We study the dynamic traction behavior within the cohesive zone during the propagation of earthquake ruptures adopting rateand state-dependent constitutive relations. The resulting slipweakening curve displays an equivalent slip-weakening distance (D0eq), which is different from the parameter L controlling the state variable evolution. The adopted constitutive parameters (a, b, L) control the slip-weakening behavior and the absorbed fracture energy. The dimension of the nucleation patch scales with L and not with D0eq. We propose a scaling relation between these two lengthscale parameters which prescribes that D0 eq/L 15.