Let $\omega = \frac{i}{2}\sum h_{\alpha\bar\beta}\, dz_\alpha \wedge d\bar z_\beta$ be the local Kähler form on $\mathcal{U}$. ((1,1)-form of Kähler metric

$z_i = 0 \Leftrightarrow z = 0$.

$$\pi^*\omega = \frac{i}{2}\sum \pi^* h_{\alpha\bar\beta}\ \pi^* dz_\alpha \wedge \pi^* d\bar z_\beta$$

$\Rightarrow \pi^* dz_\alpha = d\,\pi^* z_\alpha = d(z(i)_\alpha z_i)\quad \pi^* d\bar z_\beta = d\,\overline{z(i)_\beta z_i}$

$\pi^* h_{\alpha\beta}(z, l) = h_{\alpha\beta}(z)$.

Specially, at $E = \pi^{-1}(x)$, $z = 0$, $z(i)_\alpha = \dfrac{l_\alpha}{l_i}$, $z(i)_\beta = \dfrac{l_\beta}{l_i}$.

$(h_{\alpha\bar\beta}(0))$ is positive definite hermitian matrix.

$$\tilde{\mathcal{U}}_i \xrightarrow{\ \pi\ } \pi(\tilde{\mathcal{U}}_i)$$

$$(z(i)_1, z(i)_2, \cdots z(i)_i \cdots z(i)_n) \longmapsto (z(i)_i \cdot z(i)_1,\ z(i)_i \cdot z(i)_2, \cdots z(i)_i,\ z(i)_i \cdot z(i)_{i+1}, \cdots z(i)_i\, z(i)_n)$$

$$\Rightarrow \pi_* = \begin{array}{c} \\ \left(\begin{array}{cccccccccc}
z(i)_i & 0 & 0 & \cdots & z(i)_1 & 0 & & & & \\
0 & z(i)_i & 0 & \cdots & z(i)_2 & 0 & & & & \\
0 & 0 & z(i)_i & \cdots & z(i)_3 & 0 & & 0 & & \\
\vdots & \vdots & \vdots & \ddots & \vdots & & & & & \\
0 & 0 & 0 & \cdots & 1 & 0 & \cdots & & & \\
0 & 0 & 0 & \cdots & z(i)_{i+1} & z(i)_i & 0 & \cdots & \cdots & 0 \\
0 & 0 & 0 & & z(i)_{i+2} & 0 & z(i)_i & 0 & & 0 \\
\vdots & & & & 0 & 0 & 0 & \ddots & & \vdots \\
 & & & & \vdots & \vdots & \vdots & 0 & \ddots & 0 \\
0 & 0 & 0 & & z(i)_n & 0 & 0 & \cdots & 0 & z(i)_i
\end{array}\right)\end{array}
\begin{pmatrix} 0 \\ \vdots \\ 1 \\ 0 \\ \vdots \\ 0 \end{pmatrix} j$$

$\Rightarrow \pi_*\left(\dfrac{\partial}{\partial z(i)_1}\right) = z(i)_i \dfrac{\partial}{\partial z_1}$ $\qquad \pi_*\left(\dfrac{\partial}{\partial z(i)_i}\right) = z(i)_1 \dfrac{\partial}{\partial z_1} + z(i)_2 \dfrac{\partial}{\partial z_2} + \cdots + \dfrac{\partial}{\partial z_i} + \cdots + z(i)_n \dfrac{\partial}{\partial z_n}$

$\vdots$

$\pi_*\left(\dfrac{\partial}{\partial z(i)_j}\right) = z(i)_i \dfrac{\partial}{\partial z_j}$ $\qquad i > j$

$\pi_*\left(\dfrac{\partial}{\partial z(i)_j}\right) = z(i)_i \dfrac{\partial}{\partial z_j}$ $\qquad i < j$.