

## ANALYSIS

## RSM US Middle Market Business Index

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RSM US LLP has joined forces with Moody's Analytics to produce a first-of-its-kind gauge of middle market business health. An important but understudied part of the U.S. economy, the middle market (the real economy) is defined here as companies with annual revenues of \$10 million to \$1 billion. There are close to 200,000 firms in the U.S. that fall into this category, and together they account for about 40 million jobs and one-third of private sector gross receipts.<sup>1</sup>

The significant role that middle market companies play in the U.S. economy makes them important to track on a regular basis. Although geographically diverse and spanning all private industries, the middle market is also predominantly made up of privately held firms for which there are few good sources of timely, public information. A lot of surveys target large and small companies, for example, but very few poll middle market companies and their executives. As a result, their issues and needs are underrepresented in policy and economic discussions.

In order to bridge the information divide, RSM US LLP is systematically polling executives of middle market companies to gain insight into how this part of the economy thinks and behaves. The RSM US Middle Market Business Index is a comprehensive summary statistic for the state of the middle market that we construct from a subset of survey questions. Indexes are then created for industries and Census regions and divisions.

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<sup>1</sup> Statistics of U.S. Businesses, 2012

## Background

Middle market firms are impossible to ignore, given their outsize contribution to the U.S. economy. Yet historically, these companies have been hard to evaluate because of a lack of timely data and lack of agreement on what qualifies as a middle market company. In order to isolate the middle market, companies must be separated into three categories—small, medium and large. However, there is no one metric for comparing company sizes, and limits that define the middle market are not set.

There are very little public data on the middle market, making this part of the economy difficult to study. The most commonly used public data source for the middle market is the Census Bureau's Statistics of U.S. Businesses. Data include the number of establishments, employment, annual payroll, and sales receipts by employment and size of enterprise. However, the data are not very timely, reported only every five years.

Other sources in the private sector are helping to fill in the gap. Revenues at middle market firms have risen faster than those for small and large businesses in recent years, for example.<sup>2</sup> In addition, the vast majority of net new jobs added since 2008 have come from middle market firms.<sup>3</sup>

Building on previous work done in the field, we use an upper limit of \$1 billion and lower limit of \$10 million to define the middle market. To better understand the impact of this enormous economic segment, middle market executives are polled and a summary measure created to provide fresh insight into the middle market's immediate prospects and the U.S. economy as a whole.

## Survey

The survey, which kicked off in the first quarter of 2015, is conducted four times a year, in the first month of each quarter: January, April, July and October. The survey panel consists of 700 middle market executives and is designed to accurately reflect conditions in the middle market.

The data for each quarter are weighted to ensure that they correspond to the U.S. Census Bureau data on the basis of industry representation (see Table 1). Using the census data as a representation of the population of middle market firms, each survey respondent is assigned a

**Table 1: RSM US Middle Market Business Index Industries**

Agriculture, forestry, fishing and hunting	<b>Service-providing:</b>
Mining, quarrying, and oil and gas extraction	Retail
Utilities	Wholesale trade
Construction	Transportation, warehousing, utilities
Manufacturing	Transportation and warehousing
Wholesale trade	Utilities
Retail trade	Information
Transportation and warehousing	Financial activities
Information	Finance and insurance
Finance and insurance	Real estate and leasing
Real estate and rental and leasing	Business and professional
Professional, scientific and technical services	Professional, scientific and technical services
Administrative and support and waste management	Administrative and support and waste mgmt.
Educational services	Education and healthcare
Healthcare and social assistance	Educational services
Arts, entertainment and recreation	Healthcare and social assistance
Accommodation and food services	Leisure and hospitality
Other services except public administration	Accommodation and food services
	Arts, entertainment and recreation
	Other services except public administration
	<b>Goods-producing:</b>
	Construction
	Manufacturing
	Mining, quarrying, and oil and gas extraction

Source: Moody's Analytics

<sup>2</sup> The National Center for the Middle Market

<sup>3</sup> Dun & Bradstreet and Automatic Data Processing Inc.

weight based on the industry that the respondent belongs to so that results are representative of the middle market population. Each respondent is classified into an industry from the North American Industrial Classification System that is used by the Bureau of Labor Statistics.

Companies are classified into the following NAICS private industries: (1) agriculture, forestry, fishing and hunting; (2) mining, quarrying, and oil and gas extraction; (3) utilities; (4) construction; (5) manufacturing; (6) wholesale trade; (7) retail trade; (8) transportation and warehousing; (9) information; (10) finance and insurance; (11) real estate and rental and leasing; (12) professional, scientific and technical services; (13) administrative and support and waste management; (14) educational services; (15) healthcare and social assistance; (16) arts, entertainment, and recreation; (17) accommodation and food services; and (18) other services except public administration. NAICS private industries are aggregated into groupings called supersectors. Each supersector is then placed into either goods-producing or service-providing industries.

In addition to their primary industry, companies are also asked where they currently reside. The answers are used to group companies into Census regions and divisions. There are four Census regions—Northeast, Midwest, South and West, which are divided into two or more divisions. There are nine Census divisions: (1) New England, (2) Middle Atlantic, (3) East North Central, (4) West North Central, (5) South Atlantic, (6) East South Central, (7) West South Central, (8) Mountain, and (9) Pacific (see Table 2).

**Table 2: RSM US Middle Market Business Index Geographies**

<b>Northeast</b>	<b>Midwest</b>	<b>South</b>	<b>West</b>
<b>New England</b>	<b>East North Central</b>	<b>South Atlantic</b>	<b>Mountain</b>
Connecticut	Illinois	Delaware	Arizona
Maine	Indiana	District of Columbia	Colorado
Massachusetts	Michigan	Florida	Idaho
New Hampshire	Ohio	Georgia	Montana
Rhode Island	Wisconsin	Maryland	Nevada
Vermont	<b>West North Central</b>	North Carolina	New Mexico
<b>Middle Atlantic</b>	Iowa	South Carolina	Utah
New Jersey	Kansas	Virginia	Wyoming
New York	Minnesota	West Virginia	<b>Pacific</b>
Pennsylvania	Missouri	<b>East South Central</b>	Alaska
	Nebraska	Alabama	California
	North Dakota	Kentucky	Hawaii
	South Dakota	Mississippi	Oregon
		Tennessee	Washington
		<b>West South Central</b>	
		Arkansas	
		Louisiana	
		Oklahoma	
		Texas	

Source: Moody's Analytics

## Index

The RSM US Middle Market Business Index, or MMBI, is derived from the subset of questions in the survey that ask respondents to report the change in a variety of indicators. Respondents are asked a total of 20 questions patterned after those in other business surveys, such as those from the Institute of Supply Management and National Federation of Independent Businesses.

The 20 questions relate to changes in various measures of their business, such as revenues, profits, capital expenditures, hiring, employee compensation, prices paid, prices received and inventories. There are also questions that pertain to the economy and outlook, as well as to credit availability and borrowing. For 10 of the questions, respondents are asked to report the change from the previous quarter; for the other 10 they are asked to state the likely direction of these same indicators six months ahead.

The responses to each question are reported as diffusion indexes. Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. Participants are asked whether something has changed, and if so, in which direction. Respondents are allowed five choices in their answers: two positive, two negative and no change. The two options for positive and negative responses are treated equally in the calculation. Participant responses of no change do not enter into the calculation.

The questions to construct the index are symmetric, such as whether the respondent expects the economy to be better or worse in the next six months and plans to increase or decrease the number of people working for the firm. Responses are raw data and are never revised (see Table 3). A balance variable or diffusion index is formed for each of the 10 questions in the index. The percent of unfavorable responses is subtracted from the percent of the favorable responses to provide a net percent variable.

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**Table 3: RSM US Middle Market Business Index Questions**

1. What are your expectations regarding the general economy?
2. What are your expectations regarding your organization's gross revenues?
3. How would you describe the level of your most recent quarter net earnings results?
4. What are your expectations regarding your organization's aggregate capital expenditures or investments?
5. What are your expectations regarding your organization's overall hiring levels?
6. How would you describe the current employee compensation level on average?
7. How would you describe current access to credit?
8. What are your expectations regarding your organization's planned borrowing?
9. How would you describe the current general level of prices received?
10. What are your expectations regarding your organization's planned inventory levels?

Source: Moody's Analytics

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The MMBI is a composite index computed as an equal weighted sum of the diffusion indexes for 10 survey questions plus 100 to keep the MMBI from becoming negative. The index is designed to capture both current and future conditions, with five questions on respondents' recent experience and five on their expectations for future activity.

The MMBI, for period  $t$ , can be derived using the following equation:

$$MMBI_t = \frac{Q1 + Q2 + Q3 + Q4 + Q5 + Q6 + Q7 + Q8 + Q9 + Q10}{10} + 100$$

Since the inception of the survey, the underlying methodology and survey questions have not changed. The only change involves how the results are reported. In addition to the comprehensive summary statistic, index values are now calculated for industries and Census regions and divisions. The calculation is the same: The industry and regional MMBIs are derived by netting the negative responses against the positive responses to the 10 survey questions—participant responses of no change do not enter into the calculation.

### Seasonal adjustment

Over the course of a year, respondents' answers to index questions may undergo regularly occurring fluctuations. To the extent that these fluctuations are seasonal events that follow a regular pattern, their influence on the index can be tempered by adjusting for regular seasonal variation.

The impact on seasonality on survey results will be investigated once there are 12 quarters of data. Each question in the index will be seasonally adjusted when stable seasonality is detected. The seasonal adjustment will be based on the Census Bureau's X-12 additive procedure and will utilize a logistic transformation.

For this adjustment the “increase” and “decrease” percentage components of each index question are tested for seasonality separately and adjusted accordingly if such patterns exist. If no seasonality is detected, the component will be left unadjusted.

Data are adjusted using a logistic transformation. The not seasonally adjusted series, expressed in decimal form and referred to as NSA, is transformed using the following equation:

$$X = \log\left(\frac{NSA}{1 - NSA}\right)$$

The seasonal factor is then subtracted from X:

$$AdjX = X - \text{seasonal factor}$$

The result is transformed using the following equation:

$$SA \text{ series} = \frac{\text{exponential}(AdjX)}{1 + \text{exponential}(AdjX)}$$

One advantage of diffusion indexes is that they are easy to interpret. A reading above 100 for the MMBI indicates that the middle market is generally expanding; values from 0 to 100 indicates that it is generally contracting. The distance from 100 is indicative of the strength of the expansion or contraction.

### Information content

One way to determine whether a survey can provide useful information is to look at how well similar surveys have explained or predicted activities in the past. Since the MMBI is constructed using a set of questions that are patterned after those in other widely followed business surveys, there is good reason to believe that the MMBI will continue to prove valuable in explaining and predicting the performance of the middle market economy.

Forecasters and policymakers alike look to surveys such as those from the Institute of Supply Management and National Federation of Independent Business for predictive insight into the parts of the economy that they aim to represent. Often, these are also useful guides to the direction of the economy as a whole, making them valuable for forecasters and policymakers.

The MMBI will fill a gap in coverage of the middle market and enhance our understanding of the middle market. For example, because middle market firms have played such a critical role in the job creation process in recent years, the MMBI employment measures have had a strong relationship to measures of aggregate employment growth and other labor market indicators.

The collective actions of middle market firms have a major impact on the U.S. economy. The economic indicators pioneered by NFIB and ISM indexes are shown to have a strong empirical relationships to important economic measures such as growth in GDP, unemployment and inventory investment. Industry and regional survey detail corroborate or refute the signals on activity such as state and regional employment and surveys such as the Federal Reserve's Beige Book report. For these reasons, the MMBI is a similarly useful indicator of the middle market and economy as a whole.

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Moody's Analytics added the economic forecasting firm Economy.com to its portfolio in 2005. This unit is based in West Chester PA, a suburb of Philadelphia, with offices in London, Prague and Sydney. More information is available at [www.economy.com](http://www.economy.com).

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