

$$\Pi(Y_i, A) \longrightarrow \Pi(Y_i, B) \longrightarrow \Pi G(Y_i) \longrightarrow 0$$

$$\begin{array}{ccc} \downarrow \Pi(f_i, A) & \downarrow \Pi(f_i, B) & \downarrow \Pi G(f_i) \end{array}$$

$$\Pi(X_i, A) \longrightarrow \Pi(X_i, B) \longrightarrow \Pi G(X_i) \longrightarrow 0$$