

$$\begin{array}{ccc}
 V_y \times \{0\} & \xrightarrow{\tilde{f}|_{V_y \times \{0\}}} & T \\
 \downarrow & \nearrow \tilde{F}_{y,1} & \downarrow p \\
 V_y \times [t_0, t_1] & \xrightarrow{F|_{V_y \times [t_0, t_1]}} & X
 \end{array}$$