

# A measurement of year-on-year variation in the allocations to national departments in South Africa (2003/4–2007/8) from a public management point of view\*

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## **Abstract**

The Estimates of National Expenditure in South Africa were analysed over a five-year period to determine the extent and nature of budget variation at national level. These estimates are of importance to managers in the public service and to theoreticians in Public Administration and related fields. Changes are analysed organisationally at the level of votes, programmes and sub-programmes, and statistically at the programme level. A problem related to representing changes is solved intuitively. The analyses indicate a stable fiscal environment for managers. The distribution of the changes is skewed positively, with the modal interval of the distribution lying to the left of the zero change point in real terms. Little evidence was found of muddling through. Strategic planning at departmental level is subject to serious constraints. The article briefly discusses various research topics that can be pursued further (for example, transfer payments and statistical work).

**Keywords:** budgeting, budget change, incrementalism, positively skewed distribution, punctuated equilibrium, strategic planning,

## **I INTRODUCTION: PRACTICAL AND THEORETICAL SIGNIFICANCE OF BUDGET VARIATION**

A crucial issue within the management environment in the public sector as a non-profit sector, is annual changes in allocations. In South Africa, where strategic planning is

\* Jeanette Pauw and Kobus Wolvaardt made substantial contributions to my thinking on the measurement of budget change and to the logic and exposition of the article. My heartfelt thanks go to them. I also thank Krige Siebrits who was kind enough to read a late draft and to suggest a number of improvements. A special word of thanks is also due to Estian Calitz.

a compulsory part of departmental budgeting,<sup>1</sup> such variation in allocations could or should be one of the results of strategic budgeting. In this article I will describe certain aspects of the year-on-year variation or change in the South African national budget, and discuss certain practical methodological issues pertaining to the measurement of these variations. The results may be compared with other work that was recently done on budget change in the USA (Jones & Baumgartner 2005), France (Baumgartner, Foucault & François 2006), Danish local government (Mortensen 2005) and the United Kingdom (John & Margetts 2003). Compared with the data sets of these authors, the time span of this article is modest. An important difference between this article and the cited literature is that I am not testing a theory (namely incrementalism) of how political decisions are in fact made. My view is from the inside of the administrative system or public management environment. Here I assume strategic budgeting as an ideal and see budget incrementalism as behaviour that should be avoided, where reasonably possible.

This article forms part of an investigation into strategic budgeting. It was necessary to measure budget variations in an attempt to determine objectively the influence compulsory strategic planning has on departmental budgets. It became clear that determining this influence on a case-by-case basis was not easy at all. When strategic planning is repeated annually, it is hardly realistic to believe you will be able to say which of the strategic plan or budget is cause, and which is effect. However, deductions may be possible from the total pattern of budget changes. Jones and Baumgartner write (2005: 23): ‘Often we can postulate serious and testable hypotheses about distributions of activities when we are at loss to do so for particular occurrences of these activities.’ An impressive-sounding name for this is the ‘stochastic process approach’.

Despite the fact that some managers may think they have control of their allocations through their ‘budget requests’, managers from directors-general down to responsibility managers are, in the final analysis, recipients of what the legislature appropriates. It is their ‘bottom line’. (Incidentally, although the literature uses the term ‘request’ [see LeLoup 1978], this term should be avoided in a system working within a multi-year framework. What managers should submit are estimates of what it would cost to reach their goals within the multi-year time frame. In theory it is not the managers and their institutions that need the money, but the public whom they serve.)

The fact that there is a vast need for public services in a developing country means that any public manager who must make do with less than the previous year will be under pressure – provided, of course, that such a manager is focused on service delivery and that the allocation of the previous year was actually put to good use. Budgetary pressures in the form of suddenly decreasing allocations may typically lead to inefficiency and a lack of effectiveness, where managers tend to retain personnel and functions instead of restricting the number or scope of activities. This will result in under-funded programmes, with the probable exception of Programme 1: Administration. One such case was the funding of the Agriculture Department in the Eastern Cape at the beginning

of the century: ‘Severe restrictions have been placed on the department in terms of its service delivery capacity through the limited budget and excessive amounts which have to be spent on non-productive personnel’ (Mamase 2001). According to Mamase the department was under-funded and therefore unable to perform its duties properly. The allocation of a ‘ring-fenced’ R19 million for cattle dipping would only buy the dipping chemicals (*Daily Dispatch*, 4 April 2000).

At the same time, increases in allocations may be difficult to manage owing to, among other things, bureaucratic time lags in appointments and procurement. A medium-term expenditure framework<sup>2</sup> – an idea that is excellent in all important respects – is one of the instruments used to mitigate the possible negative effects of allocation variation.

Variation in allocation is also interesting from a theoretical point of view. The debate between incrementalists and strong rationalists has been running for more than half a century (see, for example, Elbanna 2006). As the references below will show, much of the work has been done within the context of policy theory; that is, budget change is treated as one example of policy change. In the broad debate the budget is thus only one of the points of discussion. (This is exemplified by the impressive array of data sets developed by Jones and Baumgartner (2005).)<sup>3</sup> ‘Incrementalism’<sup>4</sup> is a word covering a number of ideas: William D Berry (1990) identified 12 barely consistent definitions of the ‘concept’ as he terms it. (Of course, something with twelve definitions is hardly a concept.) As a theoretical construct, incrementalism has undergone a marked refurbishment, thanks to Jones and Baumgartner who in recent years linked it, amongst others, to the concept of ‘punctuated equilibrium’.<sup>5</sup> The second (and related) theoretical complex that this article may touch upon is the aforementioned complex of strategic planning<sup>6</sup> and strategic budgeting, which include prioritising (Pauw et al. 2002: 106ff). Budget incrementalism and the strategic approach to budgeting can be described as approaches in opposing camps, or as defining a spectrum of behaviour. I intend to show that the debate about incrementalism may have ideological overtones.

Incrementalism, in the first place, functions as an account of the way in which policy decisions are actually made – in our case, how budgets are compiled. In this context, it is said to pack some explanatory and even predictive powers (LeLoup 1978).

Some analysts describe incrementalism as *muddling through*, in contrast to the ideal of the rational–comprehensive model of policy planning. The rational model assumes a great deal of information, clarity of goals and criteria, and the ability to define and analyze all possible alternatives, rendering a single clear solution. The real world is not so obliging (Haynes 2002).

At the same time, incrementalism may operate as a theory of how budgets should be compiled. The prescriptive or normative form of incrementalism (Lindblom 1959) (see Göktuğ, 2006: 43–58) is supported by theorists of a conservative persuasion. They may be sceptical not only about the claims of approaches that are grounded in strong rationality or rational–comprehensive decision making, but also about intermediate

positions such as Herbert Simon's idea of bounded rationality.<sup>7</sup> Scepticism regarding strong rationality is understandable. Strong rationality is the belief that budget decisions can be correct in the sense that a set of allocations will provide the best solution to all problems related to the budget.

Potent practical and technical arguments against strong rationality in budget theory can be brought forward. I will mention three. *One*: even if strong rationality were possible, the time and money it would consume will probably exceed its benefits, making methods using rules of thumb, intuition and precedent more efficient. This bounded rationality argument, deriving from the famous work of Herbert Simon, is based on a rational comparison between the context of calculation and the context of the efficiency of the institution as a whole. It is, therefore, a rational argument against strong rationality. *Two*: the equally famous Kenneth Arrow (1963) showed that aggregating preferences and following certain democratic rules at the same time is not possible. *Three*: the number of simultaneous allocatory comparisons necessary even for a budget with relatively few components cannot be computed by the human brain. Note, however, that none of these arguments precludes rational decision making in budgeting if one accepts a weaker form of rationality as acceptable. Rationality should be circumscribed by the bounds of practicality; the rules of democracy can be slightly weakened and decision support systems can be used where our powers of calculation come up short. I think budgeters should espouse a tempered rationality.

Thus, against incrementalism as a normative theory of budgeting, stands tempered rational budgeting as an ideal. This rests on the idea that allocations should be based on objective choices informed by the priorities or goals a government aims to achieve, as mediated through strategic planning and the comparison of alternatives. In this context the previous allocation for a specific programme is regarded as, at most, one of the considerations to be taken into account for this year's allocation. It is counterintuitive to take the current allocation as the sole basis for determining the next allocation. Such a strategy implies that the status quo in the institution and the patterns of resource employment by the state stay in place indefinitely. It also makes it impossible for a government to honour its policy commitments in a changing environment. It is also counterintuitive to classify a method which takes the previous allocation, adjusts it by a fixed percentage and then adds a minute fault factor ( $\epsilon$ ) to derive this year's allocation under the rubric of 'bounded rationality'.

The aversion to all forms of rationality in budgeting, therefore, can only stem from ideological motives in approaches supporting conservatism or pluralism or on a principled dislike of top-down planning; alternatively on a position of strong scepticism. That which is counterintuitive is hard to defend in the marketplace of politics, which makes it highly unlikely that a government in a democracy will ever admit to incrementalism. And that brings us to the possibility that a government may preach strategic budgeting while practising incrementalism – one of the possible conclusions of this article.

To summarise: measuring year-on-year variations in allocations to public managers will provide information about the stability of the management environment in the public sector, while possibly providing data to be used in some of the theoretical debates

in Public Administration and related fields. At the same time it will provide material to evaluate the performance of the current South African government.

## 2 RESEARCH DESIGN

When attempting to measure something that is not obvious, we need to find (1) reliable data, (2) the right aspect of the phenomenon to measure, and (3) the most suitable unit of measurement.

(1) Reliable data. The source of our data was the quite exemplary budget documentation of the South African government, as drawn up by the National Treasury.<sup>8</sup> The outlay and approach of the documentation remained stable over the five fiscal years under investigation.<sup>9</sup> The data, for example for the 2007/2008<sup>10</sup> fiscal year, are available at <http://www.treasury.gov.za/documents/budget/2007/default.htm>. At this URL extensive budget information and links are available, including the budget speech and the relevant legislation. Various popular guides to the budget are found here, as are links to provincial budget documentation. For our purposes, the most important documents are the *National Budget Review* and the *Estimates of National Expenditure*<sup>11</sup> (ENE from here onwards).

The *Review* gives a total overview of the fiscal position and policies of the state against the background of the economy. Expenditures and revenues are also dealt with in this document. The projected inflation figures (CPIX) that were taken into account when compiling the budget, are set out. It is worth noting that state expenditures that are consolidated or aggregated in the *Review* include extra-budgetary expenditures, that is, from funds other than the National Revenue Fund (NRF from here onwards); for example, social security funds and the defunct RDP fund. Per definition, such expenditures are not the ones we look at as we investigate budgetary changes, even if they are relevant to the related issue of strategic planning at the highest level. Within that context, the aggregate of all expenditure – budgetary plus extra-budgetary – does give an indication of the relative importance of the various fields of expenditure at the most general level. This is typically depicted in a table (*Consolidated expenditure growth*) in the first chapter of the document. See the graph in Figure 1 below. In these graphs the expenditures from the National Revenue Fund, including direct charges,<sup>12</sup> are compared with the consolidated expenditures (excluding debt cost and contingency reserve) and with the budgeted expenditures of the votes at national level. I will return to this shortly.

The amounts we work with come from the ENE. At the same time the programme structure ('organisation' in the language of Public Administration) of the various votes is essential to the investigation. This is also found in the ENE. The format of the South African budget is management oriented. Budgets are presented along various dimensions, but the basic format is the programme format set out according to purpose and sub-purposes. This format is seamlessly combined with information on budget items, the economic classification of expenditures, and details of major transfers and subsidies.

According to the National Treasury, the purpose of the ENE is to be a tool to enhance the accountability of the executive to parliament and civil society, and to allow for the review and monitoring of government's service delivery and spending plans. By providing information that links service delivery to budgets, it strengthens the quality of trusteeship exercised over public funds allocated for government programmes (www.treasury.gov.za). Every allocation is presented within a goal hierarchy so that readers can see what is to be achieved with the money. This is typical of strategy. In working out a strategy, a general (*strategos* in ancient Greek) typically sets a number of intermediate goals en route to the final goal. (This issue is not as straightforward as it appears to be, because the achievement of goals higher up in the hierarchy is underdetermined by the lower-order goals and, at the same time, cannot be reduced to lower-order goals [Pauw 2004]).

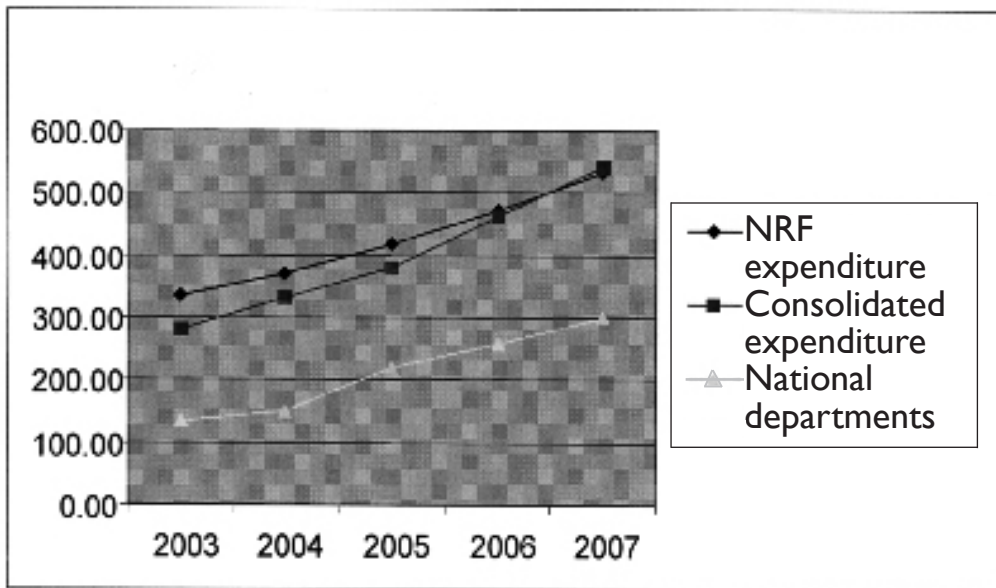
(2) The aspect to measure. In sizeable institutions the strategic budgeting process has two main aspects: structure (organisation) and quantity. In describing allocatory change from year to year within this broader concern, I decided to measure the real increase or decrease in the main budget per programme. In the case of a mammoth institution, such as the one we are dealing with, such a quantitative analysis builds upon the structural analysis of the organisation.

I assume that the programme is not only a budgetary component, but also a management unit. This is very much an assumption, especially if applied to the lower level of sub-programmes. There are 'virtual' programmes – and substantially more virtual sub-programmes – within departments. This occurs when the programme or sub-programme is used as a financial component only. Such a component will typically have no current expenditures on salaries and inventory (for example, Programme 3 in Vote 4 (Home Affairs), which is used to transfer monies to agencies and public entities, Programme 9 in the Defence Vote: Special Defence Account and Programme 11 of the vote of the National Treasury itself, aptly named 'Fiscal Transfers'). It is also possible that some programme managers are merely accountable for the money spent in a programme, whilst their senior in rank is the actual manager of the programme. Such practices go against the logic of the current budget architecture.

Measuring change only at the vote level would hide many of the strategic changes.<sup>13</sup> This was indeed found to be the case in the South African expenditure budget. Instead, we will look at the programme level. The programme is a well-defined management unit that is recognised in legislation – for example, in the definition of unauthorised expenditure in Section 1 of the PFMA (Public Finance Management Act (Act 1 of 1999, as amended)). The best evidence of effective strategic planning (under an idealistic and not a regulatory understanding of the term) is the reorganisation of a vote around newly formulated goals, with their concomitant new or restructured programmes and sub-programmes. We will consider this in more detail later.

The measured expenditures are budgeted to be defrayed from the NRF. A comparison of some totals of expenditures is provided in Figure 1. Two aspects of the figure need

to be remarked upon. Firstly, consolidated expenditure (excluding debt costs and the contingency reserve) increases in comparison with the expenditure from the NRF. The simple reason for this is the gradually more favourable position regarding state debt. State debt costs are defrayed by direct charges from the NRF and these declined over the period under investigation. Secondly, the expenditure on national votes shows a sharp jump in 2005. This is because social welfare money was brought over from the provincial budgets to an agency funded from the national vote of Social Development.



**Figure 1:** Expenditure in billions of Rand

Although considerable sums of money are allocated by means of the adjustments budget, these allocations do not yield information on the results of strategic planning as such.<sup>14</sup> The amounts we work with are budgeted and not spent amounts, owing to the purported link that we investigate between annual strategic planning and the annual budget.

The decision to measure year-on-year changes only – in other words, not to compare changes with a base year – and thus not to provide a figure on a multi-year index (as is done in measuring inflation) should be explained. The simple reason is that the budgeting and attendant strategic planning are done every year. One of the aims of the article is to collect information that could be indicative of annual strategic planning. Our approach also makes for easier computation.

(3) The most suitable unit of measurement. Programmes differ vastly in size. It stands to reason that, in order to compare programmes with one another or to say something about a set of allocatory changes of different-sized programmes, the changes must be expressed in a standard unit of measurement. I suggest that the quantum of the change

must be a function of comparing the allocation of a programme in one year with the allocation in the previous year and that this should be done in real terms. The change will therefore be expressed as a quotient of the two allocations.

The changes we are measuring can be nominal or real in terms of the amount received by the programme during the previous year. Changes can also be relative to the changes of allocations to other programmes as an indication of government priorities. The ENE indicates increases in nominal terms. For every programme it provides a discussion of expenditure trends – in nominal terms, in other words.<sup>15</sup> In the South African national budget nominal decreases for the years which I have investigated, are rare.

From a public relations point of view, politicians would rather not effect nominal decreases in allocations from year to year. A number of year-on-year increases of allocations do not keep track with inflation, though. It was crucial to the investigation to also determine whether or not the relative position of an allocation was kept intact. If a programme grows at the same rate as other programmes (and therefore the budget as a whole), such growth is incremental and chances are there has been no effective strategic planning.

What is the most suitable unit of measurement for these year-on-year changes? The changes shown, must be real. A public manager must, like any other manager, buy in an environment of increasing prices: specifically as far as human resources are concerned. An obvious measurement would then be increases as deflated in terms of the official inflation figures. In the *National Budget Review*, CPIX inflation<sup>16</sup> is used as the indication of inflation.

In the five years under consideration, the budget has grown more than the annual inflation rate, whichever way you describe it – see Table 1. I therefore maintain that inflation is already provided for in the budget. Consequently, I will not deflate for inflation as such, but normalise for the increase of the budget as a whole from year to year: I ‘deflate’ or normalise, in effect, for *budget growth*.

**Table 1:** Different inflation counts

Type of inflation or increase	2003	2004	2005	2006	2007
CPIX as per Table 1.1 National Budget Review	7.70%	4.80%	4.00%	4.30%	5.10%
CPI for fiscal year as per StatsSA	4.36%	3.79%	3.73%	5.24%	
Budgeted increase year-on-year from NRF		10.46%	13.26%	13.14%	12.94%

It should be mentioned that every vote and programme will have its own inflation rate in the sense that the basket of goods and services normally required will harbour a characteristic change in prices. It was not regarded as feasible to deflate allocations for this.



Normalising for budget growth kills two birds with one stone. It provides for increasing prices and, at the same time, for the change in allocation from one year to the next in comparison with the change in the overall budget. For example, if a programme was voted R100 million in 2003 and R110,46 million in 2004 it is regarded as no change; although the programme manager would have been in a position to buy more with his or her allocation, the buying power has not increased in comparison to the buying power of all programmes taken together (according to Table 1). In other words, such an increase could neither provide evidence of strategic planning nor of the absence of incrementalism.

The unit in which change is measured is therefore the relative change in the allocation in a programme normalised for budget growth, expressed as a quotient. Let  $A_{Pa}^{(n)}$  be the budgeted allocation (in Rand) in year  $n$  to programme  $Pa$ , and let  $Px$  be any programme, then  $f_{Pa}^{(n)}$  represents this change. The formula expressing this quantity is given below.

$$f_{Pa}^{(n)} = \left( \frac{A_{Pa}^{(n)}}{A_{Pa}^{(n-1)}} \right) \div \left( \frac{\sum_{Px} A_{Px}^{(n)}}{\sum_{Px} A_{Px}^{(n-1)}} \right) \dots\dots\dots (1)$$

The expression in the first set of parentheses represents the nominal change. The formula in the second set of parentheses expresses the normalisation factor: the total expenditure budget for the year under consideration ( $n$ ), divided by the total expenditure budget for the year  $n-1$ .

When you work with quotients to describe the way in which the allocation of one year ( $n$ ) differs from the allocation of the previous year ( $n-1$ ), one number (i.e. the second allocation) is divided by another. A conceptual choice that must be made, is whether to take the first rather than the second number to be the numerator or denominator, as the case may be.

With due cognizance of the fact that every programme will be different regarding the impact of budget variation, the following holds:

- If the allocation grows – the normal case – the measure of growth should be more than one. Because of the way that division works, this means that the second year must be the numerator.
- If the allocation declines, the result should either be negative or at least less than one. This also means that the second year must be the numerator.

So, whichever way you look at it, the second year is divided by the first. If the second number is smaller than the first, that is, when an allocation has declined in nominal or real terms, the result of the division is less than one, but more than zero. In a sense all values depicting negative growth are then squeezed in-between zero and one. If the second number is bigger, the quotient varies from just bigger than one to as high as you can get. This is counterintuitive. One could also conduct a thought experiment,

suggested to me by J. S. Wolvaardt. When a manager's allocation is halved, how much instability will that cause, or how will the change be perceived compared with the case when the allocation is doubled? In applying the above formula, a doubling in allocation in real terms will be measured as being four times as much as halving an allocation in real terms. This will not do. The two cases are much closer together than that – they may even be regarded as being of the same magnitude. A simple solution exists, also suggested by Wolvaardt, namely to express the magnitude of change in terms of the natural logarithm ( $\ln$ )<sup>17</sup> of the quotient resulting from dividing the allocation of the second year by the allocation of the first year.<sup>18</sup> Negative and positive changes then become symmetrical. This is what a logarithmic transformation achieves due to the fact that

$$\ln\left(\frac{1}{x}\right) = -\ln x \dots\dots\dots (2)$$

where  $\ln x$  is the natural logarithm of  $x$ .

In calculating the changes in the South African main budget from 2003 to 2007, I therefore used the following formula:

$$\partial_{Pa}^{(n)} = \ln f_{Pa}^{(n)} \dots\dots\dots (3)$$

where  $\partial_{Pa}^{(n)}$  is the real budget change for programme  $a$  in year  $n$ .

### 3 METHOD

Against this background I inspected the allocations to votes per programme within their organisational context over the five-year period from 2003 to 2007<sup>19</sup> and recorded their allocations. This meant a structural (organisational) as well as a quantitative analysis, which involved elementary statistics in contrast to the more sophisticated mathematical modelling used in the past (Davis et al. 1966).

Quantifying changes in the money voted to a specific programme involved ascertaining that the programme had stayed basically the same from the year  $n-1$  to the year  $n$ . I also used the 2007 ENE to record changes in the internal organisation of programmes; that is, how their structure, as for sub-programmes, changed or remained the same and whether major changes occurred in expenditures on the various items. This is made possible by the fact that the ENE has a table for every programme, setting out the history of expenditures on that programme for the previous four years plus the two outer years of the Medium-term Expenditure Framework (MTEF) – a series of seven consecutive years. We will return to this.

One programme, namely Programme 1: Administration, was taken as identical over the five fiscal years for all votes. Obviously, *organisational identity* over time is not a fully delineated concept. No programme remains the same in all respects over time.

I therefore sometimes had to make a judgement as to whether the programme was organisationally identical to that of the previous year. In a number of cases the name of the programme was adjusted, while patently retaining its organisational identity. Such a name change may be more for the sake of political correctness than accuracy.<sup>20</sup> In a number of cases the programme was continued under a different number, owing to a reorganisation of the institution as a whole – these are then cases where strategic planning was obviously undertaken.

When there was doubt regarding the organisational identity of two programmes in subsequent years, several pieces of information in the ENE could be used. The first is the summary of the programmes at the beginning of the exposition of a vote where the purpose (and in most cases, the measurable objective of each programme) is given. For every vote there is a discussion of expenditure trends. Later in the exposition each programme is discussed in more detail, including significant changes from the previous year. It was also crucial, as mentioned before, to compare the composition of programmes, sub-programmes (including the amount of their allocations) and items with the previous year. Even with a newly added sub-programme it may be advisable to still retain the identity relation, especially when such a new unit fits within the historical purpose of the programme and the allocation is not big.

As far as the history of votes is concerned, four types of organisational change can and do occur at the programme and sub-programme level of an institution. They fall into two categories: (1) reorganisation, which includes *differentiation* and *consolidation*, and (2) strategic change, which includes *addition* and *discontinuation*. ‘Differentiation’ means that work which was previously done in a single programme or sub-programme is allocated to more than one programme or sub-programme, as the case may be. ‘Consolidation’ denotes diminishing the number of organisational units whilst continuing the work. (For example, the National Youth Commission first was a programme in Vote 1: Presidency; but in 2007 it became a sub-programme in the new programme: Executive Coordination.) ‘Addition’ means undertaking new programmes or sub-programmes. The meaning of ‘discontinuation’ is obvious. However, a programme may be discontinued in one vote and continued in another, or even at a different level of government. A marked example of this is the community-based Public Works Programme, which amounted to R278 million as a sub-programme of Programme 3 of the Public Works vote for 2003. The work was then transferred to the provincial level.

Real discontinuation, i.e. where activities are stopped altogether, is rare. One of the reasons for this probably relates to issues surrounding the careers of individuals and the future of bureaucracies. Discontinuation will be hard to ascertain without going into the details of departmental activities. The multi-year tables of the ENE may show a discontinuation as far as the specific row of the table is concerned, while all or some of the funds for the activity are aggregated in another row in that and future years. What looks like a discontinuation may, in fact, be a case of consolidation or transfer to a different vote or even a different sphere. In the period under investigation strategic

change (the second main category) did not occur at the vote level. During the initial period of ANC government, it obviously did play a part.

If organisational identity over at least two consecutive years was established, I calculated the change or  $\delta$  by applying (3) above. Organisational identity was assumed to exist if at least the name and programme number remained the same and the allocation remained in the same order of magnitude. As explained above, organisational identity was deduced in a number of cases (e.g. when the name and number changed, but the work remained the same). No case was found where name and number stayed the same while the identity of the programme changed. Out of 835 allocations in the 34 votes over the five years, of which 145 stem from the first year (2003), I established 623 cases of organisational identity of programmes.

The 623 changes (deltas) were calculated and sorted from the biggest negative number to the biggest positive number, making use of readily available features of Microsoft Office Excel 2003. I then depicted the frequency distribution of the changes by means of histograms. After this, I described some elementary statistical characteristics of the data. Finally, the results of both the organisational analysis and the statistical analysis needed to be interpreted, leading me to conclusions about year-on-year variation in the allocations to national departments in South Africa: 2003–2007.

## 4 RESULTS

No new votes were introduced over the period under investigation. However, some votes were shifted to different clusters and received new numbers. Public Enterprises was moved from the cluster Financial and Administrative Services to the much more logical Economic Services and Infrastructure. Science and Technology was also shifted from Social Services, where it was associated with Arts and Culture on the one hand and Education on the other, to the Economic Services and Infrastructure cluster. (Under the apartheid regime, Science and Technology, Arts and Culture and Sport were all part of the Department of National Education.)

The rough and ready indication of the effects of strategic planning on budgeting is how the programme structure of votes changed over the period in question. In seven cases the programme structure remained the same over the years: the relevant votes/institutions are:

- Public Works (Vote 6)
- South African Management Development Institute (SAMDI) (Vote 11)
- Independent Complaints Directorate<sup>21</sup> (Vote 21)
- Justice and Constitutional Development (Vote 22)
- Land Affairs (Vote 28)
- Trade and Industry (Vote 32)
- Water Affairs and Forestry (Vote 34).

Thus, for 20% of the votes, there is no obvious evidence of strategic planning at the programme level. However, if one analyses the changes at the level of the sub-programme for these votes, things are not as stable as they would appear to be. Only two of the votes, namely the Independent Complaints Directorate, and Justice and Constitutional Development, exhibit neither reorganisation nor strategic change (as defined above) at the sub-programme level. How this information can be obtained, is now set out.

The information in the ENE is presented in such a manner that the reader can very often trace the history of the money allocated to a programme within the overall framework of the MTEF, even if the programme is new: Table 2 provides an example. The programme (Vote 1: Programme 3) is new in the specific year (2007). Nevertheless, the allocatory history of every sub-programme is given. In other words, the compilers of the ENE were able to locate the funded activities in their previous organisational contexts. When one studies the comparable tables in the ENE over the years under investigation, only three programmes emerge that are new in the radical sense of having no allocatory history: Government Publication in Vote 7 (Government Communication and Information Systems), 2010 FIFA World Cup Unit in Vote 18 (Sport and Recreation South Africa) and Joint Project Facility in Vote 30 (Public Enterprises). Counting the number of programmes showing the opposite effect, namely discontinuation or ‘disappearing without a trace’, will be a little harder to do.

**Table 2:** Table for single programme showing allocatory history of sub-programmes<sup>22</sup>

Executive Co-ordination

Subprogramme	Audited outcome			Adjusted appropriation	Medium-term expenditure estimate		
	2003/04	2004/05	2005/06		2006/07	2007/08	2008/09
<b>R thousand</b>							
Policy Co-ordination	8 841	9 929	14 098	21 464	34 543	25 372	23 492
Gender, Disability and Children	7 894	11 144	11 131	12 531	13 156	13 815	13 704
Cabinet Office	5 718	6 782	7 295	9 257	9 190	9 710	11 213
National Youth Commission	13 488	15 357	17 983	19 228	20 614	21 647	22 621
<b>Total</b>	<b>35 941</b>	<b>43 212</b>	<b>50 507</b>	<b>62 480</b>	<b>77 503</b>	<b>70 544</b>	<b>71 030</b>
Change to 2006 Budget estimate				(14 992)	(14 962)	(15 652)	

At the next level of analysis we looked at the number of programme changes, but still not at their quantities. A first indication of variation at this level is the total number of allocations over the four years that were organisationally identical (as defined earlier), with at least one other allocation in a contiguous year. As mentioned, 835 allocations were recorded, 145 stemming from the first year, namely 2003. That leaves 690 post-2003 allocations. Of this number, 623 (90%) were judged by me to be members of a structural (organisational) identity pair. In other words, from 2004 to 2007 only one out of ten allocations to programmes had neither an identical organisational predecessor nor an identical organisational successor. I have made claims (above) suggesting that the number is significantly smaller than that. That is, only three programmes are clean

starts and some discontinuations are only apparent. We can therefore conclude that the allocatory structures are highly stable at the programme level. However, we do not know what the norm is.

The situation is quite different when programmes are disaggregated to the level of sub-programmes. I inspected the tables in the 2007 ENE, where every programme is set out within a seven-year span (as explained). The number of blanks in the rows depicting the allocations to sub-programmes between 2003 and 2009, was recorded. Internal organisational changes were denoted in 70 of the 184 programmes listed. Due regard must be paid to the fact that many sub-programmes are not organisational units and are merely used for making payments. Also, some changes occurred at the responsibility level, that is, the level below that of the sub-programme. Nevertheless, the difference between the less than 10% change (where change is measured as the absence of year-on-year identity between programmes) and the 38% change (where change is measured as the non-funding in a year for a sub-programme within a seven-year envelope), is significant.

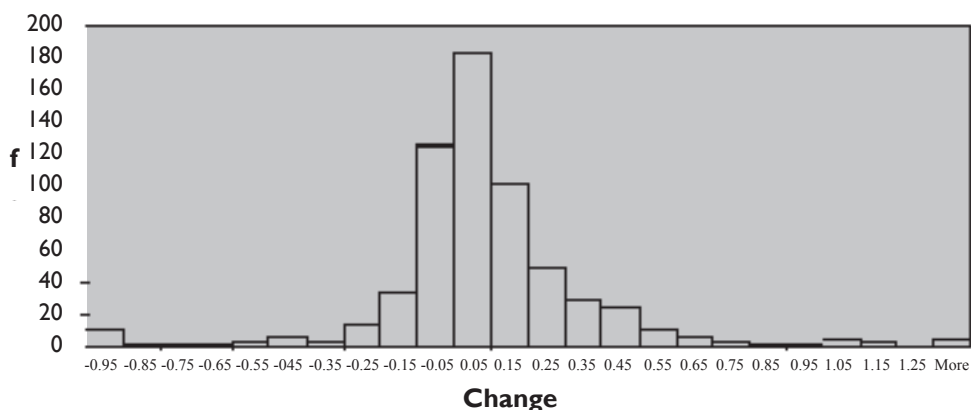
Investigating changes at the level of sub-programmes brought to light at least two issues worthy of attention. Firstly, my impression is that the most significant category of budgetary change may be transfer payments. Obviously, the effect on a bureaucracy of initiating or stopping a transfer is much less disruptive than initiating or stopping activities internally. It is therefore possible that transfer payments are used as a safe outlet, so to speak, for strategic planning in a department. The recipients, number, changes and amount of transfer payments on the budget look like a worthwhile topic for further investigation. Secondly, departments differ from each other in their propensity for organisational change. They range from the hyperactive Public Service and Administration (Vote 10) to the apparently lethargic Justice and Constitutional Development (Vote 24). The former department changed its programme structure in every year under investigation. At the same time, every programme shows changes at the sub-programme level. The latter department did not show evidence of organisational change, even at the sub-programme level, over the years investigated (including the outer years of the current MTEF).

After dealing with changes in structures, we must now present the findings on quantitative changes. The 623 deltas (measurements of real budget change from one year to the next) range from -10,2262 to 4,099809. If we discard the lowest value which is caused by the specific programme being reduced to R2000 (probably an accounting exercise) and discard the two highest values, the remaining 620 range from -2,85184 to 1,929308. However, I decided to keep the extreme values for the calculations.

308 deltas are smaller than 1 and 315 are higher than 1. The median is number 312 in the sorted data set with a value of 0,00221. This is a remarkably even distribution of growth and decline in real budget terms (as we have worked with the concept) in the allocations to programmes over the five budgets. Excel calculates the mean of our data at 0,025535. The mode is at -0,21321, but this is of no consequence. What is significant is the modal interval. Figure 3 shows that the two intervals with the highest frequencies

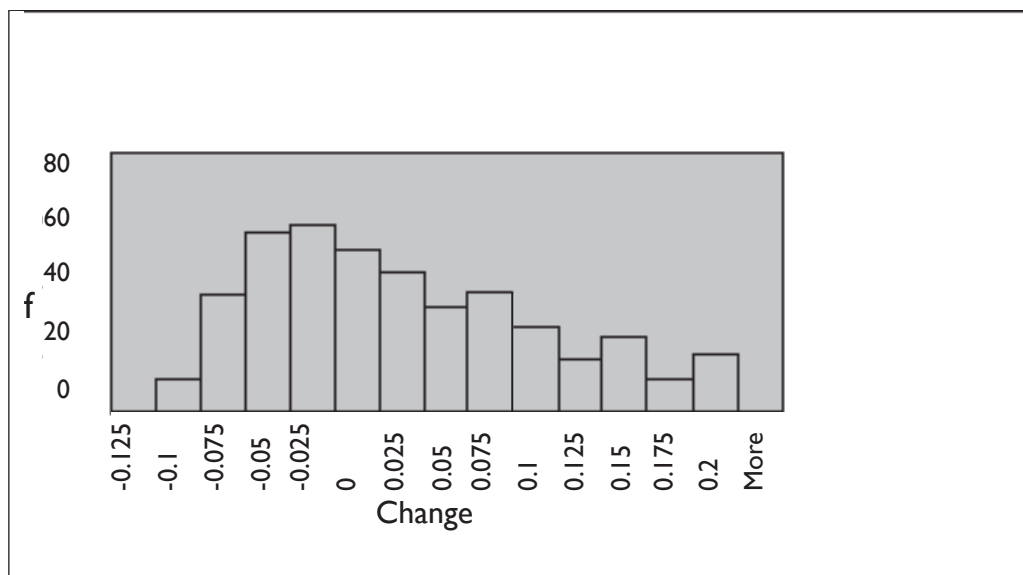
are categories representing negative growth. The modal interval is furthest left, followed by the median and then the mean. This is typical of a positively skewed distribution.<sup>23</sup> The standard deviation, which can be used as a measure of incrementalism, is 0,576768. This may look low, but it is high considering the unit in which we have measured the changes. In the literature (Jones & Baumgartner 2005: 111, 168, 173; Baumgartner et al. 2006: 1099–1100) much is made of the kurtosis or ‘peakedness’ of the change distributions. The kurtosis of our deltas is exceptionally high in comparison with a normal or Gaussian distribution, namely 168,9067. However, given the findings of Jones, Baumgartner and their associates, this is not surprising.

We now present the distribution of the deltas in two histograms. The first (Figure 2) depicts the distribution of all deltas (623) at an interval of 0,1. The second (Figure 3) focuses on a number of values (419) closer to the zero change point and depicts the distribution of these values according to a finer interval of 0,025.



**Figure 2:** All values

The chart is to be read as follows: the subscript along the *x*-axis depicts the sorting intervals, of which the number listed represents the upper limit of the interval. The height of the bar represents the number or frequency of the deltas within the interval. By far the highest numbers of deltas, namely 183, concentrate around the value of zero real budget growth in the category  $-0,05$  to  $0,05$ . The second highest frequency is found in the category  $-0,15$  to  $-0,05$ , namely 125. The histogram thus depicts an orderly distribution that is slightly positively skewed. The shape should be familiar to the readers of Jones and Baumgartner. In addition to the skewedness, it has a very high central peak and low frequencies in the flanking areas, but with significant outliers. It is, in a word, *leptokurtic*.



**Figure 3:** Central values

The picture created by the histogram of all values is strengthened by the picture created by our focus on the central values. The interval width is set finer. The three central bars in Figure 2 are made up of 410 values. Figure 3 represent 419 values. Here the two most populous intervals are also less than zero, namely 58 in the interval -0,05 to -0,025, and 56 in the interval -0,075 to -0,05. In other words, it is shown that the high bar in the first histogram contains more negative than positive values. The shape of the two charts is basically the same: regular, but positively skewed. This calls for an explanation.

## 5 INTERPRETATION: STABLE OR STAGNANT?

Both the structural and quantitative analyses indicate a stable management environment for programme managers in that part of the public sector which is financed from the National Revenue Fund by means of the annual budget. Although the adjustments may appear to be merely incremental if change is measured at the programme level, organisational disaggregation of programmes showed sufficient variation to counter charges of incrementalism of the system as a whole. In some cases there are signs of passivity on the side of departmental managements, where strategic planning appears to be mere paperwork.

This raises the question: what would a distribution of changes look like where strategic budgeting was effective? All things being equal, such a distribution – depicted as a histogram – could be flat, with a low kurtosis. One would not like to see too large



a number of deltas clustering around zero. However, strategic budgeting must take place in a given management and fiscal environment. Such an environment may be characterised by high friction (Jones & Baumgartner 2005: 88, 173) or institutional resistance to change. This technical concept does not mean discord, although discord can be a contributing factor. The constraints inherent to such an environment would favour the same positively skewed distribution of change that was seen in our case. Prioritising would cause some elements to receive substantially more funding than they did in the past, but it is unrealistic to expect this to be funded from the wholesale discontinuation of other elements. Management would rather fund a limited number of new priorities from a larger number of existing elements by taking away limited amounts from the larger number. Such action would produce something close to the distribution we have seen in the South African expenditure budget.

The fact that the biggest concentration of values in our distribution falls to the left of the zero point – in other words, it involves negative change in real budget terms – will probably be mitigated if the figures are expressed in nominal terms. Still, with effective strategic budgeting one should expect the pattern that we have seen.

Another finding that needs interpretation is why more restructuring takes place at the level of the sub-programme than at programme level. The most likely explanation lies with the constraints faced by the accounting officer. Any change in the activities of a department must take place within legislation and policy mandates emanating from the political level. In addition, planning occurs within the medium-term strategic framework of the government as a whole and also within the medium-term budget policy framework of the Minister of Finance. A new programme structure has to be approved by the ‘executing authority’ (a term in the Public Service Regulations for ‘Minister’) in consultation with the Minister of Public Service and Administration.<sup>24</sup> Strategic planning as part of budgeting in votes takes place within the financial limits set by the MTEF. Although sub-programmes also have amounts for the outer years of the MTEF, it is probably easier to change those. One must be realistic: although strategic planning at departmental level is obligatory, its effects are constrained.

A final point of interpretation: a stable pattern of allocation can be as much the result of constraints on budgeting as due to incrementalism or muddling through. For the system as a whole, I did not find any evidence that would warrant the conclusion that budgeting at the national level in South Africa is non-rational.

## 6 CONCLUSION

This article has examined easily accessible information and techniques that scholars can use to analyse the workings of South Africa’s national expenditure budget. The topic is important for managers and also for the people, as the owners of budgeted funds. At the same time, the data that we obtained also show support for the theoretical concept of *punctuated equilibrium* that is current in the literature on public policy.

Many questions remain unanswered. I will identify at least three:

- (1) Will new patterns emerge when we extend our time series in the South African context? For example, as suggested by Krige Siebrits in a personal communication, did the introduction of the MTEF make a difference to the change patterns?
- (2) What is the role of transfer payments in budget variation in particular, and in the political economy of the country in general?
- (3) Can we construct a statistical model for the outcomes of strategic budgeting?

And – perhaps facetiously – has the allocation problem been solved?

## NOTES

1 Strategic planning is required by Regulation 5 of the Treasury Regulations and is applicable to national and provincial departments (<http://www.treasury.gov.za/legislation/acts/pfma/regulations/default.htm>). It is also prescribed by Chapter 1, Part III B of the *Public Service Regulations*, 2001. The meaning of the term ‘strategic plan’ is determined by the regulatory context. When one studies the regulations, it is plain that many aspects of these plans may be quite down to earth. A strategic plan may also be a certain way of describing what departments would have done in any case. At local government level the counterpart is the Integrated Development Plan required by Chapter 5 of the Local Government Municipal Systems Act 32 of 2000.

2 See Part 3 of Trevor Manuel’s budget speech on 12 March 1997, where it is referred to as one of several reform initiatives aimed at improving the effectiveness of fiscal planning as an instrument of governance. The speech can be read on [www.treasury.gov.za](http://www.treasury.gov.za) under Documents→Budgets and Related Documents→1997. The idea had been alive in the then Department of State Expenditure before 1994.

3 Also go to the Policy Agendas Project at <http://www.policyagendas.org/>

4 A *locus classicus* in budget theory is Wildavsky, 1964. Interestingly enough, the term ‘incrementalism’ does not occur in the index to Wildavsky, 1994. Did he lose interest? In general policy theory, much of the discussion can be traced back to Lindblom, 1959.

5 This idea is borrowed from evolutionary biology and states that change in policy is characterised by periods of stability with little change, interspersed with sudden changes that set a new agenda and create a new policy environment. The similarities with Thomas Kuhn’s picture of the development of science are obvious.

6 A classic is the work of Henry Mintzberg (1994).

7 Strangely, incrementalism is regarded in the literature as a form of bounded rationality (see Jones & Baumgartner). The idea of bounded rationality does not merely refer to the fact that the powers of the mind (individual or institutional) are limited, but it also refers to non-optimising rational decision making. Incrementalist behaviour may be a case of bounded rationality, but not necessarily.

8 According to Gert van der Linde of the World Bank, the South African budget information design and presentation are of the best in the world (personal communication). This is supported by the fact that South Africa took fourth place in an international survey on budget transparency during 2006.

9 The choice of years was arbitrary.

10 For the sake of convenience, the 2007/2008 fiscal year will henceforth be written as 2007, and so on.

11 The *Estimates of National Expenditure* are all found on the National Treasury Website at [www.treasury.gov.za/documents/budget/\[insert the year here\]/ene/default.htm](http://www.treasury.gov.za/documents/budget/[insert the year here]/ene/default.htm). The reader should consult these URLs with reference to the details of specific votes and programmes mentioned in this article.

12 A direct charge is a payment from the NRF that does not need to be appropriated by an Act of Parliament (Section 213 of the Constitution 1996). The two most important items are the cost of servicing state debt and the provincial equitable share (Section 214 of the Constitution).

13 One of the criticisms by, amongst others, LeLoup (1978) of the pioneer work by Davis and associates (Davis et al 1966).

14 See Section 30 of the Public Management Act, Act 1 of 1999 (PFMA). From the seven kinds of expenditure provided for in this section ('National Adjustment Budgets'), only two can result from strategic planning, namely expenditures already announced in the main budget, and expenditures resulting from the reorganisation of functions between departments. Particulars of the amounts voted or transferred by means of the adjustments budget can be found in the additional tables for the votes in the ENE.

15 See, for example, the ENE for 2007: Vote 1 (Presidency): 9. The ENE also gives the percentage change in nominal terms. The average annual rate increase in expenditure of 20,02% in

our example is apparently calculated by means of the formula for compound interest:  $r = \left(\frac{P_n}{P_a}\right)^{\frac{1}{n-1}} - 1$

where  $P_n$  is the allocation in the  $n^{\text{th}}$  year,  $P_a$  the allocation in the start year and  $r$  the average annual rate of increase. I have not checked whether the growth rate was calculated in the same way for every vote.

16 The National Treasury's definition is: 'A measurement of the price increases of a basket of consumer goods and services.' This measure differs from the consumer price index in that it excludes mortgage costs. <http://www.treasury.gov.za/documents/budge/2007/revied/annex%20a.pdf>

17 The natural logarithm is the logarithm to the base  $e$ , where  $e$  is an irrational constant approximately equal to 2.718281828459. In simple terms, the natural logarithm of a number  $x$  is the power to which  $e$  would have to be raised to equal  $x$ . (<http://www.answers.com/topic/natural-logarithm>)

18 Let us take the example of the doubling and halving of an allocation, say, between 50 and 100. The two quotients,  $50/100 = \frac{1}{2}$  and  $100/50 = 2$  are one another's negative in terms of their natural logarithms:  $\ln \frac{1}{2} = -0.6931$  and  $\ln 2 = 0.6931$ . Disregarding the minus sign, it makes no difference which is the nominator and which the numerator.

19 The two outer years of the 2007 MTEF were also taken into account in the structural analysis.

20 See Pauw 2004 for remarks on budget rhetoric.

21 For the fiscal year 2004/2005, Programme 3 (*Information management and research*) was slightly changed and renamed. However, the similarities were strong enough to warrant a judgement of structural identity.

22 ENE 2007, Vote 1: 8

23 Personal communication by Jeanette Pauw.

24 A directive was recently issued by the Minister of Public Service and Administration, to specify which changes to the organisational structure of a department she must be consulted on, prior to the approval thereof by the relevant executing authority. Unfortunately, the conception of that directive is in terms of ranks rather than programmes and sub-programmes.

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