

EARLY BIRD SEMINAR

**PROVIDENT FUND INVESTMENT POLICY**

*Wednesday, March 31, 2004*

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*“Actuaries make financial sense of the future”*

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**31 Mar 2004      Early Bird Seminar:    Provident Fund Investment Policy**

*“Be bold, but not too bold”*

<b>1. What is the nature of a member’s balance in a Provident Fund?</b>
<b>2. Investments legally open to Provident Funds</b>
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**1. What is the nature of a member's balance in a Provident Fund?**

**Is it like a liability?**

**Employer and Trustees should decide how they view a Provident Fund.**

**Suppose they are not prepared to write down balances reported to members at any previous time. They are not prepared for “negative income” in any year. Or think that their members will not accept this situation.**

**Then members' balances are technically dead short liabilities. You may respond that in a going concern situation, all employees won't leave at once.**

**True. Banks also have very short term liabilities. Extremely unlikely that all depositors will claim money back at the same time. So banks borrow short and lend long. But have to maintain cash ratios, short term liquid assets and meet other safeguards required by law or by Central Bank. They have to maintain a minimum ratio of capital to their liabilities. And Central Bank is lender of last resort.**

**Provident Funds have no such safeguards.**

**Or is a Provident Fund more like an open-ended mutual fund, permitting writing up and writing down of members' balances?**

**This opens up possibility of going into much wider range of investments, now permitted, including ordinary shares, long-dated Government Securities (PIB's) and unit trusts.**

**As we go along, we will study risks and rewards of this policy. Both are considerable.**

**Either way, a clear view must be taken as a matter of policy.**

**2. Investments legally open to Provident Funds**

**Those responsible for investments of Provident Funds should consult legal experts and qualified investment advisers. On a plain reading, following investments are permitted.**

**1. Government Securities - 100%**

**2. Deposits with scheduled banks - 100%**

**3. NIT Units – 100%**

- 4. Listed unit trust schemes registered under Asset Management Companies Rules, 1995, (repealed and replaced by the Non-Banking Finance Companies (Establishment and Regulation) Rules, 2003) subject to, (a) total investment in unit trusts shall not exceed 50% of provident fund, and (b) the total investment in any one trust shall not exceed 20%.**

[Advice should be taken as to whether listed closed end mutual funds are covered by Para 6]

- 5. Bonds, redeemable capital debt securities or instrument issued by WAPDA - 100%**

- 6. Total investment in listed securities is restricted to 30%, subject to following conditions:**

- (a) investment in shares or other listed securities of a particular company shall not exceed 5% of its paid up capital**
- (b) in case of investment in shares it shall be made only where such companies:**
  - (i) have a minimum operational record of 5 years**
  - (ii) have paid not less than 15% dividend to shareholders during three preceding consecutive years**
- (c) in case of investment in securities other than shares, it shall not be made unless such securities have been rated as an investment grade with minimum rating of BBB by a credit rating company registered with Authority under Securities and Exchange Ordinance, 1969 and rating is maintained as such at time of investment; and**

- (d) investment shall not be made in a security if it is publicly known that issuer of security has defaulted while availing any financial facility.**

### **3. Accounting Standard for Provident Funds**

**Trustees should consult experts in the field of accounting and auditing. On a plain reading, IAS 26, re-formatted in 1994, re Accounting and Reporting by Retirement Benefit Plans, has been adopted by Institute of Chartered Accountants of Pakistan and notified by SECP.**

**Para 32 covers valuation of assets for both Defined Contribution Plans, like Provident Funds, and Defined Benefit Plans, like most Pension and Gratuity Plans. This is what it says:**

**“32. Retirement Benefit Plan investments should be carried at fair value. In the case of marketable securities fair value is market value. Where plan investments are held for which a fair value is not possible disclosure should be made of the reason why fair value is not used.”**

**Para 33 qualifies this by saying**

**“Those securities that have a fixed redemption value and that have been acquired to match the obligations of the plan, or specific parts thereof, may be carried at amounts based on their ultimate redemption value assuming a constant rate of return to maturity”.**

**Defined Benefit schemes have obligations, and may choose to match these by holding matching securities. On the face of it, Provident Funds have no such obligations, and it seems that Para 33 will not apply to them. In this premise, must show such securities at fair value.**

**Suppose fixed return security like PIB, which will mature at fixed date for fixed redemption value, bought above or below par. Then amortisation schedule needed to determine income component of each coupon, and to write up or down capital to converge to redemption value. However, if at balance sheet date market value is above or below amortised value, obtain expert opinion whether IAS 26 requires writing up or writing down B/S value.**

**For the present, we will proceed on basis that a Provident Fund has to show all assets at fair value, and for marketable security this means market or realisable value.**

**In considering limits allowed for various categories, IAS 26 implies using current market values, not historical cost. If so, whenever Trustees decide investments they should have before them market values on that date of all investments, to ensure compliance with law.**

**Do the limits apply at the point of investment? Or do they apply at all times? If latter is case, then surge in market values of any category can require re-adjustment and perhaps compel a sale which would otherwise not be made. Legal advice should be taken by Trustees on foregoing points.**

#### 4. The inflation picture

Table 1 Pakistan inflation over various periods

Period	Average CPI inflation pa
1 Jul '59 to 30 Jun '69 "Ayub era"	3.70 %
1 Jul '72 to 30 Jun '77 "Bhutto era"	17.01 %
1 Jul '77 to 30 Jun '88 "Zia ul Haq era"	7.45 %
1 Jul '88 to 30 Jun '99 "Neo-democratic era"	10.32 %
1 Jul '99 to 30 Jun '03 "Present era"	3.80 %

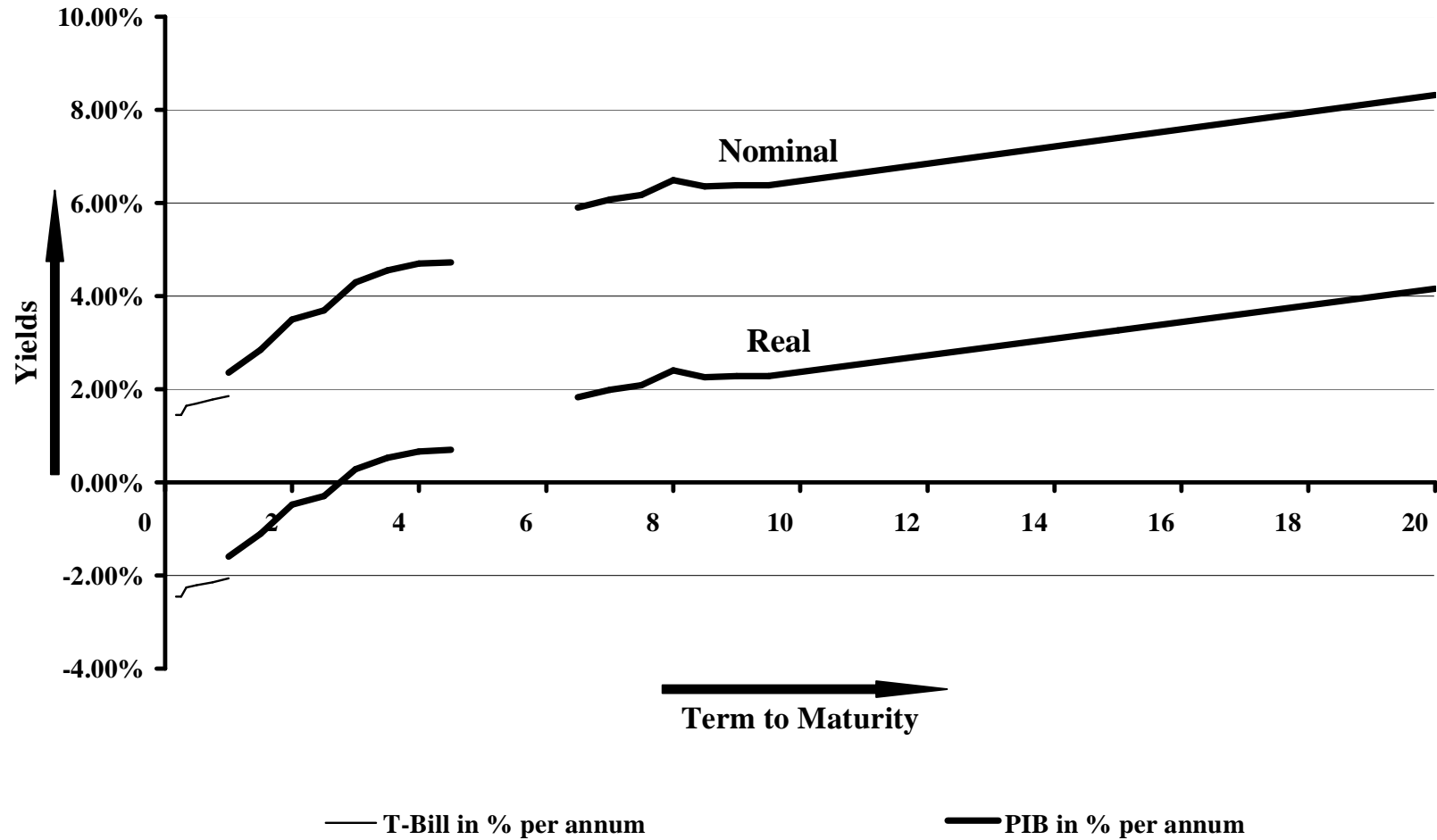
**Inflation based on official CPI figures, (Average of 12 mths Jan 03-Dec 03) ÷ (Average of 12 mths Jan 02- Dec 02), works out to 2.87 % pa. There is an opinion that inflation and interest rates will increase. In the rest of this presentation, inflation will be assumed at 4% pa unless otherwise indicated.**

**Throughout this presentation, income tax and zakat will be ignored, on the presumption that Provident Funds are exempt from both.**

## **5. Yields on Government Securities**

**Annexure 1 tabulates yields on Pakistan Government securities (T-Bills and PIB's) as at 24 March 04. Graph 1 depicts the yield curve, both nominal and real, assuming inflation at 4% pa**

**Graph 1: Pakistan Government Securities Yield Curve**



**Table 2: Possible yield and market value outcomes on PIB's**

(Coupons and Nominal Yields shown are % annum, payable half-yearly in arrears)

	5 yrs PIB	10 yr PIB	15 yr PIB	20 yr PIB
<b>1. Coupon</b>	<b>7.00%</b>	<b>8.00%</b>	<b>9.00%</b>	<b>10.00%</b>
<b>2. Nominal Yield to redemption at issue</b>	<b>4.75%</b>	<b>6.25%</b>	<b>7.25%</b>	<b>8.25%</b>
<b>3. Purchase Price per Rs 100 Face Value</b>	<b>109.91</b>	<b>112.87</b>	<b>115.84</b>	<b>117.00</b>
<b>4. Inflation outlook at issue</b>	<b>4.00%</b>	<b>4.00%</b>	<b>4.00%</b>	<b>4.00%</b>
<b>5. Expected Real yield to maturity</b>	<b>0.72%</b>	<b>2.16%</b>	<b>3.13%</b>	<b>4.09%</b>
<b>6. Valuation after</b>	<b>3 years</b>	<b>5 years</b>	<b>7 years</b>	<b>10 years</b>
<b>7. Amortised value on valuation date</b>	<b>104.24</b>	<b>107.42</b>	<b>110.48</b>	<b>111.76</b>
<b>8. Outstanding Term</b>	<b>2 years</b>	<b>5 years</b>	<b>8 years</b>	<b>10 years</b>
<b><u>Alternative 1 assumptions: yields have fallen by valuation date</u></b>				
<b>9. Prevailing yield for outstanding term</b>	<b>2.75%</b>	<b>4.50%</b>	<b>5.75%</b>	<b>7.00%</b>
<b>10. Prevailing price per Rs 100 face value</b>	<b>108.22</b>	<b>115.52</b>	<b>120.61</b>	<b>121.32</b>
<b>11. Appreciation vs amortised value</b>	<b>3.82%</b>	<b>7.54%</b>	<b>9.17%</b>	<b>8.55%</b>
<b>12. Nominal yield achieved till valuation *</b>	<b>5.89%</b>	<b>7.48%</b>	<b>8.22%</b>	<b>8.78%</b>
<b>13. Inflation outlook at valuation</b>	<b>2.75%</b>	<b>2.75%</b>	<b>2.75%</b>	<b>2.75%</b>

<b>14. Average inflation from issue to valuation</b>	<b>3.38%</b>	<b>3.38%</b>	<b>3.38%</b>	<b>3.38%</b>
<b>15. Real yield achieved till valuation *</b>	<b>2.43%</b>	<b>3.97%</b>	<b>4.68%</b>	<b>5.23%</b>

**Table 2 (cont'd) : Yield and market value outcomes on PIB's**

<b><u>Alternative 2 assumptions: Yields have risen by valuation/sale date</u></b>				
<b>16. Prevailing yield for outstanding term</b>	<b>6.00%</b>	<b>8.50%</b>	<b>11.00%</b>	<b>14.00%</b>
<b>17. Prevailing price per Rs 100 face value</b>	<b>101.86</b>	<b>98.00</b>	<b>89.54</b>	<b>78.81</b>
<b>18. Depreciation vs amortised value</b>	<b>2.39</b>	<b>9.42</b>	<b>20.94</b>	<b>32.95</b>
<b>19. Interest income for year</b>	<b>5.02</b>	<b>6.77</b>	<b>8.06</b>	<b>9.27</b>
<b>20. Net credit for year =Row 19 less 18</b>	<b>2.64</b>	<b>(-) 2.65</b>	<b>(-) 12.88</b>	<b>(-) 23.69</b>
<b>21. Nominal yield achieved till valuation *</b>	<b>4.05%</b>	<b>4.72%</b>	<b>5.02%</b>	<b>6.13%</b>
<b>22. Inflation outlook at valuation</b>	<b>6.00%</b>	<b>6.50%</b>	<b>8.00%</b>	<b>10.50%</b>
<b>23. Average inflation from issue to valuation</b>	<b>5.00%</b>	<b>5.25%</b>	<b>6.00%</b>	<b>7.25%</b>
<b>24. Real yield achieved till valuation *</b>	<b>(-) 0.91%</b>	<b>(-) 0.50%</b>	<b>(-) 0.92%</b>	<b>(-)1.04%</b>

**Nominal yields in Rows 12 and 21, and real yields shown in Rows 15 and 24 of Table 2, take into account both annual income and capital appreciation or depreciation.**

**Investment income on Provident Funds (plus or minus annual amortisation of difference between purchase price and par) distributed every year among members. So only current years' annual income available to offset any price depreciation at valuation date.**

If members' Fund balances viewed as a liability, then only safe investments are **EITHER**

(a) **PIB's** (or other investment grade fixed interest securities) with a maximum of 5 years to run from the date of purchase. If they buy PIB's with longer terms to run, then **in respect of the contributions** for any particular year they run the risk of having to write down the balance below the level of the previous year, as shown in Row 20 of Table 2.

**BUT** if fairly violent upward movement in interest rates, then even 5 year PIB can result in some write downs. Have to ignore this risk.

**OR**

(b) **Investment grade floating rate securities**, on the presumption that the floating rate will protect the nominal principal at all times. In effect, these are short term investments, with a term equal to the interval at which the interest rate is adjusted; except that Trustees will avoid the trouble of realisation and re-investment.

**This view of Fund will depress the yield, as shown in Table 2, if investment limited to 5 year PIB's. Investments in floating rate TFC's likely to produce higher yields. The market stock of floating rate TFC's is Rs 35 billion<sup>1</sup> or so, much of it tightly held. Relatively illiquid market, unlikely to absorb large weight of new investments required by Provident Funds.**

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<sup>1</sup> Per Arif Habib Investments

**In practice, Provident Fund is in state of flux. It is not a lump sum situation. Safe frontier for fixed interest investments determined by appropriate modelling of each Provident Fund.**

**6. Current Pakistan yield on shares; UK study of yields on shares, consols and “cash”.**  
**Comparison with DSC’s**

**As at 11 Mar 04, Price Earnings Ratio for KSE 100 shares was 10.34, i.e. Earnings Yield 9.67%, and Dividend Yield was 5.32%. The average dividend pay-out was 55% of earnings.**

**Source: Taurus Securities Ltd, quoted in Pakistan and Gulf Economist Mar 15-21 2004**

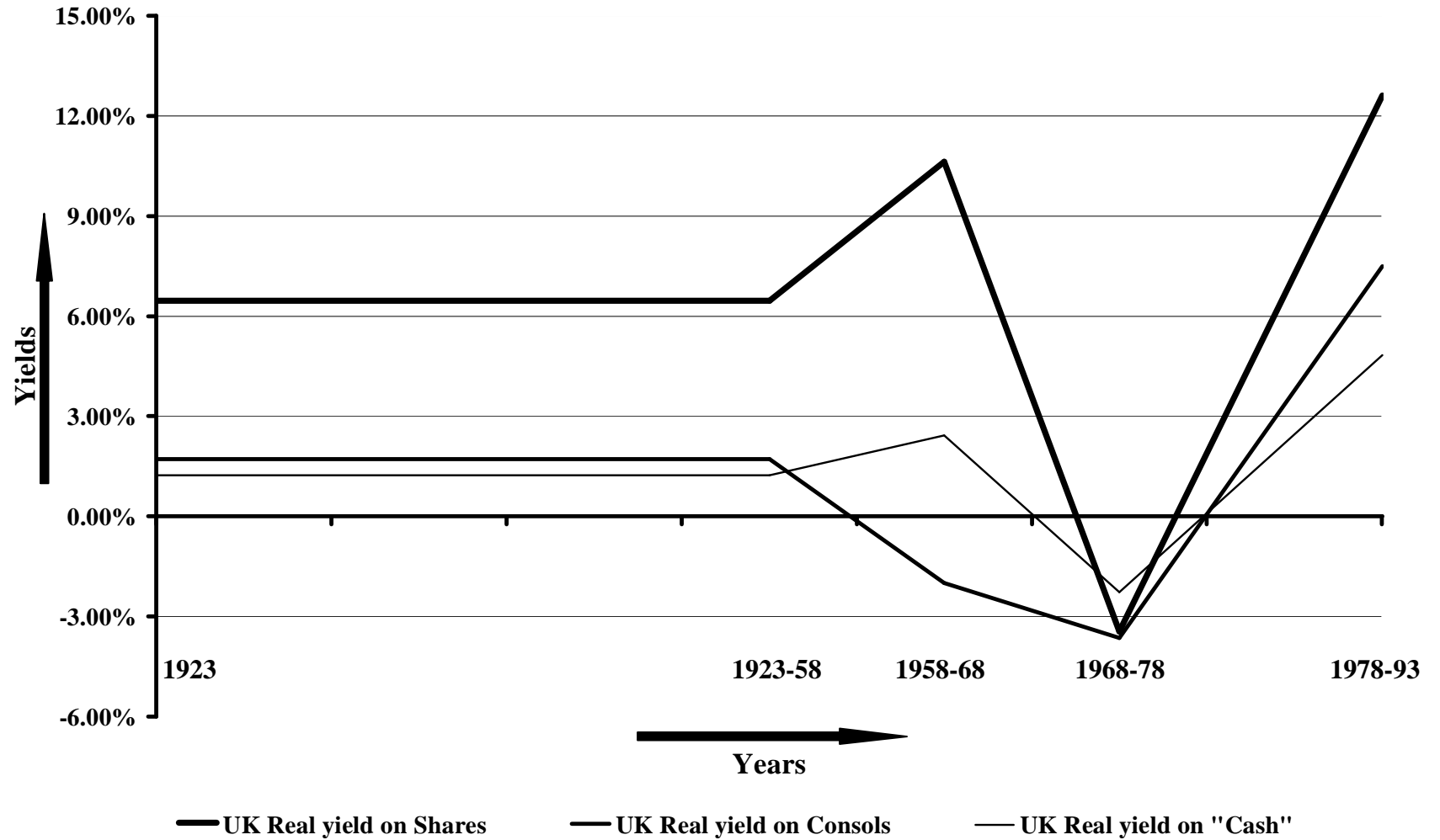
**Share investment has been studied in great depth in many countries, with elaborate mathematics. Annexure 2 based on UK study over two periods of 35 years each, by leading actuary Prof Wilkie. First period from 1923 to 1958. Second period from 1958 to 1993. Second period also studied in three sections, 1958-68, 1968-78 and 1978-93.**

**Study compared shares with (a) a very long (in fact irredeemable) Government security, 2.5% Consols, and (b) “Cash”, i.e. very short investments taken to mean Bank Rate. All dividends and interest received during periods shown were assumed re-invested. Yields take into account capital appreciation or depreciation. Yields shown are gross, i.e. no deductions for income tax, or for costs of transactions and of investment management.**

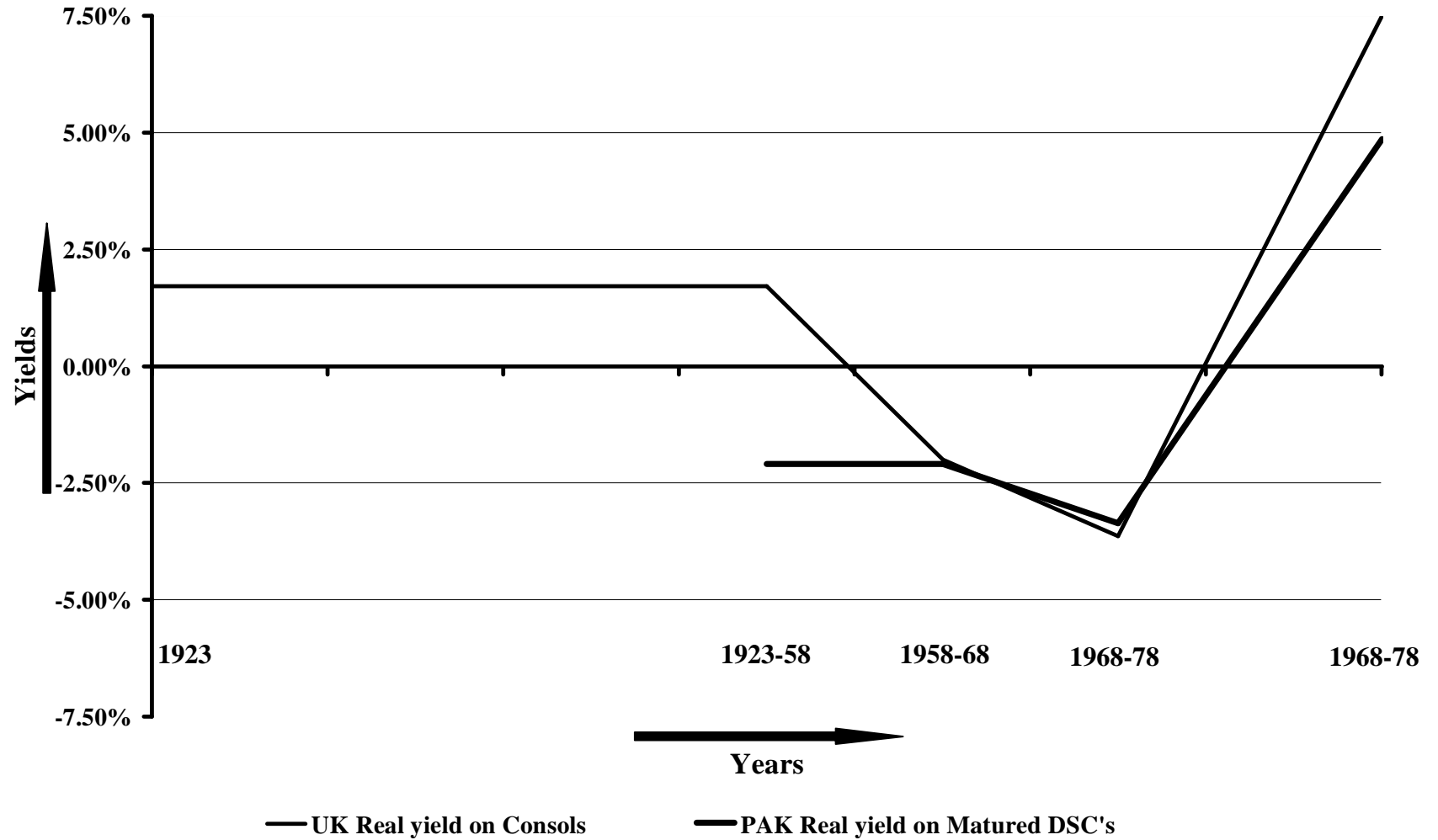
**For second 35 year period 1958 to 1993, Annexure 2 also shows Pakistan inflation rates, and nominal and real yields on matured Defence Savings Certificates, assuming reinvestment of maturity proceeds. Unfortunately, Pakistan figures for yields on shares and “Cash” are not available. Defence Savings Certificates were insulated against market price changes. Also, there was no income tax, and no transaction or investment management costs.**



**Graph 2: UK Real Yields on Shares, Consols and "Cash"**



**Graph 3: UK Real Yields on Consols vs. Pakistan Real Yields on Matured DSC's**



**During 1968-78, UK inflation was much higher than people expected. All three forms of investment produced negative real yields. Except for this period, shares performed much better than the other two.**

**“Cash” performed better than Consols in 1958-68 and 1968-78. During 35 years 1923-1958, Consols produced a yield only 0.49 % pa more than Cash. During 35 years 1958-93, Consols produced a yield 0.64% pa less than Cash.**

**Long term fixed interest investments are gamble on inflation rates. Short term interest rates more responsive to inflation. This phenomenon has also been observed in USA, according to US Society of Actuaries “Economic Statistics for Pension Actuaries”.**

**Nevertheless, long term fixed interest securities can be suitable in certain circumstances:**

- (a) When available at historically high rates. For example, in 1983, 10 year dollar denominated zero coupon Eurobonds issued by corporations with investment grade credit ratings were available at yields of around 15% per annum compound. It was almost “no-brainer” to buy these bonds.**
- (b) From 13 Nov 1996 to 13 May 1999, Defence Savings Certificates were available at a yield of 18.04% per annum compound. Still not clear why Govt to offer this yield. It made a lot of sense to invest in them.**

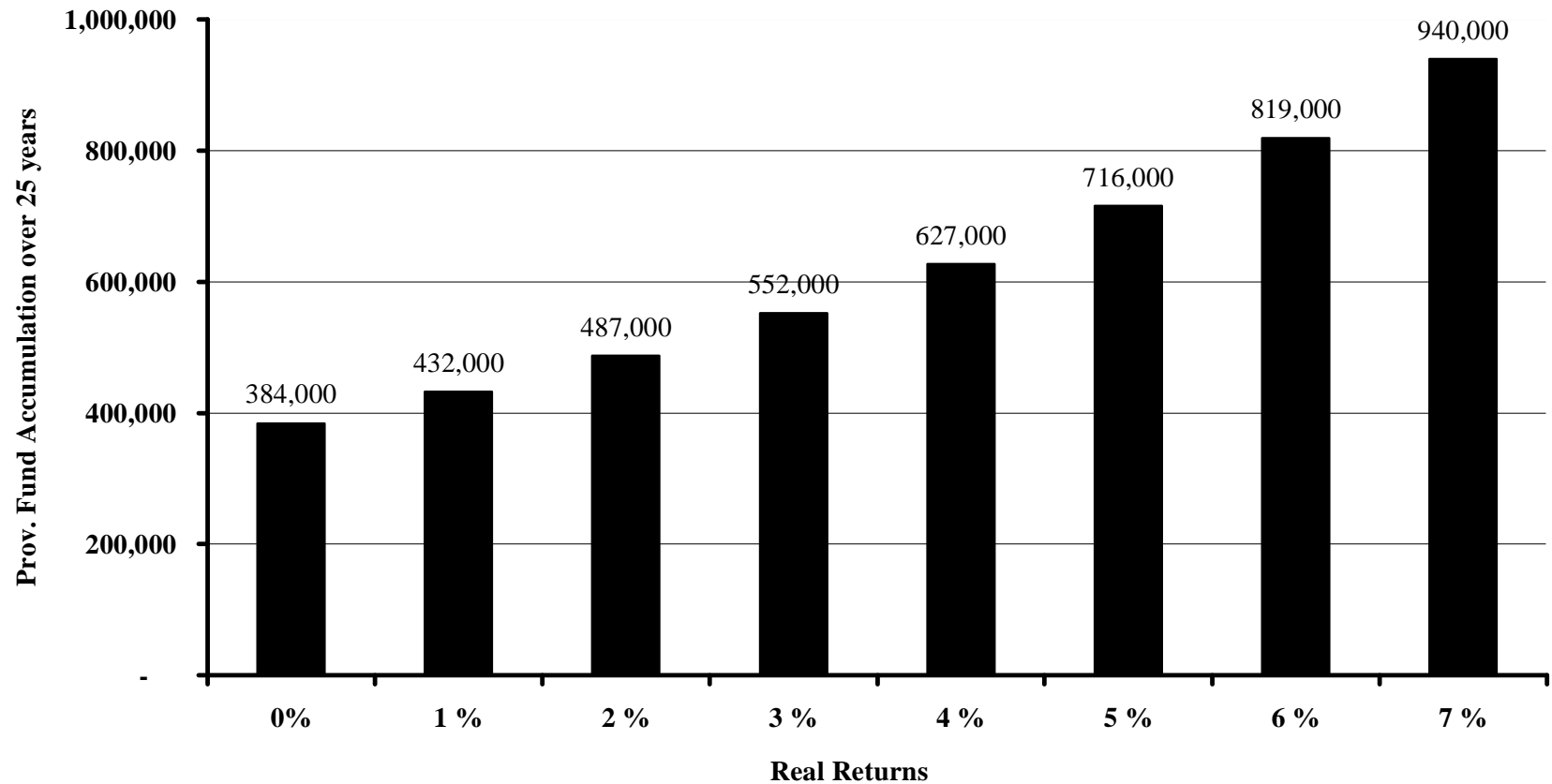
- (c) **In December 2000, and for several months after that, 10 year PIB's were available at yields of just under 14% per annum. Authorities were at bottom of learning curve. Buying these securities was almost "no-brainer".**
  
- (d) **If purchaser has long term liabilities denominated in money terms. Some life insurance liabilities have this characteristic, at least partially. It could make sense to match these liabilities by long term fixed interest securities. As mentioned earlier, Defined Benefit schemes may also be viewed as having specific liabilities, and it may (or may not!) make sense to hold matching long term fixed interest securities.**

### **7. An arithmetical digression on accumulation of Provident Fund**

**Graph 4 shows accumulation of a Provident Fund over 25 years, at various real rates of return, net of CPI inflation. Contribution in first year is assumed to be Rs 10,000 pa, and salary is assumed to increase at 2% pa over CPI inflation. All figures are "real", i.e. in today's purchasing power terms.**

**Graph 4 demonstrates powerful effect of changes in real yields. At a real yield of 2% pa, after 25 years accumulation is Rs 487,000. At a real yield of 5% pa, this improves to Rs 716,000, an increase of 47%. Income derived from investing accumulation is also powerfully affected by real yield.**

**Graph 4 : Prov. Fund Accumulation over 25 years at various Real Returns**



Note: The first year's contribution is assumed to be Rs 10,000 pa and the salary is assumed to increase at the rate of 2% pa above the CPI inflation. All figures are "real" i.e. in terms of today's purchasing power.

## **8. Digression on transaction costs of investments in ordinary shares**

**The yields quoted so far are before expenses, like brokerage, CDC charges, and Fees payable to Fund Managers.**

**Brokerage and CDC charges will be payable whether you buy directly or indirectly through unit trusts or mutual funds. These depend heavily on how active the portfolio is. Accounts of private unit trusts for year ended 30 Jun 03 indicated costs under these heads varied from 2% to 8% of dividend income.**

**Most Trustees do not have needed skills and information. Investment advice requires highly skilled persons, with research and data bank facilities. Users have to pay for these services.**

**Charges are regulated by SECP under Non-Banking Finance Companies (Establishment and Regulations) Rules 2003. Permitted charges not out of line with major markets like USA.**

**NIT's Trust Deed entitles Management Company to charge upto 1% of value of Trust as at close of the financial year.**

**Table 3: Investment Management costs, per audited accounts for year ended 30 June 2003**  
Amounts in Rs millions

	NIT	Two open ended Funds investing in shares	Five Closed ended Funds investing in shares
<b>1. Year end Funds</b>	<b>31,629</b>	<b>2,453</b>	<b>5,705</b>
<b>2. Total Expenses*</b>	<b>332</b>	<b>52</b>	<b>118</b>
<b>3. Expenses as % of average funds during year**</b>	<b>1.42%</b>	<b>3.31 %</b>	<b>4.00%</b>
<b>4. Expenses as % of year end Funds</b>	<b>1.05%</b>	<b>2.14 %</b>	<b>2.07 %</b>
<b>5. Expenses as % of Dividends***</b>	<b>14.87%</b>	<b>43.64 %</b>	<b>27.20 %</b>

\*\* Excluding interest on borrowings

\*\* Using Hardy's denominator =  $\frac{1}{2}$  of (Opening Fund + Closing Fund – Dividend Income)

\*\*\* Denominator is Dividends + other income - interest on borrowings

**As prices go up, these charges will increase, since they are based on Fund. They will tend to rise as a percentage of dividend income.**

**Subtle conflict of interest between Provident Funds as a whole and Managers of Unit Trusts as a whole. As recurrent net buyers, Provident Funds would prefer low prices and high real yields. But managers of Unit Trusts prefer high prices because charges are based on these!**

**Paradox: Compared with situation at end 2000, expected real rate of return on both Government Securities and shares have fallen, as a result of surge in market prices. But impression of prosperity for Provident, Pension and Gratuity Funds is misleading. As recurrent net investors, they would have been better off with lower prices if that meant higher expected real yields.**

**The higher the charges as a percentage of funds, the more returns to investor geared towards capital appreciation. In UK and US, except for Index Funds, dividends consumed by investment charges; net return to investor almost wholly dependent on capital appreciation.**

**9. So, should the Fund buy shares, NIT Units, Mutual Funds and/or long term fixed return securities for the sake of probably better real yields?**

**If this view is taken, then accept risk that at some points we will have to write down capital values to reflect falling market/fair values. Free Trustees to take advantage of legal scope for investing in NIT Units, shares, mutual funds and long term fixed return securities.**

**In principle no capital or other buffer to bear write downs. Write downs, if any, will have to be passed through to members by writing down balances.**

**In strict theory, Fund should be unitised, and Net Asset Value calculated periodically.**

**Contributions will buy units at NAV. On exit from Fund, balance payable will be NAV of Units credited to Member. Income and realised capital gains during accounting period will be credited. Realised capital losses will be debited. And unrealised capital appreciation or depreciation will be reflected in NAV.**

**Yield-driven investment, based on fundamentals, is probably the safest in the long run.**

**Annexure 3 shows the results after 10 years of investing Rs 100 now in ordinary shares at a dividend yield of 5%, using very simple alternative assumptions ... which may or may not materialise.**

### **Assumptions**

**(a) Inflation assumptions, starting at 4% pa**

**Alt 1: Stays at 4% pa**

**Alt 2: Gradually increases over 10 years to 7.5% pa**

**(b) Dividend growth assumptions**

- Alt 1: Dividends grow at the rate of inflation.**  
**Alt 2: Dividends grow 2% pa above the rate of inflation.**

**(c) Dividend Yields prevailing at end of 10 years**

- Alt 1: 5% pa (current Pakistan level)**  
**Alt 2: 2% pa (current level in many other countries)**  
**Alt 3: 8% pa (Pakistan level some years ago)**

**(d) Expenses as % of year end fund:**

- Alt 1: 0.30 % (CDC and Brokerage only, assuming self investment)**  
**Alt 2: 1.30 % (Approx NIT levels per A/cs for y.e. 30 Jun 03)**  
**Alt 3: 2.30% (Approx other Unit Trusts per A/cs for y.e. 30 Jun 03)**

**Annexure 3 shows real yields, net of expenses, range from MINUS 1.36% pa to PLUS 15.15%. Table 4 contains an extract from Annexure 3.**

**Table 4: Share scenarios (extracts from Annexure 3)**

<b>Row in Annex-ure 3</b>	<b>Inflation</b>	<b>Div growth</b>	<b>Div yield at end of 10 yrs</b>	<b>Expenses as % of Fund</b>	<b>Price at end of 10 yrs</b>	<b>Real yield incl apprecn/deprn %</b>
<b>4</b>	<b>Stays @ 4%</b>	<b>@ inflation</b>	<b>5% pa</b>	<b>0.3%</b>	<b>148</b>	<b>4.70</b>
<b>5</b>			<b>do</b>	<b>1.3%</b>	<b>148</b>	<b>3.70</b>
<b>6</b>			<b>do</b>	<b>2.3%</b>	<b>148</b>	<b>2.70</b>
<b>7</b>			<b>8% pa</b>	<b>0.3%</b>	<b>93</b>	<b>1.14</b>
<b>8</b>			<b>do</b>	<b>1.3%</b>	<b>93</b>	<b>(-) 0.06</b>
<b>9</b>			<b>do</b>	<b>2.3%</b>	<b>93</b>	<b>(-) 1.27</b>

**Dividends received during first 9 years will have been credited to members' accounts. Any depreciation at end of 10 years will have to be met from dividend income of that year alone. If that is not sufficient, members' balances will have to be written down.**

**Actual volatility more than indicated in Annexure 3. Be prepared for share values to fall by 25% (maybe more), and interest rates to rise by 3% (maybe more).**

**We doubt whether Pakistani trustees are prepared to treat Provident Funds as though they were open-ended unit trusts. In this case, if they go into shares etc, they must formulate some method of how to handle capital appreciation or depreciation, whether to create investment**

reserve accounts, how to make transfers to and from these accounts. Questions of equity as between leaving and continuing members will arise and have to be tackled. Smoothing capital movements should follow some policy or algorithm, preferably disclosed at least in broad terms, to members.

### **10. Life cycle investing**

Sometimes said that young person can hold relatively high proportion in equities and other “riskier” investments. As he or she comes closer to retirement, there should be a phased switch into less risky investments like fixed income shares.

**BUT** a study published in the North American Actuarial Journal of April 2000 by Booth and Yakoubov concluded, in respect of Defined Contribution Pension schemes, that “the authors do not advocate an equity-based investment strategy upto retirement at all times. The conclusion is the weaker one that there is no evidence to suggest that a gilts-based strategy is necessarily less risky”.

However, for Provident Fund scheme, if large negative cash outflow is expected during say the next 5 years, it may make defensive sense for Trustees to match this by short term fixed return investment, even at cost of depressing overall yield.

## **11. Check list of actions for DC schemes**

- (a) Policy decision on whether to protect nominal principal, or whether prepared to risk writing down values and reducing members' balances in some years. Profound investment consequences of this decision.**
- (b) Before finalising policy, estimate how alternative policies will affect projected provident fund at retirement, in real terms, and make policy decision with eyes open.**
- (c) Consider whether to formally inform members of their investment policy. Irrespective IAS 26, probably good thing to do this, because it's their money. If Fund decides to go into shares etc, perhaps inform members as to how they would deal with capital appreciation and depreciation. Prior communication may reduce disappointment if prices fall.**

**A refinement would be to divide Fund into sections, according to members' risk preferences. Often done in other countries. Complicates administration, perhaps too early to do this. Legal implications need examination.**

- (d) Trustees may consider taking legal advice as to whether Trusts Act, 1882, read with all other relevant statutes and case law, offers total protection against claims by dissatisfied member on depreciation of investments in listed securities and/or unit trusts within the limits laid down by the SECP.**

- (e) **Within contours of policy, Trustees should formulate and spell out investment objectives. General objective is to earn the maximum return for members' benefit. But basic management principle requires quantification of objectives.**

**Is object a nominal return, or a real return net of inflation? Consider probable risk aversion of members.**

**What is a realistic target for the real return net of inflation? This will be powerfully influenced by the policy decision mentioned in para (a) above.**

- (f) **Decide asset allocation according to maximum down-side risk likely to be acceptable to members.**
- (g) **If allocation made for share investments, decide the mechanism, whether they will make the selection themselves, or buy NIT Units or other open or close ended Mutual Funds, or engage an investment adviser on a fee basis. The adviser must be selected.**

**The timing risk will always remain, of buying at the top and selling at the bottom. All attempts to predict market movements have failed, especially when the market is dominated by speculative day traders. There is no way to avoid this risk. It has to be managed.**

- (h) **Examine what amendments are needed in Trust Deed and Rules to carry out above.**

- (i) Consider how to handle cases where a member leaves at a point when market values are low.**
- (j) Educate members and retiring employees of distinction between nominal and real yields. Much grief has been caused because retirees who received Provident Funds, pension commutations and/or gratuities treated nominal yield as spendable income.**

## **12. General remarks**

- (a) The rules need to be re-balanced, increasing limit for investment in listed securities from the present 30%. This will provide more scope for direct investments in shares, and also for investment in closed-end listed mutual funds. No need to reduce 50% limit for unit trusts. Total of limits for various categories can exceed 100%.**
- (b) Amendment in statute is perhaps needed specifying precisely how the limits will apply. Perhaps trustees should be permitted to rely on market values as at end of previous quarter. Also should be made clear in statute that limits apply at time of investment. If exceeded because of subsequent market price changes, Fund should not have to forcibly sell investments which were permitted when made.**
- (c) Excluding shares held by sponsors and controlling interests, and firmly held by various institutions, probably not enough depth in stock market to absorb flow of funds either through direct investment or through intermediation of unit trusts or mutual funds.**

**Perhaps too much money chasing too few shares. Jumbo Funds can participate in PIB auctions. But probably not practical for great majority of funds having few lakhs to invest periodically.**

- (d) Closing of DSC window in March 2000 was no doubt done with good reasons. But out of sync with pace of industrialisation in Pakistan. We cannot force-feed stock market. Government proposes to re-align yields on DSC's with market, and considerable progress has been made in this direction. Strong practical case for once again allowing recognised provident funds, approved pension and gratuity funds (and charitable trusts), to invest over counter in DSC's. But industrial and commercial entities like banks and limited companies should not be allowed to do this.**

**Upper limit can be placed on fresh investments in DSC's, say 50% of the Fund. DSC's purchased upto 25 March 2000 would not count towards this.**

### **13. Akhtar & Hasan's services**

**We do not offer buy-sell-hold advice in respect of specific listed securities. There are many highly competent organisations in this field.**

**What we can do is to work with Trustees and the Sponsors of Provident Fund in working out policies in the following areas:**

- (a) Calibrating the risk bearing ability of Provident Funds, having regard to projections of inflows and outflows. This is a classical actuarial exercise.**
- (b) Projecting the real value of the Fund at retirement on various assumptions for members.**
- (c) In the light of the above, helping the Trustees and Sponsors to make the various policy decisions mentioned in this presentation.**
- (d) Evaluate the performance of investment advisers.**
- (e) In case the Trustees chose to invest in shares, long term fixed interest securities and other fields where the market values can go up or down, help them to formulate a policy of handling these ups and downs.**
- (f) Help Trustees to make meaningful communications to Provident Fund Members.**

**And of course we have the ability to help in the administration of Provident Funds. Some organisations have out-sourced this to us.**

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**Presentation made by Samee-ul-Hasan, FIA, FPSA, FCII, FLMI, ASA  
Shujat Siddiqui, MA, FIA, FPSA, and all members of Akhtar & Hasan team, contributed to it**

**Annexure 1: Yield Profile of Government Securities as at 24 Mar 04**

<b>Outstanding Term</b>	<b>Security</b>	<b>Yield range % p.a. Nominal</b>	<b>Yield range % p.a Real, net of inflation</b>
31- 60 days	T-Bill	1.30 – 1.60	(-) 2.60 – (-) 2.31
61- 90 days	T-Bill	1.30 – 1.60	(-) 2.60 – (-) 2.31
91- 120 days	T-Bill	1.50- 1.80	(-) 2.40 – (-) 2.12
121- 180 days	T-Bill	1.65- 1.75	(-) 2.26 – (-) 2.16
181- 270 days	T-Bill	1.65 – 1.90	(-) 2.26 – (-) 2.02
271- 365 days	T-Bill	1.70 – 2.00	(-) 2.21 – (-) 1.92
1.1 – 1.5 years	PIB	2.01 – 2.60	(-) 1.83 – (-) 1.35
1.6 – 2.0 years	PIB	2.60 – 3.10	(-) 1.35 – (-) 0.87
2.1 – 2.5 years	PIB	3.30 – 3.70	(-) 0.67 – (-) 0.29
2.6 – 3.0 years	PIB	3.60- 3.80	(-) 0.38 – (-) 0.19
3.1 – 3.5 years	PIB	4.10 – 4.50	0.10 - 0.48
3.6 – 4.0 years	PIB	4.40 – 4.70	0.38 – 0.67
4.1 – 4.5 years	PIB	4.60 – 4.80	0.58 – 0.77
4.6 – 5.0 years	PIB	4.65 – 4.80	0.62 – 0.77
5.1 – 6.5 years	PIB	N/A	N/A
6.6 – 7.0 years	PIB	5.80 – 6.00	1.73 – 1.92
7.1 – 7.5 years	PIB	5.95 – 6.20	1.87 – 2.12
7.6 – 8.0 years	PIB	6.10 – 6.25	2.02 – 2.16
8.1 – 8.5 years	PIB	6.30 – 6.70	2.21 – 2.60
8.6 – 9.0 years	PIB	6.33 – 6.38	2.24 – 2.29
9.1 – 9.5 years	PIB	6.37 – 6.39	2.28 – 2.30
9.6 – 10.0 years	PIB	6.37- 6.39	2.28 – 2.30
15 years	PIB	7.30 – 7.50	3.17 – 3.37
20 years	PIB	8.25 – 8.40	4.09 – 4.23

Source for nominal yields: KASB Securities (Pvt) Ltd

**Annexure 2: Gross Real and Nominal yields % pa in the UK over various periods**  
**{Pakistan inflation, and nominal and real yields on DSC's, shown in brackets}**  
 All yields are compound annual returns over the respective periods. The yields are before transaction costs.

Period	Length of Period	Inflation during period	Item	Yield on Shares	Yield on Consols	Yield on "Cash"
1. 1923-58	35 years	1.90	Nominal	8.48	3.64	3.14
			Real	6.46	1.71	1.22
			Excess real yield on shares		4.75	5.24
2. 1958-68	10 years	3.19 {3.97}	Nominal	14.15	1.13 {1.80}	5.69
			Real	10.62	(-) 2.00 {(-) 2.09}	2.42
			Excess real yield on shares		12.62	8.20
3. 1968-78	10 years	11.80 {10.91}	Nominal	7.94	7.73 {7.18}	9.25
			Real	(-) 3.45	(-) 3.64 {(-) 3.36}	(-) 2.28
			Excess real yield on shares		0.19	(-) 1.17

**Annexure 2 (Cont'd): Real and Nominal yields % pa in the UK over various periods**  
**{Pakistan inflation, and nominal and real yields on DSC's, shown in brackets}**

Period	Length of Period	Inflation during period	Item	Yield on Shares	Yield on Consols	Yield on "Cash"
4. 1978-93	15 years	6.95 <b>{8.47}</b>	Nominal	20.44	14.97 <b>{13.74}</b>	12.12
			Real	12.61	7.50 <b>{4.86}</b>	4.83
			Excess real yield on shares		5.11	7.78
5. 1958-93	35 years	7.21 <b>{7.88}</b>	Nominal	14.95 %	8.79 <b>{8.45}</b>	9.43
			Real	7.22 %	1.47 <b>{0.53}</b>	2.07
			Excess real yield on shares		5.75	5.15

UK Inflation and nominal yields taken from Prof Wilkie's paper in British Actuarial Journal, Vol I, Part II, 1995.  
Other figures derived by us)

**Annexure 3: Share scenarios**

	<b>Inflation</b>	<b>Div growth</b>	<b>Div yield at end of 10 yrs</b>	<b>Expenses as % of Fund</b>	<b>Price at end of 10 yrs</b>	<b>Real yield incl apprecn/deprn %</b>
<b>1</b>	<b>Stays @ 4%</b>	<b>@ inflation</b>	<b>2% pa</b>	<b>0.3%</b>	<b>370</b>	<b>12.89</b>
<b>2</b>				<b>1.3%</b>	<b>370</b>	<b>12.18</b>
<b>3</b>				<b>2.3%</b>	<b>370</b>	<b>11.47</b>
<b>4</b>			<b>5% pa</b>	<b>0.3%</b>	<b>148</b>	<b>4.70</b>
<b>5</b>				<b>1.3%</b>	<b>148</b>	<b>3.70</b>
<b>6</b>				<b>2.3%</b>	<b>148</b>	<b>2.70</b>
<b>7</b>			<b>8% pa</b>	<b>0.3%</b>	<b>93</b>	<b>1.14</b>
<b>8</b>				<b>1.3%</b>	<b>93</b>	<b>(-) 0.06</b>
<b>9</b>				<b>2.3%</b>	<b>93</b>	<b>(-) 1.27</b>
<b>10</b>		<b>Infl + 2%</b>	<b>2% pa</b>	<b>0.3%</b>	<b>451</b>	<b>15.15</b>
<b>11</b>				<b>1.3%</b>	<b>451</b>	<b>14.42</b>
<b>12</b>				<b>2.3%</b>	<b>451</b>	<b>13.70</b>
<b>13</b>			<b>5% pa</b>	<b>0.3%</b>	<b>180</b>	<b>6.79</b>
<b>14</b>				<b>1.3%</b>	<b>180</b>	<b>5.77</b>
<b>15</b>				<b>2.3%</b>	<b>180</b>	<b>4.75</b>
<b>16</b>			<b>8% pa</b>	<b>0.3%</b>	<b>113</b>	<b>3.16</b>
<b>17</b>				<b>1.3%</b>	<b>113</b>	<b>1.94</b>
<b>18</b>				<b>2.3%</b>	<b>113</b>	<b>0.71</b>

**Annexure 3 Share scenarios (cont'd)**

	<b>Inflation</b>	<b>Div growth</b>	<b>Div yield at end of 10 yrs</b>	<b>Expenses as % of</b>	<b>Price at end of 10 yrs</b>	<b>Real yield incl apprecn/depn</b>
<b>19</b>	<b>Grows to 7.5 %</b>	<b>Inflation</b>	<b>2% pa</b>	<b>0.3%</b>	<b>444</b>	<b>12.79</b>
<b>20</b>				<b>1.3%</b>	<b>444</b>	<b>12.10</b>
<b>21</b>				<b>2.3%</b>	<b>444</b>	<b>11.42</b>
<b>22</b>			<b>5% pa</b>	<b>0.3%</b>	<b>178</b>	<b>4.57</b>
<b>23</b>				<b>1.3%</b>	<b>178</b>	<b>3.60</b>
<b>24</b>				<b>2.3%</b>	<b>178</b>	<b>2.63</b>
<b>25</b>			<b>8% pa</b>	<b>0.3%</b>	<b>111</b>	<b>0.99</b>
<b>26</b>				<b>1.3%</b>	<b>111</b>	<b>(-) 0.18</b>
<b>27</b>				<b>2.3%</b>	<b>111</b>	<b>(-) 1.36</b>
<b>28</b>		<b>Infl + 2%</b>	<b>2% pa</b>	<b>0.3%</b>	<b>541</b>	<b>15.05</b>
<b>29</b>				<b>1.3%</b>	<b>541</b>	<b>14.34</b>
<b>30</b>				<b>2.3%</b>	<b>541</b>	<b>13.65</b>
<b>31</b>			<b>5% pa</b>	<b>0.3%</b>	<b>216</b>	<b>6.66</b>
<b>32</b>				<b>1.3%</b>	<b>216</b>	<b>5.67</b>
<b>33</b>				<b>2.3%</b>	<b>216</b>	<b>4.68</b>
<b>34</b>			<b>8% pa</b>	<b>0.3%</b>	<b>135</b>	<b>3.01</b>
<b>35</b>				<b>1.3%</b>	<b>135</b>	<b>1.82</b>
<b>36</b>				<b>2.3%</b>	<b>135</b>	<b>0.62</b>