Setting Small Savings and Provident Fund Rates

This paper recommends an inflation adjustment formula for setting the interest rate on all Small Savings and Provident Funds and discusses the rationale for the suggested formula.

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I
Summary

This article recommends the following inflation adjustment formula for setting the interest rate on all Small Savings and Provident Funds (SSPF) schemes and then provides the rationale for it:

R(SSPF) = 2 per cent + three-year average of CPI (IW) inflation, average method (set annually) where R(SSPF) denotes the (uniform) interest rate on all SSPF deposits.

This formula should be combined with the following provisos:
(1) Removal of all tax rebates and concessions (Section 88, etc,) on SSPF deposits.
(2) Interest income on all SSPF deposits (and all other interest bearing assets) should be fully tax exempt.
(3) For new deposits, R(SSPF) should be locked in for the maturity of the deposit (e g, 15 years for PPF) unlike the present variable rate system that pays the current interest rate on the whole corpus.
(4) Every three years, R(SSPF) should be adjusted so that it is closer to the average yield on G-Secs in accordance with a proposed 'yield adjustment' formula that can be modified in the course of time.

If these provisos cannot be implemented, some suitable modifications to the formula are proposed.

These provisos are recommended with the understanding that they may need to be introduced in stages.

This formula was arrived at after considering various alternatives, taking into account:
(a) India's existing sources of funds for financing the deficit and debt.
(b) The specific desired characteristics of long-term contractual savings: i e, SSPF deposits.
(c) The constraints upon, and need for simplicity in, administering the Public Accounts.

The article is organised as follows: Section II argues that the major alternative

to an inflation adjustment formula – i e, linking R(SSPF) to market rates – is not desirable. Section III recommends that the government should try to rely equally on both market and non-market borrowing, without reducing the role of the latter, which is the case at present. Section IV explains the rationale for the first three provisos and also for the specific inflation adjustment formula suggested here. Section V outlines suitable debt and macroeconomic stability criteria to base an interest rate formula upon, provides the rationale for the yield adjustment proviso (4) in this context, and evaluates this formula in this regard.

The present fiscal crisis results, in an accounting sense, from huge interest payments, which in turn has been partly due to the high administered rates, R(SSPF) on non-market borrowing. These high rates seem to have also indirectly worsened the debt burden by keeping up market yields.[1] While the R(SSPF) rate reductions last year and this year are welcome, they have run into opposition from the central board of trustees of the Employees Provident Fund Organisation and other interest groups. As the finance minister himself stated in his budget speech this year, "We need a better system for the determination of these rates".

II
Inflation Adjustment vs Linking to Market Rates

One suggestion is to link these rates to a relatively flexible benchmark rate such as the return on bank deposits.[2] While the case for such a link is sometimes made on the grounds that SSPF deposits are a close substitute for bank deposits, general evidence indicates that this is not so.[3]

However, whether or not these are close substitutes, due to the likely volatility in market rates, linking SSPF rates to bank deposit rates is not a good policy. SSPF deposits are meant to provide a stable

component of long-term retirement income to investors and simultaneously a steady source of funds for the government. Linking R(SSPF) to bank deposit rates will weaken the ability of SSPF deposits to perform this function.

Volatility in Market Rates

Interest rates vary a lot over the business cycle, reflecting medium-term changes in underlying supply and demand for funds. This is true not just for daily rates that are subject to money market disturbances, but even for annual average rates – the relevant benchmark if R(SSPF) rates were set annually, as recommended here. Linking SSPF rates to bank deposit rates that would vary in response to bi-annual credit policy bank rate and CRR changes could engender 'excess volatility' in the inflow of deposits into the Public Accounts. Instead of providing a reliable source of saving to meet a large component of government borrowing, SSPF depositors would then be likely to switch their savings back and forth depending upon expected yield differentials vis-a-vis G-Secs, equities, etc. This could trigger sharp movements in yields on G-Secs, with associated risks for GOI in managing its borrowing programme and meeting its fiscal objectives.

It may be thought that as the financial system develops the volatility in interest rates will decline. This is not likely to happen – if anything, volatility will increase as output fluctutations of a modern market economy become more pronounced. Appendix I documents the huge swings in interest rates in Japan and the US over the last 10 years. Since our economic system is moving in those directions, there is likely to be more interest rate volatility in the years ahead.

There is an added difficulty when interest paid to households varies in response to big interest rate changes. As a result, interest income and total personal disposable income and thus consumer spending

could decline with lower interest rates, thus vitiating the effectiveness of monetary policy in carrying out its increasingly vital role of macroeconomic stabilisation.[4]

III
Market vs Non-Market Borrowing

The appropriate decision on SSPF rates should be closely tied up with a related decision: should the government increasingly rely on more market borrowing and reduce the amount of non-market borrowing, as is the case at present? At a fundamental level, the government has to decide as to whether it should rely mainly on borrowing at market determined rates, and phase out non-market borrowing, or to continue with the latter. The position taken here is as follows: An active bond market and a well developed yield curve are vital to the functioning of a modern economy. G-Secs are the benchmark for pricing a wide range of corporate debt instruments and hence a well functioning bond market would facilitate productive capital accumulation and growth. An active bond market also can act as a safeguard against inflation and fiscal profligacy, by reacting suitably to economic data indicators. Hence it should be carefully nurtured. However, it is not essential, and indeed may be harmful, to have only market borrowing to finance the debt since traded debt entails perennial rollover risk.

Just as limited capital account convertibility has mitigated the impact of the Asian crisis upon India, the same is likely to be the case for limited market borrowing. While SSPF deposits should not be used as a captive source of 'low cost' savings, unlike market debt they can be used as a source of steady saving, relatively immune to cyclical changes in interest rates and economic conditions.[5]

The (SSPF) formula is recommended as part of an overall policy in which market and non-market borrowings are treated as equally important twin pillars of the government's borrowing programme. SSPF rates should provide relative safety of principal and interest in real terms, and averaged over long periods, should provide roughly the same return as GOI bonds (GSecs) of the same maturity.[6] A useful 'signpost' that the GOI should monitor and try to ensure through the yield adjustment proviso (4) is that neither MB nor non-MB should exceed two-thirds, or be less than one-third, of total borrowing per year. Just as the efficacy of an exchange rate policy depends upon the overall

capital-account policy within which it is anchored, similarly the efficacy of an R(SSPF) formula is linked to the accompanying domestic borrowing policy.

This author had earlier argued, as many others have done, that India's debt burden has been worsened by the 12 per cent nominal rate, fixed until January 2000, on SSPF deposits. These high rates were, in turn, keeping market rates high. The implicit conclusion was that more market borrowing was better in this situation and conducive to debt stability [Moorthy, Singh and Dhal 2000, henceforth referred to as MS and D]. This conclusion requires clarification. If SSPF deposits pay an adequate positive return that is allowed to decline with inflation, then non-market borrowing does not necessarily lead to debt instability and need not be reduced.

It must be emphasised that the recommendation put forward here is not a universal one for all conditions and all countries. The broad historical evidence indicates that Anglo-Saxon economies (US and UK) have developed and functioned effectively under complete market borrowing for long periods of time. At the same time, post-war Japan has developed rapidly using postal savings as the source of funds for investment, without an active bond market until recently. Given the fragility of India's financial system, the political difficulties and inertial costs of drastically reducing SSPF deposits, and associated risks of full market borrowing, a substantial share of debt being financed through the Public Accounts (i e, non-market borrowing) is likely to be more beneficial than harmful. However, it might be prudent to consider a ceiling on the non-marketable debt ratio also (apart from a total debt ceiling), beyond which spending gets cut and taxes raised when triggers are reached, as per modalities such as laid out in The Fiscal Responsibility Bill, for the marketed debt (i e, Consolidated Fund) ratio.

IV
Rationale for Recommended Formula and Its Provisos

The proposed formula was arrived at in light of other considerations also, discussed below:
R(SSPF) = 2 per cent + three-year average of CPI (IW) inflation, average method (set annually in every budget)
R(SSPF) denotes the (uniform) interest rate on all SSPF deposits.

This formula should be combined with the following provisos:
(1) Removal of all tax rebates and

concessions (Section 88, etc,) on SSPF deposits.
(2) Interest income on all SSPF deposits (and all other interest bearing assets) should be fully tax exempt.
(3) For new deposits, R(SSPF) should be locked in for the maturity of the deposit (e g, 15 years for PPF) unlike the present variable rate system that pays the current interest rate on the whole corpus.
(4) Every five years, R(SSPF) should be adjusted so that it is closer to the average yield on G-Secs in accordance with a proposed 'yield adjustment' formula that can be modified with greater detail. If these provisos cannot be implemented, some suitable modifications to the formula are proposed.

Removal of All Tax Rebates

The cost of SSPF deposits paying 12 per cent, at a tax rate of 33 per cent, has been estimated to be as high as 18 per cent due to tax deductions and rebates [Mohanty and Raje 1998]. On these tranches of debt with rebates and exemptions, there is debt instability, as per the Domar debt formula, discussed later.

There is little economic justification for these deductions. While it often believed that it is necessary to raise savings to finance higher growth, it can be questioned as to whether savings is a real constraint on growth, both in general, and under current Indian conditions, in particular. Insofar as total savings is not a constraint on growth (allowing for the adverse impact of reduction in specific sources of funds to existing users of funds), it is not just futile but fiscally ruinous to use savings concessions to promote growth or infrastructure, in the opinion of this author. In formulating SSPF policy, a great deal hinges upon this issue. The unorthodox viewpoint taken here that savings concessions are neither necessary nor sufficient to promote growth is explained at greater length in Appendix II.

Even if savings were a constraint, these tax concessions raise the fiscal deficit and, on balance, may not raise the total saving available in the economy to finance investment. Further, in assessing the elasticity of supply of savings in response to changes in the interest rate, it should be emphasised that intra-marginal savings are supplied at lower rates of interest than marginal savings. This implies that if the goal is to induce more savings, then tax deductions should be provided on deposits above, not below, a certain limit. Appendix III provides the economic

justification for 'backloading' tax benefits on saving.

Safety Net Justification for Compulsory Contributions

As argued in Appendix II, it is bad policy to try and promote growth via tax rebates, generous pension and PF schemes, etc. However, special savings incentives and compulsory contributions can be justified for other reasons: to foster economic security in old age, since individuals lack full foresight, and as an insurance mechanism for depositors to meet contingencies through hardship withdrawals, i e, the safety net angle. The safety net angle also provides grounds for front loading the tax rebates, since individuals should be induced to have some minimum amount of saving. A discussion of the pros and cons of state intervention to foster old age security is outside the domain of this article.

It needs to be noted that if compulsory contributions are scrapped, then the government is on firm legal and 'moral' grounds in dealing with the opposition to lowering R(SSPF) by the finance minister's discretionary decisions, as at present, or in choosing a formula that can lead to lower R(SSPF), as recommended here. The government is then under no obligation whatsoever to offer higher returns to workers and is under no pressure to invest SSPF savings in equities to get PF holders higher returns, which is often recommended. The interest rate and investment decisions apart, the policy of compulsory contributions immensely complicates a whole range of related administrative decisions and details, in particular those that affect withdrawal rules. Recent violent incidents of arson and looting triggered by rumours about a change in Employee Provident Fund withdrawal rules provide a clear signal that it is much easier to flexibly implement suitable R(SSPF) policies when all contributions are voluntary.[7]

Nevertheless, the world over, it is common to force workers to save for retirement. In the Indian context, there is added reason for compulsory PF contributions, over and above general safety net considerations. Safe banking facilities to deposit salary are not commonly used by, or available to, many low income workers in India. Thus there is a tendency to spend all current income instead of risking the loss of savings through theft, or in the case of female and young workers, due to expropriation by other family members. When income cannot be safely saved, standard economic conclusions about the optimality of private savings decisions do not apply.

A 'first best' solution for the government would be to provide (a) information about banking facilities and the benefits of savings through economic literacy campaigns (b) cash bonuses to workers with salaries below certain levels for opening bank accounts and postal deposits, and to keep the accounts open for some time until the banking habit becomes ingrained, and (c) last but not least deposit insurance up to some limit on retirement savings accounts.

However, such a first best solution that would build up a voluntary safety net and thus facilitate the scrapping of compulsory contributions is unlikely. Further it may not be politically feasible to remove the rebates on voluntary SSPF contributions up to the rebatable (Rs 60/80,000) limit.

If rebates and compulsory contributions remain, which is likely, then a two-tier

interest rate policy with the same inflation adjustment (three-year average of the CPI) is recommended:

(i) One per cent for all voluntary deposits getting Section 88 and related rebates.

(ii) Two per cent on all voluntary deposits without rebates and on compulsory deposits (All compulsory deposits qualify for rebates being below the Rs 60,000 limit, and should continue to do so).

If it is not administratively feasible to carry out the record keeping and accounting required for this dual interest rate policy, the real return in the formula should be set at a uniform 2 per cent for all deposits, with or without rebates, as recommended in the basic formula.

All Interest Income on SSPF Deposits to Be Tax Exempt

It is certainly inequitable to tax wage income and exempt unearned interest income (to use an adjective once used by the British Treasury). However, due to inflation there is an economic rationale for letting interest income be tax free.

Inflation Adjustment Under Taxes

To begin with, suppose there is no inflation and the flat tax rate on interest income is 20 per cent. Then by the formula, R(SSPF) should be fixed at 2.5 per cent, so that the real after tax return, at a flat 20 per cent tax rate, is 2 per cent. Now suppose inflation is 7 per cent. Then by the formula R(SSPF) = 2.5 per cent + 7 per cent = 9.5 per cent. With 20 per cent tax rate, the after tax nominal interest rate received is 7.60 per cent. Adjusting for 7 per cent inflation, the real after tax return is 0.6 per cent, less than one-third of that without inflation. With inflation running at close to 7 per cent and the current PPF rate being 9.5 per cent, this example closely corresponds to the current situation for tax bearing deposits such as bank accounts, etc.

With taxes, to ensure that depositors get 2 per cent after tax real return, the formula should be:

R(SSPF) = Target real rate + Inflation/(1 − Tax rate) = 2.5 per cent + 7 per cent (1 − 0.2) = 11.25 per cent.[8]

But such a tax adjusted formula would be too complicated to explain to depositors, and would need to be combined with a lower rate on tax free deposits. The tax rates on (interest) income vary across individuals, and are changed every year in the Budget. These factors complicate the choice of the appropriate tax rate to

calculate the recommended uniform R(SSPF), and make the administration of the deposits in the Public Accounts more difficult. The tax adjusted Fisher effect is yet another channel through which inflation imposes hidden taxes. The best solution is to reduce inflation rather than offer even higher nominal returns to adjust fully for inflation.

In short, interest on all SSPF deposits should be fully tax exempt. As a practical matter, since most SSPF deposits are at present tax exempt anyway, this proviso (2) should be quite easy to implement since it largely entails continuing with the status quo. Appendix IV provides details of the interest income tax exemption, rebate status and deposits outstanding under the various SSPF schemes. As of March 1999, out of Rs 1,53, 680 crore outstanding in Small Savings schemes, with the exception of a miniscule Rs 4,218 crore under Post Office Time Deposit Accounts, for all the other schemes, interest is tax exempt, while some are also eligible for rebates. Almost half the total outstanding amount of Rs 1,53,680 crore. was in Kisan Vikas Patra, which is tax exempt and would be so anyway, being the income of agriculturists.

All Other Interest Income (Bank Deposits, G-Secs), etc, Should Also Be Tax Exempt

Suppose SSPF income is not taxed but the interest income on G-Secs and bank deposits is taxed. Then R(G-Secs) will tend rise relative to R(SSPF) due to the tax adjusted Fisher effect, creating distortions in the flow of funds. A level, transparent playing field for all interest earning assets is desirable. While any flat rate for all entities will avoid the complications due to differing returns, either on market and non-market deposits, or to different groups of investors (retail, corporate, banks and financial institutions) the only rate that ensures this easily is zero.[9]

All Future PF Deposits to Be Fixed Rate, Not Variable Rate Schemes

The prevailing PF schemes, although offering long maturity (5-15 years and even more) deposits entail considerable roll over risk to depositors since the entire corpus earns the going interest rate, which is changed at the finance minister's discretion. As long as the PF rate was fixed at 12 per cent for over a decade (1989-1999), this did not matter. Indeed, some depositors may not have been aware that PF

schemes are variable rate schemes until the last two years when rates were lowered. It is not fair to depositors to offer an interest rate subject to discretionary change on a largely illiquid (allowing for hardship withdrawals) long-term deposit. The popularity of these variable rate schemes is probably due to their tax benefits. Without these tax benefits, voluntary deposits by well informed depositors into these schemes would perhaps be much less.

Under proviso (3) the formula based R(SSPF) should be locked in every year for new deposits. The existing corpus should also earn the new R(SSPF) as is the case at present. However as old variable rate deposits mature, they should be rolled over into new fixed rate deposits at the going rate. The administration of the schemes may need immediate revamping so that different interest rates on deposits from different years can be paid. Unlike provisos (1) and (2) which remove exisiting tax benefits, proviso (3) should be generally acceptable to depositors since it reduces interest rate rollover risk, although whether depositors gain or lose from the existing system would depend upon the actual path of interest rates. If it is not possible to implement proviso (3) immediately because the accounting and record keeping is not administratively feasible, then GOI should focus its efforts on revamping the administration of these schemes on an emergency basis so that it can be implemented as soon as possible.

Reasons for Choosing Past Instead of Actual Inflation Adjustment

(a) Lack of demand for indexation: To begin with, the only way to fully guarantee 2 per cent real returns to the saver is to index both principal and interest to the future price level(s). Suppose this were administratively feasible for the new fixed rate deposits as under proviso (3). Even then such a policy of long-term indexation may not be desirable. Full indexation for R(SSPF) deposits is not a good policy. While interest rates respond strongly to past inflation, there is not much latent demand for full indexation. Our own experience with indexed bonds has not been successful, judged by volume of issuance. In December 1997, GOI launched a five-year capital indexed bond paying 6 per cent plus adjustment for WPI inflation. It did mobilise Rs 705 crore but was not popular enough and so issuance was discontinued. Even reasonably sophisticated depositors tend to make economic

decisions in nominal terms. [10] A deposits that pays a 2 per cent stipulated coupon plus 7 per cent ex post inflation compensation of princpal at maturity has less appeal than one that pays 9 per cent explicitly every year, even though the two are virtually the same, allowing for cash flow variations. Most SSPF depositors would be uncomfortable with indexed deposits and would be extremely unlikely to invest in them. *(b) Avoiding inflation bias:* Another reason for not providing inflation indexed deposits is to avoid inflation bias. A major consideration in fiscal and monetary policy should be to choose institutional and financial arrangements that help to avoid an inflation bias.[11] Inflation bias is the tendency for inflation to keep rising due to the short run trade off between inflation and growth. The welfare benefit of higher growth exceeds the cost of inflation: so aggregate economic welfare goes up in the short run with inflation, but falls in the long run since the rise in growth is temporary while inflation stays higher. So governments tend to get elected or re-elected if they pursue pro-growth policies and often influence the central bank to do so.[12]

In principle low inflation can be achieved solely by an independent central bank immune to such pressures. In practice, the fiscal arrangements affect the central bank's ability to pursue this objective. Indexing PF returns to the price level or inflation rate 15 years hence (i e, at maturity) can aggravate the inflation bias, since the benefits of higher inflation via higher growth come now; the costs via higher interest payments (when the PF rate is locked in for 15 years) come later, and are paid by another government. A full indexation formula to fix real returns on SSPF at 2 per cent would reduce the incentive for the incumbent government with a short horizon (under two to three years) to keep inflation down, since its interest expenses on SSPF deposits would be largely precommitted. For these reasons, it is recommended to adjust the interest paid to recent inflation. Past inflation adjustment, i e, adaptive expectations, provides a good conceptual and operational basis to set R(SSPF).

Choice of CPI over WPI

While the WPI is the most widely watched inflation measure and is commonly used for computing real interest rates, there is no economic justification to use it for setting R(SSPF). The savings decision involves giving up current consumption for future real consumption of goods and services. It is only proper to pay to depositors an interest rate that adjusts for inflation based upon the bundle of goods and services they actually consume, not upon what firms produce.

Although there has been no secular gap between the CPI and WPI since the 1950s, in recent years the CPI inflation rate has been higher than the WPI, as is typically the case in developed countries. This is perhaps due to the secular decline in the prices of goods relative to services as manufacturing productivity rises with technical progress and foreign competition. This new trend since 1995-96 may partly reflect the maturing of the Indian economy.

However, in the last fiscal year 2000-2001, this trend was broken, with the CPI over 300 basis points higher on an average, Decemebr-December or March-March basis (cf Appendix V, which looks at relevant post liberalisation data)[13]. But even if this recent reversal is a temporary aberration and the 1990s CPI-WPI inflation gap returns, the GOI should resist any temptation to adjust R(SSPF) according to WPI even though it would lower the interest rate burden. The government should use the CPI for all relevant purposes, and thereby direct the attention of the public, financial markets and analysts to it.

Reddy's (2000) comparison of different inflation measures (CPI, WPI, implicit GDP deflator) since the 1950s covers wide ground. His conclusions are in tune with the prevailing policy view that accords primacy to the WPI. The ostensible main benefits of the WPI are greater timeliness, higher periodicity (weekly), less volatility and a closer correlation with money growth. However, greater timeliness and periodicity of the WPI versus the CPI are useful only if the signal to noise ratio of the more frequent and timely WPI series is high. As it stands, intra-year WPI data are very noisy due to seasonal and other variations. With inadequate seasonal adjsutment procedures, inflation data can only be analysed on a year over year basis. Hence the weekly WPI inflation rate, year over year, hardly provides much extra information about the latest inflation outlook compared to the CPI, despite being more timely (a two month lead).

Due to extreme intra-year volatility of inflation, it is appropriate to only look at annual and lower frequency data. In annual data, the CPI and WPI are about equally volatile (standard deviations of CPI and WPI inflation, average method, are 3.42 and 3.68, respectively). But when a three year average of inflation, the standard deviation of CPI inflation is about half of that of WPI inflation, whether measured December-December, March-March or on an average basis (Appendix V). In this context it is worth noting that the prime minister's Economic Advisory Council, while stressing that "full modalities needed to be worked out", had recommended paying 2 per cent plus a six month average of WPI inflation (January 2001:100). Leaving aside the choice of the WPI, the intra year frequency is not suitable for SSPF deposit inflation adjsutment, as emphasised here.

Choice of Three-Year Inflation Lag

The choice of CPI over WPI is recommended on conceptual grounds. However the number of years of inflation adjustment and the method of measuring inflation (point to point versus average method) should be chosen on the basis of pragmatic and statistical considerations. If the lag is too long, policy would be more prone to inflation bias, since R(SSPF) and hence interest payments would not be much affected by the current and recent inflation rate. Too short a lag results in the inflation adjustment term and hence R(SSPF) being too volatile. Based on empirical analysis, a three year lag seems to provide a good balance between timeliness and volatility. The standard deviation of the three year average of inflation (average method) is 1.15, about a third of that for the annual data (Appendix V).

Rationale for Using Average Method Measure of Inflation

On theoretical grounds it is more appropriate to use a point to point measure of inflation (typically December-December or March-March) since these have more informational content than the average method measure. Nevertheless, for the following reasons, the average method is better:

(i) Point to point measures are prone to sharp changes due to supply shocks (such as the November 1998 onion price rise). The three year average of the CPI, December-December, fell by over 300 basis points in 1999-2000 (10.67 per cent to 7.36 per cent), while the three year average basis measure fell by 200 basis points (9.80 per cent to 7.80 per cent). Reducing volatilty in R(SSPF) and depositor income should be a major criterion in choice of the inflation adjustment formula. In this regard the average method measure is therefore better, since it smooths out infla-

tion by effectively stretching out the period a bit longer.

(ii) The average method is also relatively immune to any temptation to lower administrative prices in the last 'reporting month' of any given period so that recorded inflation (relevant for various inflation adjustment clauses) is lower. From an administrative viewpoint, the CPI data for the whole calendar year is likely to be available at the time of the budget. R(SSPF) should be announced at the time of the budget or shortly thereafter.

Based on the proposed formula, and rounded off to the nearest quarter point, R(SSPF) would be:

Year	Inflation Adjustment Term		R(SSPF) = 2 Per Cent+
	CPI (IW)	3 YR Average	
	Inflation Average Method	of CPI(IW) Average Method	Inflation Adjustment
1991-92	13.48		
1992-93	9.86		
1993-94	7.28	10.21	12.25
1994-95	10.27	9.14	11.25
1995-96	9.96	9.17	11.25
1996-97	9.43	9.89	12.00
1997-98	6.84	8.75	10.75
1998-99	13.13	9.80	11.75
1999-00	3.42	7.80	9.75
2000-01	3.82	6.79	8.75

V
Ensuring Financial and Debt Stability

Yield Adjustment Formula

When economic variables such as the interest rate are pegged at levels that do not correspond to fundamentals, then the result is macroeconomic instability, resulting in accelerating inflation or deflation. In order to prevent the R(SSPF) formula suggested here from leading to such an outcome, proviso (4) suggests an yield adjustment or correction formula, explained below, to try to ensure that R(SSPF) remains close to the long run equilibrium rate of interest in the economy.

To begin with it should be emphasised that the potential economic instability from pegging the real rate by allowing the nominal rate to vary with inflation, as recommended here, is much less than that due to pegging the nominal rate in the face of rising inflation or deflation. Milton Friedman's (1967) critique of conducting monetary policy through interest rate pegging applies forcefully to nominal rate pegging. The instability that could result from 'pegging' the real rate at say 2 per cent (under the proposed formula) when, say, the equilibrium real rate in the

economy is 4 per cent, is much less than when the nominal rate is pegged, resulting in a cumulatively rising or falling real interest rate. The latter leads to extreme instability: either an uncontrollable boom or recession accompanied by hyper inflation or deflation.

Suppose the equilibrium real interest rate in the economy is 4 per cent. Then the real yield on G-Secs would gravitate toward 4 per cent. Despite limited substitutability between G-Secs and SSPF deposits, SSPF depositors earning 2 per cent in real terms will increasingly switch toward to G-Secs. In nominal terms suppose over a three year period R(SSPF) averages 9 per cent when the G-Sec yield averages 11 per cent. Then proviso (4) is that R(SSPF) should be adjusted once in three years by half the gap, i e,

Δ R(SSPF) = 0.5 [R(G-Sec) – R(SSPF)] = 0.5 (11 per cent – 9 per cent) = 1 per cent. Implicitly the real rate is being moved up from 2 per cent to 3 per cent. The adjustment is being proposed once in three years – over shorter periods changes in R(G-Sec) reflect the impact of monetary policy and short run cyclical fluctuations. As emphasised in Section II, short run volatility in market determined bond yields should not be allowed to impinge upon R(SSPF). At the same time, since policy-makers can never know precisely what the equilibrium real interest rate is, the 2 per cent fiat (real) return should be allowed to move up or down gradually in response to longer-run economic fundamentals and trends.

Ensuring Debt Stability

The Domar debt stability condition requires that GDP growth exceeds the interest rate. Both theory and broad empirical observation suggest that this holds over long periods of time when government bond yields are market determined. The stylised fact for economies with borrowing at market rates is that, typically, GDP growth, although less than the profit rate, exceeds the rate on government bonds. The economic implications of these links are discussed in detail elsewhere (MS and D 2000:12 and 62 fn 13].

For India, comparing nominal GDP growth with the average yield on newly issued G-Secs reveals that debt stability has largely held during the 1990s [MS and D 2000:Table 1, p 70]. During the last two fiscal years this has continued to be the case. Further what matters for debt stability is the net interest rate paid on public debt, not the gross interest rate. The net interest rate is considerably lower

since the centre gets back as interest receipts about a third of what it pays out. Thus, insofar as R(SSPF) is adjusted to move in tandem with R(G-Secs), since the latter remains below GDP growth, debt stability is reasonably assured. The real threat to debt stability comes from tax rebates that can push the cost of relevant tranches of SSPF debt above GDP growth. If rebates are scrapped, there is no reason to be concerned about debt instability due to R(SSPF) deposits. The proposed 2 per cent real return is well below most reasonable estimates of India's potential GDP growth rate which is 5 per cent or higher, and at least 4 per cent.

Solvency of PF Corpus under R(SSPF) Formula

Although the proposed R(SSPF) formula should not lead to debt stability since the real rate is set at a mere 2 per cent, it does entail a solvency problem. Guaranteeing returns to policy holders often leads to insolvency in the financial intermediaries. This has been the case not only for UTI mutual funds, but also for the EPF which is 85 per cent invested in Special Deposits earning the G-Sec yield. The crisis was acute when G-Sec yields had fallen to the 9.5-11 per cent range although the EPF was still committed to paying 12 per cent to depositors.

This potential insolvency problem is present whenever R(SSPF) yields are above or rise above G-Sec yields, since the PF corpus is invested mainly in G-Secs. This needs to be tackled by a legal clause/act stating that the GOI will pay the gap R(SSPF) – R(G-Sec) out of general revenues every year, thus ensuring solvency of the Fund. Such a clause will help mitigate the potential solvency problem that will arise from time to time when R(SSPF) is above R(G-Sec).[14]

Appendix I: Volatility in Market Determined Interest Rates in Developed Economies

The experience of the two leading economies of the world over this decade, Japan and the US, demonstrate how volatile market rates can be, and thus the perils of linking SSPF rates to market rates. Between 1990 Q1 and September 1992, the target Federal funds rate (to which three month LIBOR and three month bank CDs are closely related) was lowered from 8.25 per cent (Q1 1990 average)[15] to 3 per cent, a 525 basis point fall. During January to September 2001, the

target Federal funds rate has been lowered sharply by 350 basis points from 6.5 per cent to 3.0 per cent.

It can be argued that the relevant benchmark for setting SSPF rates should be the long-term yield on government bonds and not bank deposit rates. Since SSPF deposits vary in maturity from five to 15 years, 10-year bond yields would be suitable. The long-term government bond yield is a market rate as distinct from the policy determined short-term rates. (Strictly speaking, the central bank sets only the overnight rate – Fed funds in US, call money in Japan – but all other short-term rates are so closely aligned to the policy rate that they can also be characterised as policy determined.) If these long-term bond yields were stable then they could provide a suitable benchmark for R(SSPF).

As it turns out, even long rates fluctuate substantially, and invariably in the same direction as monetary policy induced short run changes, although by much less than short rates.[16] Over the decade the 10-year yield has varied between 8.70 per cent in 1991 to 4.67 per cent in 1998 Q4 at the height of the LTCM/Asian crisis. From May 2000 to September 2001 the ten year bond yield has declined by about 180 basis points from 6.49 per cent to 4.68 per cent.

During this decade inflation in the US has not changed much. Thus nominal interest rate changes have largely been reflected in real rate changes.

In Japan, the variation in both short and long rates has been much larger than in the US. The three month commercial paper rate, closely aligned to the rate on bank deposits and to the BOJ controlled call money rate, fell from 8 per cent in 1990 to almost zero during 1999-2000. The 10-year JGB yield has fallen from 6.5 per cent in 1991 to 1 per cent in 1998, and has hovered in the 1.5-2 per cent range ever since, about a 500 basis point drop.

Japan has undergone some deflation over the decade. During the first half of the decade the CPI averaged about 2 per cent and during the second half of the decade about 0.5 per cent, a 150 basis point drop. Even after factoring in this drop, the decline in short and long real rates has been enormous, about 650 and 350 basis points, respectively.

Appendix II: Law and Order vs Savings as Determinants of Growth

The role of savings in promoting growth is a vast issue outside the domain of this article. In the orthodox development economics literature (Arthur Lewis, Ragnar Nurkse) which influenced the analytical framework and conclusions of the Mahalanobis two sector planning model and the Maurice Dobb-Amartya Sen choice of technique model, capital accumulation was the binding constraint on growth. A major goal of central planning was thus to maximise the reinvestible surplus. The growth formula (savings rate/capital output ratio) and macroecomic approach of both Cambridge England and Cambridge Massachusetts, despite their ideological differences, accords primacy to the savings rate. Although growth accounting using Solow's model shows that most growth comes from total factor productivity (the intangible residual in the production function due to technical progress) and not from inputs of labour or capital, a higher savings rate is still considered desirable and an appropriate goal of policy since it raises growth through capital accumulation. Foreign direct investment and capital inflows are seen as beneficial mainly because they augment domestically financed investment.

By contrast, in the London School of Economics – University of Chicago law and economics paradigm, well-defined private property rights, both in general and in particular pertaining to borrowing and lending, is a sine qua non for sustained economic progress. Savings will be endogenously forthcoming when there is law and order and thereby incentives to supply more labour and also accumulate more assets, thereby increasing real output, saving and possibly consumption also. (This endogeneity of savings is for completely different reasons than the endogeneity of savings in the Keynesian demand multiplier model in which labour supply is always available and which can be eliminated merely by deficit financing).

This law and order paradigm is exemplified in the work of Friedrich von Hayek, Aaron Director, founder editor of the *Journal of Law and Economics*, Milton Friedman, Ronald Coase, Lord Peter Bauer and most recently Hernando De Soto. Hernando De Soto (2001) has recently pointed out that the total value of fixed property held but not owned by the poor of the third world and ex-communist countries is vastly greater than the cumulative stock of capital arising from FDI investment into developing countries between 1989 and 1999. "Because the poor rarely have formal title, they cannot use these assets as collateral to raise cash."

Those who concede that savings in general is not a constraint on growth may still insist that infrastructure is a critical constraint. Hence it needs special saving incentives such as the rebate up to Rs 80,000 for investing in infrastructure bonds. Assessing to what extent infrastructure investment is a major constraint on India's growth is not possible here. Insofar as it is, in the opinion of this author, it is a lack of viable projects and absorptive capacity that is holding up infrastructure investment, not a shortage of funds.

The inability to absorb funds in viable projects is clearly evident in the inadequate disbursements of funds raised through Resurgent India Bonds (RIBs) in late 1998, ostensibly earmarked to finance infrastructure projects. "The centre is not able to effectively utilise RIB funds for the purpose for which they were raised, namely, funding core projects. Lack of adequate infrastructure projects has forced the GOI to provide SBI rupee funds equivalent to $ 3.5 billion. Of the Rs 14,500 crore brought to India, Rs 7,450 crore has been loaned out to foreign banks...The balance ($ 0.7 billion not brought to India is kept in overseas deposits earning a low rate of interest (*The Economic Times*, February 1999) The SBI has lent only Rs 1,800 crore to the term lending institutions IDBI, ICICI, IDFC and Power Finance Corporation for infrastructure projects and has invested the rest in G-Secs."

These facts have been used by this author [Moorthy 1999] to argue that our capital-account policy has been mistakenly geared to attracting inflows to promote growth and infrastructure, instead of allowing select outflows that could improve the quality of the financial system.

Appendix III: Efficacy of Tax Rebates in Promoting Saving

A numerical example can help explain this argument. Under mormal circumstances and as per standard economic theory, the supply curve of savings is upward sloping. (At some adequately high level of income, the supply of saving can become backward sloping. But starting with zero saving, only the substitution effect is at work and a higher interest rate will always lead to more saving.) This means that for any given individual, for example at 1 per cent interest rate, say Rs 1,000 will be supplied, at 2 per cent Rs 2,000, at 3 per cent Rs 3,000 and so on. Thus to induce this given individual to save more and consume less, a 3 per cent rate of interest needs to be offered only for savings in excess or Rs 2,000. Thus to induce more savings, the tax

concession should be back loaded, not front loaded as they currently are, with the tax rebate up to Rs 60,000 or Rs 80,000.

Although the amount of savings forthcoming at different interest rates for different individuals will vary substantially, and savers in some age/income brackets will save less at higher rates, for the economy as a whole it should still be the case that more savings will be forthcoming at higher interest rates and that tax rebates are most effective if directed at savings above certain threshold limits, not below them.

If it is administratively feasible, the back loading of tax rebates can be linked to individual incomes, since it is the marginal propensity to save per individual, rather than the actual amount of savings, that will respond to a higher interest rate. For instance, a savings maximising policy would provide no tax rebate on the first 5 per cent of income saved, say a 10 per cent rebate on the next 10 per cent of income saved, etc. Such a policy will enhance total savings (per every rupee of rebate given). It is also far more equitable to back load these rebates on the percentage of income saved, rather than the absolute amount. The latter policy effectively skews the rebates in favour of the wealthier savers.

In passing, it should be mentioned that the broad historical evidence indicates that while negative real rates lead to dissaving and financial disintermediation, small positive returns are adequate to induce saving. The oft cited World Bank Study *The East Asian Miracle* (1993) surveyed evidence that led to this conclusion. **EPW**

Notes

Appendix IV: Small Savings Schemes in Force

Name of the Scheme	Limits of Investment	Maturity Period (Years)				Rate of Interest (Per Cent Per Annum)				Whether Interest is Tax Free Under Income Tax Act	Deductions Under Sec 88 of Income Tax Act $	Amount Outstanding at End-March 1999 (Rs Crore)
		April 1991	April 1992	Since Sept 2, 1993	Since Jan 1, 1999	April 1991	Since April 1992	Since Sept 2, 1993	Since Jan 15, 2000			
1	2	3	4	5	6	7	8	9	10	11	12	13
1 Post office Saving Bank Accounts	Minimum Rs 20 and maximum Rs 1,00,000 for an individual account (Rs 2 lakh jointly. No limit on group, institutional or official capacity accounts)	#	#	#	#	5.50	5.50	5.50	4.50##	Yes Sec 10	No	7,650
2 Public Provident Fund 1968	Minimum Rs 100 and maximum Rs 60,000 in a fiscal year	15	15	15	15	12.00	12.00	12.00	11.00	Yes Sec 10	Yes	3,204###
3 Post Office Time Deposit Account	Minimum Rs 50 and maximum no limit	1,2,3 and 5	1,2,3 and 5	1,2,3 and 5	1,2,3 and 5	9.50 to 11.50+	12.00 to 13.50++	10.50 to 12.50*	8.00 to 10.50**	Yes Sec 80-L	No	4,219
4 Post Office Recurring Deposit Account	Miminum Rs 10 per month or any amount in multiples of Rs 5. No maximum limit	5	5	5	5	11.50@	13.50@	12.50@	..	do	No	11,139
5 National Savings Scheme 1992	Minimum Rs 100 and Maximum no limit	4***	4***	4***	4***	11.00	11.00	11.00	10.50	do	Yes	820
6 Post Office monthly in-come scheme	Minimum Rs 6,000 and Maximum Rs 3 lakh and Rs 6 lakhs in joint account	6	6	6	6	12.00	14.00	13.00	11.00 payable monthly	do	No	20,293
7 NSC VIII Issue	Minimum Rs 100 maximum no limit	6	6	6	6	12.00@	12.00@	!2.00@	11.83@	do	Yes	25,831
8 Indira Vikas Patras $$	No limit	5	5	5½	6	14.87@	14.87@	13.43@	–	No	No	12,430
9 Kisan Vikas Patras	No limit	5½	5	5½	6@@	13.43@	14.87@	13.43@	12.25@	No	No	67,214
10 Deposit scheme for Retiring Government Employees 1989/Retiring Employees of Public Sector Companies 1991	Minimum Rs 1,000 and maximum not exceeding the total retirement benefits	#	#	#	#	9.00	9.00	10.00	9.00	Yes Sec 10	No	280

$ Currently, the eligible amount to be invested in the specified savings is Rs 60,000 per annum. The maximum rebate is 20 per cent subject to Rs 12,000 per annum.
\#   Open ended scheme.
\##   4.5 per cent for individual/joint and group account, 4 per cent for public account and security deposit accounts for purchase of motor vehicles or tractors, official capacity accounts and other accounts 3 per cent.
\###   Relate to Post Office transactions only.
\+   Compounded quarterly and payable annually. One year - 9.5 per cent , two year- 10.0 per cent, three year - 10.5 per cent and five year - 11.0 per cent.
\++   Compounded quarterly and payable annually. One year - 12 per cent, two year - 12.5 per cent, three year - 13 per cent and five year - 13.5 per cent.
*   Compounded quarterly and payable annually. One year - 10.5 per cent, two year - 11.0 per cent, three year - 12.0 per cent and five year - 12.5 per cent.
**   Compounded quarterly and payable annually. One year - 9.0 per cent, two year - 10 per cent, three year - 11 per cent and five year - 11.5 per cent.
***   From the year of opening account.
@   Compounded interest rate.
@@   Maturity period has been raised to 6½ years with effect from January 15, 2000.
$$ The scheme has been discontinued with effect from July 17, 1999.
Note: All the Postal Savings Schemes do not come under the purview of Wealth Tax Act from the assessment year 1993-94.
Source: (1) National Savings Organisation, (2) Receipts Budget, Government of India, (3) Accountant General, Posts and Telegraph.

Year/Month	Average Basis	December-December	March-March	Three-Year Average Basis	Three-Year Average December-December	Three-Year Average March-March
CPI						
1990-91						
1991-92	13.48	13.07	13.93			
1992-93	9.86	8.00	6.11			
1993-94	7.28	8.64	9.88	10.21	9.90	9.97
1994-95	10.27	9.47	9.74	9.14	8.70	8.58
1995-96	9.96	9.69	8.87	9.17	9.27	9.50
1996-97	9.43	10.41	10.03	9.89	9.86	9.55
1997-98	6.84	6.29	8.26	8.75	8.79	9.06
1998-99	13.13	15.32	8.95	9.80	10.67	9.08
1999-00	3.42	0.47	4.83	7.80	7.36	7.35
2000-01	3.82	3.48	2.53	6.79	6.42	5.44
Mean	8.75	8.48	8.96			
Stdevn	3.42	4.32	2.57	1.15	1.40	0.86
WPI						
1990-91						
1991-92	13.74	14.26	13.56			
1992-93	10.06	8.54	7.07			
1993-94	8.35	8.77	10.55	10.72	10.52	10.40
1994-95	12.50	14.50	16.90	10.30	10.60	11.51
1995-96	8.09	6.72	4.53	9.65	10.00	10.66
1996-97	4.61	5.16	5.40	8.40	8.79	8.94
1997-98	4.40	4.05	4.35	5.70	5.31	4.76
1998-99	5.95	6.28	5.43	4.99	5.16	5.06
1999-00	3.27	2.81	5.50	4.54	4.38	5.09
2000-01	6.90	8.28	6.42	5.37	5.79	5.79
Mean	7.79	7.94	8.15			
Stdev	3.68	4.14	4.50	2.58	2.66	2.99

1 Recent issues of the RBI Annual Report, *Economic Survey*, etc, emphasise this fairly well accepted view.

2 This was first suggested by Montek S Ahluwalia (1997).

3 Since bank deposits are invariably for shorter maturities than SSPF deposits, scope for substitution is limited. Another criitcal difference is that SSPF deposits are free of default risk, while bank deposits are insured only up to Rs 1 lakh.

4 Cantor (1989) shows that for the US household cash flow sometimes declines with the Federal Funds rate.

5 Low cost saving is usually a euphemism for financial repression, and it typically reflects a situation of a fixed nominal rate on compulsory deposits (whether imposed directly on individuals or on the banking sector) in the face of rising or high inflation. By contrast, guaranteeing a real rate, adjusted for inflation as recommended here, on voluntary deposits is not financial repression.

6 Strictly speaking, SSPF rates should provide the same return over a long period as long-term bonds adjusted for liquidity and risk differences. While SSPF deposits do not have the price and total return risk of bonds, at the same time they are less liquid. There is no way to assess what the relative impact of these offsetting factors is. As a rough rule of thumb SSPF rates should be set so as to yield on average the same as long-term bonds.

7 *Deccan Herald,* Bangalore, July 26, 2001.

8 When R(SSPF) is 11.25 per cent, with a flat tax rate of 20 per cent, the after-tax interest rate is 9 per cent. Adjusted for 7 per cent inflation, the real after-tax return is 2 per cent. Evidence that nominal rates rise by more than inflation and that this after-tax Fisher effect prevails for the US is provided by Michael Darby (1975).

9 A senior ICICI official has recently pointed out that the government debt market is being stymied by the need to build taxes into the coupon rate, since the RBI requires that tax is deducted at source (*Business Line*, August 20).

10 In this context, it is worth noting that at low to moderate inflation rates there is not much private demand for inflation-hedge instruments. In the US, Milton Friedman had advocated for many years a CPI futures contract and had predicted in 1986 that it would become the most widely traded contract. It was introduced on the coffee, sugar and cocoa exchange in 1987 but never took off and was eliminated. The recently issued US indexed bonds have not seen much issuance. Nor have there been privately issued inflation-indexed bonds in US history [Fischer 1991].

11 The inherent inflation bias in a paper money regime can be avoided by an independent central bank. This follows from the Friedman-Phelps natural rate hypothesis: there is a short run trade off between growth and inflation but no long run trade-off. McCallum (1989) lucidly explains how inflation bias arises from electoral pressure.

12 In India, the ruling party tends to lose elections following a sharp rise in food prices and in the CPI(AL), but this does food price effect does not preclude the general pro growth bias that slowly leads to inflation.

13 Note that this recent reversal is not related to the one-time supply shock of soaring onion prices. In November 1998 the CPI rose by 19.7 per cent (November-November) and 15.3 per cent (December-December). In a reversal of this huge supply shock price rise, the CPI was flat November-November and rose 0.5 per cent December-December in the next year 1999-2000. These inflation rates were about 300 basis points lower than the corresponding WPI increases in 1999-2000, with roughly the same rise on an average basis.

14 The adequacy of the proposed 2 per cent real return to induce saving, a matter that pertains to macroeconomic stability, has been discussed in Section IV and Appendix III.

15 Although the Federal Reserve did not declare its target Federal funds rate until early 1994, the target was known to market watchers and, over a period as long a month, the average rate would closely correspond to the target rate.

16 The response of the long bond yield to policy induced changes in the short rate is not predictable in any given instance. Sometimes the long rate has gone up when the short-term rate has come down, as during some of the easings in the US this year. Between late March 2001 to July 2001 when the Federal funds rate was lowered from 5.5 per cent to 3.75 per cent, the 10-year yield rose from 4.78 per cent to 5.3 per cent. However, in response to specific events, there is a typical pattern in overnight changes: the long rate moves in the same direction as the short rate, although by a lesser amount. An event study carried out by this author [Moorthy 1995] comparing the overnight response of different US financial market asset prices to economic data news surprises (105 monthly observations from 1985 to 1993) revealed that the long bond yield typically moved by a third of the short-term yield (same direction). In India also, the immediate response of long rates is in the same direction as short rates.

References

Ahluwalia, Montek S (1999): 'Financial Sector Reforms: An Overview' in James Hanson and S Kathuria (eds), *India: A Financial Sector for the 21st Century,* pp 29-56.

Cantor, Richard (1989): 'Interest Rates, Consumer Expenditures and Household Cash Flow', *Federal Reserve Bank of New York Quarterly Review,* Summer, pp 59-67.

Darby, Michael (1975): 'The Financial and Tax Effects of Monetary Policy on Interest Rates', *Economic Inquiry,* June 13, pp 266-76.

De Soto Hernando (2001): *The Mystery of Capital: Why Capitalism Triumphs in the West but Fails Elsewhere,* Basic Books.

Fischer, Stanley (1991): 'On the Non-Existence of Privately Issued Index Bonds in the US Capital Market' in *Inflation, Indexing and Economic Policy,* MIT Press, pp 301-70.

Friedman, Milton (1967): 'The Role of Monetary Policy', Presidential Address to the American Economic Association, published in *American Economic Review*, 1968, Vol 58, pp 1-17.

McCallum, Bennett (1989): *Monetary Economics: Theory and Policy,* Macmillan, Ch 12.

Mohanty, M and Raje Nishita (1998): 'The Effective Cost of Small Savings', *RBI Occasional Papers.*

Moorthy, Vivek (1995): 'Efficiency Aspects of Exchange Rate Response to News', *Journal of International Financial Institutions, Markets and Money*, pp 1-17.

– (1999): 'Capital-Account Convertibility: How Should We Proceed?' in *Management Perspectives,* N Balasubramaniam (ed), MacMillan India, pp 304-15

Moorthy, Vivek, Bhupal Singh and Sarat Dhal (2000): 'Bond Financing and Debt Stability: Theoretical Issues and Empirical Analysis for India', RBI DRG Study # 19.

Reddy, Y Venugopal (2000): 'Inflation in India: Status and Issues' in *Monetary and Financial Sector Reforms in India*, UBSPD, pp 45-63.

Government of India (2001): Report of the Prime Ministers's Economic Advisory Council, GOI publications.

World Bank (1993): *The East Asian Mir1acle: Economic Growth and Public Policy,* A World Bank Policy Research Report, Oxford University Press.