Simulation exercise

Additional resources are required to meet the increased expenditure on underfunded sectors, namely, urban development, roads and bridges and environment with the constraint that fiscal deficit as a percentage of GSDP would remain at the 1996-97 level during the reform period.

$$D_t = (-.0252 * GSDP_t)$$ i.e. -2.52% of GSDP of tth year $(t = 1, 2, ... 5)$

Where D_t is fiscal deficit in the tth year

$$X_t = (A_t + B_t + D_t) - (E_t + F_t)$$

Where

X_t is additional resource mobilisation under reform agenda in the tth year

$GSDP_t$ is Gross State Domestic Product in the tth year

Further -
$GSDP_t = 1.1615 * GSDP_{(t-1)}$

A_t is revenue receipts in the tth year

Further -
$A_0 = T_0 + N_0 + G_0$
$A_t = 1.1553 * T_{(t-1)} + 1.1343 * N_{(t-1)} + R_4 * GSDP_t$
$R_4 = (G_{(96-97)} + G_{(95-96)} + G_{(94-95)}) / (GSDP_{(96-97)} + GSDP_{(95-96)} + GSDP_{(94-95)})$

where T_0 is tax revenue of the base year i.e. 96–97
N_0 is non-tax revenue of the base year i.e. 96–97
G_0 is receipts from grants-in-aid of the base year i.e. 96–97

T_t is tax revenue in the tth year
N_t is non-tax revenue in the tth year
G_t is receipts from grants-in-aid in the tth year

B_t is recovery of loans in the tth year

Further -
$B_t = R_3 * GSDP_t$
$R_3 = (B_{(96-97)} + B_{(95-96)} + B_{(94-95)}) / (GSDP_{(96-97)} + GSDP_{(95-96)} + GSDP_{(94-95)})$

E_t is capital expenditure in the tth year
Further -
$E_0 = U_0 + O_0$
$E_t = R_2 * GSDP_t + 1.1323 * O_{(t-1)}$
$R_2 = (r_0 + u_{(94-95)}) * 2 / GSDP_0$

where U_0 is capital expenditure on urban development and roads & bridges of the base year i.e. 96–97

   O_0 is other capital expenditure of the base year i.e. 96–97

   r_0 is capital expenditure on roads & bridges of the base year i.e. 96–97

   $u_{(95-96)}$ is capital expenditure on urban development in the year 95–96

F_t is revenue expenditure in the tth year

Further -

$F_0 = W_0 + U_0 + O_0$

$F_t = 1.15 * W_{(t-1)} + 1.1916 * O_{(t-1)} + R_1 * GSDP_t + P_t + 0.005 * GSDP_t$

$R_1 = U_0 * 2 / GSDP_0$

where W_0 is revenue expenditure on wages and salaries of the base year i.e. 96–97

   U_0 is revenue expenditure on urban development and roads & bridges of the base year i.e. 96–97

   O_0 is other revenue expenditure of the base year i.e. 96–97

   P_t is estimated pensions

   W_t is revenue expenditure on wages and salaries in the tth year

   U_t is revenue expenditure on urban development & roads in the tth year

   O_t is other revenue expenditure in the tth year

$$X_t = G_t + H_t + I_t + J_t \qquad (t = 1, 2, ... 5)$$

It is proposed that this additional resource mobilisation is through increased receipts from the following -

sales tax
stamps & registration
tax on vehicles
non-tax revenue

$$G_t = X_t * G_0 / X_0$$
$$H_t = X_t * H_0 / X_0$$
$$I_t = X_t * I_0 / X_0$$
$$J_t = X_t * J_0 / X_0$$

$$X_0 = (G_0 + H_0 + I_0 + J_0)$$

Where

   G_t is additional revenue from sales tax in the tth year

   H_t is additional revenue from stamps and registration in the tth year

   I_t is additional revenue from tax on vehicles in the tth year

   J_t is additional non-tax revenue in the tth year

   G_0 is receipts from sales tax in the base year i.e. 96–97

   H_0 is receipts from stamps and registration in the base year i.e. 96–97

   I_0 is receipts from tax on vehicles in the base year i.e. 96–97

   J_0 is non-tax revenue in the base year i.e. 96–97