

# PIMS

## BUDGET PAPER 1

### Revenue estimation, the budget balance and fiscal accountability in South Africa

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# **PIMS Budget Paper 1**

**Revenue Estimation, the Budget Balance  
and Fiscal Accountability in South Africa:  
Some Recent Experiences**

## 1. Introduction

In recent years South African budget outcomes have typically been characterised by revenue over-runs, which is the tendency for tax revenue collected to exceed the budget estimate. In 2006/07, revenue over-runs from a fairly small proposed deficit led to a budget surplus for the first time in democratic South Africa. Subsequent budgets have gone further and proposed moderate surpluses, generally on the inter-linked grounds of accelerating inflation, insufficient domestic private saving, and the location of the economy relative to the business cycle.

Revenue over-runs and a budget policy favouring surpluses over the current medium-term expenditure period are related concepts. Both embody aspects of a generally prudent and risk-averse approach taken by government to macroeconomic management. But they also need to be kept separate for analytical purposes: revenue over-runs, the focus of this paper, relate primarily to broad administrative performance, not only in the quality of tax compliance and collection, but also in the quality of macroeconomic and revenue projections themselves. The need for a conceptual distinction between revenue over-runs and planned budget surpluses is confirmed by the fact that over-runs have occurred under both deficit and surplus budgets in recent years. This distinction does not take away the fact, however, that a revenue over-run has a particular macroeconomic impact on the economy, irrespective of whether it is by design or comes as a recurrent surprise.

The paper is organised as follows: section two describes recent trends in revenue collection and budget balance outcomes. Section three discusses the determinants of the budget balance and confirms that revenue over-runs, rather than underspending, account for recent budget balance divergences from initial estimates. Section 4 identifies basic factors leading to revenue under-estimation and looks in more detail at the years 2004/05 to 2007/08 in South Africa. Section 5 argues that sustained over-runs may have a negative impact on fiscal accountability and makes some recommendations in this regard. Section 6 provides a rudimentary indication of the more strictly financial costs and benefits of over-runs.

## 2. Revenue over-runs and recent trends in the budget balance

In recent years, South African budget outcomes have diverged notably from proposed balances. Table 1 shows proposed conventional budget balances and outcomes for the period 2001/02 to 2007/08.<sup>1</sup>

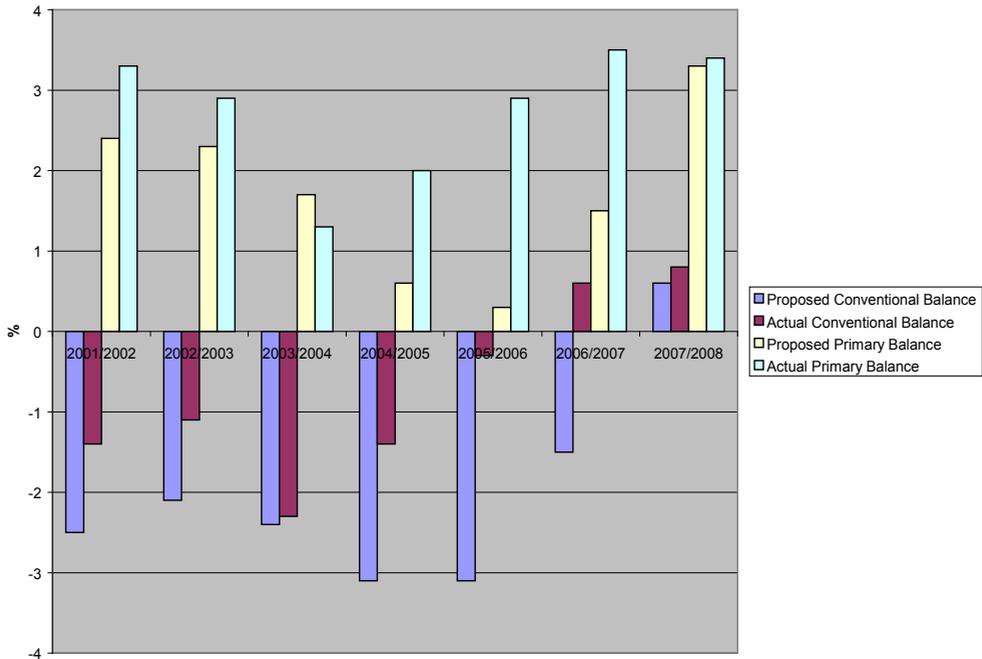
	Proposed conventional balance*	Actual conventional balance**
2001/02	-2.5	-1.4
2002/03	-2.1	-1.1
2003/04	-2.4	-2.3
2004/05	-3.1	-1.4
2005/06	-3.1	-0.3
2006/07	-1.5	0.6
2007/08	0.6	0.8

\* As contained in the Budget as submitted to Parliament.  
 \*\* The outturn at year-end.  
 Source: National Treasury Budget Reviews.

Not surprisingly, a similar trend is evident in the primary budget balance, which is the difference between revenue and non-interest expenditure. Figure 1 on the next page shows proposed primary and conventional balances and their outcomes for the same period.

As shown in both Table 1 and Figure 1, a conventional budget surplus first occurred in 2006/07. In 2006/07, the conventional budget surplus outcome was unanticipated; in fact, a deficit of 1.5% was proposed. This was followed by a planned conventional surplus in 2007/08, which ended in a slightly larger surplus than was budgeted for (0.8% vs. 0.6%). National Treasury's annual Budget Review shows that figures envisaged for the main budget balance over the current medium-term period (2008/09 to 2010/11) are a 0.6% surplus in 2008/09, a 0.5% surplus in 2009/10, and a 0.5% surplus in 2010/11.<sup>2</sup> In part these trends reflect the argument that the structural budget balance remains close to zero or moderately in deficit, that is to say that cyclical factors are the main contributor to the current budget surplus environment.

Figure 1: Proposed and actual conventional and primary balances, 2001/02 to 2007/08 (% of GDP)



Source: National Treasury Budget Reviews; 2007/08 an estimate.

There are two questions pertaining to budget balances which are of particular interest, namely the reasons for the tendency for divergence between allocation and outcome (specifically divergence generating a smaller deficit or a larger surplus than that proposed) and the broader question of the appropriateness of surpluses, be they intended or inadvertent. This paper engages primarily with the first of these questions, although the second is touched on in the discussion of the opportunity costs of revenue over-runs.

### 3. Determinants of the budget balance

The budget balance outcome refers to the actual deficit or surplus achieved, rather than that proposed by the Executive at the start of the fiscal year. The budget balance outcome is dependent on a range of fiscal and economic factors, some of which are directly within the control of the fiscal

authorities, some indirectly, and some of which are largely exogenous. Budget and outcome convergence, meaning the attainment of a small or negligible divergence between the proposed budget balance and the actual outcome, is consequently a function both of the quality of fiscal management and the accuracy of the estimates of key fiscal and economic variables for the year being budgeted for.<sup>3</sup> The budget is by definition an ex ante document, and ex post outcomes inherently constitute an evaluation of the quality of that initial document's assumptions.

In drawing up the budget, fiscal authorities need to accurately estimate general economic trends and their impact on public finances, as well as the administrative performance of spending and revenue-raising institutions. Since the budget balance as operational policy instrument in macroeconomic policy is defined as the ratio of the difference between revenue and expenditure to GDP, inaccurate predictions of any one of these variables in the budgetary estimates impacts on the degree of divergence between the balance proposal and outcome.<sup>4</sup>

Both revenue and expenditure convergence are firstly dependent on the accuracy of the economic growth estimate. Revenue outcomes depend closely on growth outcomes since growth trends largely determine trends in the value of tax bases such as income and consumption.<sup>5</sup> All else being equal, the more economic activity there is, the more there is to be taxed, and the higher revenue collection will be for a given set of tax rates. Expenditure varies with growth because lower growth may, amongst other things, mean more eligible beneficiaries for entitlement-based spending. Revenue outcomes, however, tend to be more sensitive to economic growth than expenditure outcomes, since means-tested entitlement spending rarely makes up a large part of a budget.

As Table 2 shows, expenditure has tended to be fairly well-managed in South Africa for the period under consideration, with no divergence exceeding 2%. Table 2 strongly suggests, in fact, that budget balance divergence stems largely from the revenue side of the budget where, with the exception of 2003/04, actual tax revenues have considerably exceeded revenue estimates. The value of revenue over-runs in the six years excluding 2003/04 are (in current Rands) R21.3 billion in 2004/05, R44.6 billion in 2005/06, R38.7 billion in 2006/07 and R14.5 billion in 2007/08. Thus, understanding the causes of a budget balance divergence also requires analysis of factors accounting for revenue divergence and, more specifically, for revenue under-estimation.

**Table 2: Divergence between proposed and actual expenditure and revenue in South Africa, 2001/02-2006/07 (%)**

	Expenditure divergence*	Revenue divergence**
2001/2002	1.8	6.5
2002/2003	1.4	5.1
2003/2004	-1.6	-2.4
2004/2005	-0.1	6.4
2005/2006	-0.3	12.0
2006/2007***	-0.5	5.2

\* Calculated as (actual expenditure – budgeted expenditure)/budgeted expenditure  
\*\* Calculated as (actual revenue – budgeted revenue)/budgeted revenue.  
\*\*\*Source: Statement of the National Revenue Fund, Expenditure and Borrowing as from April 2006 to 31 March 2007, available at [www.finance.gov.za](http://www.finance.gov.za)

#### 4. Determinants of Revenue Under-estimation

Revenue under-estimation can be attributed to a number of factors, but primarily to the under-estimation of economic growth, tax performance (tax bases, effort and compliance), and inflation rates.

If the real economic growth rate for a given year is higher than anticipated in the budget, revenue is also likely to increase, given that the value of the tax bases (primarily income and consumption) will tend to be higher for a given set of tax rates and definitions of tax bases. In simple terms, individuals will tend to earn more, and therefore are also likely to spend more. Clearly, the growth estimate relies on assumptions about and/or forecast of both global and domestic developments. Such estimates will also be informed by a sense of the relation between expected future output and long-term potential output, that is assumptions about the business cycle.

Under-estimation of tax performance, given the state of the economy, is another possible contributor to an overall under-estimation of revenue.<sup>6</sup> Tax performance refers to the extent to which tax revenue capacity is in fact utilised. To use a simple example, if the tax base in a given country is R1 billion and the average tax rate is 10%, perfect tax performance would generate a tax revenue of R100 million. However, strong tax performance requires detailed and updated knowledge of tax bases, strong tax effort, no loopholes, no opportunity for tax arbitrage, clear and transparent tax

rules and an entrenched culture of tax compliance. 'Tax buoyancy,' a more dynamic concept, measures the extent to which tax revenue increases as the value of the tax bases increases: it is essentially a measure of the extent to which increases in income are translated without delay into increases in revenue collected. Under-estimation of the tax base, administrative gains in collection and improved compliance may all lead to revenue under-estimation.

Clearly the revenue authorities do not have an easy task when it comes to dynamic estimation of revenue. If, for example, in the preceding fiscal year revenue exceeded expectations by 10% as a result solely of administrative gains, should this be treated as a once-off occurrence? If further such gains are to be expected, can they be expected to be at the same rate? Similarly, it is not easy to assess additional revenue which may come with adjustments in the definition of the tax base since it is not possible to know for certain what percentage of such legally due revenue will in fact be collected by the revenue authority. A country's 'tax culture', lastly, is impossible to measure quantitatively. It is one thing to assert, for example, that the perceived legitimacy of the political dispensation will have a large impact on tax compliance. It is another to try to estimate this quantitatively. Thus it is all the more difficult to incorporate compliance gains or losses into forward-orientated revenue estimates.

A third factor potentially contributing to revenue under-estimation is the under-estimation of inflation.<sup>7</sup> In this scenario, higher inflation rates tend to translate into higher nominal revenue collection. However, higher, inflation-induced nominal revenue collection will not alter the budget balance directly, since the differential inflation rate will impact on expenditure, revenue and GDP in a similar way.<sup>8</sup> There is one exception. With a progressive income tax system such as in South Africa, where the marginal tax rate increases when people move into higher tax brackets, inflation results in tax revenue rising faster than the aggregate income of taxpayers, GDP or expenditure, unless the government adjusts the tax brackets.

Given that this analysis focuses on unanticipated divergences between a budget and its outcome, the potential impacts of changes in tax policy do not feature as determinants. If, for example, personal income tax rates are decreased, this would lead to a clear and easily-calculable new estimate of revenue, holding growth and buoyancy assumptions constant. If a significant divergence then results between the estimate and the outcome, then it is precisely the accuracy of growth, buoyancy and inflation assumptions which need to be examined.

Table 3 compares the budget and outcome values for GDP, inflation and tax revenue for four recent fiscal years.<sup>9</sup>

Table 3: Budget and outcome of key variables, 2004/05 – 2007/08 (current rands)(‘000)				
	2004/05	2005/06	2006/07	2007/08
Budget GDP	R1 331 796	R1 528 633	R1 714 528	R1 938 934
GDP outcome	R1 427 445	R1 584 743	R1 807 316	R2 045 533
Budgeted inflation rate (GDP inflation)	5.4%	4.6%	4.9%	5.4%
Inflation rate outcome (GDP inflation)	5.5%	4.7%	5.9%	8.1%
Budget tax revenue	R333 694	R372 774	R456 786	R556 562
Tax revenue outcome	R354 980	R417 334	R495 515	R571 063
Revenue gain / loss (outcome – budget)	R21 286	R44 560	R38 729	R14 501
<p>* Estimated values for 2007/08.  ** Total tax revenue only, that is excluding SACU payments (a debit), and non-tax revenue such as foreign grants received, departmental revenue and transactions in assets and liabilities.</p>				

In 2004/05, nominal tax revenue actually collected exceeded the budget estimate by R21.3 billion, or 6.4%. As the GDP figures show, nominal GDP came in 7.1% higher than estimated, and inflation was a slight 0.1 percentage point higher than estimated. It appears, therefore, that in this year over-runs were largely accounted for by growth divergence, rather than inflation or tax performance divergence.

In 2005/06, on the other hand, the GDP outcome was substantially closer to that budgeted for, and the inflation rate was again predicted fairly accurately. As a result, most of the substantial revenue over-run of R44.6 billion (nominally 12.0%) must be attributed to the effects of underestimated tax performance. As shown in Table 4, given the huge revenue divergence in the corporate income tax (CIT) in particular, it appears clear

that under-estimation of the performance of this tax was the main reason for over-runs in 2005/06.

In 2006/2007, excess revenue was again substantial, amounting to R38.7 billion, or nominally 8.5%. Inflation was, this time, under-estimated to a greater degree (by a full percentage point). Growth was also significantly higher than budgeted for, at a nominal rate of 5.5%. Thus, in 2006/07 a number of different factors seem to have contributed significantly to generating the over-run. More sophisticated quantitative analysis would be required to say more than this. Again, though, as in 2005/06, the large divergence in specifically the CIT suggests further under-estimation of its performance.

Table 4: Budget and actual revenue for CIT, PIT and VAT, 2004/05 to 2006/07(current rands)('000 000)			
	2004/2005	2005/2006	2006/2007
<b>Corporate Income Tax</b>			
Budgeted revenue	68 800	68 715	95 201
Actual revenue	71 838	87 499	120 111
Excess / shortfall)	3 038	18 784	24 910
<b>Personal Income Tax</b>			
Budgeted revenue	105 938	116 890	132 475
Actual revenue	111 910	126 298	140 762
Excess / (shortfall)	5 972	9 408	8 287
<b>Value-Added Tax</b>			
Budgeted revenue	89 500	105 975	131 200
Actual revenue	98 086	114 404	134 506
Excess / (shortfall)	8 586	8 429	3 306
<i>Source: National Treasury Budget Reviews, own calculations.</i>			

Generally, government's tendency has been to design the annual budget on the basis of conservative revenue estimates. One simple but useful way of revealing the extent of this tendency is to assess the degree to which a budget's tax estimates (in this case, PIT, CIT and VAT estimates) reflect assumptions of revenue growth in excess of that achieved in the previous year. In the case of South Africa, at least between 2004/05 and 2006/07, it is clear that revenue estimates have not been adjusted sufficiently to reflect the performance of the previous year. Table 5 compares the nominal per-

centage increase between the revenue outcome for a given year and the budgeted revenue for the next year, and shows the actual nominal increase between the outcomes of the two years.

Table 5: Extent to which budget amounts reflect previous performance (%)			
	2003/04- 2004/05	2004/05- 2005/06	2005/07- 2006/07
<b>Personal Income Tax</b>			
Nominal change: Outcome to budget	7.6	5.3	5.4
Nominal change: Outcome to outcome	12.7	13.2	11.9
<b>Corporate Income Tax</b>			
Nominal change: Outcome to budget	13.0	-2.9	10.5
Nominal change: Outcome to outcome	16.3	21.7	38.1
<b>Value-Added Tax</b>			
Nominal change: Outcome to budget	10.9	8.0	14.7
Nominal change: Outcome to outcome	21.7	16.5	17.6

Table 5 shows the conservatism of annual tax estimates. For the 2004/05 budget, nominal estimates of PIT revenue were 7.6% higher than amounts collected in 2003/04. The outcome for 2004/05 was in fact 12.7% more than that collected in 2003/04. A number of divergences are particularly high. For example, in 2005/06 nominal estimates of CIT revenue were 2.9% less than amounts collected in 2004/05. However, the outcome was in fact that 21.7% more revenue was generated from this tax in 2005/06 than in 2004/05. A similar divergence (10.5% vs. 38.1%) is clear in budgeting and outcomes for the following year. Similar trends are also evident in significant VAT divergences.

One of the reasons behind this lack of sufficient adjustment is that authorities simply do not have all the information required when drafting the budget, particularly given that the annual revenue outcomes take a while to be established. For example, authorities drafting revenue estimates for 2007/08 in 2006, do not even know for certain what the 2006/07 revenue outcome will be. As a consequence, estimates are generally conservative. However, it is also possible that conservatism may be excessive, and in fact revenue under-estimation may suggest that authorities fundamentally lack a clear sense of how key taxes are likely to respond to economic developments.

## 5. Revenue Over-runs and Fiscal Accountability

Previous sections have demonstrated how revenue over-runs have recently become a familiar feature of the South African fiscal landscape. Over-runs have generally been viewed as positive, as they suggest both continued improvements in the performance of the tax authority, and ongoing caution in estimates of key fiscal and economic variables on the part of government. Further, there can be little doubt that revenue over-runs are preferable to overly-optimistic estimates which then lead to shortfalls. For a variety of reasons, it is preferable to have a deficit outcome that is smaller than anticipated rather than one larger than anticipated, not least because of the loss of credibility which would accompany government short-term lending to plug revenue gaps in the financing of its operations.

A cynic might acknowledge the need for caution in estimating growth and revenue and agree that 'more money than anticipated is better than less,' but nonetheless argue that too much of a good thing is also possible. Where, after all, does one draw the line? If government continually sets the bar too low in estimating growth and revenue, applause for exceeding its targets is hardly justified. The question then becomes whether a pattern of consistent and large over-runs in fact suggests that fiscal authorities are setting estimates too low, are perhaps too risk-averse, or are insufficiently transparent about how risk has been approached. Revenue calculations may quite legitimately be derived from assumptions around the economic growth rate and tax buoyancy which deliberately err on the side of caution. For example, the best estimate of growth may be 3.5% for a given year, but revenue estimates, and the budget, may be prepared in terms of what is available on a 3.3% scenario. Similarly, estimates of tax buoyancy may be on the conservative side. However, the extent that this approach is employed has not in fact been clearly conveyed by government.<sup>10</sup> The scope of divergence is worrying, as is the lack of robust debate on the issue. Over-runs have, typically, simply been welcomed as more evidence of the effectiveness of SARS, rather than critically assessed.

Further, revenue over-runs also raise a number of concerns related to fiscal accountability and transparency. More specifically, in terms of the accountability of the Executive to Parliament, in recent years the budget balance outcome bears little resemblance to the budget initially tabled in Parliament. Though Parliament does not vote on the budget balance per se, it implicitly approves a fiscal stance, which is after all no more than a consequence of the spending and revenue proposals Members do vote on. Seen in this way, fiscal accountability suffers when large divergences

occur, even when such divergences may not have macroeconomic consequences, and may indeed leave public finances in a better position than anticipated.

Arguably, the highest risk lies in the possibility that the extra revenue would be used to pay for expenditure of a recurrent nature. From a process point of view, the danger may indeed be bigger when such extras are considered by the Executive and Parliament, especially when decisions are taken in-between budgets, when there may be less public vigilance.

There are various ways to improve fiscal accountability in this regard. A first option would be the establishment of clear rules governing the extent of permissible deviation between a proposed budget and actual outcomes, applicable to either the budget balance or revenue collection, or to both. In the interest of enhanced fiscal accountability, such rules would aim at closer convergence of budget and outcome. Thus, for example, legislation might establish that the deficit outcome may not diverge by more than a certain percentage from that proposed, or that revenue collection needs to fall within a certain range of deviation of that budgeted for.

However, evidence suggests that fiscal rules of this kind often do not bring about the changes they are designed to achieve. Calitz (in Black et al, 2008: 270) points to the excessive costs they impose (as opposed to more discretionary- and/or transparency-orientated fiscal regimens) in terms of loss of flexibility for governments which, as in the case of South Africa, have used such flexibility well in the past. A further concern with any adoption of any fiscal rules related to revenue estimation would be the obvious perverse incentives established. It would be highly undesirable, for example, if tax efforts were adjusted in order to ensure convergence of the amount collected with a rule-based target. It is also not clear what kind of censure would in fact be available in instances where rule-based targets were not met. To establish a rule in the absence of any real means for its enforcement risks bringing the credibility of the entire system of fiscal governance into question.

A second option would be to impose specific requirements on the Executive, in the interests of enhancing fiscal accountability. Firstly, the Executive could be required to provide a clearer account of the assumptions underlying revenue estimates, and more generally, of the degree of conservatism employed. While the latter requirement may appear vague, it is in fact quite easy to concretise, and might consist of two related transparency requirements:

- 1) A more formalised use of external growth and revenue estimates, compiled for example by a commission of non-government economists, and included as an appendix to the Budget Review. Treasury would not be required to adopt the consensus estimates provided by this commission, but might be required to provide reasons for not doing so where this is the case, as it already does for the Financial and Fiscal Commission's recommendations on the determination of equitable shares.
- 2) A clear indication of the degree of conservatism underlying the estimates from which the budget derives. If, for example, the non-government consensus view (assumed to be risk-neutral) on growth for the coming fiscal year is 3.5%, and for revenue collected is that it will achieve 27% of GDP, but Treasury decides to budget on the assumption that 3.2% and 26.5% will be achieved, then this needs to be indicated explicitly. The aim is not to remove policy discretion from the Minister of Finance, but to create more transparency around assumptions embodied in the estimates.

National Treasury could also, in the Budget Review, provide a list of 5-10 key variables believed to have the greatest impact on budget balance and/or revenue outcomes, together with estimates of the elasticities of variation.

The Executive could also be required to provide Parliament with a formal explanation for instances in which revenue collection and/or the budget balance diverge from the estimate by more than an agreed percentage. A formal explanation could be also required where revenue as a whole exceeds a threshold percentage, but could also be applicable to large divergences of particular taxes in particular years. Thus, for example, the substantial divergences between the budget estimate of CIT revenue and the outcome in 2005/06 and 2006/07 might, following this approach, require a formal explanation to Parliament.

## 6. The costs and benefits of revenue over-runs

The previous section focused on the accountability implications of revenue over-runs. This section analyses the question of whether, and under what circumstances, the costs of revenue over-runs may outweigh their benefits. In discussing the costs and benefits of revenue over-runs, it is important

to draw a conceptual distinction between revenue over-runs and budget surpluses, which refer to government savings. Revenue over-runs may or may not lead to surpluses, but there is no inevitable link between the two. It is also important to note that the effect of over-runs differs depending on whether a deficit or surplus budget balance is proposed. Over-runs under a deficit budget balance carry a higher opportunity cost because they represent borrowing which need not have occurred. The focus here is on over-runs in a budget deficit scenario.

For the purposes of this discussion, it is assumed that over-runs are inherently inadvertent and unanticipated, in the sense that the additional funds associated with over-runs are not specifically allocated to any use in the budget of the year in which they occur.<sup>11</sup> In other words, over-runs are not the outcome of an explicit policy decision, though of course to a significant degree they stem from a policy orientation which favours caution in estimating key variables. Rather, over-runs result when government undertakes spending, taxation and borrowing activities as planned, only to find at the end of the year that more money has been collected than anticipated. More precisely, government lending (in a deficit-policy scenario) may largely take place as intended, and without significant adjustment for in-year revenue performance, but with the result that liquid balances held by government in commercial accounts or with the Reserve Bank in fact end up larger by year-end. This point may be clarified by looking in more detail at a particular year, say 2006/07.

In 2006/07, government reported a budget revenue estimate of R446.4 billion<sup>12</sup> and expenditure of R472.7 billion. The expenditure estimate was adjusted upward in the October 2006 Adjustment Budget to R 474.2 billion. The original deficit proposed in the budget was in the region of R26 billion; after allowing for revenue fund receipts this meant a net borrowing requirement of R24.7 billion. The revenue outcome, in fact, was R480.9 billion, indicating an over-run of R34.6 billion. As one would expect, this meant a budget surplus of more than R9.6 billion (R9 619 316 000). Where did this money 'go'? Such questioning is a pre-cursor to an assessment of the opportunity costs of over-runs, which in itself should precede rigorous consideration of the trade-offs between over-run costs and benefits. Table 6 shows how the proposed deficit was to have been funded, versus the actual outcome.

	Budget estimate	Outcome	Percentage of over-run 'absorption'*
Net borrowing requirement (surplus)	24 663 250	(9 619 316)	/
Domestic short-term loans	5 800 000	5 334 103	1.3%
Domestic long-term loans	8 693 000	891 708	22.6%
Foreign loans	2 415 100	181 410	6.5%
Change in cash and other balances (+ means reduction of cash and other balances)	7 754 250	- 16 026 537	68.8%
Total	24 663 250	(9 619 316)	/

\* Values may not add up to 100% due to rounding.

Believing a fairly large deficit would have to be financed, government budgeted for a sizeable amount of domestic long-term loan issuance in 2006/07, as well as just under R2.5 billion in foreign loans. These were cut appreciably, with net new foreign loans totalling a mere R181.4 million and only R891.7 million of net new domestic long-term loans issued.<sup>13</sup> Clearly, however, the primary manner in which revenue over-runs were absorbed was through increased cash and other balances, which rose by R16 billion in this year, despite the proposed reduction in cash balances of R7.8 billion in the original budget. This divergence 'absorbed' more than R23 billion, or almost 70%, of the 2006/07 revenue over-runs. It is interesting to look briefly at the summary of cash flow information provided by the National Treasury.<sup>14</sup> Specifically, cash and other balances discussed here are held either in Reserve Bank accounts or in tax and loan accounts with commercial banks. The balances held with the Reserve Bank were, according to the 2006 Budget Review, mostly drawn from commercial accounts in 2005, and enabled the Reserve Bank to have more resources at its disposal for money supply sterilisation (National Treasury, 2006: 94). Table 7 shows opening and closing balances for 2006/07.

Table 7: Opening and closing cash and other balances, 2006/07 (current rands) ('000)				
	Opening balance (April 2006)	Closing balance (March 2007)	Rand change	Percentage change
Total	58 186 987	75 314 799	17 127 812	29.4%
Reserve Bank accounts	39 779 266	45 667 333	5 888 067	14.8%
Commercial bank tax and loan accounts	18 407 721	29 647 466	11 239 745	61.1%

Table 7 shows quite clearly the large increase in total cash balances held in both reserve bank and commercial bank accounts, and particularly the large increase in tax and loan accounts with commercial banks, which increased by slightly more than R11 billion, or by 61.1%. It is interesting to compare these changes with the intentions expressed. For example, the 2006 Budget Review stated that sterilisation deposits would increase to R41.1 billion by 2009. These deposits already amounted to R75 billion at the end of the 2006/07 fiscal year.<sup>15</sup>

It is therefore apparent that revenue over-runs do not seem to mean less borrowing in the year in which they are generated. It is true, however, that they reveal how much less borrowing could have taken place, had revenue estimation been more accurate (and assuming no urgent need to increase cash balances). Thus, one way of conceptualising the opportunity cost of revenue over-runs is to calculate the extra cost associated with borrowing, that is the interest payments on such additional borrowing. If revenue over-runs total R40 billion in a given year in which the budget is in deficit and financing occurs unchanged commensurate with the budget plan (i.e. irrespective of the evolving outcome), the cost of such over-runs is equal to the net present value of servicing R40 billion of additional debt, given average interest rates and repayment periods on South African government bonds. This represents the 'cost of caution' in revenue estimation.

This discussion provides only one side of the question, since it ignores the requirement that revenue estimates be sufficiently conservative to avoid revenue under-estimation. These costs need to be compared to the benefits of caution, or conversely, the costs of 'recklessness', if a clear sense of the trade-offs is to be achieved. To use a hypothetical example, a government that exhibits no risk-aversion (i.e. is risk-neutral) in estimating growth and revenue would regard the benefits of a 1 percentage point

overestimation as equal to the costs of a 1 percentage point under-estimation of revenue. Its aim, accordingly, would be to avoid budgeting in such a way that over-runs are more likely than shortfalls. Instead, budgeting would aim to ensure that over-runs and shortfalls net out to zero, over a particular period of time. The possible costs of shortfalls under such a policy are two-fold. There is firstly the strictly financial dimension, and secondly the perceptual dimension, which may itself impose further financial costs.

Financially, the costs of revenue under-estimation depend on the extent of reserves government holds with the central bank. If these reserves are adequate, in years when collected revenue falls short of the estimate this shortfall could be financed through drawing down some of these reserves.<sup>16</sup> If reserves are adequate using an acceptable benchmark of this kind, and for covering the fiscal financing gap, there would be no strictly financial costs to revenue shortfalls. On the other hand, if government was to under-estimate revenue where reserves are inadequate, it would have to engage in short-term borrowing, probably at high rates.

Experience, however, suggests that where governments have had to borrow commercially to finance operations as a result of revenue shortfalls, 'perceptual' costs have been high. There is, however, less clear-cut evidence on perceptual impact where government policy specifically permitted revenue shortfalls, so long as a conservative fiscal reserve requirement was met.

What adequacy requirement would a fiscal reserve have to meet to allow risk-neutral growth and revenue estimation by government? A pre-condition would have to be that reserves were first sufficient for macroeconomic stabilisation purposes. Then, one approach for determining how much would be required in addition to this would be to require that revenue set aside for this purpose equals say 3% of GDP. This, after all, represents a kind of consensus figure on the limit of prudent borrowing by governments, both in regional policies such as the Europe Union's Maastricht Treaty and in South Africa's own GEAR. Thus, any reserve equal to this would in all likelihood be deemed adequate. At the end of April 2008, for example, sterilisation deposits plus commercial tax and loan accounts totalled R77.5 billion, of which R63.4 billion was with the Reserve Bank and R14.1 billion with commercial banks. This amounts to roughly 3.8% of GDP.<sup>17</sup> These are, in other words, reserves in addition to the conventional reserves retained as foreign exchange cover, which are generally regarded as adequate. It is also in addition to the contingency reserve

included in the annual budget. Thus it appears that, purely from a fiscal reserve position,<sup>18</sup> government should now be in a position to estimate future revenue in a risk-neutral fashion, of course after the appropriate cyclical adjustment.

Macroeconomically, the Reserve Bank deposits enable greater control of the money supply, which has become important in the more recent higher inflation environment. But then the policy option (and government has indeed taken it) should be the explicit budgeting for surpluses. This paper has not engaged with this question, but has argued more narrowly that the disguised form of saving represented by over-runs is no longer desirable and, given an appropriate margin of error represented by large government deposits, no longer necessary. Under-estimation of revenue in a moderate deficit scenario would mean drawing down some reserves from the Bank. This would, all else being equal, generate more inflationary pressure, but not more so than borrowing to finance the deficit would.

## 7. Conclusion

Generally, developing countries struggle to collect sufficient revenue from domestic taxes to finance the services demanded by their populations. Debt traps and heavy reliance on official development assistance and assistance from the World Bank and other multilateral institutions has been the result. Developing countries, lacking their own sustainable resource bases, have consequently lost some discretion over the content of domestic development policies, though the extent to which this has happened is contested.

South Africa, on the other hand, has in the post-apartheid era seen a welcome increase in revenue collected, without crippling large increases in tax rates. These trends, attributable to higher growth, better tax compliance, base-broadening and the administrative performance of SARS, are of course to be welcomed.

Furthermore, as a small, open economy, developments in South Africa are highly dependent on what happens in the global economy. Clearly, therefore, it is necessary to approach growth and revenue estimation with caution. A margin of error which is too narrow, in a context of a global economic downturn, could lead to revenue shortfalls and the penalties associated with this. These are not only financial (such as higher interest

rates on borrowing) but include less tangible ones such as the reduced credibility of macroeconomic policy-makers.

Bearing all this in mind, this paper has nevertheless argued that aspects of the revenue under-estimation trend are less than desirable from the perspective of good fiscal governance, and especially of fiscal accountability of the Executive to Parliament. Parliament admittedly only votes on programmatic allocations, and adherence to these allocations has improved and is quite close at present. But any meaningful conception of fiscal accountability would have to include accountability for the budget balance. In a sense revenue under-estimation has the effect of circumventing any Parliamentary voice in macroeconomic questions: a deficit is proposed, for example, but that deficit is based on an overly conservative set of growth and revenue estimates, with the all-too-frequent result that the policy outcome is, in a macro-economic sense, quite different from that considered by Parliament.

This paper has proposed simply that greater transparency about the degree of conservatism of estimation be established. It has also suggested that a non-government commission of economists be used to establish risk-neutral 'benchmark' estimates of medium-term growth and revenue. The obligation imposed on government by such a commission would not be to follow these estimates, but to engage with them publicly, for example as an appendix to the Budget Review. Such a practice would sit well with the general public and constitute a welcome version of a transparency-based rather than a rules-based system of accountability in South Africa.

Although more work is clearly needed on the actual financial costs and benefits of revenue over-runs, this paper has also suggested that, given adequate reserves, the financial costs of risk-neutral revenue estimation are likely to be slight. It has, further, suggested that South African reserves are close to one such an adequacy requirement at present. Given these factors, the time may be opportune to take a more critical look at revenue over-runs and the factors causing them as and when they occur.

## References

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## Endnotes

- 1 Three different budget balances are usually distinguished. The conventional balance is the difference between total revenue and total spending, the current balance is the difference between current expenditure and current revenue, and the primary balance is the difference between total revenue and non-interest expenditure. All three are generally given as a percentage of GDP. In the 2008/09-Budget the concept of the structural balance was also applied, whereby the budget balance is adjusted for the state of the business cycle in order to determine the underlying (structural or cyclically-adjusted) stance of the budget. This technique can be applied to all three measures of the budget balance.
- 2 National Treasury Budget Review 2008: 46.
- 3 In this paper convergence and divergence refer to the extent to which budget outcomes do or do not correspond to initial budget proposals.
- 4 However, divergence of revenue and expenditure in opposing directions might conceivably cancel each other out and generate a similar balance to that budgeted for.
- 5 This paper focuses on shorter-term relationships between these variables. Issues such as the long-term increase in demand for public expenditure as income increases are not dealt with.
- 6 cf. J. Teera, 'Tax Performance: A Comparative Study,' and T. Steenekamp, 'Tax Performance in South Africa: A Comparative Study'
- 7 There is of course another, perhaps more publicised link between inflation and tax in the form of the 'inflation tax', where government, typically a net debtor, allows inflation to rise in order to decrease the real value of debt.

- 8 Though, in fact, if GDP, revenue and expenditure are deflated using different indices then the budget balance would also vary with inflation rate differentials. Further, under-estimation of inflation may also set in motion other transmission effects which could cause a divergent budget balance outcome.
- 9 What one would like, ideally, is to come to a detailed quantitative understanding of the relative contribution made by inflation, growth and tax performance divergences in accounting for over-runs. That is, for example, if the inflation rate outcome in 2007/08 was 8.1% rather than 5.4%, how much of the R 14.5 billion over-run can be attributed to this purely nominal gain? Tax performance under- or over-estimation, being impossible to quantify, would have to be treated as a residual once the effects of growth and inflation under-estimation have been allowed for. A further challenge to attempts at disaggregation is the fact that the impact of budget-to-outcome divergences is likely to vary by tax type, both because of the differing 'behaviour' of different taxes (for example inflation, through 'bracket creep' and the like, will impact differently on personal income tax than on VAT) and because of the differing quality of knowledge tax authorities may have regarding different tax bases. Although this paper does not attempt it, it should nevertheless be possible to estimate revenue elasticity for each of the major taxes with respect to inflation and real growth. Given these elasticities, the extent of their contribution to over-runs can also be estimated.
- 10 The aim of this analysis is not to suggest or imply that revenue over-runs should be dealt with in any way that assumes their permanence. That is, it would not be appropriate to either increase spending to absorb 'excess' revenue, or to reduce tax rates. Both of these measures would in essence narrow the margin of error of the estimates, but might also lead to financing shortfalls. What is needed, however, is more transparency and accountability when it comes to the revenue side of the budget, as well as in terms of divergences between proposed budget balances and actual budget outcomes.
- 11 To some extent this is an over-simplification, since the mid-year adjustment budget can and has been used to sponge up surplus funds.
- 12 This figure, and the analysis following from it, uses the summary tables of national revenue, expenditure and borrowing (and related tables) as found on the web site of the National Treasury ([www.finance.gov.za](http://www.finance.gov.za)).
- 13 In fact, the domestic long-term loan net outcome of R891 of additional loans masks a great deal of activity in the course of the year. The 2006 Budget Review indicates a commitment to buy back almost R22 billion of debt in February 2007. This on top of a deficit financing requirement of almost R25 billion meant a good deal of both short-term and long-term domestic borrowing initially in 2006, much of which could have been avoided had a more accurate sense of revenue collection been available. For example, domestic long-term borrowing from April 2006 to January 2007 totalled R29.8 billion before the buyback of R21.7 billion. Much of this borrowing was clearly undertaken in order to be in a position for this scheduled buyback whilst retaining healthy cash and other balances.
- 14 There are, disappointingly, slight variations in the figures between these tables and the summary statement discussed earlier. The one is clearly an updated version of the other, though this is not indicated as such and the tables are clustered under a common

heading on the web site. Nevertheless, the differences are not large enough to have a material impact on the conclusions drawn here.

- 15 The closing balance for sterilisation deposits for April 2008 was R63.4 billion. Commercial balances stood at R14.1 billion.
- 16 Of course, this would potentially have a negative effect on the leverage the central bank has over the macro-economy, since its reserves would have declined, at least until a revenue over-run occurs. 'Adequate' could (and should) however be taken to mean that drawing down of government funds deposited with the central bank does not threaten macroeconomic stability or the ability of government to intervene in, for example, the foreign exchange market. A large literature exists establishing various measures of reserve adequacy as it pertains to macroeconomic stabilisation.
- 17 The 2008 Budget Review gives GDP for the 2007/08 year as R 2 045 533 million (National Treasury 2008: 46).
- 18 That is the cash surplus of government.