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Demystifying the GMAT: Scale Scores

By Lawrence M. Rudner

GMAT Quantitative and Verbal scores range from 11 to 51, GMAT Total scores from 200 to 800, and Analytic Writing Assessment scores from 0 to 6.0. Where did these scales come from? What do they mean? How do the scales relate to percentiles? How do I use these numbers and percentile scores? The answers to these important questions lie in understanding the purposes of these scales.

The GMAT scale scores represent the same ability level over time. Thus, a Quant score of 43 in 2002 represents the exact same level of ability as a Quant score of 43 does in 2011. This scale consistency is a critical attribute for any test that has multiple forms, or versions, because without it, scores across forms cannot be compared. As a computer adaptive test, the GMAT exam provides every test taker a different set of questions. GMAC then has to map responses from all these different forms to the same scale. The mapping takes into account both the difficulty of each question asked and whether the test taker answered it correctly.

But, how did GMAC pick the actual numbers for the GMAT scales? In the physical sciences, there is often a meaningful zero, so it makes sense to include zero in a scale of measurement. But in mental measurement, the zero point is difficult—if not impossible—to define, so zero is rarely used in educational and psychological measurement. Some faculty members might disagree, but there's no definition of zero ability to succeed in management education. Therefore, it makes no sense to have a zero scaled score. The 0 in the AWA assessment is not a score—it indicates that the test taker skipped the essay section.

Scales must also be appropriately precise. We don't report the outdoor temperature to six digits, for example, because that level of precision is rarely needed, and most thermometers are not that accurate.

Finally, each scale is defined to differentiate it from other scales. If the GMAT exam had scores in the 70-100 point range, one might confuse the scores with grades, percent correct, or percentiles.

I suspect that the 200-800 range for the GMAT Total score was originally chosen to be consistent with other admission test measures, and the 11-51 scales to differentiate the Quant and Verbal from the Total score. The AWA, added in the 1990s, has a 0 to 6.0 scale to avoid a false sense of precision.

In addition to the scaled scores, which report ability in absolute terms and are consistent over time, GMAC also provides percentiles, which are based on current norms. Percentiles report ability relative to test takers from the past three years, calculated from a rolling average, and thus can change over time.

In the 1970s, the mean Quantitative and Verbal scores were 30, with 10-point standard deviations, and the mean GMAT Total was 500, with a standard deviation of 100. Since then, the means and standard deviations of the Quant and Total scores have gone up, but those of the Verbal scores have gone down.

What has changed most is the demographics of the GMAT test takers. In 1992, 66 percent of tests were taken by US citizens, with an average Total score of 502; 34 percent were taken by non-US citizens, with an average total score of 480. Today, just 48 percent of tests were taken by US citizens, with an average Total score of 531; 52 percent are taken by non-US citizens, with an average GMAT Total score of 560. In 2006, GMAC moved to a new testing partner, Pearson VUE, which led to major improvements in global access to the test. Since then, non-US test-taker volume has increased substantially, and the best and brightest from around the globe are taking the exam.

With the constantly improving quality of GMAT test takers, the percentiles that correspond to a given score are going down. GMAC uses the most current set of norms when providing additional score reports. Some test takers are disturbed by even a slight drop in the percentile score, even though on a year-to-year basis, the norm tables change only slightly. But the reality is that a few percentile points and a few scale score points do not make a difference.

GMAC provides both scaled scores and percentiles. Together, they give test takers and schools both absolute and relative measures of each test taker's ability.

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