

## **Editorial: Trying to fathom 13-figure spending**

February 13, 2009

A million here and a million there, the saying used to go, and pretty soon you're talking real money.

Today, the idea of million as a supersized amount seems quaint. And billion? Out of date, too. As the nation evaluates President Obama's economic stimulus package and the financial system bailout, the operative sum is mind-blowingly big, requiring a pause simply to compute the zeros involved: 1 trillion.

That's 1,000,000,000,000. Or, 10 to the 12th power; a thousand billion; a million million. Times three, since the combined cost of both programs is estimated at more than \$3 trillion.

The mathematically gifted minority can compute the monster charge the nation is poised to put on its Visa card. It's difficult for everyone else to truly grasp the magnitude of the dollars involved. That's a problem when we all share responsibility for the bill.

A number of attempts have been made recently to help people wrap their heads around what a trillion means. National Public Radio offered this perspective: \$1 trillion is enough to buy each person in the United States 1,000 boxes of Girl Scout Thin Mint cookies. Time magazine estimates that a \$1 trillion stack of dollar bills would cover 25 percent of the distance between Earth and the moon. A different but timely analysis? A trillion seconds clock in close to 32,000 years.

These calculations are helpful, but limited. They tell you a trillion is a huge number but don't provide critical perspective. In the ongoing national discussion over the stimulus and the bailout, it's important to look at how large \$1 trillion looms in the economic landscape. It may come as a surprise to realize that it's not an unusually big number in this context. The annual sum spent each year on government programs or the value of the nation's economic output or the market capitalization of companies that trade on a leading stock exchange are all measured in trillions these days.

"You have to compare it to other large amounts in our economy," said Doug Arnold, the University of Minnesota's McKnight Presidential Professor of Mathematics and the president of the Society for Industrial and Applied

Mathematics.

Arnold offered up these numbers as food for thought:

- The annual U.S. gross domestic product (GDP) is around \$14.3 trillion. A trillion is 1/14 of that, or 7 percent.
- The annual federal budget was around \$3 trillion in 2008; tax receipts came to \$2.5 trillion.
- The market capitalization of companies on the New York Stock Exchange (how many shares multiplied by share prices) was at \$27 trillion about a year ago.
- The combined annual cost of Medicare, Medicaid and Social Security stands at close to \$1.3 trillion.
- The nation spends about \$1.2 trillion every two years on defense.
- Direct expenditures for the Iraq war are estimated at \$800 billion; some believe that the total amount spent is double that.
- Total U.S. public debt now stands at \$10.7 trillion, the latest figures show. That's 75 percent of the GDP; for comparison, Italy's debt in 2008 was 104 percent of its GDP and Norway's was 90 percent.

The point is that the nation's spending is already measured in the trillions. And that helps explain why, when an economy as big as the United States needs fixing, many economists say the amount needed to stimulate the economy through spending or tax cuts necessarily needs to be huge. It is, however, no guarantee that it will work. "Mathematical thinking helps bring clarity, but that is an economics question," said Arnold. "The hope is the best economic minds are the people giving advice to the administration. And that those are the ones he's listening to."