7

SAVING PERFORMANCE AND PROSPECTS: A HISTORICAL PERSPECTIVE

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1. Introduction

THERE is an impression that the saving rate peaked sometime in the late seventies and has been declining since then.[1] Based on this impression, discussion has taken place on the need for and means of raising the saving ratio. It is necessary, however, to be clear about the factual position, before such discussion can be fruitful. The present paper starts by trying to clarify the factual position (section 2).

There is a fundamental difference between the behavioural and economic factors which underlie private and public savings, and these must therefore be examined separately. The difference between household and corporate saving is in contrast not as significant as is commonly thought to be. The controlling shareholders in a corporation have considerable flexibility in deciding whether to save in the form of retained earnings or to give taxable dividends and to save these.

In section 3 the potential factors underlying the private saving rate out of private disposable income are examined briefly. The fact that public savings have become negative over the past few years has rightly caused grave concern. Section 4 presents an extensive analysis of public saving rates out of public disposable income. The different sub-categories of public saving, the sources of government consumption growth, and the behaviour of taxes and subsidies are covered. Section 5 summarises the conclusions.

2. Conventional Saving Ratios

Total Domestic Saving

This section examines the commonly used ratio of gross domestic saving to gross domestic product at factor cost. This ratio indeed reached its highest level of 28% in 1978. The picture given by this raw aggregated data can however be very misleading. There are likely to be random fluctuations in any economic variable, and the single year in which a 28% rate was recorded may be a statistical artifact.[2]

Table 7.1 shows gross and net ratios for private, public and total saving. On superficial observation, both total gross and total net saving rates show a peak in 1978 (0.28 and 0.23 respectively). If we plot this data, as in Figure 1, there is some evidence of plateauing of the total saving rate around 1977-78

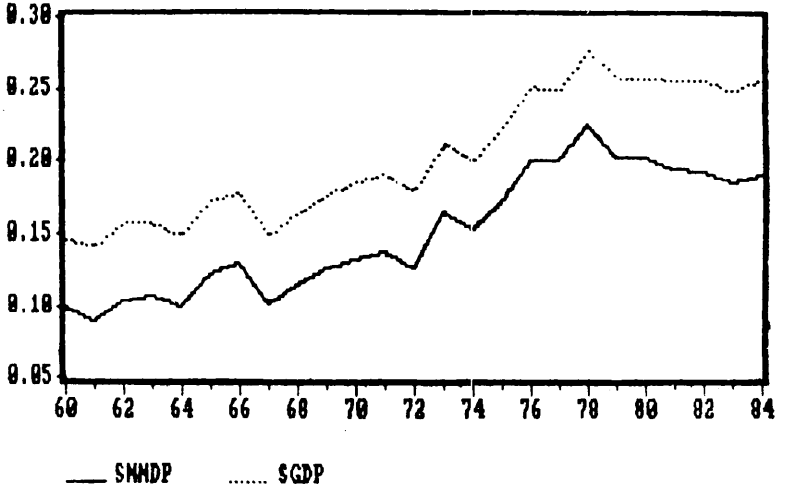

Figure 1. Gross and Net Domestic Saving Ratios

or 1978-79, but none of a systematic decline thereafter. This is confirmed by statistical analysis of trends. When the time trend is allowed to be different in two periods, the time trend term for the second period is statistically insignificant.[3]

TABLE 7.1. **Domestic Saving Ratios: Net (Gross) Saving to NDP (GDP)**

Year	*Total (SNNDP)*	*Private (SNPNDP)*	*Public (SNGNDP)*	*Total (SGDP)*	*Private (SPGDP)*	*Public (SGGDP)*
1960	9.92	7.60	2.31	14.63	11.61	3.02
1961	9.08	6.50	2.58	14.04	10.72	3.31
1962	10.36	7.62	2.74	15.63	12.06	3.57
1963	10.69	7.54	3.15	15.63	11.71	3.92
1964	10.05	7.02	3.03	14.75	10.91	3.85
1965	12.33	9.48	2.85	17.22	13.55	3.67
1966	13.01	11.32	1.69	17.75	15.12	2.63
1967	10.16	8.90	1.25	14.81	12.58	2.23
1968	11.45	9.64	1.81	16.38	13.57	2.81
1969	12.70	10.68	2.02	17.65	14.59	3.06
1970	13.23	10.90	2.33	18.46	15.05	3.41
1971	13.83	11.76	2.07	19.09	15.84	3.25
1972	12.56	10.74	1.82	17.95	14.87	3.08
1973	16.47	14.35	2.13	21.16	17.81	3.36
1974	15.26	11.96	3.30	19.98	15.75	4.22
1975	17.26	13.27	3.98	22.28	17.27	5.01
1976	20.13	15.39	4.74	25.16	19.32	5.84
1977	20.07	16.11	3.95	25.00	19.85	5.15
1978	22.58	18.32	4.25	27.67	22.19	5.48
1979	20.30	16.48	3.82	25.90	20.69	5.21
1980	20.17	17.68	2.49	25.87	21.82	4.05
1981	19.56	15.72	3.83	25.59	20.06	5.53
1982	19.26	15.92	3.34	25.60	20.23	5.37
1983	18.61	16.97	1.64	24.95	21.09	3.86
1984	19.20	18.26	0.94	25.72	22.35	3.37

Private Saving Ratio

It is more meaningful however to look separately at the private and public saving rates, because the factors influencing and motivating savings are quite different in the two cases. It is immediately apparent from Table 7.1 that there is not even a notional peak in either the gross or net private saving ratio. Only the public saving ratio shows an apparent peak, but that is in 1976-77 rather than in 1978-79, and we return to this subsequently. A plot of the private saving rate (Figure 2) suggests that this rate may have plateaued out around 1977-78 or 1978-79.

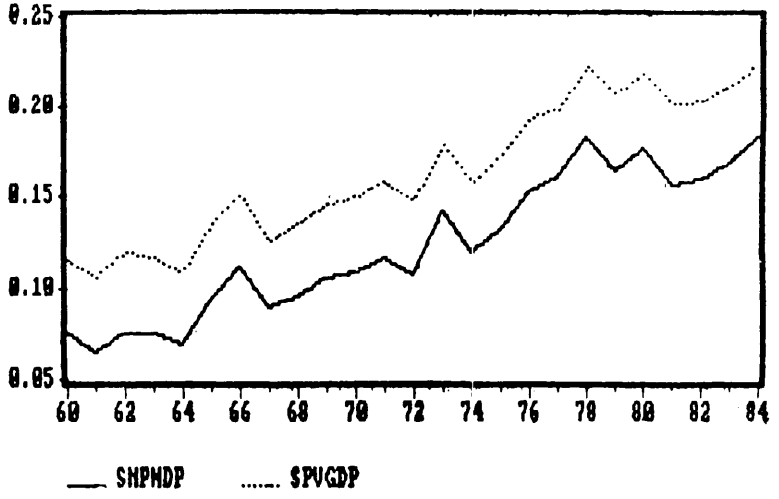

Figure 2. Gross and Net Private Saving Ratios

This visual observation needs however to be confirmed statistically. This is done by running a series of regressions, some of which are reported in Table 7.2 The third regression shows that there is no trend in the private saving ratio over the period 1978-79 to 1984-85.[4] Comparing the first and second regressions we can see that the second has a slightly higher R-squared (adjusted) than the first. Thus there is some evidence of plateauing in the private saving ratio. Comparison of the

second and fourth regressions shows that the break occurs after 1977-78 rather than after 1978-79. A firmer conclusion of this phenomenon would have been possible if the National Accounts series had remained unchanged.[5]

TABLE 7.2. **Private Saving Ratio**

SPGDP = −9.7 + 0.005 YEAR, DW = 1.67, R^2 (Adj.) = 0.908
(−15) (15.4)

SPGDP = −9.3 + 9.7 D 78P + 0.0048 Y77M − 0.0001 Y78P,
(−9.9) (2.4) (10.1) (−0.5)
DW = 2.06, R^2 (Adj.) = 0.926.

SPGDP = −9.3 + 9.5 D78P + 0.0048 Y77M
(−10) (10.3) (10.3)
DW = 2.06, R^2 (Adj.) = 0.929.

SPGDP = −10.2 + 10.45 D79P + 0.005 Y78M,
(−10.7) (10.9) (10.9)
DW = 1.9, R^2 (Adj.) = 0.91.

Note: (*a*) Numbers in brackets are *t* statistics. (*b*) DtP, *t* = 78 or 79 is a dummy variable which is 1 in all years starting at *t*, zero in all previous years. YtM (YtP) is equal to the year in year *t* and all preceding (succeeding) years, and 0 in all years after (before) *t*.

Private; New Series

The new series for the period 1980-1 to 1986-7 are too short to enable any definite conclusions about the current position (Table A3.1). Given that the available data points in the new series are only 7, no trend can be statistically confirmed. A small positive but statistically insignificant trend is observed for the available data.[6] The private saving ratio has risen from about 0.18 during 1981-82 to 1984-85 to 0.21 in the next two years.

Public Saving Ratio

Though the evidence is not conclusive, this analysis suggests that the more important problem of domestic saving is the public saving performance. No clear trend is visible in the public saving ratio as plotted in Figure 3. Given the apparent peak in 1976-77, the possibility of a structural change around the period 1974-75 to 1976-77 was explored. The result of this analysis suggests that over the period 1960-61 to 1974-75 the public saving ratio fluctuated around 0.33, with no significant trend.[7] There was a sharp increase in the ratio around 1975-76, and significant downtrend in the ratio thereafter. Over the period 1975-76 to 1984-85 the public saving ratio declined on average by 0.015 every year. The reasons for the structural break probably involve a mix of economic, social and political factors. One potential reason is the deteriorating performance of public enterprises, whose gross savings deteriorated sharply from Rs. 72 crore in 1974-75 to Rs. (—) 312 crore (dis-saving) in 1975-76.

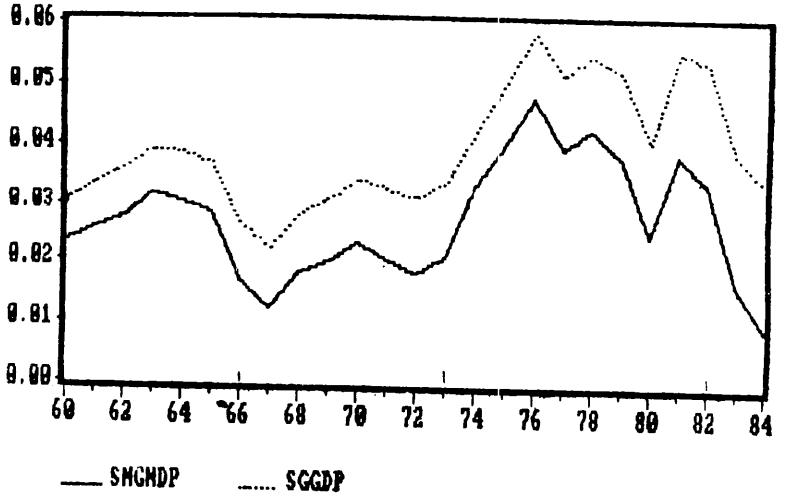

Figure 3. Gross and Net Public Saving Ratios

Public Saving; New Series

The downtrend in the public saving ratio is also confirmed by the latest data (NAS new series). Unlike the private saving ratio, the public saving ratio shows a statistically significant downtrend for the period 1980-81 to 1986-87.[8] Though the number of data points is limited, one can place some faith in this analysis because it confirms the downtrend observed in the old series. Towards the end of this period there has also been a sharp deterioration in the saving performance of the government's administrative departments. This has probably added to the problem of the poor saving performance of public corporations. The causes and remedies are explored further in Section 4.

Summary

In conclusion, the gross domestic saving ratio which had grown over the sixties and most of the seventies, seemed to plateau out at the end of the seventies. This was primarily due to the levelling of the gross private saving ratio. Though there are some indications of revival of the uptrend in the private saving ratio in the recent past, the public saving performance has worsened. Though policy reform can be used to strengthen the private saving uptrend, there is an overwhelming need to improve the public saving performance. Otherwise, the declining rate of public savings which started in 1975-76, is likely to result in a decline in the total saving ratio.

3. Saving Rates and Behavioural Underpinnings

Net Private Saving Rate

Though the ratios examined above are commonly used because of their relatively easy availability, one must go beyond them if an explanation of saving performance is to be attempted. The private saving rate can be defined as the ratio of net private saving to net private disposable income. Net private saving is obtained by adding retained earnings of domestic corporations to net household saving. Net private disposable income is obtained by adding the same retained earnings to personal disposable income. The net private saving rate as

defined here is found to have virtually the same trend as that observed for the ratio considered in Section 2 (First equation of Table 7.3).

TABLE 7.3. **Net Private Saving Rate**

SNPYPD = —10.3 + 10.5 D78P + 0.0053 Y77M		
(—9.5) (9.6) (9.6)		
DW = 2.10, R^1 (Adj.) = 0.91		
SNPYPD = 0.318 — 1108/YPD — 0.357 GDP ag/GDP		DW = 0.2
(4.06) (—2.54) (—1.78)		(0.85)
DW = 2.16, R^2 (Adj.) = 0.84		
SNPPDY = 0.177 — 1770/YPD + 0.293 RETP/YPD,		AR = 0.34
(3.80) (—4.26) (0.05)		(0.79)
DW = 2.06, R^2 (Adj.) = 0.81		

Note : Y77M(D78P) is equal to year (zero) from 1960-61 to 1977-78 and zero (one) thereafter. RETP = retained earnings of private corporations.

Saving from Agricultural Income

The almost steady increase in the saving rate over the sixties well into the late seventies, and its subsequent plateauing, requires some explanation.[9] One of the explanations suggested by Raj (1962) and Chakravarty (1973) for the rising saving rate (S/Y) has been that the rate of saving out of agricultural income (Y_{ag}) is lower than for other income (Y_{nag}).[10] The saving rate would therefore rise as the proportion of agricultural income in total income declines. Thus if,

$$S = A\,Y_{ag} + B\,Y_{cg} + K = BY + (A - B)\,Y_{ag} + K,$$
$$S/Y = B + K/Y + (A - B)\,Y_{ag}/Y = B + K/Y + C\,Y_{ag}/Y,$$

This hypothesis implies that the parameter $C(A)$ is negative and significantly different from zero (B).

This hypothesis is tested by introducing the ratio of real value-added in agriculture to total GDP at factor cost, and estimating by two-stage least squares (second equation in Table 7.3).[11] The constant term K and the marginal propensity to save are both significant at the 5% level. This shows an urban marginal propensity to save, of 0.31. The coefficient on the agricultural income term is positive but not significantly different from zero at the 5% level, though it is significant at the 10% level. This taken along with the fact that the adjusted R^2 for the trend equations is higher, leads to the ambiguous conclusion that the hypothesis is either *weakly* supported or weakly rejected.[12]

If the former is accepted, we can also conclude that the total MPS has risen from 14% to 20% as the share of agriculture has declined from 50% to 33%. The MPS would therefore continue to rise as the share of agriculture in GDP declines further.

Corporate Income

We also tested to see whether corporate retained earnings are treated differently from household income by private savers. The ratio of retained earnings to private disposable income was introduced into the basic equation. The coefficient on this term is insignificant (third equation of Table 7.3), indicating that there is no statistical difference between the general MPS and the MPS out of corporate income. This is consistent with our decision to look at private saving as a whole, rather than at household and corporate savings separately. Nevertheless, a brief review of the factual position regarding private corporate savings is given in Appendix 2.

4. Public Saving Rate

Public Income

Public enterprises and corporations earn income in a fashion very similar to private ones, even though the environment in which their managers operate may be quite different. The major source of government "income" is however not income in the conventional sense, but tax revenues.[13] We can define govern-

TABLE 7.4. Public Saving Rate

SNGYGD = 0.226 — 0.067 D66P + 30.6 D74P —0.015 Y74P, AR=0.366
(9.4) (—2.33) (3.35) (—3.34) (1.3)
DW = 1.7, R^2 (Adj.) = 0.66

SNGADY = 0.153 — 0.042 D66P + 0.75 D74P +159.9 D83P—0.08 Y83P,
(14.2) (—3.08) (6.50) (2.37) (—2.3)
DW = 2.0, R^2 (Adj.) = 0.84

SNGADY = 0.16 + 49.1 D75P — 0.025 Y75P, AR = 0.82
(2.43) (1.79) (—1.79) (3.35)
DW = 1.3, R^2 (Adj.) = 0.68
Period 1960 to 1971.

SNGCYG = 7.866 — 0.004 YEAR
(5.75) (—5.71)
DW = 1.59, R^2 (Adj.) = 0.71
Period 1973 to 1984

SNGCYG = —9.08 + 0.0046 YEAR
(—2.35) (2.37)
DW = 1.59, R^2 (Adj.) = 0.30

SNGDEY = 3.947 — 0.021 DOILSHK — 0.002 YEAR
(3.03) (—2.50) (—3.00)
DW = 1.81, R^2 (Adj.) = 0.77

SNGSCY = — 11.64 + 0.006 YEAR, AR = 0.78
(—2.69) (2.71) (5.00)
DW = 1.97, R^2 (Adj.) = 0.88

SNGGCY = 1.62 — 0.001 YEAR, AR = 0.30
(1.94) (—1.96) (1.44)
DW = 2.05, R^2 (Adj.) = 0.26

Note : For t=66, 74, 75 or 83, $D_tP=0$ ($Y_tP=0$) in years before t and is one (YEAR) from t onwards. DDILSHK=1 for 1983-84 and 1984-85, and zero in other years.

TABLE 7.5. **Public Saving Rate out of Public Disposable Income (per cent)**

Year	*Total (SNGYGD)*	*Admin (SNGADY)*	*Corpra (SNGCYG)*	*Dept (SNG-DEY)*	*Statuat (SNG-SCY)*	*General (SNG-GCY)*
1960	22.48	14.69	7.79	7.01	1.19	—0.41
1961	23.60	15.54	8.06	8.27	0.88	—1.09
1962	22.22	14.62	7.60	7.58	1.18	—1.16
1963	22.64	14.17	8.47	7.39	1.45	—0.37
1964	23.65	18.08	5.57	5.08	1.29	—0.80
1965	21.04	14.08	6.96	5.17	2.26	—0.47
1966	14.40	9.45	4.95	4.99	1.53	—1.58
1967	11.62	8.35	3.26	3.43	2.06	—2.22
1968	15.06	11.37	3.69	4.29	1.14	—1.74
1969	16.28	11.38	4.90	4.41	1.33	—0.84
1970	17.83	12.79	5.04	3.50	2.19	—0.64
1971	14.93	10.37	4.55	4.16	1.15	—0.75
1972	13.45	9.39	4.07	2.96	1.58	—0.47
1973	17.84	15.47	2.37	0.40	1.96	0.02
1974	24.77	18.54	6.23	0.97	4.37	0.89
1975	26.51	22.27	4.25	1.88	3.68	—1.32
1976	29.31	19.60	9.71	4.18	5.69	—0.16
1977	28.12	19.70	8.42	5.36	5.99	—2.93
1978	28.45	20.66	7.78	4.16	6.37	—2.74
1979	25.72	19.67	6.06	3.45	4.82	—2.21
1980	19.51	16.29	3.22	2.36	4.08	—3.21
1981	26.13	18.72	7.43	1.51	7.65	—1.73
1982	22.23	12.54	9.69	1.96	9.57	—1.84
1983	12.55	3.79	8.76	1.67	11.32	—4.23
1984	7.19	—4.29	11.47	2.18	11.45	—2.15

ment disposable income (YGD) as Net National Product at market price minus Private disposable income. The public saving rate as calculated using this concept of public income is presented as SNGYGD in Table 7.5. This rate is also disaggregated according to the source of saving (administration and defence, government/public corporations) to obtain ratios which give a breakdown by source of saving.

Public Saving Rate

The rate of total public saving out of public income as defined above is given in Table 7.5 (first column) along with the ratios relating to various sub-components of public saving. From 1960 to 1965 the public saving rate averaged 22.6%. In the aftermath of war and drought the ratio fell sharply by 7 percentage points in 1966 and by a few more points the following year. The sharp fall in 1966 was primarily due to the fall in the saving ratio for Administration and Defence by 5 percentage points (second column). Between 1966 and 1973 the rate of saving averaged 15.2%.

Somewhat surprisingly the saving rate increased by 7% points in 1974, following the oil shock of 1973. This was due to an increase in savings from Administration and Defence and from government statutory corporations. The saving rate has been on a downward trend thereafter, falling on average by 1.5% points a year (Table 7.4).[14] This downtrend appears to have accelerated since about 1983, though this cannot be confirmed statistically, given that the old series ends in 1984.

Income Transfer through Taxation and National Saving

Based on the trend equations, the predicted marginal propensity to save out of government disposal income was about 14% in 1984-85. This was 3.4% points lower than the private MPS of 17.4% predicted by the trend analysis for private disposable income. This implies that a shift of income from private to public hands, as for example through higher taxation, would have resulted in a decline in national saving. In my judgement, however, though higher tax rates are likely to reduce total saving, a rise in the tax ratio through better enforcement is less likely to have this effect as it will tend to draw funds out

of the black economy.

Saving from Administration and Defence

Over the period 1960-61 to 1984-85 saving, from Administration and Defence averaged a little less than 70% of total public savings. There is however a sharp discontinuity in 1983 as the *share* of saving from this source fell to 30%, and became —60% the following year. The trends in the ratio of savings from this source are however fairly similar to that of the total saving rate (second equation of Table 7.4). An alternative equation (third) however performs statistically better, indicating that the downtrend in administrative saving started around 1983, instead of 1974-75 for the total, and has been extremely sharp. As savings of this segment is purely a residual after accounting for current expenses, we will return to this aspect, after looking at non-departmental savings.

Departmental Enterprises, Statutory and General Corporations

With the possible exception of departmental enterprises, the trends in public corporate saving rates have been fairly smooth. Total saving from this source declined from about 8% in 1960-61 to 2% in 1973-74. They then rose to 11% in 1984-85. The rate of decline over the first period of 0.39% points a year was somewhat less than the rate of increase of 0.46% points a year over the second period (Table 7.4). This positive trend in public corporate saving since 1974-75 was the net result of contradictory trends in the three components.

There was a negative trend in the saving ratio for departmental enterprises and general corporations, and a positive trend in the ratio for statutory corporations. The first two show a declining trend of 0.2% point and 0.1% point a year (respectively), over the period 1960-61 to 1984-85. Savings of departmental enterprises also showed an additional decline of 2% because of the oil shock. In contrast, the saving ratio for statutory corporations rose by an average of 0.6% points a year over the whole period. Of *greatest concern* in this context is that the share of saving contributed by general corporations over the period 1983-84 to 1984-85 became —30%. Strong measures need to be taken to eliminate public sector losses,

which are draining public savings.

Government Consumption

As noted earlier in this Section, savings in the administration and defence category are purely a residual after government expenditures on current consumption. This in turn consists of two major sub-categories—government purchases of goods and services, and the wage bill of government employees. The ratio of current consumption to income has ranged between 75.5% and 105%, with an average of 85% over the entire period. Of this, goods purchases have ranged from 33% to 44% of total consumption, with an average of 37% over the period.

The major changes in the ratio of government consumption to income almost exactly mirror (negative of) the major jumps in the total public saving rate. Thus both changed by 7% points between 1965-66 and 1966-67, by an equal and opposite amount between 1973-74 and 1974-75, and by 10% points between 1982-83 and 1983-84 (Table 7.6). It is therefore not surprising to find that the same basic trend equation provides the best fit in the two cases. This indicates an average increase in government consumption of 2.7% points a year starting in 1974-75 (Table 7.7). The implied decline in the savings from administration and defence of 2.7% a year, is almost the same as the 2.5% shown in the third equation in Table 7.4.

Thus a rise in the rate of government consumption is the most important source of the decline in public saving. Analysis of the two sub-categories shows that the ratio of wages and salaries to income grew at a somewhat faster rate than that of commodities to income. Thus after the 1973 oil shock, the former grew by 1.8% points a year while the latter grew by 1.1% points a year. Therefore, over this period the wage bill ratio contributed 60% of the increase in the saving ratio. If the post-1965 jump in the wage bill ratio is also accounted for, its contribution over the entire period is more than 60%.

The Wage Bill: Employment and Real Wages

There are three components to the wage bill: number of employees, real wage rate and rate of inflation.[15] All three

TABLE 7.6 Government Consumption Expenses (Ratio to Income and Source)

Year	*Total (%) GCYG*	*Goods (%) GCOMYG*	*Wages (%) GCWGYG*	*Labour (lakhs) GCL*	*Rate-Real (100s) GCWRK*	*Prices WPI*
1960	NA	26.44	NA	NA	NA	0.55
1961	78.36	25.60	52.76	NA	NA	0.55
1962	79.37	29.94	49.43	NA	NA	0.57
1963	78.86	34.80	44.05	NA	NA	0.61
1964	77.56	31.41	46.15	NA	NA	0.68
1965	81.56	33.61	47.96	NA	NA	0.73
1966	88.41	34.50	53.91	55.00	33.49	0.83
1967	91.07	33.45	57.62	51.50	37.03	0.92
1968	88.00	32.00	56.01	52.36	40.61	0.91
1969	86.18	31.60	54.58	53.21	42.90	0.95
1970	84.34	31.77	52.56	54.75	43.27	1.00
1971	87.06	35.19	51.88	56.07	44.75	1.06
1972	86.17	33.70	52.47	57.86	42.87	1.16
1973	84.19	30.22	53.96	60.41	38.74	1.40
1974	77.17	25.73	51.44	62.33	37.54	1.75
1975	78.13	28.39	49.73	66.44	40.69	1.73
1976	75.51	28.31	47.21	66.39	43.75	1.77
1977	81.23	29.33	51.90	67.69	44.03	1.86
1978	73.95	28.61	50.34	69.18	47.75	1.86
1979	83.81	31.72	52.09	70.71	44.53	2.18
1980	96.89	36.26	60.63	72.24	43.88	2.57
1981	86 03	33.19	52.84	73.55	45.35	2.81
1982	89.24	33.66	55.58	75.47	51.50	2.89
1983	99.88	36.94	62.94	78.06	53.11	3.16
1984	105.10	38.18	66.92	79.81	56.71	3.38

TABLE 7.7 **Government Consumption: Employees' Wage Bill and Wage Rate**

$$GCYG = 0.793 + 0.076\ D66P - 53.1\ D74P + 0.027\ Y74P,$$
$$(42.8) \quad (3.34) \quad (-7.59) \quad (7.59)$$
$$DW = 2.0,\ R^2\ (adj.) = 0.75$$

$$GCOMYG = 0.322 - 22.3\ D74P + 0.011\ Y74P,$$
$$(35.9) \quad (-4.33) \quad (4.33)$$
$$DW = 2.0,\ R^2\ (adj.) = 0.62$$

$$GCWGYG = 0.48 + 0.058\ D66P - 35.9\ D75P + 0.018\ Y75P,$$
$$(36.3) \quad (3.48) \quad (-5.56) \quad (5.57)$$
$$DW = 1.8,\ R^2\ (adj.) = 0.67$$

$$LGCL = -49.6 + 0.027\ YEAR, \quad AR = 0.26$$
$$(-25.2) \quad (27.29) \quad (1.93)$$
$$DW = 1.0,\ R^2\ (adj.) = 0.99$$

$$LGCWRK = -28.8 + 0.017\ YEAR, \quad AR = 0.63$$
$$(-2.0) \quad (2.27) \quad (3.07)$$
$$DW = 1.2,\ R^2\ (adj.) = 0.72$$

$$LGCWRK = 3.74 - 64.6\ D74P + 0.033\ Y74P, \quad AR = 0.46$$
$$(106) \quad (-4.76) \quad (4.76) \quad (2.82)$$
$$DW = 1.6,\ R^2\ (adj.) = 0.81$$

Note : D74P=0 (Y74P=0) till 1973, and is one (YEAR) from 1974 onwards. L before a variable name denotes the Log of that variable.

components show a clear and unambiguous uptrend over the period 1966-67 to 1984-85 (Table 7.6). The number of government employees increased at a compound annual growth rate of 2.7% over the period 1966 to 1984 (Table 7.7). This is much faster than the rate of growth of population, and indicates a ballooning of the size of government over this period. It seems to be difficult to justify such rates of increase over decades, by any criterion of social productivity of such employment. More likely, it represents the counterpart of the excessive attention that the government has paid to regulating economic activity. This trend needs to be reversed sharply, and existing manpower reorganised and used more effectively.

The real average wage rate has also grown at a fairly high compound average rate of 1.7% over the same period. Statistical analysis suggests that most of this increase is a post-oil-shock phenomenon. The real average wage rate was basically stable till 1973, and thereafter grew at the rate of 3.2% a year. There is some evidence suggesting that private organised sector real wage rates have been almost stationary over this period. If true, this shows an uncontrollable increase in real government wage rates. There can be two reasons for this. One is an increase in the entire real wage structure, and the other is an increase in grade inflation, which has changed the structure of grades towards higher levels. In either case, strict limits must be put on increases in the real wage bill of different departments, and procedures must be developed for eliminating unproductive programmes and redeploying higher level manpower more effectively.

Government Disposable Income: Taxes

The most important components of net disposable income of the government as defined above are taxes net of subsidies. The ratio of total direct plus indirect taxes to net national product at market price (NNPMP) is shown in Table 7.8 (TDINNP). This ratio has risen from 10% in 1960 to 18.5% in 1984-85 (its highest level), with a statistically significant trend increase of 0.3% points a year (Table 7.9). There is also evidence to show that the rate of increase was faster after the oil shock of 1973 (second equation).

The increase in the tax ratio has been due entirely to the increase in the ratio of indirect taxes to NNPMP (TINNP),

TABLE 7.8 **Ratio of Taxes and Subsidies to Net National Product (per cent)**

Year	*Total* (*TNPM*)	*Indirect* (*TINPM*)	*Direct* (*TDNPM*)	*Sub & Trans* (*SUTRNP*)	*Subsdes* (*SUB-NPM*)	*Transfer* (*TRD-NPM*)
1960	10.27	7.32	2.96	1.82	0.65	1.17
1961	11.00	7.90	3.10	2.00	0.73	1.27
1962	12.34	8.77	3.57	2.09	0.90	1.20
1963	13.06	9.24	3.81	1.88	0.80	1.08
1964	12.37	8.86	3.50	1.71	0.67	1.04
1965	13.42	10.00	3.41	2.01	0.84	1.17
1966	13.16	9.97	3.20	2.78	1.58	1.19
1967	11.94	9.12	2.82	2.34	1.16	1.17
1968	12.52	9.61	2.90	2.28	0.90	1.38
1969	12.68	9.67	3.01	2.27	0.85	1.42
1970	13.12	10.23	2.89	2.42	0.89	1.53
1971	14.23	11.10	3.13	2.83	1.04	1.79
1972	14.79	11.52	3.27	3.33	1.23	2.10
1973	13.53	10.56	2.97	2.91	1.27	1.63
1974	14.40	11.41	2.99	3.54	1.80	1.75
1975	16.39	12.62	3.77	3.53	1.60	1.93
1976	16.83	13.15	3.68	3.90	1.85	2.05
1977	16.03	12.63	3.40	4.18	2.09	2.08
1978	17.19	13.86	3.33	4.58	2.40	2.18
1979	17.92	14.56	3.35	4 87	2.50	2.37
1980	16 98	13.99	2.99	4 74	2.37	2.37
1981	17.80	14.57	3.23	4.74	2.30	2.44
1982	18.18	15.02	3.16	5.11	2.49	2.62
1983	17.72	14.73	2.98	5.43	2.84	2.58
1984	18.47	15.54	2.93	6.54	3.64	2.90

which has also increased at a trend rate of 0.3% points a year This was also at its peak level 15.5% in 1984-85. The direct tax ratio (TDNNP) had no significant trend over the period as a whole. The result was that the share of indirect taxes has increased from about 70% in 1960-61 to 84% in 1984-85.

TABLE 7.9. **Trends in Tax and Subsidy Ratios (to NNP)**

TNPM = —5.99 + 0.003 YEAR, AR = 0.39
(—8.5) (8.7) (2.0)
DW = 1.8, R^2 (adj.) = 0.90

TNPM = —3.49 D74P—4.21 D75P + 0.0018 Y74M + 0.0022 Y75P
(—4.4) (—3.17) (4.55) (3.30)
DW = 1.9, R^2 (adj.) = 0 93

TINPM = —6.25 + 0.003 YEAR, AR = 0.33
(—13.2) (13.4) (1.6)
DW = 1.9, R^2 (adj.) = 0.94

TDNPM = 1.07 D74P + 1.73 D75P — 0.0005 Y74M — 0.0008 Y75P
(2.38) (3.01) (—2.31) (—2.95)
DW = 1.8, R^2 (adj.) = 0.58, AR = 0.43

Further analysis of the direct tax ratio shows that there is a small but significant declining trend in each of two sub-periods, with a sharp increase between the two (Table 7.9). The decline in the ratio in the period before the oil shock occurred despite the rise in income/wealth tax rates in the late sixties to the mid-seventies. The maximum marginal income tax rate was 95% in 1970-71, and 97.5% during 1971-72 to 1973-74. The effective marginal tax rate on income from certain assets (i.e., including wealth tax) was even higher than 100%.

Following the oil shock there was an increase in the tax ratio in 1975-76 to its peak of 3.8%. With the sharp increase in

inflation in 1973-74 and 1974-75, compensatory nominal income increase must have occurred over 1974-75 and 1975-76. The effect of tax collections during 1974-75 was moderated by the reduction of the highest marginal income tax rate to 80%. With nominal income adjustment largely completed by 1975-76, virtually all income tax payees were pushed into higher brackets by 1975-76, when there was a sharp increase in income tax collections.

Thereafter, the declining trend in the direct tax ratio accelerated somewhat, so that by 1983-84 the ratio was back to the level prevailing before this jump. The incredibly high maximum marginal tax rates of the early seventies provided an enormous incentive for tax evasion. These effects percolate slowly through the system, but are extremely persistent and very difficult to reverse. The only solution to the problem of declining direct tax ratio is a determined and *sustained attack on tax evasion and administrative corruption.*

Government Disposable Income: Subsidies and Transfers

The concept of disposable government income that we have used includes only *net* taxes (taxes minus subsidies). The ratio of net taxes to NNP has barely increased by 2%, on a fitted trend line basis (from 9.9% to 12.8%) over the 24-year period.[16] Formally, therefore, a reduction in subsidies and transfers is an alternative to higher taxation for transferring income from the private to the public sector. From the perspective of raising public saving, however, subsidies can also be viewed as a type of public expenditure.

There has been a phenomenal increase in subsidies and direct transfers over the past two decades. The ratio of subsidies plus transfers to NNP has more than tripled from 1.8% in 1960 to 6.5% in 1984-85. This represented a trend increase of 0.2% points a year. This rate of increase is two-third the trend rate of increase of 0.3% points per year in the tax ratio, with the result that taxes net of subsidies have only grown by 0.1% point a year. In other words, subsidies as a proportion of tax revenue doubled from 17% in 1960-61 to 35% in 1984-85.

Indirect subsidies have increased faster than direct transfers,

with the effect that their share in total subsidies has gone up from 35% to 55%. The time has come to re-examine and refocus both subsidies and transfers. Subsidies going to the prospering middle class of 100 million people must be reduced, by eliminating most production *subsidies to industry*, by appropriate *pricing* of productive infrastructure and levy of reasonable *user charges* for social services. It must be ensured that the poor, constituting roughly 60% of the population, actually receive the benefits which are theoretically budgeted for them.

5. Conclusions

The most disturbing finding is the declining trend in the public saving rate since 1974 (post-oil-shock). This has been declining at a rate of 1.5% points a year. By 1984 the marginal propensity to save out of net public disposable income was lower than the marginal propensity to save out of net private disposable income by at least 3.4% points. This would imply that a transfer of income from private to public hands will reduce national savings. In my judgement, though higher nominal tax rates may do this, simplification and better enforcement of tax provisions will not have this effect. This is because it is likely to draw money out of the black economy.

Three main causes have been identified for this trend. One is the declining trend in the savings of general (i.e., non-statutory) corporations. Particularly disturbing in this context is the very sharp fall in the corporate contribution during 1983-84 and 1984-85 which averaged —30% of public saving. This again brings to the fore the urgent necessity of solving the problem of loss-incurring units.

The second reason is the phonemenal growth in government employment together with rising average real wages. Public employment grew at a compound annual rate of 2.7%, that is, much faster than the rate of population growth. Similarly, the average real wage rate grew at a compound annual rate of 1.7%, a rate which appears to be much higher than wage increases in the private corporate sector. A hard look must be taken at programmes, divisions and departments which are not providing commensurate benefits to the people. Zero-base budgeting may have to be combined with stricter limits on the total real wage bill. A measure of accountability and job flexibility must also

be introduced into public administration.

The third reason is the positive trend in government purchases of goods and service. The ratio of these to public income rose by 1.1% points a year from 1974-75, and was responsible for about 40% of the decline in the ratio of savings from administration and defence to income. The problem of procurement efficiency, of corruption, and of materials management and inventory control must be forcefully addressed. The efficiency of public goods provision by the government must also be examined. In this case, alternative measures to increase responsiveness include local public involvement and private provision of certain services.

NOTES

1. See e.g., Ghosh, A., "Supply Side Economics—Is India Ready for the Recipe?" *Economic and Political Weekly*, June 25, 1988.
2. We are all familiar with the data difficulties with the NAS estimates *vide* Raj Committee. In this section GDP is at factor cost, as this is more relevant for private saving than GDP at market price.
3. SGDP = −15 + 12.3 D79P + 0.0077 Y78M + 0.0015 Y79P
   −(5) (1.3) (5.1) (0.3)
   DW = 2.29 (after adjustment for serial correlation)
   R^2 = 0.91. For 1960-61 to 1978-79 D79P = 0, Y79P = 0, Y78M = YEAR, for 1979-80 to 1984-85 D79P = 1, Y79P = YEAR, Y78M = 0.
4. Though unreported, the same is true for the period 1979-80 to 1984-85.
5. An alternative suggestion that the period 1973-1978 witnessed a departure from the trend growth in private saving, is explored in Appendix 1.
6. This equation predicts a ratio of 19.4 in 1989-90 and 21.2 in 1994-95, the base and terminal years of the Eighth Plan.
7. SGGDP = −0.055 + 3.53 D75P + 0.00004 Y74M − 0.0017 Y75P
   (−0.08) (2.39) (0.12) (−2.6)
   DW = 1.67, R^2 = 0.66.
8. The trend rate of decline appears to have increased, though non-comparability of the series makes it difficult to say so with confidence.
9. According to the trend equation the predicted marginal propensity to save out of disposable income was 17.4 in 1984-85.

10. Raj, K.N., "The Marginal Rate of Savings in the Indian Economy," *Oxford Economic Papers*, Vol. 14, No. 1, 1962. Chakravarty, S., "Reflections on the Growth Process in the Indian Economy," Foundation Day Lecture at the Administrative Staff College of India, Hyderabad (December 1973). Reprinted in Wadhwa, Charan D. (ed.), *Some Problems of India's Economic Policy*, Tata McGraw Hill Publishing Co., Ltd., 2nd Edition, 1977.
11. OLS will yield biased estimates because savings itself affects the growth of agricultural value-added.
12. Krishnamurti *et al.* (1987) have concluded that it holds. Krishnamurty, K., K.S. Krishnaswamy and P.D. Sharma, "Saving Behaviour in India: An Overview", in Brahmananda, P.R. and V.R. Panchamukhi (eds.), *The Development Process of the Indian Economy*, Himalaya Publishing House, 1987.
13. If it were not for the virtual uncontrollability of tax evasion, this is a variable over which the government would exercise considerable control.
14. Note that the basic picture is again similar to that of the ratio of gross public saving to GDP, which has a negative trend from 1975. The rate of decline was however much smaller because growing taxes shifted income from private to public.
15. The last is relevant because the adjustment of nominal government income to inflation may be different from that of the adjustment of nominal consumption.
16. This is consistent with national accounting practice.

APPENDIX 1

Private Saving: An Alternative View of Trends

Figure 2 suggests that the private saving ratio may have risen at a faster than average rate over the period 1973-74 to 1978-79. One must however be cautious in picking out sub-periods over which changes may have been faster or slower than average. Normally there should be some exogenous reason for doing so. It has been suggested that a special policy package (including Compulsory Deposit Scheme) during this period may be responsible. In this appendix, we merely carry out some statistical exercises. Subsequent analysis should directly test the effect analysis of these exogenous changes on saving ratios.

Table A1 shows the results of this exercise for the private saving ratio. In the first equation, both a constant dummy (DX) and a slope dummy (UEARX) for the years 1973-74 to 1978-79 are introduced into the constant trend growth equation. Both these are found to be statistically significant.[1] The negative sign on the constant implies that there was a significant decline in the saving rate in 1973-74. This was however more than made up for over the years 1973 to 1978, by a faster than average growth rate of this ratio. In 1979 the saving ratio fell back to its trend line.

Analysis in the text shows however that there was no growth in the private saving ratio after 1978. If we introduce the slope and constant dummy for 1973 to 1978 into the plateauing trend equation, the results are quite different. Neither is significant (second equation of Table A1), suggesting that the plateauing trend representation of the private saving ratio is a better one.[2]

TABLE A1. **Private Saving Ratio: Alternative Trends**

SPVGDP = —9.3 — 11 DX + 0.005 YEAR + 0.0056 YEAR X

(15.3) (2.2) (15.4) (2.2)

DW = 2.15, R^2 (adj.) = 0.924.

SPVGDP=—8.0 — 4.5 DX + 8.2 D78P + 0.004 Y77M +0.0023 YEAR X

(6.4) (0.93) (6.6) (6.5) (0.93)

DW = 2.3, R^2 (adj.) = 0.935.

Note: (a) Figures in parentheses are t statistics. (b) SPVGDP is the ratio of gross private saving to gross domestic product. Y77M is equal to the year during 1960 to 1977, and 0 from 1978 to 1984. D78P is zero in the first and one in the second period. YEAR X (DX) is equal to the YEAR (one) during 1973-74 to 1978-79 and zero in all other years.

Annexure-7 (Concld.)

(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
1980-81	14079	44.7	3764	12.0	13615	43.3
1981-82	17784	49.1	4511	12.5	13934	38.4
1982-83	20330	50.2	6196	15.3	13950	34.5
1983-84	21988	46.5	6806	14.4	18461	39.1
1984-85	6355	49.0	7505	13.9	19985	37.1
1985-86	28697	46.6	8406	13.7	24413	39.7
			II. Revised (1980-81) Series			
1980-81	14000	42.5	5691	17.3	13238	40.2
1981-82	17656	42.5	9802	23.6	14114	34.0
1982-83	20219	48.6	10196	24.5	11148	26.8
1983-84	21713	45.1	8670	18.0	17795	36.9
1984-85	26235	48.3	11836	21.8	16224	29.9
1985-86	30553	44.8	12309	18.1	25315	37.1
1986-87	34123	47.5	10334	14.4	27400	38.1

@ The data are not adjusted for (i) errors & ommissions and (ii) net purchase of second-hand physical assets.

APPENDIX 2

Corporate Income and Saving

In the body of the paper it has been argued that it is better to look at total private income and saving, rather than at household and corporate saving ratios separately. Nevertheless, when equity markets are imperfect, a case can be made for examining corporate savings separately. A thorough analysis requires modelling of dividend and investment policy of corporations. This is beyond the scope of the present paper, and only the basic factual position regarding corporate savings is examined.

We look first at the conventional corporate saving ratio obtained by dividing net private corporate saving by net national product at market prices (SNCNPM). There is a considerable amount of fluctuation in this ratio over the period 1960-61 to 1984-85 (Table A2.1). The low point was 0.25% in 1967-68, while the high point was 1.17% in 1974-75. The latter was almost reached again in 1979-80 (1.13%). There is however no clear trend in this ratio over this period, with the time trend variable being statistically insignificant (Table A2.2).

There is an impression that the size of the corporate sector has been expanding. If this is true, the fact that the corporate saving ratio has not been rising may be of concern. It is therefore necessary to look at the ratio of private corporate value-added to total value-added. There is a practical problem in obtaining a series for private corporate income. The NAS gives data for the factor income originating in the private organised sector. We assume that this approximates value-added in the private corporate sector.

The ratio of organised private sector value-added to NDP, YPONDP, is given in Table A2.1. This has fluctuated between 12% and 15% over the period 1960-61 to 1984-85, with a statistically significant negative time trend over the period as a whole. A closer look at the series suggests that negative time trend prevailed till about the mid-seventies. Statistical analysis confirms that the decline took place till 1975, and that the ratio

TABLE A2.1. **Corporate Savings, Value-Added and Profits**

Year	*Saving/NNP* (*SNCNPM*)	*VA/NDP* (*YPONDP*)	*Save/Profit* (*SNCPRO*)	*Profit/NNP* (*PRONPM*)
1960	0.80	14.02	14.89	5.38
1961	0.88	14.26	15.82	5.54
1962	0.87	14.75	15.34	5.70
1963	0.81	14.78	14.31	5.69
1964	0.49	14.01	9.18	5.32
1965	0.44	14.67	8.50	5.21
1966	0.44	13.66	9.57	4.61
1967	0.25	12.05	7.15	3.49
1968	0.27	12.51	7.95	3.35
1969	0.43	12.81	10.66	3.99
1970	0.59	11.85	19.06	3.10
1971	0.70	12.63	20.50	3.43
1972	0.56	12.26	19.80	2.83
1973	0.87	11.07	28.91	2.99
1974	1.17	11.17	34.98	3.35
1975	0.50	11.01	19.52	2.54
1976	0.39	11.69	13.51	2.92
1977	0.50	11.53	19.17	2.63
1978	0.62	11.99	22.51	2.74
1979	1.14	12.16	38.34	2.96
1980	1.03	11.34	39.62	2.61
1981	0.78	11.62	25.73	3.05
1982	0.71	12.15	25.60	2.77
1983	0.56	11.37	23.67	2.37
1984	0.63	11.76	25.36	2.49

stabilised thereafter.[3] Thus the facts are the opposite of the impression that the private corporate sector is responsible for an increasing share of economic activity. One possible reason for the confusion, is that the size of the total organised sector has been increasing because of the rapid growth of the public corporate sector.

From the behavioural perspective we should also look at the rate of corporate saving out of profits accruing to this sector. The profits and dividends accruing to the organised private sector is assumed to approximate the net of depreciation income of the private corporate sector. Given these assumptions, we can construct a series for the corporate saving rate (SNCPRO). The most important characteristic of this series is the extremely wide fluctuations to which it is subject, ranging in value from 7% to 40% (Table A2.1). A statistically significant positive trend of 0.09 per year is found in this ratio over the period 1960-61 to 1984-85 (fourth equation of Table A2.2). As the ratio of savings to NNP is stationary over the period, the ratio of profits to NNP must be declining over time. This is consistent with the decline in the ratio of private organised value-added to NNP.[4]

TABLE A2.2 **Corporate Saving Trends**

SNCNPM = −0.15 + 0.00008 YEAR, AR = 0.54
(−0.57) (0.59) (2.98)
DW = 1.66, R^2 (adj.) = 0.26

RYPOND = 2.60 − 0.001 YEAR, AR = 0.60
(2.78) (−2.65) (3.22)
DW = 1.99, R^2 (adj.) = 0.73

RYPOND = 5.72 − 5.60 D75P − 0.003 Y74M
(8.8) (−8.62) (−8.60)
DW = 2.01, R^2 (adj.) = 0.83

SNCPRO = −17.8 + 0.009 YEAR. AR = 0.53
(−2.39) (2.41) (2.9)
DW = 1.51, R^2 (adj.) = 0.58

TABLE A3.1 **Private Saving Rate and Income (per cent)**

Year	*Saving Rate (SNPYPD)*	*GDP AG'TOT (GAGGDK)*	*Y Corp'PV (RETYPD)*	*YPD/NNPMP (YPDNPM)*
1960	7.92	54.20	0.91	90.34
1961	6.79	52.82	1.00	89.79
1962	7.99	50.48	0.99	88.56
1963	7.96	49.34	0.92	87.17
1964	7.35	49.88	0.55	88.13
1965	9.90	45.56	0.50	87.61
1966	11.72	44.64	0.46	89.13
1967	9.17	47.22	0.26	89.97
1968	9.96	46.29	0.28	88.94
1969	11.09	46.25	0.48	88.56
1970	11.22	47.43	0.58	88.06
1971	12.19	46.47	0.80	87.44
1972	10.98	44.08	0.56	87.78
1973	14.63	45.15	0.90	89.11
1974	12.20	43.93	1.17	87.92
1975	13.64	45.11	0.51	86 57
1976	15.95	41.93	0.41	85.60
1977	16.48	43.30	0.51	87.39
1978	18.68	42.16	0.65	86.73
1979	16.58	38.65	1.25	86.98
1980	17.51	40.40	1.12	88.76
1981	15.80	39.87	0.86	87.12
1982	16.09	37.50	0.78	86.80
1983	16.99	38.59	0.61	88.41
1984	18.33	36.92	0.69	88.41

TABLE A3.2 **Gross and Net Saving Ratios To GDP & NNP (New Series)**

Year	*Total SGDP*	*Private SPGDP*	*Public SGGDP*	*Total SNNPM*	*Private SNPNPM*	*Public SNGNPM*
1980	23.54	19.73	3.81	13.45	13.64	--0.19
1981	23.56	18.49	5.08	13.25	12.28	0.96
1982	21.83	16.90	4.92	11.11	10.58	0.53
1983	22.01	18.37	3.63	11.60	12.28	--0.67
1984	21.69	18.50	3.19	10.97	12.33	--1.36
1985	24.70	21.22	3.48	13.34	14.71	--1.37
1986	24.33	21.44	2.89	12.74	14.82	--2.08

TABLE A3.3 **Private and Public Saving Rate (New Series)**

Year	*Private SNPYPD*	*Public SNGYGD*	*Admin SNGADY*	*PUB Corp. SNGCYG*	*Dept. Ent. SNGDEY*	*YPV/NNI YPDNPA*
1980	14.92	--2.28	16.96	--19.2	--11.49	91.97
1981	13.65	9.61	19.56	--9.95	--9.63	89.98
1982	11.82	5.03	10.54	--5.51	--8.52	89.55
1983	13.52	--7.33	--0.71	--6.62	--9.44	90.89
1984	13.56	--15.04	--10.16	--4.88	--10.37	90.95
1985	16.38	--13.44	--10.14	--3.30	--7.50	89.79
1986	16.55	--19.98	NA	NA	NA	89.59

NOTES TO APPENDICES

1. Similar results are found for the ratio of household savings to GDP. There is no trend in the ratio of corporate saving to GDP.
2. The results for household saving are the same.
3. See third equation in Table A2.2. The adjusted R^2 for this equation is significantly higher than for the previous equation.
4. It has been suggested that corporate managers are showing personal expenses as business expenses. For the above results to hold, the switch to this practice must be greater in the organised than in the unorganised sector.