

Analyst Expectations, and Actual Performance of Regional Economies with and without FOMC Representation

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Abstract

We examine the relation between the expected growth of an urban economic base when it is represented by a member on the Federal Open Market Committee (FOMC). We create and employ new forward-looking financial growth indices that measure the urban economic strength of an MSA and find that the predicted earnings is 44% higher when there is a representative for the region on the FOMC. The membership rotation to the FOMC is announced three years in advance. Therefore the markets should have no reaction to the membership changes to the FOMC when it actually takes effect.

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Abstract

We examine the relation between the expected growth of an urban economic base when it is represented by a member on the Federal Open Market Committee (FOMC). We create and employ new forward-looking financial growth indices that measure the urban economic strength of an MSA and find that the predicted earnings is 44% higher when there is a representative for the region on the FOMC. The membership rotation to the FOMC is announced three years in advance. Therefore the markets should have no reaction to the membership changes to the FOMC when it actually takes effect.

1. Introduction

There is perhaps no financial institution whose movements are watched as carefully as those of the Federal Reserve Bank's Open Market Committee (hereafter FOMC). The FOMC guides the evolution of US monetary policy through the use of open market operations: the buying and selling of government bonds. As such it guides the federal funds rate and the money supply in the US Economy. As discussed more fully below, the FOMC rotates its membership among the presidents of the Federal Reserve's regional banks, thus raising the question of whether or not the regional representation of committee has an impact on policy, and in turn whether regional economic performance is affected by its representation (or lack) on the FOMC. In this paper, we examine the reaction of the financial market analysts to the appointment of a Federal Reserve Bank president to the Federal Open Market Committee (hereafter, FOMC) by examining the reaction of analysts' earnings forecasts on an index of traded firms that are headquartered in a particular Federal Reserve region, to the announcement of, and subsequent actual, membership of that region's Bank presidents on the FOMC. We then examine the actual earnings of these regional indexes to this regional representation. We find that the announcement - three years prior - of a regional Fed president has no impact on the three year ahead earnings forecast, but that the actual ascension to membership does cause an economically and statistically significant increase in one year ahead earnings forecasts. This expected increase in earnings is almost matched by the actual increase in earnings when there is regional representation on the board although this latter result is not statistically significant.

2. The FOMC

There are twelve Federal Reserve Regions: Atlanta, Boston, Chicago, Cleveland, Dallas, San Francisco, Kansas City, Minneapolis, North Eastern Ohio, New York, Philadelphia, Richmond and St. Louis. The primary goal of these regional banks has been to more locally

manage the day-to-day supervision of member banks, including the decreasingly important task of check-clearing. The original 1913 legislation creating the Open Market Committee also suggests a desire by Congress to provide a variety of regional viewpoints on the FOMC as the Fed formulates its monetary policy.

The FOMC committee has 12 members, seven of whom are from the Federal Reserve Board of Governors. The New York Fed has a permanent vote on the FOMC committee. The other four members are selected by rotation from the rest of the Federal Reserve System¹. These last four members of the committee are decided three years in advance and that information is publicly available on the Federal Reserve website. Table 1 displays the regional banks whose president sits on the FOMC for each year of our sample. These data were hand-collected from the Federal Reserve web pages by reading through the minutes of the past FOMC meetings.

Research on the impact of this regional representation has mostly concentrated on the biasedness of the representatives on the FOMC committee with regards to voting for the benefit of their region. For instance, Gildea (1992) looks into whether macroeconomic variables like unemployment rate in the Federal Reserve region influences the voting behavior of their representatives at the FOMC meetings. He finds that their voting behavior is similar to that of elected officials in that they are more focused on their regions and may be more worried about the short-term. Hayo and Neuenkirch (2012) analyze the determinants of monetary policy based on the speeches of the Federal Reserve officials. They find that the content of regional speeches is influenced by both regional and national information and speeches outside of their region are based on just national information. Another important finding in their study is that speeches by the non-

¹ “The rotating seats are filled from the following four groups of Banks, one Bank president from each group: Boston, Philadelphia, and Richmond; Cleveland and Chicago; Atlanta, St. Louis, and Dallas; and Minneapolis, Kansas City, and San Francisco.” (<https://www.federalreserve.gov/monetarypolicy/fomc.htm>)

voting presidents reflect regional economic development more so than those by the voting presidents.

While there is detailed examination of the voting behavior of presidents of the Federal Reserve System, the literature has paid scant attention to the effect on the economy of their presence on the FOMC.

3. Data and Model

The price and return data for our sample firms are obtained from the Center for Research in Security Prices (hereafter, CRSP). Earnings per share (EPS) realizations and one-year-ahead analysts' forecasts of EPS are obtained from I/B/E/S (Institutional Brokers' Estimate System). We conduct our analysis for the period 1985-2014.

We employ Bloomberg Regional Indices to identify the companies that reside in each fed region. We do not use the actual values of the regional indices constructed by Bloomberg LLC. Coulson, Liu and Villupuram (2013) find that the earnings forecasts of these companies are highly correlated to house prices in their metropolitan area, demonstrating the importance of these firms to the region. While the index and Compustat rely on headquarter location to link firms and metropolitan areas, it is clear that headquarters are decisively important for our analysis (Klier (2006), Testa (2006) Davis and Henderson (2004) and especially Ono (2006)).

We first collect earnings forecasts by analysts² for all firms in the Bloomberg Regional Indices for each of the Federal Reserve Banks from the Institutional Brokers Estimate System (hereafter, I/B/E/S³). The forecasts are for the one year, two year and three year periods ahead of the estimate date. We then construct a growth index for each region by obtaining the stock price for each firm in the MSA's portfolio from Center for Research in Security Prices (CRSP). We also

² Analyst forecasts of earnings are partly based on the earnings forecast by a firm's management

³ I/B/E/S is a Thomson Reuters database that provides individual analyst forecasts of company earnings, cash flows and other important financial items.

obtain the number of shares outstanding from the same source and use the product of the two to obtain the market value of the firm. We then calculate the market-value weighted average of earnings of the MSA's portfolio of firms every calendar quarter, using the price and number of shares outstanding at the end of each period. The general equation that represents the value-weighted index at any point in time t is as follows:

$$Value - weighted Index_t = \sum \frac{w_{it}}{W_t} X_{it} \quad (1)$$

w_{it} represents the market value of firm i at time t , and W_t represents the total market value of all firms in a particular MSA. X_{it} represents the expected annual earnings per share (EPS).

Our first set of regression models takes the following form:

$$F_{it+k} = \beta_0 + \beta_1 FOMC_{it} + \gamma_i + \alpha_t + e_{it} \quad (1)$$

where

F_{it+k} = k - year ahead earnings forecast index for region i delivered at time t .

$FOMC_{it}$ = 1 if region i has representation on the FOMC at time t .

A positive β_1 is evidence that regional representation on the FOMC is considered new information that is a positive shock to firm performance in that region. However, given that regional representation in year t is settled in year $t-3$, efficient market models would suggest that this coefficient should actually be equal to zero. A better test of the informational content of regional representation is

$$F_{it+k} = \beta_0 + \beta_1 FOMC_{it+k} + \gamma_i + \alpha_t + e_{it} \quad (2)$$

where, by analogous notation, F_{it+k} is the k-year ahead earnings index forecast made at time t, taking into account the information that the region will have FOMC representation k years hence. If information is processed efficiently, the β_l when k=3 should reflect this piece of news, but when k= 1 or 2, this news is already processed and the corresponding coefficient should be equal to zero.

Our final regression model regresses actual earnings (A_{it}) at time t on the concurrent FOMC representation:

$$A_{it} = \beta_0 + \beta_1 FOMC_{it} + \gamma_i + \alpha_t + e_{it} \quad (3)$$

in order to ascertain if forecasters were justified in their processing of the news about regional representation.

4. Results

As a baseline model, Panel A estimates equation 1, setting k=1, and shows the results when both regional and time fixed effects are included, and when each are excluded in turn. Surprisingly, β_1 is positive, with an economically and statistically significant value of 0.44. This implies that analysts expect firms to produce 44% higher earnings on average, when their region has FOMC representation. This result is basically unchanged when regional fixed effects are removed, indicating (again, somewhat surprisingly) that these components are not critical to the specification. However, when time fixed effects are removed the coefficient increases to 0.71. This is of interest because it suggests that changing economic conditions (as represented by the time fixed effects) are correlated with FOMC representation. Whether this means that representation is influenced by those conditions is an open question.

The result is surprising for reasons discussed above, that this information is known three years prior to the actual ascension of the regional Fed president to the FOMC. Thus in Panel B we present results from (1) with k=2 and k=3 (i.e. current earnings forecasts 2 and 3 years hence, given *current* representation on the board, and then estimates of equation (2) with k=1,2, and 3 respectively. The latter regressions, presented in the first three columns of Panel B provide

uniform results. The key coefficient is tiny, certainly much less than those obtained in panel (A) and statistically insignificant. Analysts do not process the information about FOMC representation at all. Note that it is not the case that they do not think that representation is unimportant—the results of Panel A suggest they do. It is only that they do not recognize this event until it happens.

The final three columns in B report the results from (1). The first of these replicates Panel (A) with both time and region fixed effects. The last two set $k=2$ and 3, where the coefficients are 0.22 and 0.03 respectively. Thus the expected effect of current board representation (recalling that regional representation (except for the New York City Fed) usually lasts for only one year at a time) is reduced by half after one year and is for all intents and purpose zero after that. This is entirely in keeping with the idea that analysts are focused on current conditions and do not process information on events more than a year or so in the future.

Our final panel models actual earnings over the year of representation. The coefficient on regional representation is 0.33. While this estimate has a wide standard error, it is remarkably close to the corresponding coefficient of 0.44 in Panels A and B. Analysts were roughly correct (although 3 years too late) in their assessment of the impact of FOMC representation.

5. Conclusion

The purpose of our study is to determine if regional representation (or lack thereof) on the Federal Reserve Bank's Open Market Committee (FOMC) committee affects that region's economic performance. Ex-ante, markets shouldn't react to the actual change in the composition of the FOMC since the rotation of FOMC members is announced three years in advance. In other words, we would expect that analysts revise their expectations of future economic performance for a given region at the time of the announcement rather than when the actual change in membership

occurs. To test this conjecture, we examine the reaction of analysts' vis-avis their earnings forecasts on an index of traded firms that are headquartered in a particular Federal Reserve region, to the announcement of, and subsequent actual, membership of that region's Bank presidents on the FOMC. We subsequently examine the actual earnings of these regional indexes to this regional representation. Surprisingly, the announcement of changes in the FOMC membership composition has no impact on the three year ahead earnings forecast. Analysts appear to update their priors only when actual change in FOMC membership occurs. This event triggers analysts' to increase their one year ahead earnings forecasts by 44% on average. We find that this increase is both economically and statistically significant.

Table 1: Federal Reserve Bank Rotation on the Federal Open Market Committee (FOMC)

At the first regularly scheduled meeting of every year, the new membership of the Federal Open Market Committee becomes effective. * represents the presence of a regional Federal Reserve Bank president on the FOMC and – represents the absence of representation of a regional Federal Reserve Bank president on the FOMC. The FOMC comprises of 12 members, seven from the Board of Governors of the Federal Reserve System, one from the Federal Reserve Bank of New York and the other four from the remaining Federal Reserve Banks

Year	Kansas	Philadelphia	Dallas	New York	Cleveland	Minneapolis	Chicago	San Francisco	Atlanta	St Louis	Boston	Richmond
1990	*	*	*	*	*	*	--	--	--	--	--	--
1991	*	--	--	*	--	--	*	*	*	--	--	--
1992	*	--	--	*	*	--	--	--	--	*	*	--
1993	*	--	--	*	*	--	--	--	--	*	*	--
1994	--	--	--	*	*	--	--	*	*	--	--	*
1995	*	--	--	*	--	--	*	--	--	*	*	--
1996	--	*	*	*	*	*	--	--	--	--	--	--
1997	--	--	--	*	--	*	*	*	*	--	--	*
1998	*	--	--	*	*	*	--	--	--	--	*	--
1999	--	*	*	*	--	*	*	--	--	--	--	--
2000	--	--	--	*	*	--	--	*	*	--	--	*
2001	*	--	--	*	--	--	*	--	--	--	*	--
2002	--	--	*	--	*	*	--	--	--	--	--	--
2003	--	--	--	*	--	--	*	*	*	--	--	*
2004	*	--	--	*	*	--	--	--	--	--	*	--
2005	--	--	*	*	--	*	*	--	*	--	--	--
2006	--	--	--	*	*	--	--	--	*	--	--	*
2007	*	--	*	*	--	--	*	--	--	--	*	--
2008	--	*	*	*	*	*	--	--	--	--	--	--
2009	--	--	--	*	--	--	*	--	*	--	--	*
2010	*	--	--	*	*	--	--	--	--	*	*	--
2011	--	*	*	*	--	*	*	--	--	--	--	--
2012	--	--	--	*	*	--	--	*	*	--	--	*
2013	*	--	--	*	--	--	*	--	--	*	*	--
2014	--	*	*	*	*	*	--	--	--	--	--	--

Table 2: Number of publicly traded firms in each of the Federal Reserve Region

The number of firms is obtained by simply counting the firms in the Bloomberg Regional Index for each region. These are also firms that are headquartered in the respective region.

Federal Reserve District	Number of Firms
Kansas City	37
Philadelphia	128
Dallas	108
New York	167
Cleveland	41
Minneapolis	56
Chicago	140
San Francisco	138
Atlanta	104
St Louis	43
Boston	115
Richmond	18

Table 3: Panel Regression Analysis

The left hand side variable is the forecasted earnings index. We use Bloomberg Regional Indices to collect the list of firms in the MSA where the Federal Reserve Bank is located. Then we collect one-year-ahead analyst forecasts of these firms from I/B/E/S, each quarter. We then build a weighted average index of earnings forecasts aggregated by MSA and weighted by firm value at the beginning of each quarter, which we call the forecasted earnings index. The firm value is a product of the number of shares outstanding and the price of a stock of a corporation as per data from Center for Research in Security Prices (CRSP). ***, ** and * represent significance at 99%, 95% and 90% respectively. The values in parenthesis are the standard errors for the respective coefficient estimates.

Panel A: One-year-ahead earnings forecast after the representation on FOMC

Intercept	4.15***	1.85***	4.47***
	(1.48)	(0.28)	(1.53)
Representation on the FOMC	0.44**	0.70***	0.41*
	(0.23)	(0.21)	(0.23)
Time Fixed Effects	Yes	No	Yes
Region Fixed Effects	Yes	Yes	No

Panel B: Earnings forecast before and after the representation on FOMC

Intercept	6.73**	5.73***	6.00***	4.15***	5.77***	6.14**
	(3.03)	(2.08)	(1.75)	(1.48)	(2.03)	(3.13)
Representation on the FOMC	0.03	0.08	0.01	0.44**	0.22	0.03
	(0.50)	(0.32)	(0.27)	(0.23)	(0.32)	(0.49)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Forecast Type	3 YRS AHEAD	2 YRS AHEAD	1 YR AHEAD	1 YR AHEAD	2 YRS AHEAD	3 YRS AHEAD
Forecast Announcement (relative to year of representation)	3 YR LAG	2 YR LAG	1 YR LAG	NO LAG	NO LAG	NO LAG

Table 4: Panel Regression Analysis of Realized Earnings

The left hand side variable is the Actual Earnings index. We use Bloomberg Regional Indices to collect the list of firms in the MSA where the Federal Reserve Bank is located. Then we collect realized earnings of these firms from I/B/E/S, each year. We then build a weighted average index of realized earnings aggregated by MSA and weighted by firm value at the beginning of each year, which we call the Actual Earnings index. The firm value is a product of the number of shares outstanding and the price of a stock of a corporation as per data from Center for Research in Security Prices (CRSP). ***, ** and * represent significance at 99%, 95% and 90% respectively. The values in parenthesis are the standard errors for the respective coefficient estimates.

Actual Earnings after the representation on FOMC

Intercept	1.15 (4.88)
Representation on the FOMC	0.33 (1.85)
Time Fixed Effects	Yes
Region Fixed Effects	Yes
Earnings Type	ANNUAL ACTUAL
Earnings Announcement (relative to year of representation)	1 YR AFTER