

## **Look Who's Talking Now!**

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*There can be no doubt* that for a *considerable period* of time the Federal Open Market Committee (FOMC) has articulated its message at a *measured pace*. This has not always been the case. Indeed, for much of its history the FOMC has been the strong and silent type, preferring to surround itself with mystery and secrecy as it has implemented monetary policy.

But over the past 30 or so years the Federal Reserve System has changed in at least three distinct ways. The first change by the Fed is the better appreciation of the market forces. In the 1970's, the Fed controlled deposit interest rates, regularly intervened in foreign exchange markets and manipulated margin requirements. Mercifully, the deregulation of financial markets coupled with the prudential supervision of markets has subsequently been an important policy theme. The second major change by the Fed has been the determination to keep inflation boxed in at a low rate. The FOMC continues to wiggle out of adopting an actual inflation target or announcing an actual inflation goal, but the weight of the evidence is that they take adverse inflation conditions seriously and act to offset them.

The final change has been the emphasis on transparency in the conduct of monetary policy. Historically, this has not been the case. For example, as argued by Professor Hugh Rockoff of Rutgers University, the imagery of the Wizard of Oz is focused on the debates over a bimetallic currency standard at the end of the 19<sup>th</sup> century. And the view taken by the book is that those who conduct monetary policy are grandiose wizards, who hide behind smoke and mirrors, and who are ultimately filled with hot air.<sup>1</sup>

In addition, the author William Greider (1987) describes the Fed's level of transparency in equally unpleasant terms:

“The central bank, notwithstanding its claims to rational method, enfolded itself in the same protective trappings that adorned the temple---secrecy, mystique, and an awesome authority that was neither visible nor legible to mere mortals. Like the temple, the Fed did not answer to the people, it spoke for them. Its decrees were cast in a mysterious language people

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<sup>1</sup> Hugh Rockoff, “The ‘Wizard of Oz’ as a Monetary Allegory,” Journal of Political Economy, 1990, volume 98(4), pp. 739-760.

could not understand, but its voice, they knew, was powerful and important.”<sup>2</sup>

The FOMC, however, has made some recent progress in articulating its decisions. Indeed, it actually started announcing decisions in 1994. That’s right, prior to 1994, the FOMC did not announce decisions: rather, it allowed market participants to infer its actions from the conduct of open market operations. Systematically, however, the FOMC has begun to improve the dissemination of its decisions. As of the middle of 1999, for instance, the FOMC now provides an approximately 100 word statement after the conclusion of each and every meeting, regularly scheduled or not. Moreover, members of the FOMC routinely make speeches that are placed on the Federal Reserve Board’s web-site.

Now there are two important questions about Federal Reserve communications. The first is what are the goals of Fed communication? The second is what are the best ways to accomplish these goals? For the time being I will defer discussion of the second question to the end of this paper and concentrate for now on the first one.

In his speech at Princeton University on April 2<sup>nd</sup> of 2005, former SOMC member and now president of the Federal Reserve Bank of St. Louis, William Poole points to several issues as necessary preconditions for the FOMC to implement and design an appropriate communication strategy in an environment where it does not have private information about the economy.<sup>3,4</sup> The first issue is that the central bank must be clear about its objectives. The second is that the market and the central bank have a correct understanding of how the economy works. The third is that unexpected economic outcomes are to be understood as news, that is, information that cannot currently be forecasted.

Against this backdrop, the goal of monetary policy communication is that markets should understand both current policy actions and the strategy for future monetary policy actions. Accordingly, policy should be as informative about future policy as possible and as predictable as possible within the confines of Poole’s three necessary conditions: that the FOMC stick to its objectives, that the FOMC and the market understand the workings of the economy and the understanding that the actual path of future monetary policy may be affected by events that cannot currently be forecasted.

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<sup>2</sup> William Greider, Secrets of the Temple: How the Federal Reserve Runs the Country, 1987, Simon and Schuster, New York, NY.

<sup>3</sup> William Poole, “How Should the Fed Communicate?” Center for Economic Policy Studies, Princeton University, April 2, 2005. [http://www.stlouisfed.org/news/speeches/2005/4\\_02\\_05.htm](http://www.stlouisfed.org/news/speeches/2005/4_02_05.htm)

<sup>4</sup> See Amato, Morris and Shin (2002) for an analysis of central bank communication when the central does have private information. They point to the problems of providing public information in these types of environments as it may diminish the range of expectations in the market and force the coordination of market expectations on the outcome. J. Amato, S. Morris and H.S. Shin (2002). Communication and Monetary Policy. Oxford Review of Economic Policy 18(4), 495-503.

In the evidence below I demonstrate evidence that Chairman Greenspan's communications are generally accomplishing the goal of providing relevant information as well as making policy more predictable. Moreover, in the concluding section I provide a perspective on the second question of how the Fed may be better able to accomplish its goals for communicating.

## Evidence

Recent research has examined the role that FOMC communications (speeches, statements and testimonies by Chairman Greenspan) have played in moving markets. Governor Donald Kohn and former Federal Reserve economist Brian Sack (now at Macroeconomic Advisors) investigate the role that communications have on raising or lowering the volatility of markets, the former being evidence according to them that there is "news" in the communications that is driving the market.<sup>5</sup> Their evidence involves results from the following regression:

$$\Delta y_t = \beta_0 + \beta_1 \Delta ff_t^u + \sum_{i=2}^n \beta_i \cdot MAC_t^u + \eta_t \quad (1)$$

where  $\Delta y_t$  is the change in one of the financial variables under consideration,  $\Delta ff_t^u$  is the unexpected change in the federal funds rate as measured by Kuttner (2001) and  $MAC_t^u$  refers to macroeconomic news.<sup>6,7</sup> This standard specification indicates that financial variables change in response to unexpected moves in monetary policy as proxied by the federal funds rate, as well as news about the macroeconomy. Implicitly, the level of financial variables should price in the expected path of monetary policy and macroeconomic activity so that changes in financial variables represent unexpected

<sup>5</sup> Donald L. Kohn and Brian P. Sack, "Central Bank Talk: Does it Matter and Why?" to appear in a Festschrift volume for Chuck Freedman, Bank of Canada. Available as [Finance and Economics Discussion Series](#) Working Paper 2003-55, Board of Governors of the Federal Reserve System

<sup>6</sup> Kenneth Kuttner, "Monetary Policy Surprises and Interest Rates: Evidence from the Fed Funds Futures Market," *Journal of Monetary Economics*, 2001, 47, pp.523-544.

<sup>7</sup> We use a proxy variable for the unexpected component of monetary policy developed in Kuttner (2001) and used in Kohn and Sack (2003). The Federal funds futures rates are a market based predictor of future policy, though they must be adjusted in order to adequately measure the expected and unexpected component of monetary policy. Two problems must be resolved. First, the settlement price of the contract is the average of the month's overnight Fed funds futures rates, not the rate on the last day of the month. Second, futures contracts are based on the market rate rather than the target Federal funds rate. The difference of the two can be significant on a day-to-day basis. To correct for these problems, Kuttner (2001) derives the unexpected change in the Federal funds target rate for date t as:

$$\Delta \tilde{r}_t^u = \frac{m}{m-t} (f_{s,t}^0 - f_{s,t-1}^0)$$

where the left hand side is the unexpected change in monetary policy (change in the Federal funds target rate), m is the total number of days in the month, t is the day of the month, f is the spot futures rate on a given day t in month s. If the target rate change is in the last three days of the month, the daily change in the one-month spot futures rate is used to correct the targeting error of day-t and the change in the expectation of future targeting errors. A complete description of this variable is available in Kuttner (2001).

changes or news to these same variables.<sup>8</sup> The residual term,  $\eta_t$ , allows for omitted factors that move financial variables.

For the dependent variables, we use the daily changes in various financial variables, as done in Kohn and Sack (2003). We use many of the same variables, including the changes in the federal funds futures rate (three months ahead), Treasury yields (two and ten years ahead), Treasury forward rates (zero to one year ahead, one to two years ahead, and four to five years ahead), the S&P 500, the dollar and the price of Gold. All the interest rate data are reported in basis points (that is 100 times the percentage) while the data for the U.S. Dollar, the S&P500 and Gold are reported in percentages. With the exception of the inclusion of the price of gold, all the data in the analysis are exactly similar to those in Kohn and Sack.

To further explore the role of the qualitative factors of Greenspan's language and their quantitative impact on financial markets, in research that I am conducting with Michelle Bligh, we augment equation (1) with language variables constructed from linguistic content analysis:

$$\Delta y_t = \beta_0 + \beta_1 \Delta ff_t'' + \sum_{i=2}^n \beta_i \cdot MAC_t'' + \theta \cdot COMM_t + \mu \cdot COMM_t \times LANG_t + \eta_t \quad (2)$$

There are two additional terms that we include on the right side of expression (1). The first is a set of three dummy variables for presence of a communication on day  $t$ . Such communications are FOMC statements (STATE), and speeches (SPEECH) and testimonies (TEST) by Chairman Greenspan.

The second additional set of additional regressors in equation (2) term allows for the quantification of the qualitative factors of these communications. For each form of communication, the entire text was read into the DICTION Program which is a content analysis program that keeps track of a number of key features of language that conform to key lists of words constructed by linguists. There are 194 communications in our sample made up of 45 FOMC statements, 44 Testimony's before Congress or the Senate and 105 Speeches during the time period May 18th, 1999 to June 30th, 2004. This period was chosen as May 18th, 1999 is the date at which all FOMC meetings were followed with a statement. We then perform content analysis on all these communications and score the messages based on the following criteria: **Certainty, Optimism, Pessimism, Immediacy, Activity and Jargon** (these dictionaries are detailed below). Each of these 6

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8. The macroeconomic news variables were from the Money Market Services report. These 13 data series are constructed from the median of the survey of forecasts in the Friday before the data are reported for the first time. The surprise is constructed by subtracting the actual reported number from the most recent survey. The data were purchased from Haver Analytics. The 13 surprise variables are for the employment cost index, advance GDP, capacity utilization, consumer confidence, core consumer index, durable goods orders, Institute of Supply Management Index, nonfarm payrolls, new home sales, core producer price index, retail sales, unemployment rate, and initial claims for unemployment.

characteristics of speech is treated separately in the regression by the three types of communication so that there are 18 additional explanatory variables in  $COMM_t \times LANG_t$ .

By default, DICTION uses 33 different dictionaries, containing over 10,000 search words, to analyze a given communication. In order to keep our analysis as simple as possible, we construct five composite variables from 16 of these dictionaries that are likely to be of interest with respect to monetary policy making: These composite variables are Certainty, Optimism, Pessimism, Immediacy and Activity. While these are formally described in supplemental appendix below, a brief description here is warranted. **Certainty** refers to words that indicate resoluteness, inflexibility, and completeness. **Optimism** is language that endorses or highlights the positive entailments of some person, group, concept, or event, while **Pessimism** endorses or highlights these negatively. The variable **Immediacy** refers to verbs that describe immediate matters that affect people's everyday lives. Finally, **Activity** refers to words featuring movement, change, the implementation of ideas, and the avoidance of inertia.

We also made two important adjustments to the data. First, a problem with examining individual words is that they can be preceded by a negation that completely reverses the meaning of the individual word. For instance, the common term by Chairman Greenspan of "There can be no doubt" is clearly impacted by the presence of a negation. As such, we do not count any words that are preceded by the word "no" or "not". Second, we created an additional composite variable to more closely follow the extent to which macroeconomic terms are present in the Chairman's communications. We constructed this list of words by accumulating the dictionary of terms provided at the end of the popular intermediate macroeconomic textbooks by Professors Abel and Bernanke, Mankiw, and Delong. We label this variable **Jargon**.

As a methodology, content analysis allows the investigator insight into the often symbolical laden connotations employed by leaders themselves in context, making it a valuable tool for researchers specifically interested in leadership as the management of meaning. Given the focus on Chairman Greenspan's language, this suggests that Greenspan's specific choice of words can be particularly telling about his motives, intentions, and underlying assumptions, and may have significant effects on financial markets. Given the highly visible and politicized nature of Greenspan's position, computerized content analysis has the additional advantage of providing a completely impartial analysis of his leadership based solely on his public policy communications.

We estimate expression (2) for the financial variable described above and report some of the key results in Tables 1 and 2.<sup>9</sup> The results in Table 1 indicate a number of important factors. First, macroeconomic news moves financial markets. In almost all cases and even at the 10 day horizon, the p-value for MAC is below the .1. Indeed it is below the .05 level for the current day forecast equations. Second, for the 1 day horizon, only language in FOMC statements help in predicting near term movements in the federal funds rate and 1 year Treasury markets. Interestingly, this also moves the spot price of

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<sup>9</sup> To save space, the estimates are not reported.

the dollar. Alternatively, the language characteristics of Greenspan's speeches have strong predictive power over the one day growth of the S&P500. Third, over longer horizons, speeches appear to have little predictive power over the movements in financial variables. In contrast, testimonies and statements appear to have a growing impact on the longer run predictability of these financial series. Indeed, though they do not help in predicting the 3 month federal funds futures rate, they do for a variety of short, medium and long term Treasury securities.

Table 2 provides data on the standard deviation of the underlying financial data series (labeled, "raw data") as well as the standard deviation from the estimated residual from equation (2). Each row of the table provides the estimated statistics for a different financial variable. The first three columns of estimates are the estimated standard deviation of  $\eta_t$ ,  $\sigma_{\eta}$ , when no right hand side variables are included in the specification other than the constant term. In other words, this is the raw data. The value in column one is for the full sample, whereas the results in column two are for days when there is macroeconomic news and the results in column three are for when there is communication (i.e., a speech or testimony by Chairman Greenspan, or an FOMC statement). The results in the remaining columns repeat the same exercise except that the standard deviation of the residual is obtained after estimating the effect of controlling for macroeconomic news and the qualitative factors of Federal Reserve communications. Note that the columns also indicate the level of statistical significance at which one can reject the null hypothesis that the standard deviation in the NEWS or COMMUNICATION sub-sample differs from that in the full sample.

The results in Table 2 appear to provide some evidence, albeit preliminary, that Federal Reserve communication is providing news to the market, as well as information that is helpful towards predicting movements in financial variables. There are a few key results worth noting. First, for the raw data at the current (one) day horizon, financial data are generally more volatile on days when there is macroeconomic news. This seems to hold for the interest rate variables although not for the movements in the other financial variables. As well, these effects are still present in some interest rate variables at longer horizon, though these effects appear to be diminished. Second, for the three month federal funds futures rate, communications raise short run volatility. However, in the raw data, this is the only statistically significant effect. Overall then, in the raw data, macroeconomic news raises the current day and 10-day ahead level of financial market volatility, whereas communications only raise financial volatility in shorter term interest rates.

Finally, for the estimated model, these relationships are changed. In particular, macroeconomic news continues to have current day and 10 day ahead effects on raising financial market volatility. However, the language content of Chairman Greenspan's communications helps to reduce the unexpected volatility in financial markets. For example, at the current 1 day horizon, the decline in market volatility from the language variables reduces the unexpected volatility in the three month ahead federal funds futures rate. The order of magnitude of the decline in the standard deviation is on the order of .5 basis points. Interestingly, however, at the 10 day horizon, the effect of communication

in lowering the unexplained volatility of markets is stronger than for the shorter horizon. For instance, the decline in the standard deviation in for the three month ahead federal funds futures rate at the 10 day horizon is 3.3 basis points and statistically significant. More importantly, the decline in the standard deviation in unexplained volatility also holds for many longer term interest rates measures.

### **Perspective**

The evidence suggests that monetary policy communications by Chairman Greenspan are informative and aid in the improved predictability of longer term interest rates. The remaining question as indicated above, however, is whether the Federal Reserve System has fully exploited the net gains from communication.

Generally speaking, I think that the Federal Reserve System has under-utilized its ability to beneficially communicate to the markets and broader public. There are a number of reasons why I believe this to be true. First, as indicated by the evidence, testimony by Chairman Greenspan appears to have an important impact on longer horizon predictability of financial market variables. As such, richer in-depth explanations and analysis are likely to be important factors to market participants. Generally speaking, the Federal Reserve Board and the FOMC provides too little of this. By comparison, the Bank of England provides a richer description of economic activity in its Inflation Report which not only gives a perspective on policy and economic activity but also provides a range of forecasts which can help market participants delineate expected from unexpected movements in economic activity.

Second, as articulated by a number of authors, communication is not a one-way street. While I am not suggesting that the FOMC is unresponsive to pertinent issues in the market, it is safe to say that they are a long way away from joining the Oprah and Dr. Phil communication revolution. While the nature of monetary policy discussions involves reflection and the judicious discernment of permanent and temporary factors, these also need not live solely within the Federal Reserve vacuum. FOMC decisions should be supported with facts, analysis and answers to real-time questions from market participants. 100 word parables are simply not enough.

Finally, the FOMC needs to remain mindful of the fact that it is an appointed, non-elected body that has the final say in monetary policy decisions. Very few institutions in the U.S. are given such an awesome level of responsibility and autonomy. Historically, such autonomy does not come cheap. The FOMC should continue to earn this autonomy by better justifying and documenting in its decision making in real time – the secrets of the temple should be revealed to all.

**Table 1: Statistical Significance of Macroeconomic News and Federal Reserve Language on Financial Variables**

	Horizon	<i>p-values</i>					
		MAC	COMM	SPEECH	STATE	TEST	LANG
$\Delta$ FFF3	1 day	.00	.30	.20	.00	.89	.00
$\Delta$ TFWD0-1YR	1 day	.00	.23	.32	.07	.08	.04
$\Delta$ TFWD1-2YR	1 day	.00	.71	.61	.11	.68	.39
$\Delta$ TFWD4-5YR	1 day	.00	.71	.23	.31	.98	.58
$\Delta$ T2YR	1 day	.00	.49	.32	.09	.37	.14
$\Delta$ T10YR	1 day	.00	.74	.31	.34	.98	.66
% $\Delta$ Dollar	1 day	.00	.29	.34	.01	.67	.06
% $\Delta$ S&P500	1 day	.02	.39	.00	.34	.61	.01
% $\Delta$ Gold	1 day	.03	.21	.18	.18	.39	.16
$\Delta$ FFF3	10 days	.02	.97	.33	.01	.99	.14
$\Delta$ TFWD0-1YR	10 days	.00	.40	.52	.00	.11	.00
$\Delta$ TFWD1-2YR	10 days	.00	.12	.76	.00	.00	.00
$\Delta$ TFWD4-5YR	10 days	.10	.11	.78	.17	.00	.01
$\Delta$ T2YR	10 days	.00	.10	.57	.00	.00	.00
$\Delta$ T10YR	10 days	.05	.04	.77	.07	.00	.00
% $\Delta$ Dollar	10 days	.31	.67	.06	.06	.95	.11
% $\Delta$ S&P500	10 days	.05	.12	.51	.92	.28	.51
% $\Delta$ Gold	10 days	.18	.90	.94	.97	.57	.98

Notes: Data are daily from mid 1999 to June 30th, 2004. There are 194 communications sample made up of 45 FOMC statements, 44 Testimony's before Congress or the Senate and 105 Speeches during the time period May 18th, 1999 to June 30th, 2004. Horizon refers to the cumulative numbers of days including the current day when calculating the change in the variables. The remaining column heads refer to p-values for F-test for the exclusion of the following variables. MAC refers to the macroeconomic news variables and COMM refers to the dummy variables for Chairman Greenspan's Speeches, Statements and Testimonies.  $\Delta$ FFF3 is the change in the federal funds futures rate (three months ahead),  $\Delta$ TFWD0-1YR,  $\Delta$ TFWD1-2YR,  $\Delta$ TFWD4-5YR are the change treasury forward rates (zero to one years ahead, one to two years ahead, and four to five years ahead),  $\Delta$ T2YR and  $\Delta$ T10YR are the change in treasury yields (on two and ten years bonds), % $\Delta$  Dollar is the growth rate of trade weighted dollar, % $\Delta$  S&P500 is the growth rate of the S&P500 and % $\Delta$  Gold is the growth rate of the price of gold. All the interest rate data are reported in basis points (that is 100 times the percentage) while the data for the dollar, the S&P500 and Gold are in percentages. Note that for the case of the 10 day horizon, the estimated regression (not shown) and the test statistic is adjusted for the moving average error structure imposed by time aggregation.



**Table 2: Standard Deviations of Unexplained Movements in Financial Variables**

	Horizon	<i>Raw Data</i>			<i>Estimated Model</i>		
		ALL	NEWS	COMM	ALL	NEWS	COMM
$\Delta$ FFF3	1 day	3.53	4.13 <sup>c</sup>	4.67 <sup>b</sup>	3.01	3.75 <sup>c</sup>	2.50 <sup>b</sup>
$\Delta$ TFWD0-1YR	1 day	5.40	6.14 <sup>c</sup>	5.51	5.08	5.62 <sup>b</sup>	4.86
$\Delta$ TFWD1-2YR	1 day	8.31	9.38 <sup>c</sup>	8.47	7.91	8.69 <sup>c</sup>	8.00
$\Delta$ TFWD4-5YR	1 day	7.24	7.99 <sup>c</sup>	7.39	6.98	7.54 <sup>c</sup>	7.09
$\Delta$ T2YR	1 day	6.64	7.55 <sup>c</sup>	6.78	6.27	6.91 <sup>c</sup>	6.17
$\Delta$ T10YR	1 day	6.40	7.01 <sup>c</sup>	6.37	6.16	6.59 <sup>c</sup>	6.06
% $\Delta$ Dollar	1 day	0.41	0.43	0.40	0.40	0.41	0.38
% $\Delta$ S&P500	1 day	1.30	1.29	1.36	1.27	1.24	1.17
% $\Delta$ Gold	1 day	0.94	0.89	0.94	0.92	0.87	0.88
$\Delta$ FFF3	10 days	14.21	15.22	13.52	13.74	14.71 <sup>a</sup>	11.42 <sup>c</sup>
$\Delta$ TFWD0-1YR	10 days	17.20	18.28 <sup>b</sup>	15.88	16.80	17.63 <sup>b</sup>	14.70 <sup>b</sup>
$\Delta$ TFWD1-2YR	10 days	26.23	27.26 <sup>a</sup>	25.50	25.56	26.32	23.55 <sup>a</sup>
$\Delta$ TFWD4-5YR	10 days	24.13	24.89	25.30	23.61	24.16	23.71
$\Delta$ T2YR	10 days	20.89	21.84 <sup>a</sup>	19.88	20.35	21.04 <sup>c</sup>	18.30 <sup>b</sup>
$\Delta$ T10YR	10 days	20.43	21.06	20.96	20.02	20.50	19.46
% $\Delta$ Dollar	10 days	1.32	1.31	1.23	1.30	1.29	1.16 <sup>c</sup>
% $\Delta$ S&P500	10 days	3.72	3.61	3.48	3.65	3.55	3.14 <sup>c</sup>
% $\Delta$ Gold	10 days	3.26	3.22	3.40	3.24	3.16	3.33

Notes: See Table 1. The columns labeled Raw data makes reference to the fact that the standard deviations are of the actual data. The columns labeled estimated model makes reference to the fact that the standard deviations are of the estimated model (2). ALL, NEWS and COMM refer to whether the statistic is calculated over the full sample, for just days when one of the 13 news variables were reported, or only for days when there was a Speech or Testimony by Greenspan, or an FOMC statement. The superscripts <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate the .10, .05 and .01 level of statistical significance at which one can reject the null hypothesis that the standard deviation of the data in the NEWS (COMM) sub-sample differs from that in the full sample.

## SUPPLEMENTAL APPENDIX A

### Diction Dictionaries and Composite Dictionaries

Dictionary	Description	Sample Words
<b>Certainty =</b>	<b>Language indicating resoluteness, inflexibility, and completeness as well as a tendency to speak ex cathedra.</b>	<b>Tenacity + Leveling + Concreteness + Insistence – Ambivalence</b>
Tenacity	Includes all uses of the verb “to be”, definitive verb forms and their variants, and associated contractions. These verbs connote confidence and totality.	Is, am, will, shall, has, must do, he’ll, they’ve, ain’t
+ Leveling	Words used to ignore individual differences and to build a sense of completeness and assurance.	Everybody, anyone, each, fully, always, completely, inevitably, consistently, unconditional, consummate, absolute
+ Concreteness	A dictionary of words denoting tangibility and materiality, including physical structures, modes of transportation, articles of clothing, household animals, etc.	Airplane, ship, bicycle, stomach, eyes, lips, slacks, pants, shirt, cat, insects, horse, wine grain, sugar, oil, silk, sand, courthouse, temple, store
– Ambivalence	Words expressing hesitation or uncertainty, implying an inability or unwillingness to commit to what is being said.	Allegedly, perhaps, might, almost, approximate, vague, baffled, puzzling, hesitate, could, would, guess, suppose, seems
<b>Optimism =</b>	<b>Language endorsing or highlighting the positive entailments of some person, group, concept, or event.</b>	<b>Praise + Satisfaction + Inspiration</b>
Praise	Affirmations of a person, group, or abstract entity.	Dear, delightful, witty, mighty, handsome, beautiful, shred, bright, vigilant, reasonable, successful, renowned, faithful, good, noble
+ Satisfaction	Terms associated with positive affective states, moments of undiminished joy, and moments of triumph.	Cheerful, passionate, happiness, smile, welcome, excited, fun, lucky, celebrating, pride, secure, relieved
+ Inspiration	Abstract virtues deserving of universal respect and attractive personal qualities.	Honesty, self-sacrifice, virtue, courage, dedication, wisdom, mercy, patriotism, success, education, justice
<b>Pessimism =</b>	<b>Language endorsing or highlighting the negative entailments of some person, group, concept, or event.</b>	<b>Blame + Hardship</b>
*Blame +	Terms designating social inappropriateness and evil, as well as unfortunate circumstances.	Mean, naïve, sloppy, stupid, fascist, repugnant, malicious, bankrupt, rash, morbid, weary, nervous, painful, detrimental, cruel
*Hardship +	Natural disasters, hostile actions, censurable human behavior, unsavory political outcomes, and human fears.	Earthquake, starvation, killers, bankruptcy, enemies, vices, infidelity, despots, betrayal, injustices, exploitation, grief, death

Notes: See next page.

<b>Dictionary</b>	<b>Description</b>	<b>Sample Words</b>
<b>Activity =</b>	<b>Language featuring movement, change, the implementation of ideas, and the avoidance of inertia.</b>	<b>Aggression + Accomplishment + Communication + Motion +Cognitive Terms</b>
Aggression	Words denoting human competition and forceful action, including physical energy, social domination, and goal-directedness.	Blast, crash, explode, collide, conquest, attacking, violation, commanded, challenging, overcome, mastered, pound, shove, dismantle, overturn, prevent, reduce, defend
+ Accomplishment	Words expressing task-completion and organized human behavior.	Establish, finish, influence, proceed, motivated, influence, leader, manage, strengthen, succeed, agenda, enacted, working, leadership
+ Communication	Terms referring to social interaction, both face-to-face and mediated. Includes modes of intercourse as well as social actors and social purposes.	Listen, interview, read, speak, film, videotape, telephone, email, translate, quote, scripts, broadcast, reporter, spokesperson, hint, rebuke, respond, persuade
+ Motion	Terms connoting human movement, physical processes, journeys, speed, and modes of transit.	Bustle, lurch, leap, momentum, revolve, wandering, travels, nimble, ride, fly, glide, swim
+ Cognitive terms	Words referring to cerebral processes, both functional and imaginative. Includes modes of discovery and domains of study. Also includes mental challenges, insitutional learning practices, and intuitional, rationalistic, and speculative processes.	Learn, deliberate, consider, compare, biology, psychology, logic, economics, question, forget, reexamine, paradox, graduation, teaching, classroom, invent, perceive, speculate, interpret, estimate, examine, diagnose, analyze, software, fact-finding
<b>Immediacy =</b>	<b>Language describing immediate matters that affect people's everyday lives</b>	<b>Present concerns – Past concerns</b>
Present Concern	Present-tense verbs denoting an emphasis on the here and now.	Cough, tastes, sing, take, canvass, touch, govern, meet, make, cook, print, paint.
– Past concern	The past-tense forms of the verbs in the Present concern dictionary.	Coughed, tasted, sang, took, canvassed, touched, governed, met, made, cooked, printed, painted
<b>Jargon</b>	<b>The dictionary of terms provided at the end of the popular intermediate macroeconomic textbooks by Professors Abel and Bernanke (2004), Delong (2003) , and Mankiw (2004).</b>	<b>Unemployment, inflation, natural rate.</b>

Notes: To offset the potential problem of negation affecting the meaning of a word, words that were preceded by “no” or “not” were omitted from the analysis.