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ABSTRACT

The history of public debt reflects the cumulative effect of fiscal decisions and real outcomes in the economy. In the South African case the published record on public debt distorts the historical perspective on the associated fiscal decisions. This note shows the impact of adjusting the South African public debt on an accrual basis to take account of two major obligations assumed in the first half of the 1990s, namely actuarial pension fund deficits and government debt of the apartheid homelands. The adjusted series is less volatile and rose less steeply between 1989 and 1996 than the official, cash based debt series. Failing to account for the evolution of these obligations exaggerates the impression of weak fiscal discipline in the early nineties and exemplary fiscal prudence in preceding decades.

Keywords: South African public debt, fiscal discipline, accrual classification,
pension fund deficits, sub-national debt

JEL codes: H62, H63, G230

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1. INTRODUCTION

The political transition in South Africa during 1994 took place against a backdrop of high government deficits (which peaked at 7.3% of GDP in 1992/93) and a public debt burden that was rising alarmingly (national government debt rose from 36.4% on 31 March 1989 to a peak of 49.5% of GDP on 31 March 1996). So alarming was this trend that economists at the time, and in subsequent years, feared the onset of a debt trap (for example, Van der Merwe 1993 and Cronje 1998, and the concerns raised in Fourie and Burger, 2003). Furthermore, it was widely ascribed to “weak” “aggregate fiscal discipline”, in the words of Ajam and Aron (2007: 746). We revisit this issue and illustrate how a revised calculation of the evolution of South African public debt since the 1960s leads to different conclusions. We base our calculations on the accrual of obligations by the government employees pension fund (GEPF), as adjusted to include imputed membership to employees in the former TBVC states (Transkei, Bophuthatswana, Venda and Ciskei) and self-governing territories (SGT) before 1994, as well as the accrual of public debt in those jurisdictions prior to 1994. The revised data suggest that the sense of imminent crisis during the mid-1990s and the harsh judgement on pre-1994 fiscal discipline requires revision.

We begin with a short historical context, followed by an outline of the method and calculations and conclude with our interpretation.

2. HISTORICAL CONTEXT

By 1994 government debt was just shy of 50% of GDP – a dramatic increase from 31.5% in 1990 which has been attributed partly to cyclical factors (Calitz & Siebrits, 2003: 58-60). However, between 1989 and 1994, the Government accepted responsibility for two major obligations, namely the improved actuarial funding of the GEPF² and the accumulated debts of the apartheid era’s TBVC states and SGTs, as they were referred to at the time. While the consolidation of these obligations on the books of the national government occurred over a few years in the early nineties (see table 1 for the schedule and amounts³), the associated liabilities were incurred over a much longer period.

An accurate reflection of “aggregate fiscal discipline” would take account of the evolution of these liabilities and our focus is on the financing commitments of government with regard to the funding of the GEPF between 1962 and 1994, as well as the national consolidation of the debt accumulated by the TBVC states and SGTs of the apartheid era in 1994. The argument is not that all contingent liabilities should be counted as debt; rather we argue that the evolution of obligations that were converted abruptly into national debt is important if the debt stock is used as a barometer of fiscal discipline. Failing to account for the evolution of these obligations exaggerates the impression of weak fiscal discipline in the early nineties and exemplary fiscal prudence in preceding decades.

² These were not the only pension fund obligations, but the impact of the others was not as large. A closed pension fund (amounting to about R1bn) was established for retiring politicians in the apartheid political system. The pension fund for associated institutions was also underfunded and various institutions (e.g. universities) opted to establish their own pension funds; thus relieving government of the funding obligation. The pension fund for temporary workers was also underfunded.

³ Table 1 shows the transfer payments to the GEPF between 1990 and 1994, as well as the budget balances of the TBVC states and SGTs and the transfer of their debt to the national Government between 1977 and 1994.

Table 1: Transfers to GEPF; budget deficits in TBVC & SGTs and debt taken over by the national government

Year ending 31 December	Additional transfers to GEPF ⁽¹⁾⁽²⁾	Year ending 31 March	TBVC & SGT	
			Budget balances ⁽³⁾⁽⁴⁾	Debt transferred to national government
	Rm		Rm	Rm
1962	0	1962	-	
1963	1	1963	-	
1964	0	1964	-	
1965	0	1965	-	
1966	0	1966	-	
1967	17	1967	-	
1968	0	1968	-	
1969	5	1969	-	
1970	0	1970	-	
1971	0	1971	-	
1972	0	1972	-	
1973	1	1973	-	
1974	0	1974	-	
1975	1	1975	-	
1976	1	1976	-12	
1977	1	1977	46	
1978	1	1978	93	
1979	1	1979	-46	
1980	0	1980	6	
1981	0	1981	47	
1982	0	1982	66	
1983	0	1983	291	
1984	0	1984	244	
1985	0	1985	434	
1986	0	1986	561	
1987	0	1987	1 425	
1988	0	1988	1 381	
1989	150	1989	555	
1990	1 000	1990	821	
1991	1 000	1991	unknown	
1992	2 000	1992	unknown	
1993	7 300	1993	unknown	
1994	0	1994	unknown	
1995	0	1995		14 093

Source: Transfers to pension funds and debt transferred to National Government: RSA Auditor-General Reports and RSA Budget Reviews, various issues; Budget balances, TBVC & SGTs: SARB (1991).

- (1) It is not always clear from government documents which of the pension funds benefitted from the transfers. Given two sets of consolidation of pension funds, i.e. in 1973 and 1996, eventually resulting in the GEPF, we regarded the GEPF as the beneficiary.
- (2) Over and above the annual contributions as employer.
- (3) A negative figure indicates a budget surplus.
- (4) Figures for 1991-1994 have not been published separately by the S.A Reserve Bank and merely included as part of the borrowing requirements of extra-budgetary institutions.

3. METHOD AND CALCULATIONS

In this section we describe the adjustment of public debt in terms of an accrual definition which reflects when the funding obligations for the GEPF, TBVC states and SGTs arose, rather than a cash definition which reflects when the actual financing was undertaken. Where the GEPF is concerned, if for any government employee the annual contribution to the pension fund is lower than the value of his/her accrued benefit in that year, the government incurs an unfunded liability. The South African government incurred unfunded liabilities of this kind over an extended period. Also, most of the debt of the TBVC states and SGTs which became national debt in 1994 was incurred during earlier years. In both these cases, therefore, there is retrospectively a time difference between date of funding and date of accrual of obligation, which renders the published national government debt series correct from a funding point of view but incorrect from the point of view of the time incidence of obligations.

Starting with the pension fund, the preferred method to estimate government's funding obligations with regard to the GEPF⁴ as it accrued over time would be to use the actuarial valuations of the government pension fund in selected years. However, such valuations do not exist or are not available, because of the ruling by the Minister of Social Welfare and Pensions in 1975 that periodic actuarial valuations were no longer needed (RSA, 1977: 75-76), as well as the decision ten years later by the Minister of National Health and Population Development not to release an actuarial report on the fund (Wassenaar, 1987: 12-13).

As a pragmatic alternative we calculate the unfunded liabilities with respect to the pension fund by using the known levels of funding for the pension fund at particular dates, the time series of employer and employee contributions to the GEPF and an assumption on the appropriate level of contributions in a fully funded defined benefits scheme of this kind. The period under consideration runs from 1962 until 1994. We use 1962 as our starting point because of the publication by the Controller and Auditor-General (1969) of the government's liabilities towards pension funds on account of an actuarial evaluation on 31 March 1963.⁵ The aggregate actuarial liability amounted to R82.74 million⁶, which is shown as the debt obligation at the beginning of our calculation in table 2 (the figure in column 7). The end point (1994) was chosen because it was the culmination of the political transition to democracy and the end of a period (since 1989) of major debt restructuring and improved funding of the government pension fund. Also, 1994 is close to the last actuarial evaluation of the government's pension funds during apartheid. The actuarial report dated 9 July 1992 calculated an actuarial funding level of 51 per cent, but nonetheless stated that the funding position of the GEPF was consistently improving and that, if the trend were to continue, the GEPF would attain full funding naturally (RSA 1992: 289).⁷

We were unable to obtain exact information on the funding history of the TBVC pension funds and their funding levels upon amalgamation with the newly established GEPF on 1 May 1996. Information supplied by staff of the GEPF indicate that the Bophuthatswana pension fund was 103% funded on amalgamation, the Transkei fund was 85% funded as on 31 March 1994, the Ciskei funding was more or less of the same

⁴ Two consolidations of pension funds should be noted. As of 1 July 1973 the following were incorporated into the Government Service Pension Fund: the Public Service Pension Fund, the Permanent Force Pension Fund, the SA Police and Prisons Fund, the Government Service Widows' Pension Fund and two smaller funds. To ensure comparability with the post 1973 figures, we added data in respect of the four above-mentioned funds for the pre-1973 period. To ensure comparability with the Government Employees Pension Fund, as consolidated in 1996, we added estimates of the contributions of employees and employers in the TBVC-states and SGTs for the period between 1973 and 1996.

⁵ This was the first actuarial valuation published after the founding of the Republic of South Africa in 1961 and the calendar year 1962 is closest to the valuation date. Actuarial estimates were published quite infrequently, as evidenced by the following valuation dates: 31 August 1956, 31 August 1957, 31 March 1963, 31 March 1968, 31 March 1970 and 31 March 1971. The valuation of 31 March 1963 was the only one covering all four the pension funds mentioned in footnote 3.

⁶ The total funding shortfall of R82.74 million consisted of the deficits of the Public Service Pension Fund, the Permanent Force Pension Fund and the SA Police and Prisons Pension Fund, as well as the surplus on the Government Service Widows Fund. All these funds were later consolidated into the GEPF.

⁷ An important factor in the improved funding prospects was the changes in the investment policy of the (then) Public Investment Commissioners (now the Public Investment Corporation), the entity responsible for the investment of the GEPF and other government funds. This inter alia entailed a reduction in the prescribed investment in government stock and a commensurate greater freedom to invest in shares, as well as the contracting of a number of portfolio investors to manage its investments. The last-day salary as basis for pension was replaced in 1996 by the average salary of the last two years before retirement and the pension buy-back option was made cost-neutral to the fund. The GEPF's annual report (Government Employee Pension Fund, various issues) (which can be obtained from the GEPF) showed that on 31 March 1998 it was 96.5% funded and the 2003 actuarial report, discounting future pension increases, showed a 100% funding level. Subsequently the Fund remained at or close to the 100% funding level.

order and the Venda fund was also underfunded. Salary hikes shortly before amalgamation may have been the reason for all or some of the shortages. Given that ours is an illustrative analysis and that the personnel of the overfunded Bophuthatswana pension fund represented a small percentage of all national and provincial public employees in SA, the TBVC states and the SGTs (on “independence” in 1977 it was only 3%), we assumed for purposes of our analysis that the trend of underfunded pension funds in respect of apartheid South Africa applied *pari passu* to all pension funds of the TBVC states and SGTs. In any case, from table 2 it can be seen that most of the inadequate contribution to pension funds occurred before the first of the TBVC states, namely Transkei, was established in 1976.

A critical assumption for the method used here is the benchmark that, in a normal funded private sector pension fund, the combined contribution of members and the employer varies between 15 and 18 per cent of total salaries (Wassenaar, 1987: 55). Having been a contributory fixed benefit fund since its inception in 1934, however, the government pension fund historically provided more generous pension benefits than private-sector funds, especially because pensions were calibrated on the salary of the last working day⁸, public servants were able to buy back pension at particularly low cost and a gratuity was due over and above the pension benefit⁹. Given that actual contribution rates averaged about 17 per cent during 1992-1994 – the time of the positive actuarial report referred to above, as well as during the most recent 12 years (from 1997-2008) since the intensive funding effort between 1989 and 1994, we used 17 per cent of total salaries¹⁰ (or 16.75 per cent to be exact¹¹) as the norm for the required annual contribution to the GEPF.¹²

The contributions ratio was not consistently met during the sample period and table 2 shows the time pattern of the shortfalls in current rand amounts in column 7 and as a proportion of remuneration in column 6.

The evolution of funding shortfalls shown in table 2 is revealing. Firstly, though government pensions were never managed on a pay-as-you-go basis, they were considerably underfunded during the entire period under review, especially during the sixties and seventies, when benchmarked against a contribution rate which would be sufficient to ensure adequate funding for a normal private sector pension fund. The accumulated amount of this underfunding, which was calculated to carry interest equal to the yield rate on long-term government bonds, is shown in rand terms in column 10 of table 2 and expressed as a ratio of GDP in column 11 of the same table. As a ratio of GDP the underfunding reached a peak in 1977, when

⁸ As opposed to the salary for the final few years of employment.

⁹ A private sector employee, by contrast, had the option to convert up to one-third of the pension benefit into a gratuity. If the private annuity benefit (inclusive of the conversion option) was comparable to the public annuity benefit (exclusive of the gratuity), the public employee's gratuity thus represented a net benefit. In the case of a public servant, the pension annuity was calculated as $1/55\% \times n \times S$ (where n = number of pensionable years of employment and S = pensionable salary). The gratuity was $6.72\% \times n \times S$. In combination the total benefit was thus equivalent to $1/40\% \times n \times S$, compared to a total private-sector pension benefit of $1/50 \times n \times S$. The benefit of the public pensioner was thus 25% higher than that of a typical employee retiring from a private company. Put differently, the higher benefit resulted in a higher pension fund obligation for the government, given the relatively low employee contribution during the 1960s and most of the 1970s (see column 4 of table 2).

¹⁰ This translates into a norm of about 24% for the required combined contribution by government and employees as a percentage of pensionable salaries (which are normally about 75% of total salaries). This is close to the required contribution rate of 24.9% to fund benefits that accrue, as stated in the actuarial report of 9 July 1992 (Auditor-General, 1992: 289).

¹¹ At this rate and when adding the accrual-adjusted obligations in respect of the accumulated debt of the TBVC states and SGTs, the adjusted and unadjusted debt-to-GDP ratios are equated in 1994. By doing this we regard the historical imputation of accrued obligations to be completed. The TBVC and SGT consolidation was indeed completed. The once-off enhanced funding of pension funds was also completed.

¹² We thus assume that the additional pension fund contributions by the Government in the early 1990s, together with the changed investment policies and concomitant investment yields in respect of pension funds and the scaled-down pension benefits (see footnote 6), were sufficient to eliminate the accrued funding deficit.

contributions at the norm rate of 17 per cent would have resulted in a rise in the debt-to-GDP ratio of almost 5 percentage points.

Table 2: Change in debt-GDP ratio when applying accrual accounting to pension fund obligations

Year	Pension fund contributions by members (1)	Pension fund contributions by gov ⁽¹⁾⁽⁵⁾	Remuneration, incl estimates of TBVC & SGTs ⁽¹⁾⁽²⁾	Ratio of gov to member contributions	Total contribution as % of remuneration	Shortfall on 16.75% contribution, as % of remuneration	Extra contributions required to fill ratio gap of 16.75% ⁽³⁾	Extra pension fund gov contributions made from time to time	Net extra contributions to fill ratio gap of 16.75%	Accumulated net extra gov contributions to effect 16.75% ratio	Change in debt-GDP ratio ⁽⁶⁾
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Rm	Rm	Rm		%	%	Rm	Rm	Rm	Rm	Percent points
1962	15.35	15.34	341.29	1.0	9.0	7.76	482.74	0.00	26.48	82.74	1.40
1963	16.68	16.67	373.01	1.0	8.9	7.81	28.13	1.00	28.13	116.14	1.78
1964	18.92	18.91	411.43	1.0	9.2	7.55	31.08	0.00	31.08	154.58	2.15
1965	20.95	20.95	430.88	1.0	9.7	7.03	30.27	0.00	30.27	195.95	2.49
1966	22.34	22.33	492.65	1.0	9.1	7.68	37.85	0.00	37.85	248.99	2.91
1967	24.57	25.82	541.16	1.1	9.3	7.44	23.26	17.00	23.26	289.95	3.03
1968	28.07	29.41	595.62	1.0	9.7	7.10	42.28	0.00	42.28	353.83	3.42
1969	22.89	38.66	643.39	1.7	9.6	7.18	41.22	5.00	41.22	420.73	3.61
1970	26.38	44.89	773.98	1.7	9.2	7.54	58.38	0.00	58.38	516.23	4.04
1971	30.74	52.36	928.96	1.7	8.9	7.81	72.51	0.00	72.51	638.79	4.52
1972	36.09	61.87	1 006.20	1.7	9.7	7.02	70.59	0.00	70.59	767.04	4.81
1973	38.81	66.08	1 259.59	1.7	8.3	8.42	105.59	0.50	105.59	942.45	4.77
1974	62.29	128.12	1 514.51	2.1	12.6	4.18	63.28	0.00	63.28	1 101.27	4.54
1975	75.60	167.76	1 751.58	2.2	13.9	2.86	49.53	0.50	49.53	1 265.88	4.63
1976	79.83	184.15	1 960.94	2.3	13.5	3.29	63.72	0.75	63.72	1 475.85	4.78
1977	91.68	220.53	2 125.21	2.4	14.7	2.06	43.01	0.75	43.01	1 681.23	4.91
1978	101.54	253.86	2 357.53	2.5	15.1	1.68	38.99	0.50	38.99	1 887.43	4.79
1979	143.91	377.51	2 751.29	2.6	19.0	-2.20	-61.33	0.75	-61.33	1 996.30	4.24
1980	165.48	446.66	3 464.43	2.7	17.7	-0.92	-31.85	0.00	-31.85	2 196.44	3.50
1981	208.67	584.49	4 382.06	2.8	18.1	-1.35	-59.17	0.00	-59.17	2 422.17	3.33
1982	278.06	705.86	5 294.52	2.5	18.6	-1.83	-97.09	0.00	-97.09	2 588.05	3.14
1983	355.10	901.79	6 196.62	2.5	20.3	-3.54	-218.96	0.00	-218.96	2 692.23	2.85
1984	430.98	1 094.70	8 091.01	2.5	18.9	-2.11	-170.43	0.00	-170.43	2 931.84	2.65
1985	569.54	1 480.02	9 352.43	2.6	21.9	-5.16	-483.02	0.00	-483.02	2 891.82	2.27
1986	627.77	1 642.57	11 804.33	2.6	19.2	-2.48	-293.12	0.00	-293.12	2 995.26	2.00
1987	773.09	2 027.43	14 572.21	2.6	19.2	-2.47	-359.68	0.00	-359.68	3 043.04	1.74
1988	983.49	2 584.13	17 242.29	2.6	20.7	-3.94	-679.53	0.00	-679.53	2 758.45	1.32
1989	1 108.28	2 912.71	22 165.29	2.6	18.1	-1.39	-458.31	150.00	-458.31	2 664.71	1.06
1990	1 312.53	3 458.99	26 694.20	2.6	17.9	-1.12	-1 300.24	1 000.00	-1 300.24	1 582.24	0.55
1991	1 462.41	3 852.83	27 694.86	2.6	19.2	-2.44	-1 676.34	1 000.00	-1 676.34	-109.78	-0.03
1992	1 675.17	4 411.52	32 106.73	2.6	19.0	-2.21	-2 708.81	2 000.00	-2 708.81	-3 238.55	-0.87
1993	1 758.49	4 640.66	36 092.84	2.6	17.7	-0.98	-7 653.59	7 300.00	-7 653.59	-12 236.24	-2.87
1994	1 930.18	5 289.85	44 371.07	2.7	16.3	0.48	212.12	0.00	212.12	-14 044.17	-2.91

Sources: Various issues of S.A Statistics, published by Statistics South Africa; Auditor-General Reports (various issues); RSA 1992 Budget Review, p 5.8; S.A Reserve Bank Quarterly Bulletin, various issues

(1) Data from the former TBVC-states and SGTs are included from June 1994 onwards in Statistics South Africa series. Before 1994 estimates were made by applying RSA transfers growth rates.

(2) Remuneration data for the period 1990 to 2008 (the post-1989 series) are from the Survey of Employment and Earnings (P0275), published by Statistics South Africa. The pre-1991 series (up to 1990) showed a break with the post 1989 series. Continuity was achieved by scaling up the pre-1991 series with the ratio between the two series' 1990 figures.

(3) The interest on accumulated debt was calculated at the yield rate on long-term government bonds.

(4) In the published series employer contributions to funds were excluded for years prior to 1992 and included thereafter. In order to calculating the required additional funding consistently, employer contributions were subtracted from remuneration as from 1992.

(5) Total of funding deficits in respect of the following pension funds which were later on consolidated into what is presently known as the Government Employee Pension Fund: Public Service Pension Fund, Permanent Force Pension Fund, S.A police and Prisons Pension Fund. The surplus in the Government Service Widows Fund was also added. Valuations as on 31 March 1963. Source: Auditor-General Annual Report

(6) Calculated, using data from S.A Reserve Bank Quarterly Bulletin, various issues.

Underfunding of this kind emerges when some combination of contributions by the employer and employees falls short of a prudent ratio of total earnings. In the case of the GEPF an interesting pattern emerges: during the early sixties government and its employees contributed on a one-for-one basis to the GEPF as can be seen in column 4 of table 2, and their combined contributions fell far short of the prudent benchmark (see column 6). From 1969 onwards government apparently allowed a persistently lower contribution by public servants while progressively raising the employer contributions as can be seen in the rapid rise of the employer to employee contributions ratio over this period in table 2. It was

only by 1979 that the total annual contribution to the pension funds exceeded the prudent ratio of 17 per cent, at which time the employer-member contribution ratio had reached 2.6:1 (the industry norm is 2:1).

It appears, therefore, that underfunding was due to contributions below the industry norm and, in particular, increasingly due to below norm contributions by members (i.e. government employees). The latter amounted to an increase in the implicit remuneration of public servants, ultimately at the cost of the taxpayer. In fact, government incurred most of the contingent liabilities represented by the underfunded pension funds during the period 1962 to 1975. This can be seen in the 6th column of table 2, where the combined contribution gap was above 7 percentage points for the entire period between 1962 and 1973, after which it gradually fell, eventually to turn negative (signifying excessive funding relative to the norm) in 1979. The rise in public debt in the early 1990s on account of pension fund funding was therefore not the result of profligacy shortly before the political transition in 1994, but to compensate for inadequately funded pension benefits during an earlier period. And, by undertaking such funding, the government actually removed (or largely reduced) a liability with a real threat to future fiscal sustainability.

Next we consider the debt of the TBVC states and SGTs, amounting to R14.093bn, which was consolidated with the national debt in 1994 (RSA, 1994: 2.8). For this calculation an appropriate period starts in 1977 (the year after Transkei became the first of the TBVC states to obtain nominal independence from the apartheid state) and ends in 1994 (the end of the apartheid era, after which these entities again became part of the new South Africa). Table 3 shows the extent of annual deficits over time, as converted to calendar year figures. The accumulated interest-bearing debt is shown in the last column. By the time the debt was taken over by the post-apartheid state, the accrued obligations added almost 4 percentage points to the national debt-GDP ratio. Accrued debt calculations were based on the assumption that these debts were not redeemed and carried interest equal to long-term South African government bond rates. The entities' accumulated interest-bearing debt obligations on an accrual basis appear to exceed the total debt taken over by the national government, hence a 0.5 percentage point debt increase remained after the debt take-over in 1994.

Table 3: Change in debt-GDP ratio when applying accrual accounting to TBVC-debt taken over by national government

Year	Deficits as adjusted converted to annual data	Accumulated impact on debt-to-GDP ratio	Year	Deficits as adjusted converted to annual data ⁽¹⁾	Accumulated impact on debt-to-GDP ratio
	Rm	Percentage points		Rm	Percentage points
1977	32	0.1	1986	529	1.6
1978	124	0.3	1987	1 209	2.4
1979	123	0.3	1988	1 392	3.1
1980	130	0.2	1989	762	3.4
1981	189	0.3	1990	755	3.7
1982	278	0.3	1991	205	3.8
1983	583	0.6	1992	0	3.9
1984	975	0.9	1993	0	3.9
1985	1 608	1.3	1994	-14 093	0.6

Source: SA Reserve Bank (1991)

(1) The negative deficit figure in 1994 signifies the total amount of debt which the national government took over.

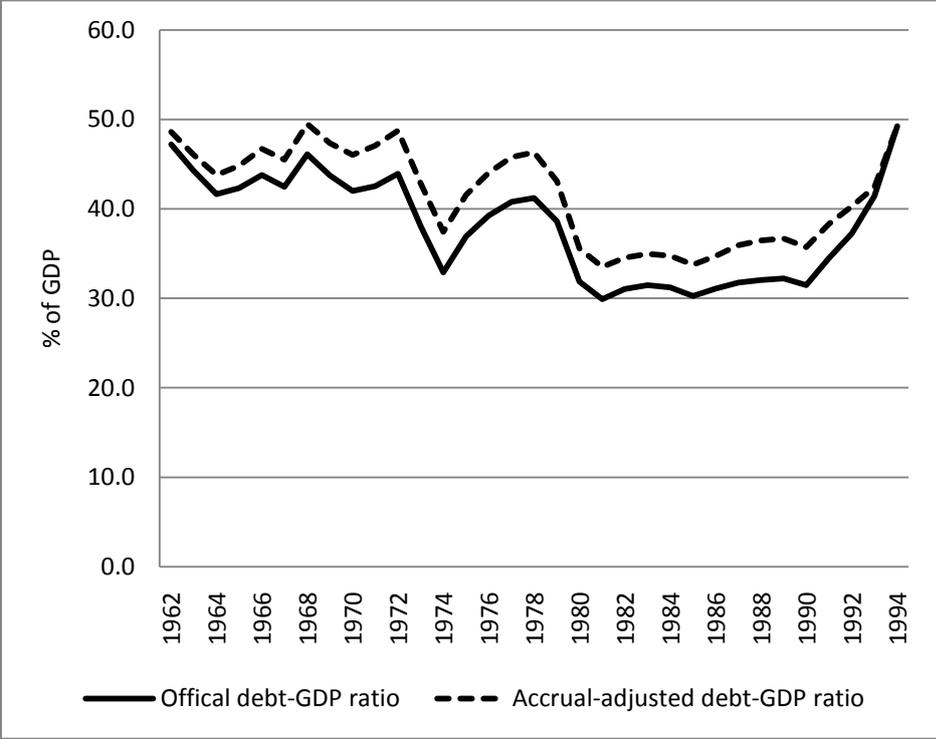
Combining the information in tables 2 and 3 allows the adjustment of the national debt from 1962 to 1994 as shown in table 4 as a ratio of GDP. Figure 1 plots the adjusted and unadjusted (officially published) debt-GDP ratios as time series over the period under consideration.

Table 4: Official and accrual adjusted South African national government debt as % of GDP, 1962-1994

Year	Official debt-GDP ratio	Accrual adjusted debt-GDP ratio	Year	Official debt-GDP ratio	Accrual adjusted debt-GDP ratio
	%	%		%	%
1962	47.2	48.6	1979	38.6	43.1
1963	44.2	46.0	1980	31.9	35.6
1964	41.6	43.8	1981	29.9	33.5
1965	42.3	44.8	1982	31.0	34.5
1966	43.8	46.7	1983	31.5	35.0
1967	42.5	45.5	1984	31.2	34.7
1968	46.1	49.5	1985	30.2	33.8
1969	43.7	47.4	1986	31.1	34.7
1970	42.0	46.0	1987	31.8	35.9
1971	42.5	47.1	1988	32.0	36.5
1972	43.9	48.7	1989	32.2	36.7
1973	38.0	42.8	1990	31.5	35.7
1974	32.9	37.4	1991	34.5	38.3
1975	36.9	41.6	1992	37.2	40.3
1976	39.2	44.0	1993	41.4	42.4
1977	40.8	45.8	1994	49.2	49.2
1978	41.2	46.3			

Source: SA Reserve Bank Quarterly Bulletin, various issues. Adjusted figures are authors' calculations.

Figure 1: South African national government debt as % of GDP: official and accrual-adjusted, 1962-1994.



Source: South African Reserve Bank Quarterly Bulletin data.

4. INTERPRETATION

The assumptions required to undertake this data revision, given the paucity of data on the funding levels of the GEPF and the pattern of deficits in the former bantustans, should caution the reader against over-interpreting the results. Indeed we regard the adjustments as illustrative rather than exact. The outcomes of the exercise nonetheless support a number of observations.

A substantial part of the cash debt that emerged towards the end of the apartheid regime was incurred much earlier. By funding these debts explicitly the national government before and especially in 1994 assumed responsibility for unfunded obligations with a long history. The improved funding of the pension funds reduced, if not removed, a major liability that otherwise would have had to be financed in future. The removal of the debt of the TBVC states and SGTs closed the financial books on a failed system and enabled a fresh start for the new provinces.

The accrual accounting applied here indicates that the general level of public debt was significantly higher (on average 41.6% of GDP) during the period under review, than the cash debt figures showed (on average 38%). By and large the funding gap averaged almost 4 percentage points over the period. But the accrual series was less volatile than the “cash” series; their respective standard deviations are 5.4 and 6.1. Besides, the average annual rise in the accrual-based public debt series between 1989 and 1994 was also less steep than the official debt figures, namely 20.8 per cent compared to 23.9 per cent. Finally, fiscal sustainability – which concerns the long-term balance between revenue and obligations – should be analysed with reference to the underlying structure of debt obligations, such as revealed by accrual accounting and after controlling for cyclical factors. The adjusted debt series developed above serves that purpose and will be employed to that end in a separate article in which we analyse fiscal sustainability in South Africa during the period 1962-2008.

REFERENCES

- Ajam, T. and J. Aron (2007). Fiscal Renaissance in a Democratic South Africa. *Journal of African Economies* 16(5): 745-781.
- Auditor-General (1992). *Report of the Auditor-General for the Financial Year 1991-92*. R.P. 148/1992. Pretoria: Government Printer.
- Auditor-General (1977). *Report of the Auditor-General for the Financial Year 1976-77*, Part III. R.P. 82/1977. Pretoria: Government Printer.
- Auditor-General. *Report of the Auditor-General*. Various issues. SA Reserve Bank: Government Printer.
- Calitz, E. and F.K. Siebrits (2003). “Fiscal policy in the 1990s”. *The South African Journal of Economic History* 18(1&2): 50-75.
- Controller and Auditor-General (1969). *Part III of the Report of the Controller and Auditor-General for the Fiscal Year 1968-69 on the Appropriation Accounts and Miscellaneous Accounts and the Finance Statements*. Pretoria.
- Cronje, A. (1998). Deficit Financing and the Public Debt in South Africa: Some Unpleasant Fiscal Arithmetic. In *Economic Globalization and Fiscal Policy*, edited by I. Abedian and M. Biggs. Cape Town: Oxford University Press.
- Department of Finance (1994). *Begrotingssoorsig*. Pretoria: Department of Finance. 22 June 1994.
- Department of Finance (1992). *Begrotingssoorsig*. Pretoria: Department of Finance. 18 March 1992.
- Fourie, F. C. v. N. and P. Burger (2003). Fiscal Sustainability and the South African Transformation Challenge. *South African Journal of Economics* 71(4): 806-829.
- Government Employee Pension Fund (GEPF). *Annual Report* (various issues). Pretoria. GEPF (available on request).
- SA Reserve Bank (1991). South Africa’s public-sector accounts, 1973 to 1990. *SARB Occasional Paper no 4*. Pretoria.

SA Reserve Bank. *Quarterly Bulletin* (various issues). Pretoria: South African Reserve Bank.
Statistics South Africa. *South African Statistics* (various issues). Pretoria: Statistics South Africa.
Statistics South Africa. *Survey of Employment and Earnings* (P0275). Pretoria: Statistics South Africa.
Van der Merwe, E.J. (1993). Is South Africa in a debt trap? *SA Reserve Bank Occasional Paper no 6*. Pretoria.
Wassenaar, A.D. (1987). *En route to fairyland*. Cape Town: Tafelberg.