$$\begin{array}{ccc}
& & \pi_1(T, \tilde{x}_0) \\
& \overset{\tilde{f}_*}{\nearrow} & \downarrow p_* \\
\pi_1(Y, y_0) & \underset{f_*}{\longrightarrow} & \pi_1(X, x_0)
\end{array}$$