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8.1 SALIENT FINDINGS

On the basis of the analysis of the data on various mutual fund parameters the following salient findings emerged:

8.1.1 UNIT TRUST OF INDIA

8.1.1.1 MOBILIZATION OF FUNDS

➢ The growth pattern in Mobilization of Funds has a trough after 1999-2000 and regained its growth after 2003-04 onwards and having an overall compound growth of the order of 53% p.a. the compound growth model is having a good fit with 83% coefficient of determination ($R^2$).

➢ The fixed base index has also shown a very high rate of change. On the other hand the link relatives suggested a decline during 200101 and 2001-02 with a 3-fold increase in 2003-04 with respect to their previous years as base.

8.1.1.2 REDEMPTION/REPURCHASE

➢ The analyses of data on Redemption/Repurchase in the form of time series, has suggested a fast growth during 2007-08 onwards, whereas small decline is also seen 1999-2000 and 2001-2002.

➢ The compound growth model is found to be most appropriate with a significantly high coefficient of determination ($R^2$) of the order of 90.25% and can be taken as quite appropriate to estimate the trend values and future forecasting. The compound growth is estimated to be 51.6% with a geometric mean of ₹ 52582.72 cr.

➢ The fixed- base index with 1998-99 as base 100 declined up to 2001-02 and grown very fast. The analysis suggests that a sharp increase in Redemption/Repurchase by unit trust of India during 2007-08 with a marginal growth in 2002-03 and 2005-06.

➢ The chain base indices are highest during 2007-08 with a decline in 1999-2000 and 2001-02 over their respective previous years.
The analysis suggests that as there is a sharp increase in Redemption/Repurchase during a period of 12-years and quite satisfactory in the form of a compound growth model is confirmed.

8.1.1.3 CUMULATIVE NET ASSETS POSITION

- The Cumulative Net Assets declined at the rate of 2.64% compounded annually, having no definite trend over the period. The study period if splitted into two parts, have shown a decline of 22.4% p.a. up to 2004 and a sharp increase thereafter at the rate 26.3% p.a. compounded annually.
- The trend is almost of parabolic nature, hence a second degree parabolic trend is found to be most appropriate with coefficient of correlation 63%.

8.1.1.4 NET INFLOW/OUTFLOW

- The Net Inflow/Outflow in respect of Unit Trust of India is highest in the year 2009-10 followed by 2007-08 and 2009-10 respectively and is positive in nature during these years. The decline is very sharp for some of years and no definite trend is seen. The trend is found to be quite divergent in nature. The analysis through three-years-moving average suggests that from 2005-06 to 2007-08 there is considerable and steady growth and for whole of the period no definite trend is seen during a span of 12 years.
- It indicates that during 1998-99, 2001-02, 2002-03, 2004-05 and 2008-09 the outflow due to redemptions is showing quite a significant impact on the overall inflow of business to the unit trust of India.
- Average inflow found to be ₹ 8374cr whereas average inflow found to be ₹ 5167.32cr, thereby an excess of ₹ 3206cr inflow is giving an edge over outflows, the overall position can be said to be not under loss for unit trust of India in this regard.

8.1.2 OTHER PUBLIC SECTOR MUTUAL FUNDS

8.1.2.1 MOBILIZATION OF FUNDS

- A very sharp compound growth rate has been observed during the study period (81% p.a. compounded annually).
The compound growth model fitted by the method of least-squares has shown almost a perfect fit with a coefficient of correlation ($R^2$) 99%.

The fixed base index has shown a geometric growth doubling after 2004-05 onwards. The study suggests that the mobilization of funds by other public sector have grown very fast and never declined during the 12-year span.

As an individual year comparison with the help of link-relative index number a two-fold increase is seen during 2002-03, 2004-05, 2008-09 and 2009-10 over their respective previous year. The geometric mean of the 12 year data on mobilization of funds is calculated to be ₹ 44055cr.

8.1.2.2 REDEMPTION/REPURCHASE

- The Redemption/Repurchase amount has shown a very good growth over time with a compound growth rate of 81% p.a.
- The trend analysis suggests that the compound growth model as fitted by the method of least-squares as the most appropriate with a co-efficient of determination ($R^2$) of 99% and can be gainfully employed for the purpose of future forecasting.
- The fixed base index has suggested that the redemption amount by the other public sector funds has increased manifold over period of study almost doubling every year and almost the same phenomenon is observed in the link relatives.
- It is seen that the mobilization of funds and redemption/repurchase in the other public sector mutual funds is following almost the same path.

8.1.2.3 CUMULATIVE NET ASSETS POSITION

- The study suggests that the behaviour of observations on Cumulative Net Assets position is not as uniform as studied in previous segments.
- Comparatively low compound growth (23%p.a.) has been observed, but a growth model fitted is quite satisfactory ($R^2$=86%).
- The geometric mean is calculated to be ₹16534cr.
- The fixed base index has shown that during 2001-02 the index is less than 100, showing a decline in the Cumulative Net Assets over its base year. However, a marginal increase during 2003, 2004 and 2005 is seen. It is interesting to note that
upward movement is noticed during 2006 onwards and more than 8-fold increase is noticed during 2010 over its base period.

- Link-relatives have shown a fall during 2005 but a considerable decrease for other years with respect to their previous years as base.

- If a comparison is made between Unit Trust of India and other public sector mutual funds with regard to cumulative net assets position, then it is found that for other public sector mutual funds there is sharp increase at the tail-end of the series whereas in unit trust of India the series is fluctuating over the entire study period. However unit trust of India has held cumulative position of its net assets during the initial years of the study quite significantly higher than public sector mutual funds. It may be due to less number of public sector mutual funds. It may be due to less number of public sector mutual funds during 1999-2005.

8.1.2.4 INFLOW/OUTFLOW

- There are more outflows during 1999-00, 2001-02 and 2004-05 compared to inflows. There is no definite trend in the data.

- The average inflows for the period are estimated to be ₹ 4247.75cr.

- The study indicates that the redemption rate is quite low a compared to unit trust of India.

- The year moving average trend is found to be most appropriate. Since 2005-06 regularity have been noticed as the inflow in this primary segment.

- The difference between the averages of inflow and outflow is measured as ₹ 4244cr over the entire period of study clearly showing the state of overall gainful position in other public sector.

8.1.3 PRIVATE SECTOR MUTUAL FUNDS

8.1.3.1 MOBILIZATION OF FUNDS

- There is quite a fast growth in this sector with respect to Mobilization of Funds, in each year.

- A compound growth of 75% is estimated with a geometric mean of ₹ 4549cr.

- The compound growth model fitted as a trend has shown a very good fit with a coefficient of determination ($R^2=96\%$).
A comparison with the unit trust of India and other public-sector mutual funds with private-sector have revealed that the growth is almost of the same order in all the three.

The fixed base index and link-relative index have suggested that there is manifold increase in the mobilization of funds by the private sector over its base year as 1998-99.

If the base is shifted to 1999-2000 there is considerable shift in the fixed base index and gives the real pattern of increase in mobilization of funds.

The analysis has suggested that there is significant growth in mobilization of funds by private sector.

### 8.1.3.2 REDEMPTION/REPURCHASE

- Growth rate of the private sector mutual funds is also found to be quite fast (80% annually).
- The compound growth or the semi-log mathematical model is fitted and found to be most satisfactory with a 96% co-efficient of determination ($R^2=96\%$).
- The analysis on Redemption/Repurchase suggested that the investors are getting redeemed their investment well within shortest lock-in-period specified by each scheme.
- The geometric mean is calculated to be ₹413542cr, for a period of 12 years.
- The fixed base index has also confirmed a very fast growth in the redemption amount in the private sector mutual funds.
- The link-relatives, however, are quite satisfactory and increased in the redemption amount over its previous year is as high as 2.4 times (2007-08) and lowest a 1.19 times (2008-09) respectively.
- The analysis suggests that along with the mobilization the redemption is also increasing very fast.

### 8.1.3.3 CUMULATIVE NET ASSETS POSITION

- A steady growth compounded annually of the order of 43%p.a. is observed in cumulative net assets position over a span of 12-year.
- The semi-log regression model fitted with the help of method of least-squares gives quite satisfactory trend with a co-efficient of determination of 95% ($R^2$).
The fixed base index numbers clearly indicate the significant growth pattern of the cumulative net assets position.

The index is growing very fast especially 2004 onwards.

For the link-relatives index numbers the index for 2009 is less than 100 showing a decline its previous year as base in cumulative net assets position.

The logarithmic trend and other trends have been shown graphically also.

The growth model can be gainfully used further for the purpose of future projections.

8.1.3.4 INFLOW/OUTFLOW OF FUNDS

The analysis suggests that there is sudden jump in 1999-2000 as inflow has shown a considerable increase.

This phenomenon is further noticed in 2004-05 and 2005-06 with a decline thereafter.

It is interesting to note that during the entire period of 12 years span, only once, i.e., in 2008-09, there is considerable outflow suggesting a divergent trend in the movement of time-series data on Inflow/Outflow.

The three-year moving average trend quite satisfactory and short-term random fluctuations are considerably smoothened.

The study indicated a satisfactory gain in private sector mutual funds with a sound stock of inflow of funds.

8.1.4 PUBLIC SECTOR

8.1.4.1 MOBILIZATION OF FUNDS

During the first three years, there is nominal increase in the Mobilization of Funds, but, beyond that almost 2-fold increase is seen every year.

A compound growth mathematical trend gives a very good fit with a coefficient of determination of 95%.

The study concluded that, there is a sharp increase in the fund position in respect of public sector mutual funds over a span of 12 years and if the same trend continued, as expected the public sector will expected to be in a very sound position.
Mutual funds are very effective instruments for tax savings further improvement in funds mobilization is expected.

**8.1.4.2 REDEMPTION/REPURCHASE**

- Like mobilization of funds the Redemption/Repurchase too remained moving upward throughout the study period.
- Compound growth trend model is fitted well with a coefficient of determination \((R^2)\) 96%.
- The analysis has suggested that as per trend in the Mobilization of Funds, the redemption is also going almost parallel in the same fashion.

**8.1.4.3 CUMULATIVE NET ASSETS POSITION**

- For all the years, a divergent trend is observed with frequent peaks and troughs.
- The compound growth model is also poor fit.
- Moving average with three years periods is found to be comparatively better.
- The relative changes based and link-relatives index numbers also confirm the phenomenon of divergence is the trend on net assets of public sector mutual funds.

**8.1.4.4 NET INFLOW/OUTFLOW**

- It is observed that during the limited period of study, the outflow the outflow is considerably higher, thus creating an imbalance in the real situation.
- Because of frequent ups and downs, the series could not maintain any specific trend. Three year moving average trend is found to be most appropriate.
- The average difference between Inflow/Outflow over the period under reference is found to be ₹8001cr and gives a very sound position of inflow of average funds over the years.

**8.1.5 MUTUAL FUNDS INDUSTRY**

**8.1.5.1 MOBILIZATION OF FUNDS**

- Funds have grown registering a 70% growth with geometric mean of ₹588169.65cr over a span of 12 years.
The growth model fitted is absolutely good fit with co-efficient of determination of the order of 99% ($R^2$).

A manifold growth in the Mobilization of Funds is noticed through fixed base index and link relatives index have also shown a good growth in almost all the years.

**8.1.5.2 REDEMPTION/REPURCHASE**

- A very fast growth is seen in the Redemption/Repurchase amount during all the years.
- The compound growth in the sub-segment of the mutual fund industry is found to be of the order of 71% over a span of 12 years.
- The plot of the time series data strongly suggested a compound growth model as trend with a coefficient of determination ($R^2$) as 99% and can be gainfully used for future forecasting.
- Fixed base index also suggested a manifold growth in the redemption amount.

**8.1.5.3 CUMULATIVE NET ASSETS POSITION**

- A consistent growth in the Cumulative Net assets Position over entire period of the study for the industry is observed with certain exceptions in 2001, 2002 and 2009 where slight decay is seen.

- It is quite satisfaction to the mutual fund industry that Cumulative Net Assets Position is growing at a compound growth of 21.9% per annum.
- The fixed base index has shown a slight decline in 2001 and 2002 and has continuously growth thereafter with a steady increase.
- The analysis has suggested a very sound position of mutual fund industry of the country.

**8.1.5.4. INFLOW/OUTFLOW OF FUNDS**

- Analysis suggests that only for the years 1998-99 and 2008-09, there is dominance of by outflows and for the rest of the years there is considerably higher amount in the inflow (₹ crore) with higher fluctuations as well.
No definite trend is seen and hence 3-year moving average trend is found to be most appropriate.

8.1.6 GAP INDEX ANALYSIS

8.1.6.1 MOBILIZATION OF FUNDS

To measure the extent of difference between Mobilization of Funds by public and private sector spread over a period of 12 years. The gap-index analysis was adopted. It is observed that the gap has been widening very fast up to 2003-04 and has shown a decline thereafter.

The private sector mutual funds are gaining more in terms of magnitude of mobilization of funds compared to that of public sector.

The gap is reaching up to 81% in 2003-04 from 31% in 1998-99 and finally settled at 54% in 2009-10.

If the trend continues to be the same it is likely that both the private and public sector mutual funds may come more closure to each other in terms of mobilization of mutual funds.

8.1.6.2 REDEMPTION/REPURCHASE

The Gap-Index-Analysis suggest that the year 1998-99 being an outlier or abnormal (as reported earlier also). The index shows some difference but from 1999-00 onwards a steady growth is observed up to 2003-04 with a peak of 81% Gap-Index.

The Gap in redemption also started receding after 2003-04 and touched a point of 54% during 2009-10.

It may be projected that the redemption in private and public sector mutual funds may show quite closeness after 2009-10.

To measure the relation between Gap-index of mobilization of fund and redemption/repurchase a high degree of co-efficient of correlation of the order of 0.92 is found to be significant at 1% level of significance.

The analysis suggests that there is a strong evidence of relationship between the pattern of the Gap movement between mobilization of funds and Redemption/Repurchase of public and private sector mutual funds.
8.1.7 CORRELATION ANALYSIS

8.1.7.1 UNIT TRUST OF INDIA

➢ The correlation analysis in respect of mobilization of funds and redemption/repurchase suggest the significant relationship between both the sub-segments, at 1% level of significance (P<.01, t=22.19), with correlation coefficient .99.

➢ Absence of inter-dependence is found between mobilization of funds and cumulative net assets position, co-efficient of correlation (r), 0.29.

➢ In unit trust of India, it is showing a good relationship with the sub-segment, mobilization of funds and net inflow/outflow segment, unit trust at (p<.05, t=2.78), with 0.66 correlation coefficient (r).

➢ Redemption/Repurchase and Net Assets position statistically reflecting non-significant relationship between both the sub-segments, the correlation-coefficient (r) calculated to be 0.28.

➢ Redemption/Repurchase and Net-Inflow/Outflow are proving a vital relationship with the analysis on study-period, at (p<.05, t=2.64)

➢ The analysis on significance of relation between Cumulative Net Assets position and Net-Inflow/Outflow reveals that there is non-significant relationship between these variables, with a nearly poor correlation-coefficient (0.28).

8.1.7.2 OTHER PUBLIC SECTOR

➢ In this primary segment of the present research, the two sub-segments viz, mobilization of funds and redemption/Repurchase are showing a very dominant and significant relationship with each other at (p<.01, t=22.19) (correlation-coefficient (r) 0.99, coinciding the results with that in case of unit trust of India.

➢ A significance of relationship is also confirmed with mobilization of funds and cumulative net assets position of this primary segment with (p<.01, t=9.62) coefficient of correlation(r) 0.95.

➢ The unique behavior of data is noticed, compared to unit trust of India, between mobilization of funds and net Inflow/Outflow in the public sector (p<.01, t=4.070 ,coefficient of correlation (r) 0.79.
A very good relationship has been observed with the similar analysis between Redemption/Repurchase and cumulative net assets position at (p<.01, t=9.62). This phenomenon is coinciding with the relationship of mobilization of funds and cumulative net assets position.

Relationship between Redemption/Repurchase and net-Inflow/Outflow is reflecting the coinciding behaviour of relationship same as it have been observed with mobilization of funds and net-Inflow/Outflow of the same segment, with (p<.01, t=4.07) coefficient of correlation(r), 0.79.

The analysis have suggested a high degree of correlation-coefficient (r=0.91) between cumulative net assets position and net-Inflow/Outflow with (p<.01, t=6.94).

8.1.7.3PRIVATE SECTOR

Moving on the same path as have been observed in the case of previous correlation discussions, the mobilization of funds and Redemption/Repurchase are having a very high degree of correlation-coefficient(r=0.99). The analysis is also depicting a great significance between both the variables (p<.01, t=22.19).

Mobilization of funds and cumulative net assets position are showing a vital co-movement with a high degree of coefficient of correlation (r=0.93) and as per calculation (p<.01, t=8.00).

Net-Inflow/Outflow and mobilization of funds are revealing lack of dominant/significant relationship, and a very low degree of coefficient of correlation (r=0.20).

The Redemption/Repurchase and cumulative net assets position are throwing an impression of mutual dependence on each other as calculated (p<.01, t=8.00), with a high degree of coefficient of correlation (r=0.93).

There is no significant relationship between Redemption/Repurchase and net-Inflow/Outflow, as the analysis is suggesting, with a coefficient of correlation (r=0.19).

In private sector there is also non-significant relationship between cumulative net assets position and net-Inflow/Outflow, although a moderate degree of correlation (r) is being observed between the two as 0.42.
8.1.7.4 PUBLIC SECTOR

- In this sector the two sub-segments namely, mobilization of funds and Redemption/Repurchase have indicated a very significant relationship (p<.01, t=22.19) with an extremely high degree of coefficient of correlation (r=0.99).
- The mobilization of funds and cumulative net assets of this sector are suggesting to be significant with a high degree of coefficient of correlation (r=0.84) and with the testing (p<.01, t=4.90).
- The mobilization of funds and net-Inflow/Outflow are also showing a significant relationship with each other (p<.01, t=3.82). With a high degree of coefficient of correlation (r=0.77).
- The Redemption/Repurchase and Cumulative Net Assets position is also reflecting the same phenomenon as observed between mobilization of funds and cumulative net assets position, with a high degree of coefficient of correlation (r=0.84) (p<0.01, t=4.90).
- The Redemption/Repurchase and Net-Inflow/Outflow are an impression of having a good relationship with each other (p<.01, t=3.70), with a high degree category of coefficient of correlation (r=0.76).

Cumulative net assets position and Net-Inflow/Outflow are also showing their significance to the each other (p<.01, t=3.38) and having a 0.73 correlation-coefficient (r).

8.1.7.5 THE MUTUAL FUNDS INDUSTRY OF INDIA

- The Mutual Funds industry is showing an extremely well relationship between Mobilization of Funds and Redemption/Repurchase (p<.01, t=22.19), with a very degree of coefficient of correlation (r=0.99).
- The Mobilization of Funds and Redemption/Repurchase, if analyzed with Cumulative Net Assets Position, separately denotes a common result indicating a very significant bonding in movement of their observations (p<.01, t=9.62), with a very high degree of coefficient of correlation (r=0.95).
- The interesting scenario represented as coinciding of relationship between Mobilization of Funds and Net-Inflow/Outflow and also between
Redemption/Repurchase and Net-Inflow/Outflow is showing their significance with each other, in both the analyses, with common results (p<.01, t=4.07).

- The Cumulative Net Assets Position and Net-Inflow/Outflow are suggesting a significant pattern in the relationship between these two (p<.01, t=6.94).

### 8.1.8 MISCELLANEOUS

- During study period, it is observed that the mutual funds industry of India is growing with all its other primary segments, except few sub-segments.
- The year 2008-09 have been crucial with some inconsistency for almost all of the sub-segments, this unusual behaviour may be attributed to the international liquidity crunch, prevailing at that time.
- Private sector has shown a comparatively more consistency during the study period, with the maximum inflows of funds annually.
- During the period of liquidity crunch in the global market consistency is lying more with that of public sector mutual funds.
- Private sector has occupied a slight edge over the public sector in the form of growth rates.
- The very surprising fact which comes out of the data collected is in the year 1998-99 i.e., beginning period of study, the public sector is having 65% of the total funds mobilized in the study compared to 35% occupied by the private sector.
- The scenario above discussed have been totally reversed in the tail end of the study period, private sector occupied 77% of funds mobilized compared to 23% by public sector. The impact may be due to a large number of entrants in the private sector than that of public sector.
- A unique behavior is observes in significance of relationship between mobilization of funds in unit trust of India and Cumulative Net Assets position as well as between Redemption/Repurchase and Cumulative Net Assets position of Unit Trust of India.