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What and How the Public Knows about the Fed

Jane S. Lopus (corresponding author)
California State University East Bay
Jane.lopus@csueastbay.edu

Evgeniya A. Duzhak
Federal Reserve Bank of San Francisco
Evgeniya.Duzhak@sf.frb.org

K. Jody Hoff
College of Western Idaho
boisejody77@gmail.com

JEL Codes: A20; A29; E52; E58; E59

Keywords: Economic education, public knowledge of economics, Federal Reserve, Federal Reserve communications, following the news, news sources

This work was supported by the Federal Reserve Bank of San Francisco. Opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the Federal Reserve Bank of San Francisco or of the Board of Governors of the Federal Reserve System. The authors thank Paul Grimes for helpful comments.

ABSTRACT

The general public's knowledge about the Fed is important in part because it can affect expectations that influence monetary policy. Results from a 2020 survey of 841 adults indicate that those who are male, baby boomers, have higher incomes, more education, and who studied economics in college exhibit more knowledge about the Fed as measured by an 18-question test. Economic knowledge also improves when people follow the news regularly. Where people get their news matters: Those who get their news from news websites exhibit significantly more knowledge, while those who get their news from social media exhibit significantly less knowledge. Consistent with these findings, those who get their news from news websites have higher incomes, more education and follow the news regularly, while those who get their news from social media are younger, less educated, and do not follow the news regularly. Because learning economics is found to be a life-long endeavor, following the news and news sources should be considered to be important determinants of economic knowledge, and those wishing to improve economic knowledge should consider disseminating information via different news outlets.

There are many reasons why the public's knowledge about the Fed is important, whether the public is aware of this or not. The public, or households, make up the largest sector of the economy and form expectations that influence the effects of monetary policy (van der Cruijsen 2015). These expectations are based in part on knowledge about the Fed and monetary policy and are affected by media coverage (Coibion et al 2019). Additionally, household opinions influence politicians and thus impact policy decisions (Blinder and Krueger 2004).

Central banks have been increasingly recognizing the importance of communication as a tool of monetary policy, and the importance of communication with households in particular (Powell 2020). Viewed as a form of economic education, central bank communication is important for educating the public and helping to form accurate expectations. However, households may be inattentive to this communication for reasons that include low economic and financial literacy (Binder 2017). Central bank communication may also be ineffective

because it is often directed at financial experts and not the general population, making it too complicated for many to understand (Haldane and McMahon 2018). Clear central bank communication may increase the effectiveness of monetary policy by influencing consumer behavior in desirable ways.

This paper uses survey data collected in early 2020 (prior to the pandemic) to investigate the public's knowledge about the Fed and monetary policy and how people acquire this knowledge. To better understand what the public knows about the Fed we examine whether survey respondents follow the news and where they get their news. We also study knowledge effects of on-the-job experience, and effects of formal schooling in economics at different levels. We then look at the major news sources used by survey respondents (news websites, TV and social media) and analyze characteristics of individuals who use these news sources. We find that following the news and the source of the news matter for economic knowledge. Our paper proceeds as follows: After a literature review we describe our survey data, focusing on knowledge about the Fed and how people acquire this knowledge. We next describe our research design, results, and discuss our findings. We conclude with a discussion of implications for economic education.

LITERATURE REVIEW

Several studies investigate what the general public knows about economics. In 1992 the Gallup Organization conducted a phone survey of over 1600 high school and college seniors and members of the general public about their economic knowledge, opinions about economic issues, and sources of information (Walstad and Larson 1992). The general public scored 39 percent on a series of questions about the economy, with high school students scoring 35

percent and college students 51 percent. The major sources of information about the economy were TV and newspapers, although newspapers were used less by high school students. Despite the demonstrated lack of economic knowledge, respondents expressed strong opinions about economic issues such as who should conduct monetary policy and how to reduce the government budget deficit. The authors conclude that economic illiteracy has the potential to misshape public opinion and to influence policies that may negatively affect the economy.

Walstad conducted a follow-up study in 1997 using the 1992 Gallup survey data focusing on determinants of economic knowledge for the 1006 members of the general public in the survey and the effects of economic knowledge on public opinion (Walstad 1997). He found that those with more knowledge of economics were likely to be older, male, white, more educated, higher income, Republican and to have studied economics in college. Studying economics in high school did not produce lasting effects on economic knowledge. Those with more economic knowledge were more likely to have opinions on economic issues that aligned with those of economists, for example, believing that the Fed should conduct monetary policy rather than Congress.

The Federal Reserve Bank of Minneapolis conducted a phone survey of 404 randomly-selected adults in fall 1998 to assess economic literacy (Dahl 1998; Walstad 1998). The average score on a 13-item test of economic knowledge was 45 percent. When scores were broken into whether respondents had taken a formal economics course (high school or college) or not, those who had studied economics scored higher (49 percent) than those who had not (38 percent). While these overall scores were not remarkable, the findings suggest that studying

economics in high school or college makes a difference and that the knowledge is retained over time (Walstand and Rebeck 1999).

A 2002 study analyzes results from five national surveys conducted between 1992 and 1999 on factors affecting economic knowledge and public opinions in adults (Walstad and Rebeck 2002). This study included the 1992 and 1999 surveys cited above and reinforced most of the results of those studies: Economic knowledge is positively influenced by education, income, race, sex, age and taking a college-level economics course, but not a high-school level course. Political affiliation showed mixed results. Economic knowledge was the single important factor consistently affecting opinions on economic issues and for aligning those opinions with those of most economists.

Blinder and Kreuger (2004) use telephone survey data to determine factors that affect public opinions about economic issues including the public debt, social security, and the minimum wage, arguing that this is important because public opinion influences politicians and thus political decisions. They find that knowledge about these issues, measured by nine factual questions, influences opinions less than ideology but more than self-interest. The authors conclude that the level of knowledge shown by the general public in their study was "reasonable," which was on average about 50 percent correct for those who attended college. With respect to how people get their information on economic issues, 61 percent said that they regularly obtained information from TV, followed by newspapers (49 percent) and friends and relatives (35 percent). The Internet was rarely or never a source of information for 61 percent of the sample at that time.

Van der Cruijsen (2015) looks specifically at knowledge of monetary policy as measured by Dutch households' ability to correctly identify objectives of the European Central Bank, given a list of 11 possibilities. Only three of the 11 objectives are correctly identified by a majority of respondents. The author argues that knowledge of the central bank is important due to the role of households in forming inflationary expectations.

A New Zealand survey of business firms finds that managers are generally uninformed about central bank strategies, and that lack of knowledge is associated with inflation expectations largely unrelated to the Reserve Bank of New Zealand's widely publicized inflation target (Kumar et al 2015). Similar results have been found for households in the United States (Binder 2017). Binder further investigates studies of central bank communication with households and the limited receptiveness of the public to this communication.

A 2017 survey of high school teachers from different disciplines in the Fed's twelfth district investigates knowledge about the economy and attitudes about the job the Fed was doing at the time of the survey (Duzhak, Hoff and Lopus 2022). Economics teachers exhibited more knowledge than other social studies teachers and those who did not teach social studies, who are likely representative of the college-educated general public. All types of teachers were much more aware of the Fed's goal of price stability than full employment. Teachers with more knowledge were more likely to express positive attitudes about the job the Fed was doing, at a time when the it was generally agreed that the Fed was achieving its dual mandate.

Where people get their news has changed dramatically with the advent of the internet and social media. National surveys from the 1960s through the 1990s identified television as the most widely used source for national news information, followed by print newspapers and

radio (Stempel 1991). A Pew Research Center survey conducted in August – September 2020 documents the transition from TV, print and radio to digital sources (Shearer 2021). By 2020 about 86 percent of U.S. adults report getting news on a digital platform (phone, tablet or computer) "sometimes" or "often." When asked about their preferred news source, 52 percent preferred digital platforms over TV (which was preferred by 35 percent), radio (preferred by seven percent) and print publications (preferred by five percent). Within the category of digital platforms, the most common sources were news websites or apps (68 percent), search engines (65 percent), and social media (53 percent).

The Pew survey also documents that the use of social media as a news source varies widely with age, with those under age 50 more likely to use social media sources (Shearer and Mitchell 2021). As social media sources struggle with a reputation for spreading disinformation regarding issues such as the 2016 and 2020 elections and the Covid pandemic, it is interesting that the Pew study finds that about 60 percent of those who get news from social media expect the news to be largely inaccurate.

Alcott and Gentzkow (2017) investigate the role of fake news and social media in the 2016 election and elsewhere. Social media is of potential concern as a news source because it is generally not subject to outside filtering, fact-checking or editorial judgment. While those seeking news from social media are found to represent a small percentage of those using mainstream news sites, social media comprises a much larger share of fake news. The authors point out, however, that concerns over shifts to new news sources occurred in the 19th , 20th, and early 21st centuries as well, due to concerns over the influence of inexpensive news print, radio, TV, and then online sources.

DATA

To investigate what the public knows about the Fed and monetary policy and where they get their information, we use survey data collected in early 2020 (prior to the pandemic).[1] Our data consist of responses from adults residing throughout the United States. We launched our 50-question online survey through *SurveyMonkey Audience* on March 3 – 4, 2020.[2] We contracted for 1000 panelists and received 1147 survey responses. We then conducted a quality check of the responses, eliminating those with nonsensical or inconsistent answers and those who spent fewer than six minutes on the survey and thus could not have read all of the questions. Our final sample included 841 responses.[3]

Demographics: Table 1 shows characteristics of survey respondents in our sample. There are more female (57%) than male (43%) respondents. Age 45 – 59 is the largest age group (39%). The two younger groups (18 – 29 and 30 – 44) and the older group (60 or older) are fairly evenly distributed, each ranging from 18 to 21 percent of the sample. Most (69%) identify as white. About two-thirds live in the southern or western states and over half live in the suburbs. Over half are married with household incomes of over $50,000 per year. Most are employed either fulltime (44%) or part time (10%), with the remainder being unemployed or less likely to be in the labor force (retired, students, or homemakers). Almost half (46%) have a four-year college degree or higher. More (36%) identify as moderate, compared to conservative or very conservative (26%) or liberal or very liberal (32%).

[1] The California State University East Bay Institutional Review Board approved the research protocol for this study.
[2] This was about two weeks before shutdowns and shelter-in-place orders connected to the Covid-19 pandemic. We do not believe that the pandemic affected the survey results.
[3] *SurveyMonkey* contracts for respondents (panelists) who donate their time to take surveys in exchange for a small donation to a charity of their choice. *SurveyMonkey* stratifies samples according to census distributions for age and gender. However, perhaps due to the attrition in our data, we have six percent more females and eight percent fewer over age 60 than in census data.

(INSERT TABLE 1 ABOUT HERE)

Knowledge: We measure knowledge about the Fed using 18 true-false or multiple-choice questions included in the survey and shown in Table 2.[4] While most of the questions relate directly to the Fed and monetary policy, two are definitions relating to inflation and GDP. All but one of the questions reflect content found in the *Federal Reserve Education Test* (FRET; Grimes and Bosshardt 2010) or the *Test of Economic Literacy Fourth Edition* (TEL; Walstad, Rebeck, and Butters 2013). The 20-question FRET was developed, along with content standards,[5] for the Federal Reserve Banks of Atlanta and St. Louis in 2009 to provide guidance for designing economic education outreach programs. The TEL is a normed and standardized test designed to measure the economics knowledge of high school students.

(INSERT TABLE 2 ABOUT HERE)

The average score on the 18-question test is about 57 percent, with individual question scores ranging from about 27 percent to 80 percent. This is a higher overall average than found by Blinder and Krueger (2004) and Walstad (1992), both of whom asked some open-ended questions which would reduce the probability of guessing correctly. The first five questions shown in Table 2 are true-false questions that require identifying the Fed's dual mandate (price stability and maximum employment) while also recognizing that the Fed does not print money and does not aim to stabilize the stock market or balance the (implicitly government) budget.

[4] In the survey, true-false questions 1-5 and 6-9 were presented as multiple-choice questions asking respondents to "check all that apply." We scored these as true-false to capture knowledge about the individual response options.

[5] Our 18-questions address the FRET content standards of money and banking, monetary policy, and the role, history, and structure of the Federal Reserve System. They do not address the content standards of banking supervision and regulation and financial services.

Most respondents (from 59 to 65 percent) correctly identify four of the five objectives,[6] with the perhaps surprising exception being that only 15 percent knew that the Fed has an objective of maintaining full employment, reinforcing the findings of Duzhak, Hoff, and Lopus (2022). Since the Fed has had a dual mandate from Congress since 1977 to "promote effectively the goals of maximum employment, stable prices, and moderate long term interest rates" (Steelman 2011), we might expect that knowledge about maximum employment would be more in line with that about stable prices. However two studies surveying transcripts of the Federal Open Market Committee and the Fed's biannual statements to Congress prior to 2012 point to an emphasis of discussions on inflation versus unemployment, beginning in the Volcker era (Ayse et al 2019; Thornton 2012). This communication from the Fed could influence public knowledge about the objectives of the Fed. While we do not know if this trend has continued more recently, we anecdotally suggest that coverage of Fed policies in the news media seems to emphasize the Fed's role in addressing inflation rather than unemployment, even in periods when inflation was at or below the two percent target. An emphasis on inflation in news sources may lead to more public awareness about the inflation side of the dual mandate than unemployment.

Questions six through nine are true-false questions asking respondents to identify likely Fed policies during recessions. Most respondents (54 to 72 percent) correctly identified the policies about increasing or decreasing the federal funds rate, and also knew that the Fed did not control government spending. However only 11 percent correctly identified decreasing the

[6] However only two percent correctly identified both price stability and full employment as the Fed's objectives without also identifying incorrect objectives.

Federal funds rate as the correct Fed policy during a recession without also identifying an incorrect response.

The remaining nine questions are multiple-choice with a wide range of difficulty. Respondents were most knowledgeable about unemployment increasing during recessions (80%), incentives provided by changes in real interest rates (71%) and the definition of inflation (69%). They were least knowledgeable about the Fed being more decentralized and independent than most other central banks (27%). Most respondents knew why the Fed was established (60%) and the definition of GDP (58%). Fewer than half knew that Jerome Powell was the chair of the Fed (47%), and causes and effects of changes to the money supply (43% and 44% respectively).

Knowledge of Fed's Inflation Target: In addition to multiple choice questions and true-false questions, the survey included an open-ended question on the Fed's target for inflation. Responses to this question are shown in Figure 1. While answers ranged from zero percent to 1000 percent, almost half of the respondents specified relatively reasonable inflation targets of between one and three percent, with 20.8 percent giving the correct answer of two percent. However about a third of respondents either indicated that they did not know the answer or chose a response of above nine percent, indicating that they were not knowledgeable about the inflation target.

(INSERT FIGURE 1 ABOUT HERE)

Sources of knowledge about the Fed: Our survey listed several types of information sources to provide insights into how respondents may have obtained their knowledge (or lack thereof) about the Fed. We asked if respondents regularly follow the news and where they get

their news, whether they work in a field related to economics and finance or as a business professional in a different capacity, and whether they had ever studied economics in school and if so at what level (elementary/middle school through graduate school). These responses are shown in Table 3.

(INSERT TABLE 3 ABOUT HERE)

We find that 44 percent of respondents regularly follow the news, while 40 percent do so sometimes and 16 percent do not. Survey respondents were asked where they get their news and to rank the sources, given the options of news magazines, news websites, print newspapers, radio, social media, TV and other sources. The vast majority of respondents (79-94%) report using all seven of the options. TV, news websites, and social media were the most commonly cited sources, closely followed by radio. Print newspapers, magazines and other sources were the least common sources, although 79 – 86 percent reported using them.

Reasoning that lower-ranked sources may be only used occasionally, when we look at respondents' top three-ranked news sources (Table 3 Column 3) a somewhat different picture emerges. TV, news websites and social media still rank as the top three sources, except that news websites and TV switch places for first and second place. News websites and TV are far more likely to be in the top three (66% and 71%) with social media coming in third at 49 percent. Additionally, because some people may acquire information about economics and the Fed through job experience and on-the-job-training, we also look at those currently working in jobs related to finance and economics, or other business professions. About 12 percent report doing so.

Finally, because formally studying economics at some level of schooling is a likely source of information about the Fed and monetary policy, or may stimulate interest in future learning, we look at if and when respondents studied economics. We see that 69 percent of respondents report having studied economics at some level of schooling. Column 2 of Table 3 shows percentages of those who studied at any level from elementary/middle school through graduate school (so those who studied at both high school and college, for example, would be double counted), and Column 3 reports the highest level of schooling where economics was studied. Of those who ever studied economics, it was most common to do so in high school (59%) or college (42%). The highest level studied was also most commonly high school (46%) or the undergraduate level in college (42%), with about three percent reporting having studied economics at the graduate level and nine percent only in elementary or middle school.

REGRESSION MODELS

We estimate four regression models to investigate factors relating to knowledge about the Fed and who gets their knowledge from news websites, TV and social media as one of their top-three sources of news. These results are shown in Table 4. Regression 1 is used to explore the determinants of the score on the 18-question test to better understand the link between knowledge about the Fed and the sources of this knowledge. We use a traditional OLS model that takes the following form:

$$\mathbf{SCORE} = \alpha + \beta_1\mathbf{D} + \beta_2\mathbf{N} + \beta_3\mathbf{SI} + \varepsilon \quad (1)$$

The dependent variable **SCORE** is the total number correct on the 18-questions relating to the Fed and monetary policy, **D** is a vector of survey respondents' demographic characteristics, **N** captures how often people follow the news, and **SI** is a vector of variables representing possible

sources of information of knowledge about the Fed. The specific variables included in the equation are shown in the first column of Table 4 (and were described in Table 1 or 3).

(INSERT TABLE 4 ABOUT HERE)

Demographic characteristics include whether respondents identify as female, their age, income, and the highest level of education attained. Female is a dummy variable with the omitted category including those who identify as male. Age categories include 18 – 29 (GenZ and younger Millennials), ages 30 – 44 (older Millennials and younger GenXers), and ages 45 – 59 (older GenXers). The omitted category is baby boomers (aged 60 and over). Income is divided into categories of those earning less than $25,000, from $25,000 to $49,999, $50,000 to $99,999, $100,000 to $149,999 and those who prefer not to answer. Those with incomes of $150,000 or more are the omitted category. Categories for the highest level of education achieved include some college, a four-year college degree, and a graduate or professional degree, with a high school education or less as the omitted category.[7]

Because following the news may result in people acquiring knowledge about the Fed, we include dummy variables for whether respondents follow the news regularly or sometimes, with not following the news the omitted category. For sources of news, we include whether the top three reported news sources (news websites, TV and social media) rank in respondents' top three sources of the news. To investigate on-the-job learning, we include a variable for whether the respondent works in an industry related to business or finance, or in another capacity as a business professional. Effects of formal schooling in economics are captured by

[7] The survey also included a "prefer not to answer" category for highest level of education achieved. Because only nine respondents chose this option, for ease of interpretation we re-coded these responses into education categories corresponding to their scores on the 18-question test.

variables measuring the highest level of school when respondents studied economics, with never studied economics as the omitted variable.

The next three regression models estimated in Table 4 (Regressions 2, 3, and 4) are binary logistic models and investigate who ranks the news sources of news websites, TV, and social media among their top three. These equations take the following form:

$$\mathbf{NEWS\_SOURCE} = \alpha + \beta_1\mathbf{D} + \beta_2\mathbf{N} + \beta_3\mathbf{V} + \varepsilon \quad (2)$$

The dependent variables, NEWS_SOURCE, are binary variables indicating whether news websites, TV or social media are one of the top three news sources. Independent variables include the same vector of demographics **D** as in the knowledge equation (sex, age, income, and highest level of education attained). **N** again represents whether the respondent follows the news regularly or somewhat, compared to those who seldom follow the news. Because the choice of news source may vary with political views, **V** indicates the viewpoint of the respondent on a conservative to liberal continuum. Respondents are classified as conservative or very conservative or as liberal or very liberal, with moderate being the omitted category.

RESULTS AND DISCUSSION

Economic Knowledge: The results for Regression 1 with Score as the dependent variable show that knowledge about the Fed, as measured by the 18-question test, varies by demographic groups and that all of the demographic controls (sex, age, income and education) enter the equation with significance. Women score about five percent lower (0.88/18) on the 18-question test on average than men. This finding is consistent with the prior literature about gender differences in the public's knowledge of economics (Walstad 1997; Walstad and Rebeck 2002) and deserves further attention.

Interestingly, the older people in the study, the baby boomers, score significantly higher than each of the other generation groups, with the knowledge gap decreasing for each generation as age increases. While those aged 18 – 29 score seven percent (1.34 points) lower than baby boomers, that gap decreases to six percent (1.1 points) for those aged 30 – 44 and to five percent (.90 points) for those aged 45 – 60. Given our controls, this implies that life-long learning is taking place regardless of more formal acquisition of information about economics. Life experiences such as living through business cycles and periods of inflation may lead to greater understanding of economics. For example, because the last significant period of inflation in the U.S. at the time of the survey was in the late 1970's to early 1980's, the baby boomers would be about the only ones who would have lived through and are likely to remember personally the effects of inflation. Similarly, older individuals have been faced with making more financial decisions than their younger counterparts and may therefore be more apt to correctly answer questions about basic economics.

Household income significantly affects economic knowledge. Those who earn annual incomes of under $50,000 score significantly lower than those earning over $150,000, with the effect of income on knowledge decreasing consistently as incomes increase. Knowledge increases consistently the higher the level of educational attainment. Those attending some college, have a college degree, or a graduate or professional degree score significantly higher than those with a high school diploma or less.

Turning to possible ways that people may acquire information about economics, we see that following the news regularly makes a significant difference. Individuals who regularly follow the news score seven percent (1.2 points) higher on the knowledge test. Where people

get their news matters as well. Those who rank news websites as one of their top three news sources score significantly higher on the test, while those who list social media as one of their top three sources score significantly lower. Getting news from TV does not significantly affect the knowledge score.

Working in fields related to economics and finance does not affect the score on the 18-question test. However studying economics at the college level significantly improves scores[8], while those who only studied economics in high school or elementary/middle school did not score higher than those who never studied economics. This reinforces results of prior studies (Walstad 1997, Walstad and Rebeck 2002) that find that college-level economics has lasting effects on knowledge, but high school economics does not. The rigor of college-level courses may help knowledge retention. As well, taking economics in college is most often a choice and may reflect an individual's interest in the topic.

News Sources: Given that following the news is important for understanding economics, we next look into characteristics of those who get their news from different sources. Regressions 2 – 4 of Table 4 are binary-logistic regressions estimating the probability of using news websites, TV or social media as one of the top-three news sources, given demographic characteristics, how often respondents follow the news, and whether they identify as liberal or conservative along a political spectrum.

Regression 2 shows that those for whom news websites are a top-three news source tend to be male, higher income, have a graduate degree, and to follow the news regularly. News website users are also less likely to prefer not to state their liberal or conservative

[8] Studying economics at the graduate level interacts with graduate school being the highest level of education completed and is not significant in this specification.

viewpoint. Age does not make a difference for users of news websites. While our data do not show what news websites survey respondents are using, news websites are likely a more mainstream source of the news than social media, and subject to more scrutiny and less misinformation.

Those who list TV as a top news source, shown in Regression 3, tend to be female and older. Those aged 18 – 44 are significantly less likely to use TV compared to baby boomers, while the difference between those aged 45 - 60 and baby boomers is not significantly different. Income determines who uses TV to some extent. Those with income levels between $50,000 and $99,999, and those who prefer not to state their income, are more likely to use TV than those with incomes over $150,000. While the highest level of education achieved does not affect who uses TV, those who follow the news regularly or somewhat regularly are significantly more likely to use TV as a major source of their news than those who do not. TV users are also significantly less likely to identify as liberal or very liberal, compared to those who identify as moderate.

By contrast, Regression 4 shows that those for whom social media is a top news source tend to be female, younger than 60, and without college degrees. All younger age groups get there news significantly more from social media than baby boomers over age 60, with the usage declining somewhat as age increases. Those getting news from social media are significantly less likely to have attended college at any level, and are also significantly less likely to follow the news regularly. Income and liberal vs. conservative viewpoints are not significant determinants of who gets their news from social media.

Following the News Regularly: Given that following the news regularly is important for knowledge of economics and for determining preferred news sources, we further explore who follows the news regularly in Table 5. We know from Regression 1 that those who follow the news regularly exhibit more knowledge about the Fed, and from Regressions 2 – 4 that they are more likely to get their news from news websites and TV and less likely to get their news from social media. Table 5 shows that those who follow the news frequently are also more likely to be male (50%) compared to female (39%). While only 25 percent of those under age 30 follow the news regularly, 68 percent of those over age 60 do so. Following the news regularly increases steadily with income, ranging from about one-third of those with annual incomes under $25,000 to almost two-thirds of those with annual incomes of over $150,000. Following the news regularly increases steadily with education, again ranging from about one-third of those without college degrees to about two-thirds of those with graduate degrees. Because gender, age, income and education are also the characteristics of those who have more economic knowledge, these correlations are consistent with our earlier finding that following the news affects economic knowledge. As well, 40 percent of those identifying as moderate regularly follow the news, compared to 45 percent of conservatives and 54 percent of liberals. This may indicate that those with views more to the left or right of center are more interested in the news and thus follow it more often.

(INSERT TABLE 5 ABOUT HERE)

CONCUSIONS

Because following the news matters for economic knowledge, there are implications here for economic education. Following the news should be considered an important

determinant of economic knowledge along with the more commonly identified drivers such as formally studying economics. Related to this is our finding that learning economics is a life-long process and does not stop with formal coursework in high school or college. We find that older people, regardless of the level of education or background studying economics, have more knowledge about the Fed. Therefore to increase economic knowledge of the general public, economic educators may want to consider reaching people through media posts and news outlets in addition to focusing on K-12 or college-level methods and materials.

Because different groups of people use different news sources, economic educators and the Fed may be able to improve the distribution of information to the public through the use of a variety of news outlets, the most frequently used being news websites, TV, and social media. Because news websites are found to positively affect economic knowledge, we suggest that they could be a targeted channel for those wishing to deliver economic information. Although getting news through social media is found to negatively affect economic knowledge in our study, this may be due to the quality of information and the disinformation often associated with it. Social media could serve as a way to reach audiences that are not regularly tuned to economics-related news outlets and who tend to be younger, female, and with less formal education. Posting accurate economic information via social media to reach these audiences may help narrow the knowledge gap.

Finally, keeping in mind that Fed communications to the public are a form of economic education, our findings indicate that this communication may be achieving some success. To the extent that Fed communications reach news outlets, these communications are likely reaching those who follow the news regularly through mainstream sources such as news

websites, and those who follow the news regularly using news websites exhibit more knowledge about the Fed. However there is obvious room for improvement in this regard, especially with respect to the full-employment aspect of the Fed's dual mandate, in that overall knowledge scores on our 18-question test averaged about 57 percent.

Meanwhile economics instructors at all levels can play an important role by providing the foundation for students and the public to consider the sources of the news they consume, and to focus on news sources that are vetted and subject to fact checks. Students can be encouraged to read the news and to stay up to date with current events. Instructors can emphasize current economic topics in the classroom, show examples from the news and tie news events to topics being studied. If students and the public can be encouraged and guided to follow the news and to use accurate news sources, economic knowledge can improve, leading to better information about the Fed and ultimately to better expectations and influences on policies.

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Table 1: Characteristics of Survey Respondents			(n = 841)
Characteristic	**Number (%)**	**Characteristic**	**Number (%)**
Sex		**Marital Status**	
Male	360 (43%)	Single never married	256 (30%)
Female	481 (57%)	Married / domestic partnership	446 (53%)
		Divorced / separated	92 (11%)
		Widowed	30 (4%)
		Prefer not to answer	17 (2%)
Age		**Household Income**	
18 – 29	178 (21%)	< $25,000	128 (15%)
30 – 44	178 (21%)	$25,000 - $49,999	171 (20%)
45 – 59	330 (39%)	$50,000 - $99,999	269 (32%)
60 or older	155 (18%)	$100,000 - $149,999	128 (15%)
		≥ $150,000	68 (8%)
		Prefer not to answer	77 (9%)
Race /Ethnicity		**Employment Status**	
Asian	66 (8%)	Employed full-time	369 (44%)
Black/ African American	51 (6%)	Employed part-time	85 (10%)
Hispanic / Latino	60 (7%)	Unemployed	29 (3%)
Mixed	39 (5%)	Retired	145 (17%)
White	582 (69%)	Student	89 (11%)
Other / Prefer not to answer	43 (5%)	Homemaker/caregiver	61 (7%)
		Other /Prefer not-did not answer	63 (8%)
Region of Country Where Live		**Highest Level of Education Completed**	
Northeast	133 (16%)		
Midwest	193 (23%)	High school diploma or less	143 (17%)
South	265 (32%)	Some college or technical school	181 (22%)
West	250 (30%)	Community college/ tech degree	123 (15%)
		Bachelor's degree	256 (30%)
		Masters/prof/doctoral degree	138 (16%)
Community Type Where Live		**Viewpoint**	
Rural	172 (21%)	Very conservative	62 (7%)
Suburban	443 (53%)	Conservative	158 (19%)
Urban	214 (26%)	Moderate	299 (36%)
Prefer not to answer	12 (1%)	Liberal	179 (21%)
		Very Liberal	93 (11%)

Table 2: Economics Content Questions		**(n=841)**
Questions 1-5: True-False* Identify Fed's main objectives	Percent Correct	Source of Question
1. Printing money (false)	58.6	SF Fed / FRET
2. Price stability (true)	63.6	SF Fed / FRET
3. Stock market stability (false)	59.9	SF Fed
4. Full employment (true)	15.1	SF Fed / FRET
5. Balancing the budget (false)	65.4	SF Fed / FRET
Questions 6-9: True-False Identify likely Fed policies during recession**		
6. Increase federal funds rate (false)	71.5	Adapted from TEL
7. Decrease federal funds rate (true)	54.6	Adapted from TEL
8. Increase government spending (false)	72.3	Adapted from TEL
9. Decrease government spending (false)	63.9	Adapted from TEL
Questions 10-18: Multiple choice (4 response)		
10. Chair of Fed is Jerome Powell.	47.3	SF Fed
11. Inflation is sustained increase in general level of prices.	69.3	TEL
12. When banks increase loans, money supply increases.	43.0	TEL
13. Fed is different from most other central banks due to decentralization and independence.	27.2	FRET
14. Fed was established to provide more stable monetary system following panics.	60.0	Adapted from FRET
15. GDP is market value of the nation's output of final goods and services.	58.0	TEL
16. Increase in real interest rates provides incentives to save more and borrow less.	70.9	Adapted from TEL
17. Unemployment increases during recessions.	80.4	TEL
18. Increasing the money supply and credit tends to decrease unemployment and increases inflation in the short run.	43.8	FRET
Average percentage correct	**56.9 (SD=2.91)**	
*** For questions 1-5, 2% (17/841) correctly identified only price stability and full employment. **For questions 6-9, 10.5% (88/841) correctly identified only decreasing the federal funds rate.**		

Table 3: Possible Sources of Information about the Fed		(n=841)
	Number / % of 841	**Number / % of 841**
How often follow the news		
Regularly follow news	369 (43.9%)	
Sometimes follow the news	337 (40.1%)	
Don't follow the news regularly	135 (16.1%)	
Where get news		**News source Is ranked one of top three**
News magazines	704 (83.7%)	169 (20.1%)
News websites	774 (92.0%)	597 (71.0%)
Print newspapers	720 (85.6%)	223 (26.0%)
Radio	756 (89.9%)	350 (41.6%)
Social media	758 (90.1%)	412 (49.0%)
TV	786 (93.5%)	557 (66.2%)
Other	667 (79.3%)	94 (11.2%)
Work in economics, finance, or as other business professional	100 (11.9%)	
Background studying economics		
Studied economics	580 (69.0)	
Never studied economics	261 (31.0)	
	Number/% of 580	**Number/% of 580**
Level studied economics		**Highest level studied economics**
Elementary/middle school	134 (23.9%)	53 (9.1%)
High school	343 (59.1%)	266 (45.9%)
College/university	246 (42.4%)	242 (41.7%)
Graduate school	19 (3.3%)	19 (3.3%)

Table 4: Regression Models and Results

	1. Score (OLS)		2. News from Websites (binary logistic)		3. News from TV (binary logistic)		4. News from Social Media (binary logistic)	
Female	-0.880***	(0.179)	-0.552***	(0.170)	0.300*	(0.157)	0.452***	(0.154)
Age 18-29	-1.337***	(0.304)	0.131-	(0.273)	-1.247***	(0.265)	1.831***	(0.265)
30-44	-1.109***	(0.285)	0.085	(0.271)	-0.760***	(0.259)	1.407***	(0.252)
45-59	-0.893***	(0.249)	0.011	(0.236)	-0.369	(0.240)	0.776***	(0.227)
Income $0-24,999	-1.666***	(0.402)	-0.992**	(0.466)	-0.093	(0.339)	-0.091	(0.348)
$25k-49,999	-0.623*	(0.378)	-1.112**	(0.451)	0.489	(0.325)	-0.047	(0.329)
$50k-99,999	-0.434	(0.350)	-0.949**	(0.435)	0.630**	(0.299)	0.293	(0.305)
$100k-150,000	-0.254	(0.376)	-0.521	(0.470)	0.375	(0.321)	-0.03	(0.330)
Prefer not answer	-0.149	(0.431)	-1.414***	(0.488)	0.434*	(0.392)	-0.099	(0.388)
Highest level ed: Some college	0.566**	(0.256)	0.166	(0.222)	0.065	(0.231)	-0.277	(0.219)
College degree	0.775***	(0.280)	0.373	(0.244)	-0.045	(0.245)	-0.555**	
Grad degree	1.579***	(0.333)	0.633**	(0.316)	-0.442	(0.285)	-0.477*	(0.28)
Follow news Regularly	1.244***	(0.264)	0.676***	(0.236)	0.684***	(0.229)	-0.45**	(0.226)
Some	0.127	(0.255)	0.173	(0.219)	0.468**	(0.218)	-0.119	(0.219)
News Source: TV rank 1-3	-0.190	(0.190)						
Websites rank 1-3	0.745***	(0.198)						
SocMedia rank 1-3	-0.336*	(0.182)						
Work in Econ /Finance industry	-0.151	(0.269)						
Highest level econ: Elem/midsch	-0.309	(0.380)						
High school	-0.274	(0.223)						
College	0.483**	(0.239)						
Grad school	0.589	(0.613)						
Viewpoint: Conservative or very			-0.198	(0.210)	-0.101	(0.206)	-0.457	(0.196)
Liberal or very			0.124	(0.201)	-0.419**	(0.187)	-0.221	(0.182)
Prefer not answer			-0.819**	(0.337)	0.170	(0.359)	-0.375	(0.337)
(Constant)	10.631***	(0.539)	1.575***	(0.561)	0.448	(0.458)	-0.557	(0.459)
R^2 / pseudo R^2	.302		.129		.115		.167	

*****p<.01; **p<.05; *p<.10** **(Standard errors in parentheses)** **n=841**

Table 5: Frequency of Following the News			(n=841)
	Regularly	**Sometimes**	**Do not**
Female (n=481)	39%	44%	17%
Male (n=360)	50%	35%	15%
Age 18-29 (n-178)	25%	52%	23%
30-44 (n=178)	43%	38%	19%
45-60 (n=330)	43%	42%	15%
> 60 (n=155)	68%	24%	8%
Income $0-24,999	34%	47%	20%
$25k-49,999	39%	43%	18%
$50k-99,999	44%	41%	15%
$100k-150,000	55%	34%	11%
> $150,000	65%	26%	9%
Prefer not answer	35%	42%	23%
Highest Level Ed ≤ High school diploma	32%	49%	19%
Some college	39%	41%	20%
College degree	46%	39%	14%
Grad degree	63%	29%	8%
Viewpoint: Conservative or very (n=220)	45%	37%	18%
Moderate (n=299)	40%	44%	17%
Liberal or very (n=272)	54%	36%	11%
Prefer not answer (n= 50)	10%	58%	32%

Figure 1: Inflation Target **(n=841)**