

# Morningstar Quantitative Moat Score Normalization Methodology

## Morningstar Indexes

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## For More Information

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Traditionally, Morningstar’s approach has been to provide analyst-driven, forward-looking, long-term insights alongside quantitative metrics for further understanding of the investment landscape. However, Morningstar has developed a method of combining our quantitative and analyst-driven output, resulting in expanded coverage.

This document describes the process that converts quantitative moat scores which ranges from 0 to 1, into discrete labels: wide, narrow, and none moat ratings, which are used as inputs across several Morningstar indexes.

### Assigning Discrete Labels to Quantitative Moat

Data for all companies that have both an analyst moat (wide, narrow, or none) rating and quantitative moat score are considered while defining cut-off points.

1. The 1<sup>st</sup> percentile quantitative moat score in the group of all wide-moat-rated stocks is defined as Wi1.

**Exhibit 1** 100 Companies in Descending Order of Quantitative Moat Scores

Number	Company ID	Analyst Moat	Quantitative Moat Score	
1	0C0000001	Wide	0.9998	
2	0C0000002	Wide	0.9997	
3	0C0000003	Wide	0.9995	
4	—	—	—	
5	—	—	—	
99	0C0000099	Wide	0.9652	◀ Wi1
<b>100</b>	<b>0C0000100</b>	<b>Wide</b>	<b>0.9648</b>	◀ Bottom 1% by Quantitative Moat Score

Source: Morningstar Indexes. Data as of June 31, 2017.

2. The 99<sup>th</sup> percentile quantitative moat score in the group of all narrow-moat-rated stocks is defined as Na99.
3. The 1<sup>st</sup> percentile quantitative moat score in the group of all narrow-moat-rated stocks is defined as Na1.
4. The 99<sup>th</sup> percentile quantitative moat score in the group of all no-moat rated stocks is defined as No99.

The cut-off points are defined as follows:

1. Wide-narrow cut-off point as the average of  $W_{i1}$  and  $Na_{99}$ .
2. Narrow-none cut-off point as the average of  $Na_1$  and  $No_{99}$ .

For companies where quantitative moat scores are available, the discrete labels are assigned as:

1. Wide for companies with quantitative moat score  $\geq$  wide-narrow cut-off.
2. None for companies with quantitative moat score  $<$  narrow-none cut-off.
3. Narrow for all other cases.