Using the Federal Reserve’s Beige Book to track economic activity

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This article provides the public a first look at a new set of indexes constructed from the Chicago Fed’s Beige Book survey, and describes their ability to track economic activity.

The Federal Reserve’s Beige Book is a collection of reports from the 12 Reserve Banks summarizing economic conditions in their respective Districts. Its publication two weeks prior to scheduled meetings of the Federal Open Market Committee serves to complement existing data sources by drawing on anecdotal information collected from each Bank’s regional business contacts. Arguing the Beige Book has little value to the public, some have questioned its relevance as an indicator of the direction of monetary policy. While the publication of the Beige Book was never intended for this purpose, it was intended to provide information on current and future economic activity. The value of the Beige Book in this respect is not entirely clear, as suggested by the mixed results from a small set of studies measuring its information content. Generally, the approach of these studies has been to numerically score the language in the Beige Book and compare the score to another measure of economic activity. In this Chicago Fed Letter, we describe a different approach based on an online survey the Chicago Fed has been conducting in conjunction with the Beige Book for over a year. The survey asks both qualitative and quantitative questions that allow us to measure economic activity in the Seventh District with a set of indexes constructed from survey responses.

We show how our indexes track the national and Midwest economies by comparing them with the Institute for Supply Management’s (ISM) various purchasing managers’ indexes (PMIs) and the Chicago Fed’s Midwest Economy Index (MEI). We then discuss how the combination of quantitative and qualitative survey responses can help us understand pivotal or special economic events. For instance, we show that while the harsh winter weather at the beginning of 2014 reduced economic activity in the Midwest, respondents’ outlooks remained positive in anticipation of the subsequent rebound.

Chicago Fed’s Beige Book survey and indexes

Beginning with the March 6, 2013, Beige Book, the Chicago Fed has been gathering information from its business contacts using an online survey system. The survey asks respondents to rate the performance of their respective businesses over the past four to six weeks relative to the previous four to six weeks, covering aspects such as demand for their products or services. The survey then asks for anecdotes to explain their assessments. Respondents come from all of the major industries in the Seventh District. Figure 1 shows the industry composition of the respondent pool. Manufacturing has the highest representation, though no single industry dominates.
Respondents are asked to rate business conditions along a seven-point scale ranging from “substantially increased” to “substantially decreased.” To summarize the distribution of responses, we calculate a series of diffusion indexes.\(^6\) Diffusion indexes are intended to be leading indicators of economic activity, capturing changes in the prevailing direction of business conditions. If the index has a positive reading, it indicates that more respondents reported increased activity than decreased activity. The index ranges from –1 to +1 and will be –1 if every respondent reports decreased activity and +1 if every respondent reports increased activity.

**Comparisons with survey-based indicators**

Our diffusion indexes are comparable to the ISM’s PMIs.\(^7\) The ISM surveys purchasing managers and asks them to rate economic activity along a positive-neutral-negative scale, similar to how our Beige Book indexes are constructed. It is important to note, however, that because our survey targets industries in the Midwest economy, the composition of our respondent pool differs from that of the ISM’s. For this reason, we compare our indexes to the ISM’s at both the national and regional level. At the national level, we are better able to match the industry composition of the Beige Book and ISM respondent pools. At the regional level, we are better able to match the locations of the respondents from both pools.

Figure 2’s panels A and B show how the Beige Book indexes formed by dividing the survey responses between manufacturers and nonmanufacturers compare with the ISM’s national manufacturing and nonmanufacturing PMIs, respectively. While the ISM’s PMIs cover the entire U.S., the comparisons with our indexes are still informative because the respondents come from a comparable mix of industries. The correlation coefficient is greater than 0.50 for both comparisons, suggesting that the indexes are capturing very similar business conditions.

Panel C of figure 2 shows how the main Beige Book index in a similar manner to be relative to our respondents’ trend (or average) responses. To facilitate the comparison, we adjust the main Beige Book index with the Chicago Fed’s Midwest Economy Index.\(^8\) The MEI is a monthly weighted average of Midwest economic indicators, including the three Midwest city PMIs referenced earlier, state employment and unemployment, retail and home sales, and housing permits. The MEI is measured relative to a trend rate of Midwest economic growth such that positive values indicate above-trend growth and negative values indicate below-trend growth. To facilitate the comparison, we adjust the main Beige Book index in a similar manner to be relative to our respondents’ trend (or average) responses.\(^9\) Figure 3 shows how this adjusted Beige Book index compares with the MEI. Because the data used to calculate the MEI are subject to revision, the MEI is subject to revision. Panel A features the revised MEI as of August 29, 2014. While the adjusted Beige Book index does not track the contemporaneous movements in the MEI very well, visual inspection suggests that the adjusted index may lead the MEI. Panel B shows the adjusted Beige Book index compared with the

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The Institute for Supply Management’s (ISM) manufacturing and nonmanufacturing purchasing managers’ indexes (PMIs) are national indexes. The Midwest PMI is an average of the ISM’s PMIs for Chicago, Detroit, and Milwaukee. A value greater than 50 indicates expansion in the manufacturing sector, nonmanufacturing sector, and Midwest economic activity in panels A, B, and C, respectively. See note 7 for details on how the Beige Book and ISM index comparisons are facilitated.

**Sources**

Authors’ calculations and Institute for Supply Management data from Haver Analytics.
3. Adjusted Beige Book index and MEI

![Graph of Adjusted Beige Book index and MEI](image)

**Notes:** A value of zero for the Midwest Economy Index (MEI) here is consistent with trend growth in Midwest economic activity during the period from January 2013 through July 2014. The real-time MEI uses only the MEI reading initially reported for each month plotted in panel B. See the text, in particular note 9, for details on how the MEI and adjusted Beige Book index comparisons are further facilitated.

**Sources:** Authors’ calculations and Haver Analytics.

4. Adjusted Beige Book indexes

![Graph of Adjusted Beige Book indexes](image)

**Notes:** The current activity index is the adjusted main Beige Book index, depicted in figure 3. See note 9 for a detailed example of how all the Beige Book indexes are adjusted to be relative to our respondents’ trend (or average) responses. Positive readings of the current activity (employment or wages) index indicate that more respondents reported above-trend growth in activity (employment or wages) than below-trend growth. Positive readings of the outlook index (see note 11 for details on its construction) indicate more respondents reported above-average outlooks than below-average ones. Negative index readings indicate the opposite.

**Source:** Authors’ calculations.
for their own businesses (the adjusted main Beige Book index) in early 2014. We concluded in the March 5, 2014, Beige Book that “the modest pace of growth to start the year tempered contacts’ expectations only somewhat, as most generally maintained their optimistic outlook for 2014.” As panel A also shows, our business contacts have seen a healthy recovery in economic activity since the early 2014 slowdown. Moreover, by the third quarter of 2014, our contacts were reporting increased hiring and wage pressures, pushing up the employment and wages indexes in panel B of figure 4.

Conclusion

The Beige Book can be a useful tool for understanding current and future economic activity, especially at the regional level. As we have shown, it can and often does provide timely and unique contexts for understanding trends in national and regional economic activity. We plan to continue to develop our analysis of our survey with the expectation of making our indexes publicly available at a later date.

1 For details, see www.federalreserve.gov/monetarypolicy/beigebook/

2 For District boundaries, including those of the Seventh District (which is served by the Chicago Fed), see www.federalreserve.gov/otherfrb.htm.


5 Sadique et al. (2013) highlight the value of the Beige Book in detecting turning points in economic activity.

6 Diffusion Indexes = Positive Responses – Negative Responses

Total Responses

We count a response as positive if it indicates economic activity increased and negative if it indicates economic activity decreased. We include neutral responses in the count of total responses.

7 We transform the resulting Beige Book diffusion indexes to have the same range (0 to 100) as the ISM’s PMIs and match the ISM’s PMIs standard deviation over the sample period in which both are available.

8 For MEI details, see www.chicagofed.org/webpages/publications/mei.

9 For example, if, on average, a respondent reports that demand increased slightly, we count a response for a given period as positive only when the respondent reports that demand increased moderately or substantially. For this respondent, we count a slight increase in demand as neutral. Thus, we treat respondents’ average responses as the long-run trend in demand for their products. A reading above zero indicates growth above trend, while a reading below zero indicates growth below trend.


11 The Beige Book outlook index is also adjusted to be relative to each respondent’s average response (see note 9). In addition, for the survey’s question on the outlook, we use a positive-neutral-negative scale as opposed to the seven-point scale referenced early in the text.