



Accounting for confidence

Professor Michael Mainelli FCCA takes an alternative view of audit, arguing that accountants should learn from the world of science about measurement



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Beginning a decade ago with the embarrassing failures of large firms boasting successful-looking financial statements, and continuing into the present with questions being asked about why problems at our large financial institutions weren't spotted earlier, the time has come to rethink auditing. And in analysing what might be done, a little science couldn't hurt.

When people move from science to accounting, they are stunned to find that auditors do not practise measurement science. Accuracy and precision are at the heart of scientific measurement. Accuracy specifies how closely a stated value is to the actual value. Precision specifies how likely repeated measurements under unchanged conditions will produce the same results.

A measurement system can be accurate but not precise, precise but not accurate, neither, or both. If it contains a systematic error, then

whole population having the same intention on the survey date might be 37% to 43%. From the same data the pollster might also provide a 95% confidence interval, which might be 34% to 46%.

What might a world of auditors using interval estimation with confidence levels look like? Well, the end result would be the presentation of major entries for the profit and loss, balance sheet and cashflow statements as distributions. For example, a profit figure might be stated as £83,120,000 ± £1,500,000. On a balance sheet, the value of freehold land might be stated as £150,000,000 ± £45,000,000, recognising the illiquidity of property holdings. Next to each value would be confirmation of the confidence level – for example, 95% confidence that another audit would produce a value within that range. Finally, there would be a picture, a histogram of the range, so people could see its shape.

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increasing the sample size by measuring more often will make it more precise but not more accurate.

Scientists view measurement as a process that produces a range, and they express those ranges using intervals. There is a big difference between point estimation and interval estimation. The former is about a single value, the latter is about a range. Auditors provide a point estimate, scientists an interval.

Without digressing into the statistical detail of credible intervals and confidence intervals, we can say scientists express most measurements as X , with an interval. In a simple example assuming a normal distribution, you might be said to weigh 78kg ± 0.65kg. If +0.65 or - 0.65 are one standard deviation from the mean, then 68% of the times you measure your weight the scale will show a value between 77.35kg and 78.65kg. There are ways of expressing more complex distributions, but the key point is that scientists are trying to express the characteristics of a distribution, not a single point.

Social scientists also use confidence levels to report interval estimates. In a poll of voting intentions, for example, pollsters might express the result as 40% of respondents intend to vote for a certain party. A 90% confidence interval for the proportion in the

CONFIDENCE ACCOUNTING

For want of a term that distinguishes the use of intervals and confidence levels from the use of points or discrete values, let's use 'confidence accounting', a term used by several proponents of the shift to interval estimates such as the Long Finance Initiative. Confidence accounting simplifies discussions of which number to pick (the lower of cost or value, for example), because the range itself is expressed clearly. There are numerous examples of difficult single numbers in audits – think of assets in exploration, or environmental liabilities. For users, presentation would be easier to understand, with footnotes simplified or made redundant. Confidence accounting goes to the heart of the mark-to-market debate. Different instruments have different values for different entities. A hedge fund that has been caught out on a long-term instrument in the short term is different from a pension fund that can hold the instrument to maturity. Presenting a range of potential future valuations, informed by historic prices, is surely better than a marked-to-the-market price at a particular valuation date. There is greater value in an audit that confirms a range of market values applicable to a specific business.

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Some organisations will want to provide extremely wide ranges in their distributions. Where that reflects reality, so be it. In other cases, managers will hope that a wide range will remove some of the responsibility of

meeting a target. But consistently silly future estimates recorded in the financial accounts are there for investors to judge. Markets will price the value of tighter distribution ranges, and auditors will be able to sell the value of greater work to provide better disclosure.

Confidence accounting goes to the heart of the mark-to-market debate

Audit buyers have limited information on which to base choices, so they choose what others have chosen – an algorithm that over time spirals in on a few brands not competing on measured quality. Major audit firms assert quality, bragging that compliance has grown in burden and cost. Dispiritingly, an outsider cannot evaluate quality by analysing published audits. Under confidence accounting, external assessors could evaluate performance. Any major firm will have a number of client failures over a period, say the past decade, but are these within the bounds of their audited financial statements? If so, perhaps a good, or even too prudent, auditor. If not, perhaps a sloppy, or statistically unusual, auditor.

WHAT WILL AUNT AGATHA MAKE OF IT?

To a traditional point estimator, confidence accounting looks complicated. Many claim that the mythical Aunt Agatha will not understand. Yes, the profession will need to work on specifying standard measures and representations, but auditors should worry more about their ignorance of scientific measurement than about Aunt Agatha.

Others will say these changes may lead to managers 'gaming' a new system. Perhaps, but managers are already gaming a system that provides too many get-outs based on the unfairness of reporting on single numbers.

Others will invoke the ultimate clincher for the status quo: confidence accounting is against vested interests, doesn't solve everything and might reduce the unmeasured quality of present practice. Yet reform will come, and better that it relies on science rather than more compliance.

Work is needed: a commitment by the auditing establishment to reform, a restructuring of audit skills, and better communication to users of financial information. Auditors are taught that good financial information is accurate, complete, relevant, reliable and timely. Confidence accounting reflects the financial situation more accurately, provides more complete information, is more relevant to many users, allows reliability to be checked and takes better account of timing issues.

