

## Mathematics or Mismanagement: The Crash of 2008

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(Minor changes October 2010.)

I read with interest the letters of David J. Hand and David Steinsaltz in Mathematics Today regarding 'Mathematics or Mismanagement: The Crash of 2008' on pp.238-239 of the October 2009 issue of *Mathematics Today*.

What can we do about the issues they raised? What can we do as mathematicians? What can we do as human beings?

As mathematicians we should require that the financial indicators should be accurate and stable. In my studies of formulae of price indices, I demonstrate these problems and propose a formula with good accuracy and stability characteristics for measuring prices [1, 2].

I have not studied the accuracy and stability characteristics of the index formulae for stock exchanges - perhaps improvements need to be made to give it better accuracy and stability characteristics. Perhaps improvements need to be made regarding how we present the price of a single share. An average, weighted by actual sales over a suitable period (day/week/month/year), will be much more stable than closing prices, as unrealistic prices would typically be down-weighted by low sales.

As human beings, we should encourage honesty and discourage fraud - a difficult matter as leaders too are human. Presenting the value of money in terms of the average wage expresses in human terms the value of money and makes clear that when money is stolen we are in effect damaging or destroying the time of others. Also relevant is a short note of mine on this topic, which includes a little discussion of "Halacha" or Jewish law on this matter [3].

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1. Raphael B. Yehezkael (revised December 2009) *Computational analysis of index formula inaccuracies* (available at <http://cc.jct.ac.il/~rafi/inaccura.pdf> ).

2. Raphael B. Yehezkael (revised December 2009) *Mathematical analysis of index formula inaccuracies* (available at <http://cc.jct.ac.il/~rafi/analytic.pdf> ).

3. Raphael B. Yehezkael (revised October 2010) *Encouraging Honesty - Discouraging Fraud* (available at <http://homedir.jct.ac.il/~rafi/enc-dis.pdf> ).

**Raphael B. Yehezkael**