Terminology and Methodology

MONTHLY MOVING TOTAL/AVERAGE: Moving totals/averages are used to smooth out the volatility inherent to monthly data at the product/company level.

MONTHLY MOVING TOTAL (MMT) vs **MONTHLY MOVING AVERAGE (MMA):** There are times when it is desirable to calculate a monthly moving average instead of a total. Averages are used for data that cannot be compounded, such as indexes, percentages, price levels, or interest rates. Totals are used when it makes sense to add the data together, as with units sold or total dollars spent.

3MMT OR 3MMA: A 3-month moving total (3MMT) or average (3MMA) is the total (or average) of the monthly data for the most recent three months. 3-month moving totals (3MMT) or averages (3MMA) illustrate the seasonal changes inherent to the data series.

12MMT: A 12-month moving total (12MMT) or average (12MMA) is the total (or average) of the monthly data for the past 12 months. The 12MMT(A) removes seasonal variation in order to derive the underlying cyclical trend. It is also referred to as the annual total or average.

RATE-OF-CHANGE: A rate-of-change figure is the ratio comparing a data series during a specified time period to the data series during the same time period one year ago. Rates-of-change are expressed in terms of the annual percent change in an **MMT** or **MMA**. Rates-of-change reveal whether activity levels are rising or falling compared to last year. Consecutive rate-of-change illustrates and measures cyclical change and trends.

ITR Economics' three commonly used rates-of-change are the **1/12, 3/12**, and **12/12,** which represent the year-over-year percent change of a single month, **3MMT(A)**, and **12MMT(A)** (respectively).

A rate-of-change above 0 indicates a rise in the data relative to one year prior, while a rate-of-change below 0 indicates decline.

BUSINESS CYCLE: The data trends and rates-of-change identify positions in the business cycle. Those positions are:

Above 0 line: signals above year-ago levels

Below 0 line: signals below year-ago levels
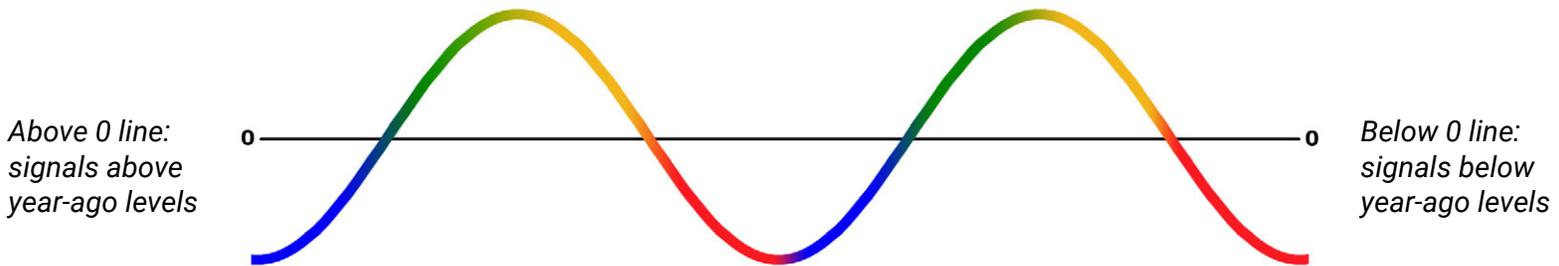
RECOVERY (A):
12/12 is rising below 0 and is either heading toward a low or is in the early stages of recovery. This is the first positive phase of the business cycle.

ACCELERATING GROWTH (B):
12/12 is rising above 0, data trend is accelerating in its ascent, and is above year-ago levels. This is the second positive phase of the business cycle.

SLOWING GROWTH (C):
12/12 is declining but remains above zero; data trend ascent is slowing or has stopped its rise but is still above the year-ago level. This is the first negative phase of the business cycle.

RECESSION (D):
12/12 is declining and is below zero; data trend is below the year-ago level, and the rate of decline is increasing. This is the second and final negative phase of the business cycle.