

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ECONOMICS
50 MEMORIAL DRIVE
CAMBRIDGE, MASSACHUSETTS 02142-1347

15 July 2008

Professor Barry Nalebuff
Yale School of Management
135 Prospect Street
Box 208200
New Haven, CT 08520-8200

Dear Barry,

I am a 1738 Laplacian named Dan Bernoulli. My $U(\text{wealth})$ function for stochastic choice is $\log W$.

- A. I will be investing for retirement for two periods.
- B. Or for 20 periods for 20^{20} periods.

In my secluded universe, only two securities are available for me to invest my retirement moneys into: each \$1 in A brings me with *certainty* (!) \$1; but each \$1 in B brings me at even odds \$4 or $\frac{1}{4}$.

Ayres-Nalebuff seem to tell me: Dan, take a zero-interest margin loan and purchase a lot of B with each of your ante dollars. That outcome will "stochastically dominate" just buying B.

When I make my optimality calculation, I pursue a contrary advice (whether for $N = 2, 20,$ or 20^{20} periods). Instead of Ayres-Nalebuff's better diversification, I *always* de-leverage my B purchases: half of my ante goes always into B and half goes always into A!

Can all three of us be without error? Am I the patsy? Please, help, help!

Best regards,



Paul A. Samuelson

PAS/jmm