1010-13-64   **Scott T. Chapman*** (`schapman@trinity.edu`), Trinity University, Department of Mathematics, One Trinity Place, San Antonio, TX 78212-7200, **Paul Baginski**, Department of Mathematics, University of California, Berkeley, 970 Evans Hall #3840, Berkeley, CA 94720-3840, **Matthew T. Holden**, Department of Mathematics, University of Chicago, 5734 S. University Avenue, Chicago, IL 60637, and **Terri A. Moore**, Department of Mathematics, University of Nebraska at Lincoln, Avery Hall, P.O. Box 880130, Lincoln, NE 68588-0130. *Asymptotic Elasticity in Atomic Monoids.*

Let M be a commutative atomic monoid (i.e. every nonzero nonunit of M can be factored as a product of irreducible elements). Let $\rho(x)$ denote the elasticity of $x \in M$, $\mathcal{R}(M) = \{\rho(x) \mid x \in M\}$ the set of elasticities of elements in M, and $\rho(M) = \sup \mathcal{R}(M)$ the elasticity of M. Define $\bar{\rho}(x) = \lim_{n \to \infty} \rho(x^n)$ to be the *asymptotic elasticity* of x. We determine some basic properties of $\bar{\rho}$ and discuss the set of values it attains. We highlight this discussion using classical examples from numerical semigroups, block monoids and rings of integer-valued polynomials. (Received August 18, 2005)