

## "Can You Do Division? Divide A Loaf By A Knife – What's The Answer To That?"

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In *People v. Collins*, 68 Cal. 2d 319 (1968), the California Supreme Court wrote that it could "discern no inherent incompatibility between the disciplines of law and mathematics". While the Supreme Court may be correct about the relationship between mathematics and law, I'm not so sure about the relationship of lawyers to mathematics.

Every quarter, the California <u>Department of Financial Institutions</u> distributes a <u>quarterly report</u> presenting summary statistics for banks, industrial banks, credit unions, offices of foreign banks and trust companies with a one-year comparison. The report provides some interesting information. For example, the Department's most recent report discloses that the number of state chartered banks has declined by 14 from September 30, 2009. However, assets increased from \$238.3 billion to \$246.0 billion, or 3.2% over the same period.

I am puzzled, however, by the Department's report on bank earnings. According to the Department, state chartered banks reported for the first nine months of 2010 net income of of \$428.3 million, as compared to a net loss of \$2.0 billion in the first nine months of 2009. I don't doubt the numbers, but I do question the Department's spreadsheet that describes this as a "–121%" change. I understand how the percentage was calculated (i.e., by dividing \$2.4283 billion by \$2.0 billion). However, the percentage doesn't make sense to me. A net loss can only decline to zero. After that, it's not a net loss any more.

Although it made intuitive sense to me that it is meaningless to report a percentage change in two number with opposite values, I had my doubts. Thus, I was relieved to see that the *Wall Street Journal* supports this approach in its <u>explanation</u> of its Digest of Earnings:

**Net Income:** Income after a company's taxes and all other expenses have been paid. Net Income is listed in thousands of U.S. dollars in the digest, unless otherwise indicated. The detailed earnings report presents whole U.S. dollar amounts, unless otherwise indicated.

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Net Income percent change is the change from the same period from a year ago. Percent change is not provided if either the latest period or the year-ago period contains a net loss. On the digest page, if a company posts a profit in the latest period against a loss in the year-ago period, the percent change is represented as a "P". Similarly, if a company posts a loss in the latest period against a profit in the year-ago period, the percent change is represented as a "L".

The caption for today's post is a quotation from Lewis Carroll's <u>Through The Looking-Glass</u>. The answer to the White Queen's question is, according to the Red Queen, "Bread-and-butter, of course". Charles Lutwidge Dodgson (aka Lewis Caroll) undoubtedly knew more about mathematics than the average lawyer because he was also a mathematician who wrote such books as <u>An Elementary Treatise on Determinants</u>, <u>With Their Application to Simultaneous Linear Equations and Algebraic Equations</u>.

So, when you are reviewing Management's Discussion and Analysis or an earnings release, remember the White and Red Queens and eschew the temptation to divide a negative value by a positive value or vice versa.

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