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Robin Baidya* (rbaidya1@gsu.edu), Department of Mathematics and Statistics, Georgia State University, Atlanta, GA 30303. *Capacities and cancellation*. Preliminary report.

Let R be a commutative Noetherian ring, and let M and N be finitely generated R -modules. We give a lower bound on the global surjective (respectively, splitting) capacity of M with respect to N over R in terms of local surjective (respectively, splitting) capacities and dimensions of prime ideals in $j\text{-Spec}(R)$. In the case that M is projective and N is R , this result fully recovers Serre's Splitting Theorem from algebraic K -theory. In the case that R is a hereditary ring, we can also provide conditions equivalent to having a given global surjective, splitting, or injective capacity. Finally, we obtain an analogue of Bass's Cancellation Theorem that replaces R with a homothetic R -module. All of these results generalize recent work by De Stefani, Polstra, and Yao. (Received August 28, 2017)