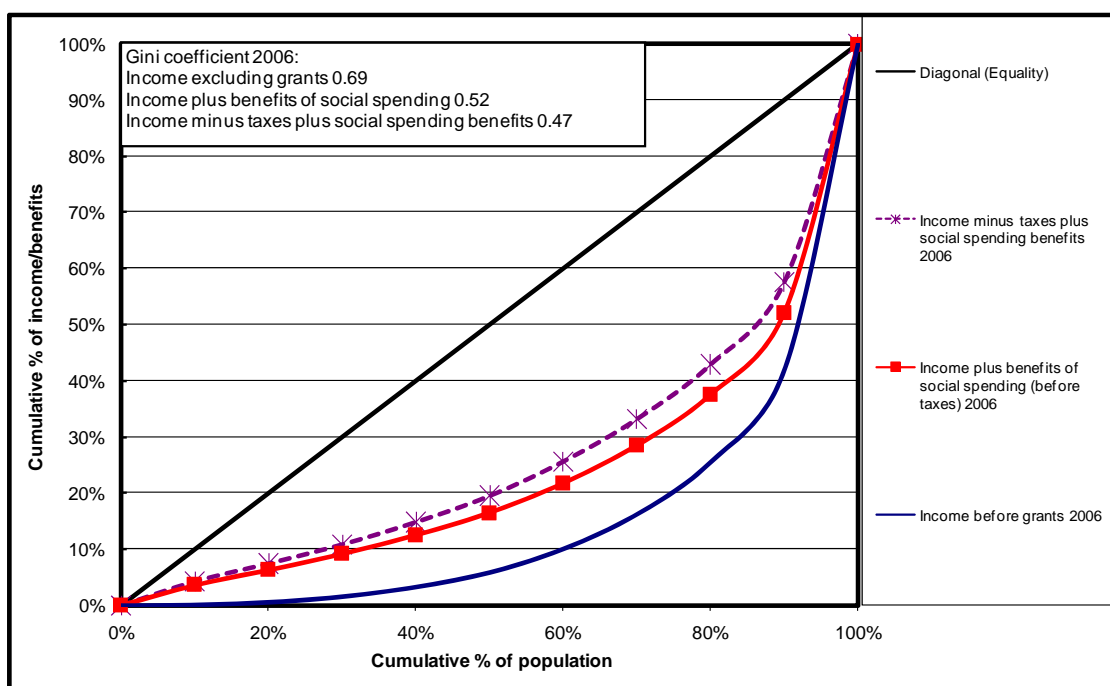

The overall spending on the social services covered in this study in 2006 (R177 billion in nominal terms) was not much more than the overall value of personal income taxes paid

(R141 billion). It is conceptually useful to think of both social spending and personal taxes as fiscal interventions that alter the distribution of the overall resources (private and public) at the disposal of people, i.e. through the market and in the form of social services that people consume (Bromberger 1982).

As explained earlier, to determine the benefit of social spending, households were ordered in terms of their income before social spending, i.e. by income per person *excluding* the value of any social grants that they may have received. Thus one can think of three distributions: a distribution of income *before* grants, subsidies and taxes; a distribution *after* grants and subsidies had been added to households' resources; and a final distribution that also *excluded personal taxes* households paid. For each of these, a Lorenz curve could be drawn and a Gini coefficient calculated. (Note, however, that none of these is the normal Gini coefficient for all income and that none is therefore comparable to Gini coefficients published for other countries.) The Gini for pre-transfer income was 0.69, but it dropped to 0.52 for income plus benefits and to 0.47 after taxes had also been subtracted (Figure 7 and Table 3). This illustrated three things:

- The South African fiscal process was highly distributive.
- Social spending had an especially large impact on inequality, reducing a Gini so calculated by far more than even the progressive income tax system did.
- Even after all redistributive spending and taxes had been considered, inequality was still extremely large. This emphasised both the limits of fiscal redistribution and the need for a reduction of inequality in the market. The latter is best achieved through a combination of human capital improvements and a growing economy.

Figure 7: Lorenz curves for three welfare measures in 2006: Pre-grant income, income plus social spending benefits, income minus taxes plus social spending benefits

Income distribution data for 2000 and 2006 were not strictly comparable, so not too much should be read into the fact that the Gini coefficient of pre-grant income was smaller at 0.69 in 2006 compared to 0.71 in 2000. However, assuming an unchanged progressivity of the tax system after 2000, the expansion and improved targeting of social spending had made the budget more redistributive, reducing the Gini-coefficient for post-fiscal resources by 0.14 in 1995, by 0.18 in 2000 and by 0.22 in 2006.

The last columns in Figure 8 that show total spending per person confirm that such spending increased substantially in real terms between 1995 and 2006, as has also been shown before. By far the largest part of this increase occurred after 2000, reflecting the strong growth of the economy and government revenue in this period. As the figure shows, gains in social benefits were recorded right across the distribution, but the gains for the poor were particularly large. An important reason for this was the rapid growth of social grant spending, the best targeted of all social spending programmes. Improved targeting was also reflected in the concentration index, which improved somewhat from –0.095 in 1995 to –0.112 in 2000, and then even much more rapidly to –0.152 in 2006. In real terms, social spending per person for the poorest 40% of the population increased more than two and a half fold over eleven years, from only R1 373 in 1995 to R2 329 in 2000 and R3 532 in 2006 (all in 2000 Rand values). This reflected both the aggregate growth of social spending and the improved targeting that the concentration ratios showed. The increase of more than R1 200 per person for the poorest 40% of the population since 2000 was almost three times as large as for the richest 20% of the population, and they now receive considerably larger benefits than before.

In terms of population groups, Figure 9 shows that benefits have shifted towards the black and to a lesser extent the coloured population groups, for similar reasons as apply for the shifts to the poorer quintiles.

Figure 8: Real per capita benefits from all social spending by quintile, 1995, 2000 and 2006 (in 2000 Rand values)
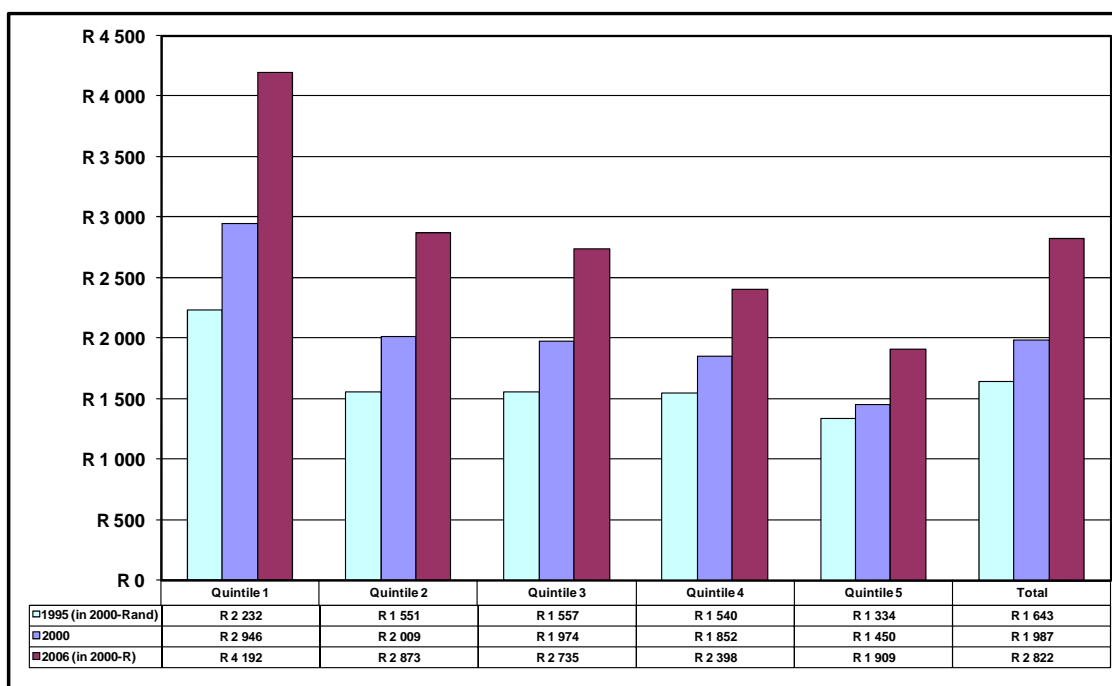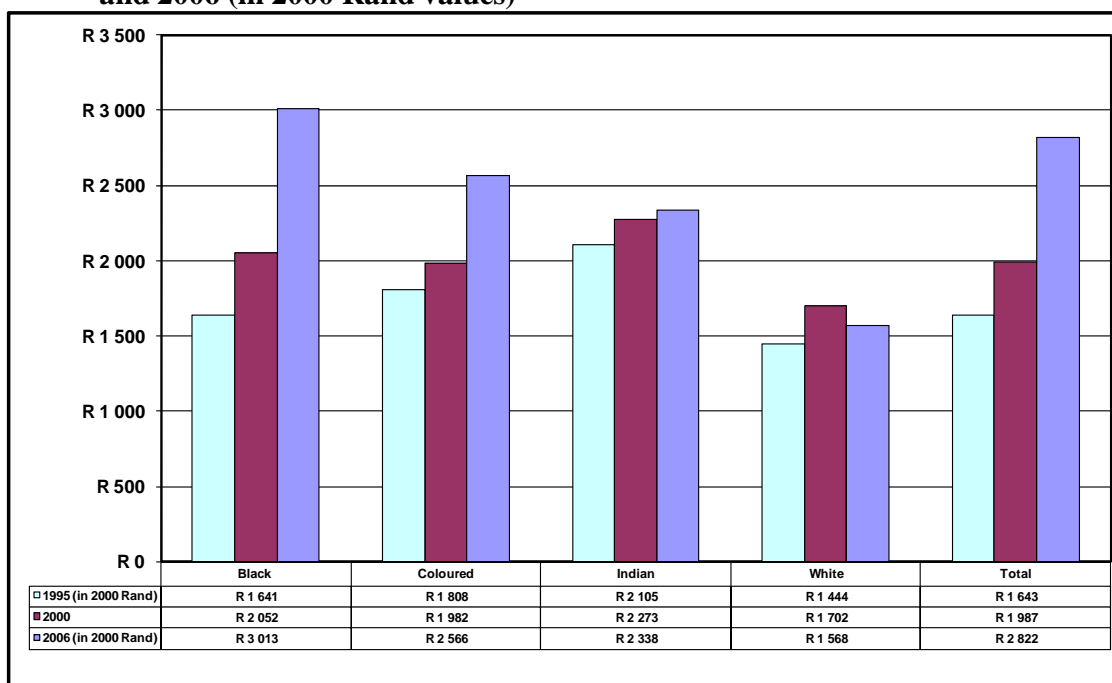

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
1995 (in 2000-Rand)	R 2 232	R 1 551	R 1 557	R 1 540	R 1 334	R 1 643
2000	R 2 946	R 2 009	R 1 974	R 1 852	R 1 450	R 1 987
2006 (in 2000-R)	R 4 192	R 2 873	R 2 735	R 2 398	R 1 909	R 2 822

Figure 9: Real per capita benefits from all social spending by race group, 1995, 2000 and 2006 (in 2000 Rand values)

	Black	Coloured	Indian	White	Total
1995 (in 2000 Rand)	R 1 641	R 1 808	R 2 105	R 1 444	R 1 643
2000	R 2 052	R 1 982	R 2 273	R 1 702	R 1 987
2006 (in 2000 Rand)	R 3 013	R 2 566	R 2 338	R 1 568	R 2 822

Interestingly, targeting within *specific* social programmes had changed little since 2000, as Table 1 above had indicated. The scope for redistribution to eliminate earlier discrimination has almost been exhausted. Aggregate social spending became much better targeted largely as a result of structural shifts in the size of different programmes: The rapid growth of the best targeted social programme, social grant spending, and the decline on the other hand in per student spending on tertiary education, the most poorly targeted programme (though note the earlier proviso about the accuracy of the targeting information for tertiary education). These changing weights made social spending even more redistributive, though further scope for this was diminishing.

Figure 10 indicates some changes in the underlying distribution of pre-transfer income. However, there is good reason not to be too confident about these trends, given data comparability issues. As the post-fiscal distribution is affected by the pre-fiscal distribution, uncertainty about the latter means that, for measuring changes over time, it is better to place the emphasis on fiscal impact from a *given* distribution of pre-transfer income. A visual comparison of Figure 11, Figure 12 and Figure 13 illustrates the growing impact of the fiscus in changing distribution, as is evident in the growing gaps between the pre- and post-fiscal distributions.

Figure 10: Changing pre-transfer income distribution (Note: This is based on somewhat uncertain data about the distribution of income)
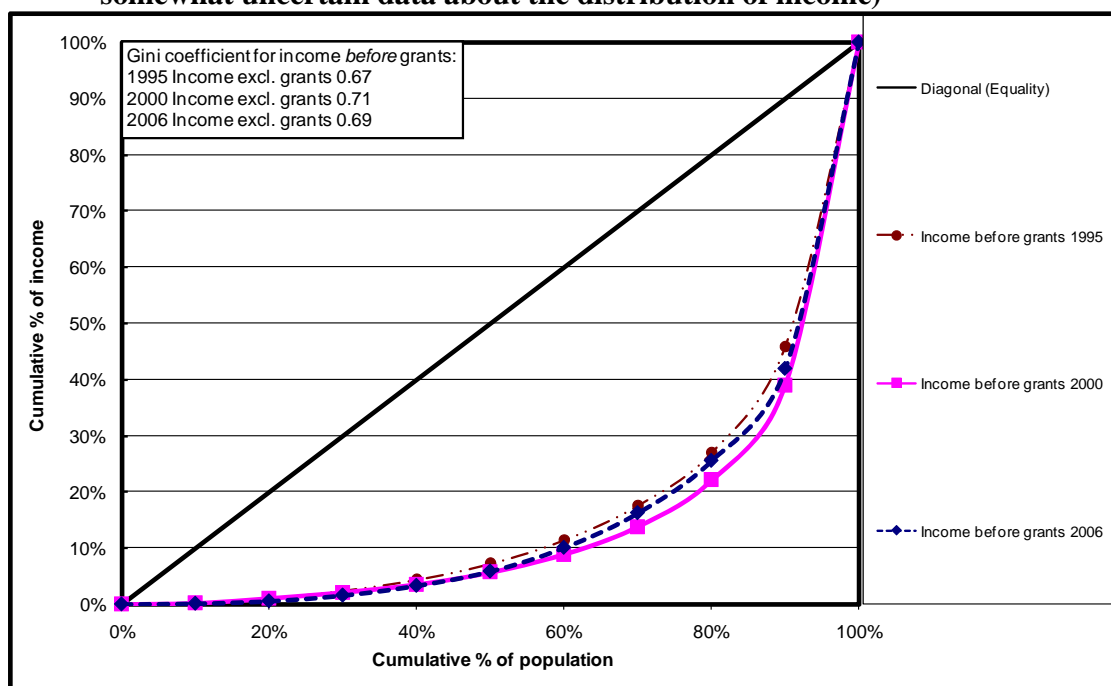
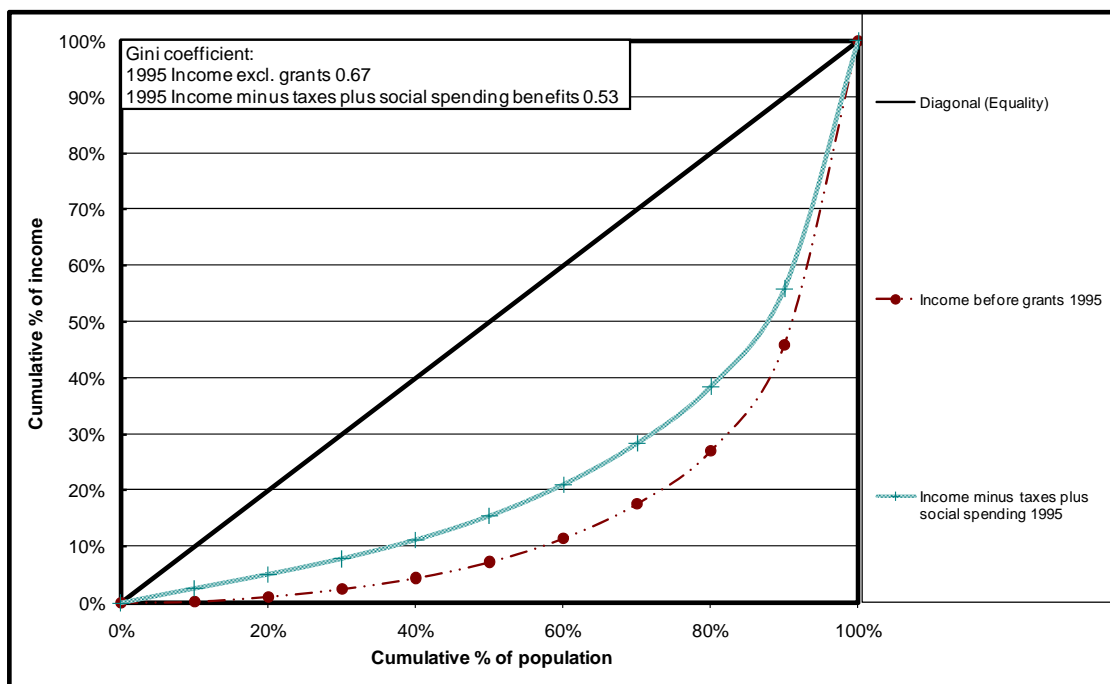**Figure 11: Effect of fiscal redistribution on income distribution, 1995**

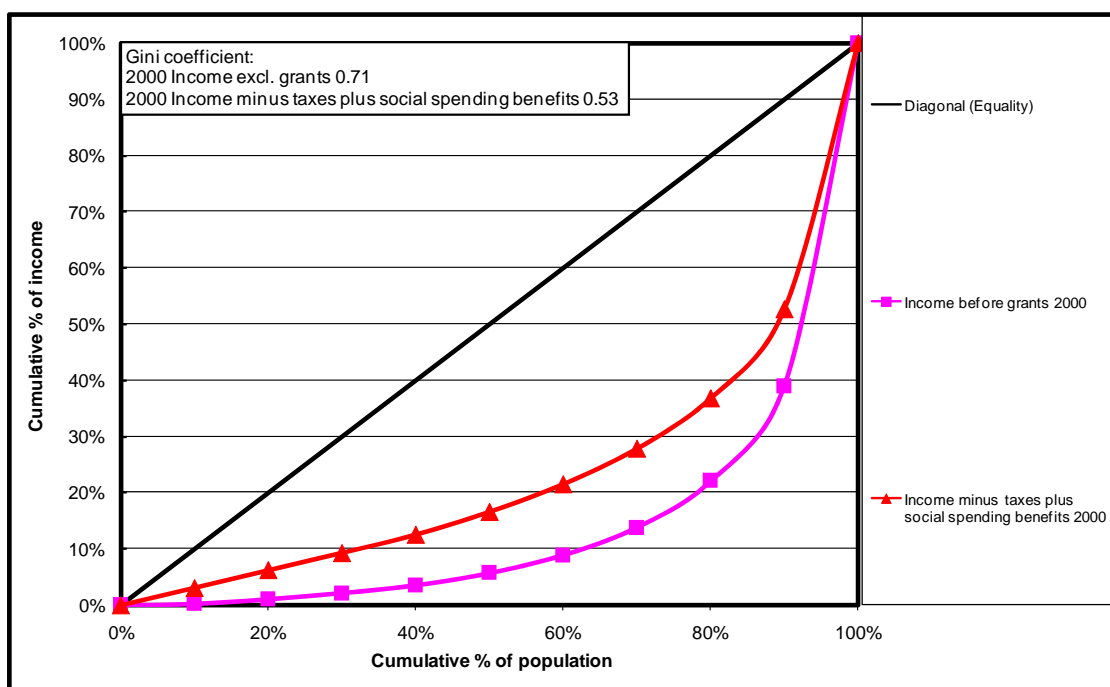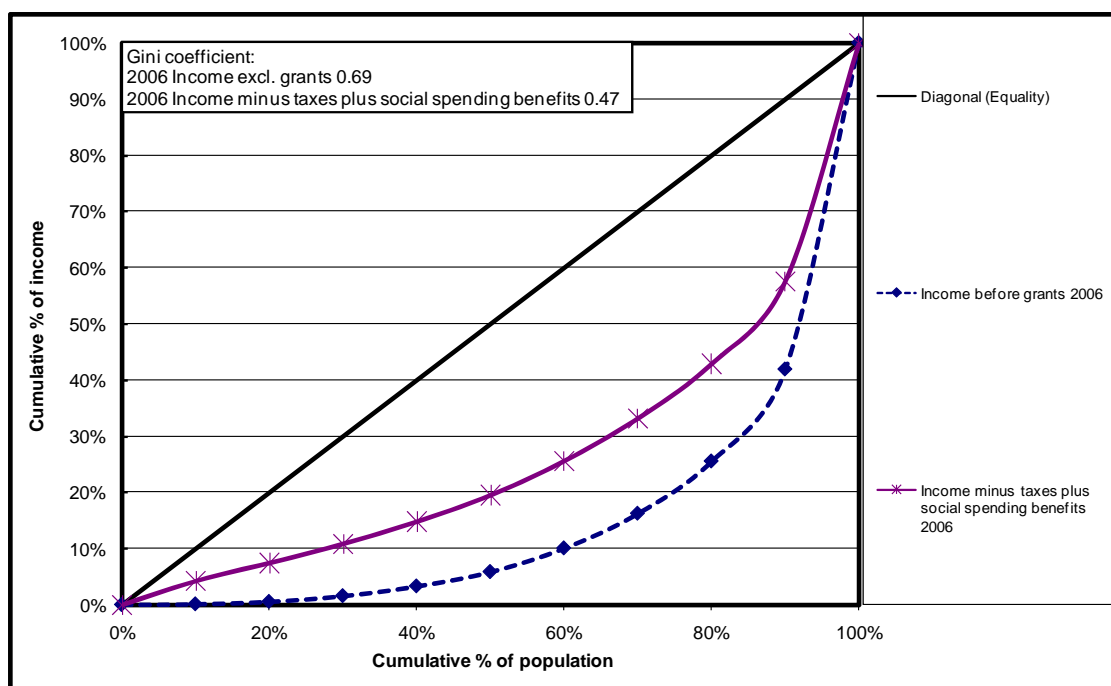**Figure 12: Effect of fiscal redistribution on income distribution, 2000**

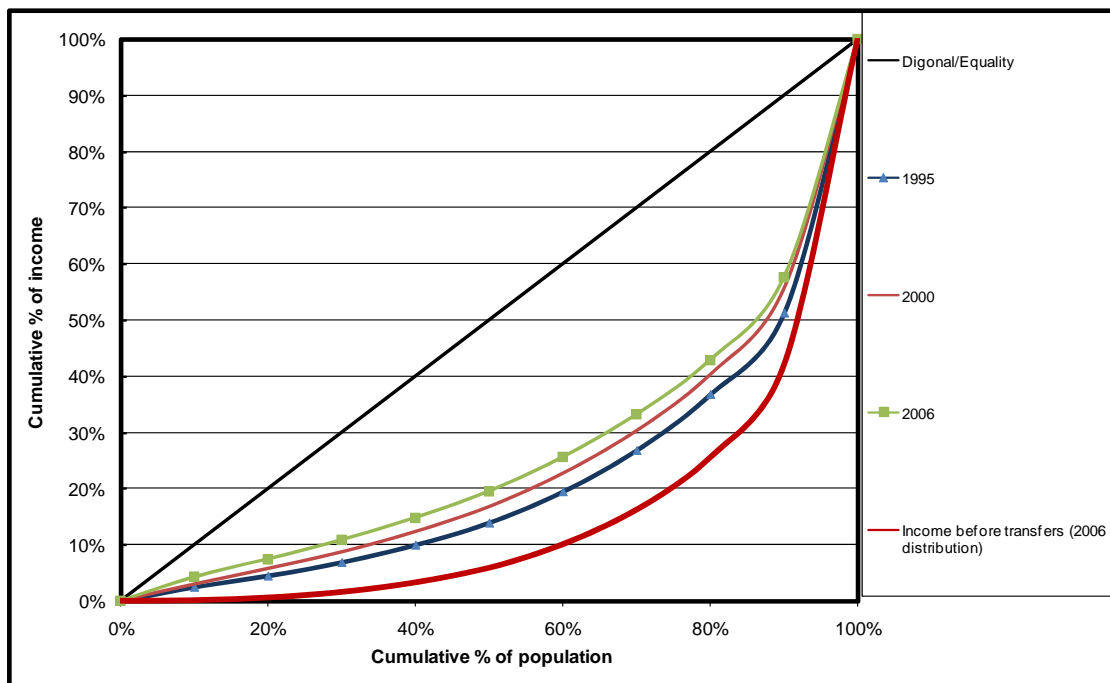**Figure 13: Effect of fiscal redistribution on income distribution, 2006**

Table 3 takes this comparison further and shows that the fiscal process has been quite redistributive, but that the extremely unequal distribution resulting from the working of market processes constrained the potentially achievable post-fiscal equity The Gini coefficient excluding social transfers was very high. Because of the uncertainty referred to above regarding the comparability of the income distributions for different years, one should not focus too much on the Gini coefficients themselves, both for pre-transfer income and consequently also after considering the effects of the fiscal process. The more pertinent figure is the *reduction* in the Gini that arises from the fiscal process (after taxes and social spending), which gives a crude indication of the redistributive power of the budget. In 1995, it reduced the Gini compared by 0.138, in 2000 by 0.180, and in 2006 by 0.223. Clearly, the redistributive power of the budgetary process increased.

Table 3: Concentration ratios and Gini coefficients, 1995, 2000 and 2006

	1995	2006	2000
Total social spending	-0.095	-0.112	-0.152
Total income/expenditure (excluding grants)	0.666	0.707	0.690
Taxes paid	0.755	0.829	0.829
Income plus benefits	0.578	0.576	0.523
Income minus taxes plus benefits	0.528	0.527	0.467
Effect of fiscal process	*-0.138*	*-0.180*	*-0.223*

Another way of looking at this is to assume a fixed income distribution in 2000, and then to consider the impact of the fiscal redistribution process on the Gini, as in Figure 14.

Figure 14: Changing effect of fiscal processes on distribution, assuming unchanged distribution of pre-transfer income
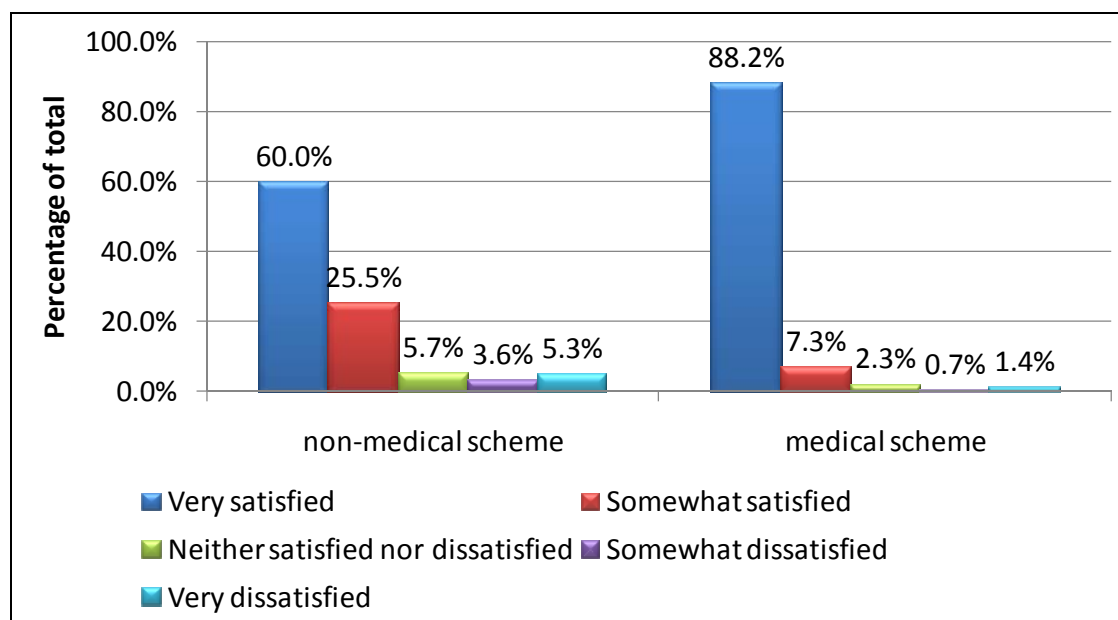

Results: Limitations of expenditure incidence analysis

Budgetary resources limit social spending increases, as social spending is already well targeted in international comparison. Future growth of spending per poor person is thus likely to slow. A source of concern is that social spending has often not had the desired results in terms of social outcomes. This is clearly the case for social delivery programs, where government puts much effort into improving efficiency of resource use and social delivery. According to some views, households too are not all equally effective in converting social grant spending into desired improvements in living standards for the most vulnerable in such households, e.g. children and old people. There are concerns that some households may use such additional resources poorly.

Government has been grappling with serious quality concerns in social spending programmes for some time. So, for instance, there is general dissatisfaction with many public health services. Figure 5 shows satisfaction rates for public hospital services (mainly visited by non-medical aid members) to be significantly lower than for private hospital services (largely used by medical scheme members). Quality concerns about services for the poor also arise in education, where there is evidence that "*(g)reat inequality of educational outcomes persists despite increased equity in educational spending since political transition*" (Taylor & Yu 2009: 41). Clearly, equity in fiscal incidence of social spending is a necessary but an insufficient requirement for equity in social outcomes.

Figure 15: Satisfaction levels with hospital services among members and non-members of medical schemes, 2006

Conclusion

This study has shown that fiscal redistribution intensified in the period after 2000 and that the expansion of spending on social grants in particular had contributed by 2006 to a highly redistributive fiscal stance. Yet, despite this, much inequality remains. The reason for this is the massive degree of inequality in pre-transfer income. This remains the biggest challenge to perceived equity of outcomes.

The scope for further fiscal redistribution is now constrained by the size of the budget and by the extent of redistribution that has already occurred. In most areas of social spending, little scope remains for increasing such redistribution. The major impediment to more social equity now rather appears to lie in the inefficiency of the social delivery process among the poor. Improved efficiency of social delivery is an issue that has been growing in prominence as the scope for more fiscal redistribution declines.

This study has shown that fiscal discrimination has been eliminated. The minor differences in spending that remain that favour richer parts of the population arise within non-discriminatory frameworks, e.g. more affluent schools attract better qualified teachers, and more affluent students have a higher propensity to study in the natural sciences, which are more highly subsidised. But the effect of these issues unequal spending outcomes is negligible compared to the excellent targeting of spending towards the poor.

The results of this study are not very sensitive to the datasets used or the assumptions made. Largely, access to services now determine fiscal spending incidence, while

inefficiencies of social delivery are now a major influence on inequalities in social outcomes.

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