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Natalia E. Romero*, Physics Department, 777 Glades Rd., Boca Raton, FL 33432, and **Qianli D.Y. Ma, Larry S. Liebovitch, T. Brown Clifford** and **Ch. Ivanov Plamen**. *Correlated walks down the Babylonian markets.*

To investigate the evolution of market dynamics in different stages of historical development, we analyze commodity prices from two distinct periods – ancient Babylon, and medieval and early modern England. We find that the first digit distributions of both Babylon and England commodity prices follow Benford’s law, indicating that the data represent empirical observations typically arising from a free market. Further, we find that the normalized prices of both Babylon and England agricultural commodities are characterized by stretched exponential distributions, and exhibit persistent correlations of a power-law type over long periods of up to several centuries, in contrast to contemporary markets. Our findings suggest that similar market interactions may underlie the dynamics of ancient agricultural commodity prices, and that these interactions may remain stable across centuries in two distinct historical periods. (Received February 16, 2010)