

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

$$\downarrow \Pi(f_i, A)$$

$$\downarrow \Pi(f_i, B)$$

$$\downarrow \Pi G(f_i)$$

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