

$\rightarrow$  Sejam  $X$  e  $Y$  v.a. com densidades  $f_{XY}$   
 $(\Rightarrow X$  e  $Y$  são vbs contínuas)

$$Y = \begin{bmatrix} Y_1 \\ \vdots \\ Y_n \end{bmatrix} = \begin{bmatrix} h_1(X_1, \dots, X_n) \\ \vdots \\ h_n(X_1, \dots, X_n) \end{bmatrix} = h \begin{bmatrix} X_1 \\ \vdots \\ X_n \end{bmatrix} \quad h \text{ bijetiva}$$

$$J = Jh \Rightarrow \det(J) \neq 0$$

$$J \cdot \frac{\partial Y_i}{\partial X_j} = \frac{\partial h_i}{\partial X_j} \text{ contínua } \forall i, j$$

$$\Rightarrow f_{X_1, \dots, X_n}(y_1, \dots, y_n) = f_{(X_1, \dots, X_n)} \left( \frac{h^{-1}(y_1, \dots, y_n)}{|\det J|} \right)$$