

# Stress in Boom Times: Understanding Teachers' Economic Anxiety in a High Cost Urban District

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## ABSTRACT

Despite growing concern over teachers' ability to live comfortably where they work, we know little about the systematic impacts of affordability on teachers' well-being, particularly in highcost urban areas. We use novel survey data from San Francisco to identify the patterns and prevalence of economic anxiety among teachers and how this anxiety relates to teachers' attitudes and behaviors. We find that San Francisco teachers have far higher levels of economic anxiety on average than a national sample of employed adults and that young teachers are particularly anxious. Furthermore, anxiety relates to job performance and well-being economically anxious teachers tend to have more negative attitudes about their jobs, have worse attendance, and are more likely to be chronically absent.

## VERSION

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**Stress in Boom Times:**  
**Understanding Teachers' Economic Anxiety in a High Cost Urban District**

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## **ABSTRACT**

Despite growing concern over teachers' ability to live comfortably where they work, we know little about the systematic impacts of affordability on teachers' well-being, particularly in high-cost urban areas. We use novel survey data from San Francisco to identify the patterns and prevalence of economic anxiety among teachers and how this anxiety relates to teachers' attitudes and behaviors. We find that San Francisco teachers have far higher levels of economic anxiety on average than a national sample of employed adults and that young teachers are particularly anxious. Furthermore, anxiety relates to job performance and well-being—economically anxious teachers tend to have more negative attitudes about their jobs, have worse attendance, and are more likely to be chronically absent.

## INTRODUCTION

Certain professions—including nurses, doctors, and teachers—require not only high levels of education or specialized skills, but also a geographically dispersed workforce. Although we commonly worry about the supply of professionals in rural and low-income areas (Ricketts 2005, Continelli et al. 2010, Hsia and Shen 2011), supply constraints have surged in urban areas with extremely high costs of living—areas such as San Francisco, New York City, Washington D.C., and a growing list of other cities with fast economic growth. For professionals with middle-level incomes, such as school teachers, the expense of living in high cost areas may prevent their moving to or staying in that area. For those who do stay, high costs may push them to take on lengthy commutes, accept suboptimal housing situations, and experience increasing personal anxiety.

This problem is particularly acute in the San Francisco Bay Area,<sup>1</sup> where the median listing price of a home in October of 2017 was \$749,000 and the median monthly rent was \$3,295. In the city of San Francisco, these values were approximately \$1.2 million and \$4,450 (Zillow 2017). In 2016, 15.3 percent of the region’s commuters travelled an average of 60 minutes or more each day, relative to 8.7 percent nationally and up from 12.0 percent three years earlier (U.S. Census Bureau).

Concerns about the impact of escalating costs on the supply of teachers are mounting (Westervelt 2016, Simmons 2017, Knight and Palomino 2016). The potential deterioration in quality of life that these statistics illustrate may affect not just teachers themselves but also those they teach—including low-income families who live in high-cost areas, whom the benefits of a booming city have failed to reach. Despite growing attention to the problem of affordability generally, we know little beyond anecdotal reports about the experience of teachers and the effects it may have on the education sector.

In this paper, using novel survey data from San Francisco, we find evidence of high economic anxiety among teachers—considerably higher than a national sample of employed workers—which translates into behaviors that could negatively affect students. Our focus is on

understanding the prevalence and patterns of economic anxiety among teachers. We also explore the implications, including teachers' attendance and plans for resignation, to understand potential impacts on teacher supply and student outcomes. To our knowledge, ours is the first study to focus on K-12 teachers' financial anxiety and its implications for schools and students. We are also not aware of any similar research that has examined the topic in a regional context that is on the forefront of the urban affordability crisis.

Research on teachers' financial status and wellbeing has primarily focused on teacher pay (Hanushek and Rivkin 2004, Allegretto et al. 2004, 2008, 2011), which increasingly lags behind salaries of other workers with bachelor's degrees as the U.S. labor market rebounds from the 2008-10 recession (Allegretto and Mishel 2016, PayScale 2013). Low salaries have consequences. Teachers' decisions to enter and stay in the profession are responsive to wages and pay incentives, particularly for less-experienced teachers (Clotfelter et al. 2011, Hendricks 2014, Feng and Sass 2015). Pay can also affect teacher sorting among districts and schools (Steele, Murnane, and Willett 2010; Hough and Loeb 2013) and wage increases can draw teachers to districts whose salaries are higher relative to nearby districts (Imazeki 2005). Moreover, financial incentives can affect not only teachers but also their students, with wage increases leading to eventual reduction in high-school dropouts and increases in college attendance (Loeb and Page 2000).

By and large, the existing literature has not made distinctions between teachers' compensation and their sense of financial wellbeing. An exception to this is King et al. (2016), which examines multiple dimensions of early childhood teachers' financial wellbeing, including their perception of their ability to cover basic expenses, and finds that financial wellbeing is associated with young children's behaviors in the classroom. Our research takes a related approach, using measures of K-12 teachers' financial anxiety and their ability to cover large or unexpected costs to understand their experience and the relationship it has with their behavior and attitudes toward teaching. We address the following three research questions:

Question 1: To what extent do teachers in a high cost-of-living area face economic anxiety and how does their experience compare to the nation at large?

Question 2: Which types of teachers face the most economic anxiety—by demographics, specialty area, and experience, as well as by assets, financial responsibilities, and family resources?

Question 3: How does economic anxiety predict teachers' attitudes and behaviors that could affect their teaching and career choices, and, thus, the overall supply of teachers?

## **DATA**

### ***Survey Data***

This study uses survey data collected in partnership between San Francisco Unified School District (SFUSD) and Stanford University.<sup>2</sup> The survey included a section addressing teachers' financial stability and sense of economic anxiety, which we adapted from an economic survey of Americans conducted by Marketplace Edison Research in February of the same year. This nationally representative survey asked questions about Americans' financial situations and perceptions of economic stress; providing a basis for comparing teacher responses to a national sample.<sup>3</sup>

We ask teachers three questions, modified from the national survey, that collectively form our measure of economic anxiety. The first asks teachers how frequently their financial situation makes them feel anxious; the second question, how easy or difficult it is to pay their rent or mortgage each month; the third, how difficult it would be to pay an unexpected expense of \$1000.<sup>4</sup> As a follow-up, the survey asked whether respondents have a friend or family member they can turn to for help, were they unable to pay the \$1000 expense.

In addition to the three primary economic anxiety questions, we use other survey questions to better understand teachers' financial situations and family background, some of which we also adapted from the Marketplace/Edison survey. These questions ask about teachers' household income levels, sources of household income, home ownership, receipt of inheritance or other wealth, student loan repayment, and child care costs. We also ask about teachers' parental education level, free or reduced-price lunch (FRPL) eligibility as a child, and whether they attended primarily Bay Area schools growing up, as a measure of social and, potentially, financial capital in the community. Additionally, we analyze a series of questions addressing

teachers' attitudes toward their job—including whether they like being a teacher and how likely they would be to do it again—as well as a question about their plans for resignation. Lastly, our survey asks teachers how long it takes them to commute to and from school. We use this variable as another indicator of teachers' financial situations and quality of life, since the ability to live close to work and avoid long commutes is generally considered to be an advantage among workers (Kahneman and Krueger 2006; Choi et al. 2013).

### ***Administrative Data***

We match our survey data to administrative records provided by the district in order to examine patterns of economic anxiety across teacher characteristics. We use data on teachers' race, gender, age, experience, subject and school-level they teach, as well as on racial demographics and subsidized lunch eligibility of students in their schools. Our partnership also provides unique data on teachers' own attendance and their reasons for missing work, from which we create variables for days missed and whether teachers miss more than ten days in a school year, consistent with the definition of chronic teacher absenteeism used by the US Department of Education's Office of Civil Rights (CRDC User Manual 2014).

## **TEACHERS' ECONOMIC ANXIETY**

### ***Teachers' Perceptions***

Table 1 shows SFUSD teachers' responses to the primary economic anxiety questions.<sup>5</sup> We display the frequency and percentage of teachers who selected an answer out of the subset of respondents for whom the question is applicable and who answered the question. Columns (3) and (4) provide points of comparison from the full sample of the Marketplace survey and from the employed subset, respectively. When compared to a national sample of adults in early 2016, SFUSD teachers are considerably more likely to experience economic anxiety, with nearly half experiencing frequent anxiety and a full 85 percent experiencing economic anxiety frequently or sometimes. Renters appear to face the most acute anxiety about covering housing costs. The prospect of paying an unexpected \$1,000 expense strikes 39 percent of teachers as very difficult.

Anxiety among SFUSD teachers exceeds that for both the national sample and the employed subsample, arguably a better comparison for teachers. Although Americans generally express

some level of economic anxiety, their responses tend not to fall at the extreme high end of each question's distribution. Relative to the national samples, SFUSD teachers are more likely to be frequently anxious about their financial situation, to find it very difficult to cover monthly rent or mortgage payments, and to find it very difficult to cover a large, unexpected expense.<sup>6</sup> Despite their relatively high levels of economic anxiety, however, SFUSD teachers are also more likely to indicate that they have someone to turn to should they be unable to cover their expenses, suggesting that they may have stronger support networks despite their financial burdens.

### ***Differences Among Teachers***

Our results further reveal that these levels of economic anxiety are experienced fairly consistently across types of teachers in SFUSD, except by age. We estimate bivariate linear probability models in which the dependent variable is an indicator for a teacher selecting the most extreme option of the economic stress variables (i.e. feeling frequent financial anxiety, or saying it is very difficult to cover housing costs) and the explanatory variable is a teacher or school characteristic. These characteristics include demographic characteristics (race, gender, age), professional characteristics (experience, subject or level taught), and teachers' school characteristics (share of students by race, share FRPL-eligible). We intend these models to uncover patterns of economic anxiety rather than identify primary drivers of teachers' responses. Table 2 gives the estimated coefficients (interpreted as predicted percentage difference) from these models where each of the seven categories of covariates is a separate model for each dependent variable. We report robust standard errors in parentheses.<sup>7</sup>

While most of the teacher characteristics that we assess are unrelated to expressed economic anxiety, age is a strong predictor, with younger teachers more likely to express economic anxiety across all three anxiety measures. Similarly, veteran teachers are less likely to be economically anxious than their less experienced counterparts; teachers with five years of experience or less experience the most economic anxiety. A number of factors may contribute to this trend. Younger and less experienced teachers not only earn lower salaries than their more experienced colleagues, they are also less likely to be part of a two-income household and are likely to face higher housing costs if they are new to the city or the labor market.



Other demographics are less consistent predictors. For the most part, teachers do not vary by race or gender in how likely they are to feel frequently anxious about their finances or to find it very difficult to cover housing costs. However, black and Hispanic teachers are significantly more likely than white teachers to say that it would be very difficult to cover a \$1,000 expense. The same is true for female teachers relative to males.<sup>8</sup>

Although younger, less-experienced teachers tend to be concentrated in high-minority and high-poverty schools, the student population at a teachers' school does not individually predict their economic anxiety with one exception: the share of black students at a teacher's school. With each additional percentage point in the share of black students, a teacher is 0.29 percentage points more likely to be frequently financially anxious and 0.34 percentage points more likely to find it very difficult to cover an unexpected expense.<sup>9</sup> San Francisco's black student population is small for a large urban district (seven percent in 2017), and the schools with the largest proportions of black students tend to be located on the outskirts of the city, relatively far from other city neighborhoods and from the region's main public transportation system. Although location cannot completely explain these findings, it appears to be a contributing factor along with teacher race and experience. In models that additionally control for self-reported commute time, or for teacher experience, or for teacher race, the coefficients on black share in the \$1,000 expense models remain significant. However, in models that control for at least two out of three of these factors, the coefficients on black share of students are reduced to non-significance.<sup>10</sup>

In supplemental results, we estimate comparable models using logistic regression and find no differences in the substance or significance of our results. We also estimate models with more broadly defined dependent variables; for example, indicator variables for respondents reporting financial anxiety "frequently" or "sometimes," or for reporting that it is "very difficult" or "somewhat difficult" to cover a cost. With only a few exceptions across models, the signs and significance of our estimated coefficients remain the same. The results of all alternative models are available upon request.

### ***Teachers' Financial Situations***

Our survey data permit us to assess how the specifics of teachers' financial situations predict their economic anxiety. Table 3 shows an overview of SFUSD teachers' financial profiles and possible indicators of their access to support networks—their parents' level of education, their own subsidized lunch-eligibility as a child, and whether they attended a K-12 school in the area. As we do in Table 1, we make comparisons to the Marketplace survey.<sup>11</sup>

SFUSD teachers tend to have higher household income than the national sample. The modal income category among teachers is \$50,000-\$74,999 (the lower end of the salary schedule in SFUSD), while it is under \$50,000 nationally. About 37 percent of teachers have a household income of greater than \$100,000, compared to 22 percent of employed Americans nationally. The national survey's highest income category is \$150,000 or greater, and although the percent earning this nationally among employed respondents (9) is similar to that among teachers (11 percent), a non-negligible percent of SFUSD teachers (less than 3) are in a household with income greater than \$250,000. That SFUSD teachers have above-average household income levels is perhaps unsurprising. Teachers have at least a Bachelors' degree, unlike the national sample, and they have to be able to afford—at least at a minimal level—living in the Bay Area. Nonetheless, SFUSD teachers do not receive the same salary premium that many other Bay Area workers do. The 2016 median individual earnings for a person with a Bachelor's but no graduate or professional degree in the Bay Area metropolitan area—around \$67,000—was almost \$10,000 more than that for the state as a whole (U.S. Census Bureau).<sup>12</sup> However, the average SFUSD teacher salary was, at around \$68,000, almost \$10,000 *less* than the average teacher's salary statewide (California Department of Education).

Our survey reveals other aspects of teachers' financial situations that indicate a financial struggle or lower quality of life. Nearly 70 percent of teachers report that their SFUSD salary provides the majority of their household income—even though 62 percent of teachers report living with a spouse or partner. Twenty percent of SFUSD teachers have a second job to help make ends meet. This prevalence of additional work is not unique to San Francisco; according to data from the 2011-12 NCES Schools and Staffing Survey, in 11 states at least 20 percent of teachers held a second job (Boser and Straus 2014). The survey also shows that SFUSD teachers are considerably more likely to rent than own a home and are considerably more likely to rent than

the national sample, a finding consistent with the high property values in the area. More than a third are paying off student loans. On average, teachers report commuting 0.56 hours (or 34 minutes) home, with times ranging from one minute up to three hours with a standard deviation of 26 minutes. Relatively small numbers report receiving financial help from family members other than a spouse/partner (17 percent) or inheriting wealth (7 percent). Lastly, on a more neutral note, more than a third of teachers (38 percent) appear to have grown up in the area, as they indicated that they attended primarily Bay Area schools as a child.

### ***Drawing Connections Between Teachers' Financial Situations and Economic Anxiety***

The results in Tables 1 and 3 provide evidence that SFUSD teachers face greater economic anxiety than Americans do on average, despite having higher household income and potentially stronger support networks. Moreover, the specifics of teachers' financial situations significantly predict their economic anxiety.

Results presented in Table 4 treat the components of teachers' financial situations (shown in Table 3) as predictors of the anxiety indicators. Because our earlier findings indicate that age is a strong predictor of teachers' economic anxiety, and because the specifics of teachers' financial situations (for example, whether they live with a partner or spouse, or whether they are paying off student loans) can be highly dependent on age, we control for age in these models.

The specifics of teachers' financial situations provide insights into their economic anxiety and its potential drivers. Teachers who are the primary or solo breadwinners are more likely to feel financially anxious and to have difficulty covering housing and unexpected expenses, as are teachers who hold a second job to make ends meet. We find no relationship between economic anxiety and financial support from family members; this result is reasonable, as receipt of family support could identify highly resourced teachers (as a result of help) or teachers whose financial instability requires help. Teachers who rent, are paying off student loans, are struggling to find affordable child care, or self-report long commutes are also more likely to indicate economic stress, with almost all coefficients statistically significant.

We also find evidence that teachers from more advantaged family backgrounds or who are more likely to have a financial support network experience less economic anxiety. Teachers whose parents have higher education levels experience less economic anxiety, although the relationship is only significant when the dependent variable is difficulty paying a \$1000 expense. Teachers who attended primarily Bay Area schools are less likely to have economic stress, although the coefficient is only significant when the dependent variable is frequently feeling financially anxious. Conversely, teachers who come from poorer socioeconomic backgrounds report greater economic stress across all three dependent variables. Interestingly, in models where we control for teachers' childhood eligibility for subsidized lunch, all three coefficients for being from the Bay Area are significant and negative. This pattern suggests that the negative sign is not simply because Bay Area families tend to be more affluent, but that having family in the area or at least background with the region may reduce the economic anxiety teachers feel.

We also consider the possibility that the significant relationships found between teachers' economic anxiety and their current financial situations—household income, home ownership, student loan status, child care costs, and commute—might be driven by teachers' family background, especially their income levels growing up. We estimate models examining these relationships while controlling for teachers' family background and support network. Our results are essentially unchanged from those of the unconditional models presented in Table 4, providing evidence that the relationships between teachers' current financial situations and their economic anxiety are consistent across family background. For all of these results, comparable logit models produce virtually identical patterns to linear probability models.

## **IMPLICATIONS FOR TEACHER BEHAVIOR AND RETENTION**

Our final research question considers how economic anxiety predicts teachers' attitudes and behaviors in ways that could affect their teaching and the supply of teachers in high cost districts like San Francisco. We find evidence of consequences to teachers' economic wellbeing. Teachers with high levels of economic anxiety tend to have a lower regard for teaching, are more likely to plan to resign, and have lower school attendance. These findings show that the economic wellbeing of teachers predicts not just satisfaction with their job, but also demonstrated behavior.

We construct a variable of teachers' regard for teaching through a principal component analysis of a series of survey questions aimed at measuring teachers' attitudes toward their job. These Likert-scale questions include (a) whether they would be a teacher if they could do it all over again, (b) whether they like being a teacher in SFUSD, (c) whether they like working at their current school, (d) whether they feel good about their performance as a teacher, and (e) whether they are discouraged by the state of the profession. Our measure of teachers' plans for resignation comes from a survey question asking their plans for the following year.<sup>13</sup>

We measure teachers' absences in multiple ways. Using our administrative data on teacher attendance, we construct continuous measures of days missed for any reason, for professional development only, for illness only, and for personal leave or emergency only.<sup>14</sup> Because a number of outliers have especially high absence rates, we drop these measures for teachers who are in the top one percent of our sample for number of days absent. We also construct indicators for chronic absence (defined as missing more than 10 days) for any reason, and specifically for illness or personal leave/emergency.<sup>15</sup>

Table 5 shows the results of linear probability models, where measures of financial anxiety predict positive regard for teaching, plans to resign, and measures of attendance. Each cell shows the estimated coefficient from a separate regression and robust standard errors are in parentheses. Estimating comparable logit models and models including age as a control variable do not meaningfully change our results.

Economically anxious teachers have a lower regard for teaching and are more likely to plan to resign in the following year, across all three of our economic anxiety variables. Additionally, teachers who are frequently anxious about their financial situation miss 1.6 more days of school, on average—a 15 percent increase over the mean missed days in our sample of teachers. While some of this absenteeism is driven by an increase in professional development, frequent anxiety is also significantly related to increases in days missed for illness and for personal leave. Frequently anxious teachers are 12 percentage points more likely to be chronically absent. Our findings are similar for the other measures of economic anxiety: teachers who find it very

difficult to cover housing costs miss more total days of school and are significantly more likely to be chronically absent. Both those who struggle with housing costs and unexpected expenses also miss significantly more school due to illness, suggesting that when health problems arise, teachers may lack a financial buffer to support them.

## **DISCUSSION**

Teaching is one of the most geographically dispersed occupations. Where there are children, teachers are in demand. Substantial research has identified the shortage of teachers in areas producing few college graduates and in high-poverty areas with few college-educated workers (Lankford, Loeb, & Wyckoff, 2002; Boyd, Lankford, Loeb, & Wyckoff, 2005). This study is the first that we know of assessing the difficulty for teachers working at the other extreme – in areas of high and increasing wealth, in which high property values can limit quality of life and create economic anxiety. These areas often have bimodal income distributions, so while the market for housing is out of reach for teachers, high-poverty enclaves have schools in need of strong teachers.

We find that teachers in San Francisco experience far greater economic anxiety than other American adults, even without restricting the national sample to those who are employed. They are also far more likely to rent, far less likely to own a home, and have far longer commutes than other workers. These experiences appear to create economic anxiety, especially for younger teachers and for those with weaker local networks. The higher levels of economic anxiety among younger teachers are concerning because they suggest that the pipeline of new teachers may be facing an added deterrent. Attrition from retirement is looming—in SFUSD and more broadly—and a strong labor market for college graduates is pulling potential teachers to other professions (Darling-Hammond and Shields 2016; Kraft et al. 2018). High living costs and the financial anxiety they create may further reduce the supply of new teachers. Financial anxiety is particularly great for teachers in schools serving large proportions of black students, at least in part because those schools are located in areas that are farther from teachers' residences. To the extent that these schools have the greatest need for teachers, reducing economic anxiety may be an important hurdle to overcome in reducing the turnover rate and increasing the supply of teachers to these schools.

We also find initial evidence that teachers' financial anxiety can affect their performance in school. Teachers reporting greater anxiety also report that they are likely to leave teaching in the Bay Area and they are more likely to be chronically absent from school. Teacher absenteeism can, in turn, meaningfully hurt student learning (Miller, Murnane, & Willet, 2008; Clotfelter, Ladd, Vigdor 2007).

Our data does not allow us to estimate causal pathways; however, the associations we find between elements of teachers' financial situations and their economic anxiety offer insights into ways districts and policymakers may better support teachers. Raising teacher salaries overall is the most direct approach to addressing financial insecurity, though the increase necessary may be politically prohibitive. Alternative strategies that more specifically target the conditions that those teachers struggling the most face are worthy of consideration, such as locating affordable housing closer to schools, offering housing stipends or low-cost loans, or making financial crisis grants available—alternatives to the support networks that some teachers lack.

While our analysis focuses on teachers who live and work in a high-cost urban area, there are indications that even across broader contexts, teachers' economic wellbeing does not follow the patterns of middle-income workers overall. According to the General Social Survey, which tracks national attitudes and beliefs, in the years following the recession, the percentage of teachers who believed that their financial situation was improving "during the last few years" stayed relatively stable, hovering between 27 percent to 38 percent. On the other hand, among employed respondents with a bachelor's degree or higher who were not teachers, this percentage steadily increased, from 37 percent in 2010 to 53 percent in 2016. These statistics suggest that even outside the San Francisco bubble of high living and housing costs, the economic landscape for teachers is not keeping pace with that for other middle-income professionals. And despite the extremes of San Francisco's affordability crisis, teachers in other areas are facing similar financial challenges. According to data from apartmentlist.com, the percentage of teachers' salaries needed to cover the median rent is 30 percent or greater in seven major cities in California, representing 16 percent of the entire K-12 public school enrollment in the state (Bennett 2017; California Department of Education 2017).<sup>16</sup>

Finally, rather than providing a complete picture of the challenges teachers face, our research raises additional questions about the nuances of teachers' economic wellbeing and the ways it might be improved. We look at average trends across all SFUSD teachers regardless of where they live, recognizing that doing so might mask variation across teachers' residential neighborhoods that could affect their quality of life, feelings of housing security, and satisfaction with their financial position. Additionally, more years of data could shed light on shifts in wellbeing over time and responses to targeted interventions, while research looking at teachers' experiences in other districts and states could provide insight into the ways in which their experience is unique or not to geographic context. Better understanding these contextual differences that make teachers feel more or less financially secure could help ensure a supply of teachers everywhere that students need them.



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## NOTES

<sup>1</sup> San Francisco Bay Area statistics quoted are for the San Francisco-Oakland-Hayward metropolitan statistical area.

<sup>2</sup> We administered the survey online, emailing it to nearly all teachers in the district in May 2016, and offering a \$15 gift card as an incentive to participate. Our target sample included teachers of core academic subjects as well as some with specialized credentials, teaching in regular public schools only. We achieved a response rate of 69 percent (2,266 teachers responded), with 93 percent of respondents finishing the survey (although respondents were allowed to skip questions at their own discretion). Appendix Table A1 shows descriptive statistics of the survey's respondents, who are representative of the teacher population in SFUSD.

<sup>3</sup> The Marketplace Edison Research Survey was conducted through a combination of online and telephone (both landline and cell) interviews and is representative of Americans 18 and older (Marketplace staff, 2016). Although Marketplace also conducted a similar survey in June 2016, a number of questions in the later survey addressed the presidential election and respondents' political beliefs. Out of concern that the tone and content of the national conversation leading up to the 2016 election might impact respondents' stress levels and feelings about their economic situations, we compare our results to the February responses.

<sup>4</sup> The first question's answer options include "I am frequently anxious about my financial situation," "I am sometimes anxious about my financial situation," "I am rarely anxious about my financial situation," "I am never anxious about my financial situation," and "don't know." The second question's answer options include "very easy," "somewhat easy," "somewhat difficult," "very difficult," "don't know," and "I don't currently have rent or mortgage payments to make." The third question's answer options include "not at all difficult," "somewhat difficult," "very difficult," and "don't know."

<sup>5</sup> The responses shown in the table are those indicating higher levels of anxiety; we omit the percentages for the less anxious responses. For example, on the first question asking teachers about their anxiety due to their current financial situation, we omit from the table the combined 15 percent of respondents who said that they were rarely or never anxious about their financial situation.

<sup>6</sup> These inequalities are all significant at the  $p < 0.001$  level.

<sup>7</sup> Because not all 2,266 teachers in our sample responded to each of our three economic anxiety questions, the sample size varies across models depending on the dependent variable. We deal with the limited degree of missing data on independent variables by including covariate missing flags. See Appendix I for more detail.

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<sup>8</sup> Only a few differences emerge with regard to teachers' subject area or credential, which are difficult to extrapolate into larger patterns. Teachers with an ELL credential are more likely than those without to express economic insecurity both in terms of financial anxiety and difficulty covering a \$1,000 expense, while single-subject teachers are less likely to be frequently financially anxious and to express difficulty with the unexpected expense. Multiple-subject teachers are also less likely to have difficulty with the unexpected expense. Across school levels, the results are mixed: compared to elementary school teachers, preschool teachers are less likely to report frequent financial anxiety and high school teachers are less likely to report difficulty covering a \$1,000 expense.

<sup>9</sup> We estimate alternative models for racial shares of the school population in which we control for the FRPL-eligible share of the student population. The results of these models, available upon request, are effectively the same as those we report, with the exception that the coefficient on the share of Black students when predicting frequent financial anxiety is less precisely estimated and no longer statistically significant ( $\beta=0.288$ ,  $\sigma=0.170$ ).

<sup>10</sup> In the school composition model that controls only for teacher race, the share of Black students' coefficients in both the frequent financial anxiety specification and the \$1,000 expense specification remain positive and significant. In models that control only for teacher experience or commute time, only the difficulty covering \$1,000 has a significant relationship. The results from these supplemental models are available upon request.

<sup>11</sup> The wording of some questions differs between our teacher survey and the national survey. Specifically, in the teacher survey, the percentage of respondents who do not live with a spouse or partner is defined as those teachers who did not indicate that they live with a partner or spouse, whereas the percentage for the national survey is a combination of the share of respondents who say they are single or divorced. In the national survey, the prompt comparable to our teacher survey's question "I have a second job (including part-time work) to help make ends meet" is "Do you have more than one job?" And the national prompt comparable to "I have already received or expect to receive an inheritance or other source of wealth" is "Do you expect to receive or have you already received an inheritance from family members?"

<sup>12</sup> The precise median income for workers with a Bachelor's degree in the San Francisco-Oakland-Hayward metropolitan area was \$66,506 in 2016, compared to \$57,109 statewide. The salary premium for Bay Area workers is even higher among those with a graduate or professional degree, at \$92,767 compared to \$80,616 statewide.

<sup>13</sup> Although we considered examining demonstrated turnover using administrative data, the number of teachers in our 2016 survey sample who left the district in the single year following was too small to result in meaningful comparisons.

<sup>14</sup> Our data tracks ten different reasons a teacher might be absent: bereavement, illness, jury duty, military leave, non service, administrative leave, personal leave/emergency, professional development/permission day, special assignment, and subpoena. 44 percent of the recorded days

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absent across all teachers in 2016 are due to illness; 27 percent are due to professional development/permission days; and 23 percent are due to personal leave/emergency.

<sup>15</sup> Among our sample of teachers, 46 percent are chronically absent for any reason, and 19 percent are chronically absent for illness, personal leave, or emergency. Outlier teachers whose absence rates are dropped from the analysis because they are especially high are still identified as chronically absent.

<sup>16</sup> These cities include San Francisco, Oakland, San Jose, Los Angeles, San Diego, Long Beach, and Sacramento. The 16 percent share is calculated based on the sum of the total student enrollment for the single largest school district in each of the seven cities (e.g. San Jose Unified, Los Angeles Unified) in the 2016-17 school year.

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**TABLE 1: Teacher Perceptions of Their Own Financial Insecurity**

Topic	Prompt	(1)	(2)	(3)	(4)
		SFUSD Teachers		National Survey	
		n	%	All	Employed
				%	%
Current financial situation	I am frequently anxious about my current financial situation	981	48%	17%	17%
	I am sometimes anxious about my current financial situation	751	37%	44%	46%
Monthly housing costs (mortgage/rent)	Owners: Finds it "very difficult" to cover	97	13%	3%	3%
	Renters: Finds it "very difficult" to cover	322	27%	8%	4%
	Owners: Finds it "somewhat difficult" to cover	268	35%	14%	12%
	Renters: Finds it "somewhat difficult" to cover	456	39%	26%	26%
Unexpected expenses	Would find it "very difficult" to cover unexpected \$1000 expense	798	39%	26%	22%
	Would find it "somewhat difficult" to cover unexpected \$1000 expense	804	39%	32%	33%
Access to financial support	If unable to pay the \$1000, does <i>not</i> have friend/family member who could help	445	21%	50%	46%
	If unable to pay the \$1000, does <i>not know</i> whether a friend/family member could help	278	13%	1%	1%

Notes: Total number of SFUSD teacher survey respondents is 2,266, though the number of respondents for each survey question varies by question. The percentages shown for SFUSD teachers are based on the subgroup of respondents who answered the given question. The data from the national Marketplace/Edison Research Survey is sourced from the February 2016 survey and the total number of respondents is 1,012. The percentages shown in column (4) are for the subset of national respondents who were employed at the time of the survey.



**TABLE 2: Likelihood of Financial Stress by Teacher Characteristic, Linear Probability Models**

		(1)	(2)	(3)
		Pr(frequently anxious)	Pr(very difficult, housing)	Pr(very difficult, \$1000)
i. Race (ref group: White)	Black	-0.0358 (0.0563)	0.0298 (0.0477)	0.216*** (0.0551)
	Asian	-0.144*** (0.0269)	-0.0356 (0.0216)	-0.0380 (0.0263)
	Hispanic/Latino	0.000961 (0.0351)	0.0116 (0.0292)	0.137*** (0.0350)
	Ntv. Amer/Multi-racial	0.0259 (0.0816)	-0.0379 (0.0630)	0.0618 (0.0831)
	Decline to state	0.0115 (0.0383)	0.0279 (0.0324)	0.0169 (0.0372)
ii. Gender	Female	0.0297 (0.0248)	0.0159 (0.0200)	0.0566* (0.0240)
iii. Age	Age (in years)	-0.00589*** (0.000890)	-0.00370*** (0.000709)	-0.00737*** (0.000851)
iv. Experience in SFUSD (ref group: 20+ yrs)	1-2 years	0.255*** (0.0393)	0.156*** (0.0332)	0.239*** (0.0390)
	3-5 years	0.237*** (0.0328)	0.135*** (0.0263)	0.205*** (0.0320)
	6-10 years	0.175*** (0.0339)	0.0912*** (0.0261)	0.172*** (0.0328)
	11-20 years	0.122*** (0.0305)	0.0927*** (0.0231)	0.104*** (0.0290)
v. Teacher credential	Multi-subject	-0.0484 (0.0314)	0.00593 (0.0255)	-0.0803** (0.0308)
	Single subject	-0.0759* (0.0372)	0.00720 (0.0302)	-0.149*** (0.0360)
	ELL	0.0483* (0.0225)	-0.00231 (0.0184)	0.0532* (0.0217)
	Special Ed	0.00903 (0.0366)	0.0267 (0.0300)	0.0114 (0.0364)
	English	0.0218 (0.0356)	-0.0229 (0.0287)	-0.0136 (0.0339)
	Math	-0.0463 (0.0380)	-0.00670 (0.0309)	-0.0353 (0.0355)
	Science	-0.0289 (0.0438)	-0.0194 (0.0351)	-0.0258 (0.0408)
vi. School level (ref group: Elem. School)	PreK/Early Ed	-0.120* (0.0595)	-0.0452 (0.0459)	0.0701 (0.0619)
	K-8 School	-0.00152 (0.0436)	0.0507 (0.0381)	0.119** (0.0440)
	Middle School	0.00335 (0.0330)	0.0146 (0.0276)	0.00451 (0.0324)
	High School	-0.0444 (0.0266)	-0.0352 (0.0210)	-0.0854*** (0.0254)
	Admin/Other	-0.0740 (0.0819)	0.0247 (0.0719)	0.0852 (0.0839)
vii. Student population (race)	Share Black	0.289* (0.130)	0.113 (0.111)	0.326* (0.130)
	Share Hisp/Latino	0.0522 (0.0833)	0.0509 (0.0696)	0.0795 (0.0810)
	Share Asian	-0.0514 (0.0788)	-0.0415 (0.0645)	-0.104 (0.0764)
	Share other race (non-White)	-0.754 (0.391)	-0.0919 (0.347)	-0.519 (0.401)
viii. Student population (poverty)	Share FRPL-eligible	0.0720 (0.0625)	0.0362 (0.0513)	0.0672 (0.0604)
Number of observations		2055	2085	2043

\* p<0.05 \*\* p<0.01 \*\*\* p<0.001

Notes: Table 2 shows the results of linear probability models, where the dependent variable is a dummy for a respondent selecting the financial anxiety-related prompt shown. The subsections of Table 2 (i-viii) represent separate regression models. Robust standard errors are shown in parentheses. Missing flags for explanatory variables are used in all regressions to keep the sample size consistent across models for each dependent variable. R-squared's available upon request.

**TABLE 3: Teachers' Self-Reported Financial Profile and Access to Outside Support**

Topic		(1)	(2)	(3)	(4)
		SFUSD Teachers		National Survey	
		n	% or mean	All	Employed
				%	%
Total household income	Under \$50,000	206	10.0%	40%	30%
	\$50,000-\$74,999	691	33.5%	18%	20%
	\$75,000-\$99,999	406	19.7%	16%	21%
	\$100,000-\$149,999	526	25.5%	10%	13%
	\$150,000-\$250,000	181	8.8%	7%	9%
	Over \$250,000	52	2.5%		
Sources of household income	SFUSD income is majority of household income	1238	69.5%	n/a	n/a
	Does not live with spouse/partner	790	38.1%	35%	34% †
	Has a second job to help make ends meet	357	20.0%	17%	17% †
	Is financially supported by family members (other than partner/spouse)	296	16.6%	n/a	n/a
	Have or will receive inheritance or other wealth	122	6.8%	25%	24% †
Home ownership	Owns a home	766	36.8%	63%	67%
	Rents a home	1185	56.9%	28%	26%
Student loans	Is currently paying off student loans	651	36.5%	18%	24%
Child care costs	Struggles to find affordable child care	181	10.2%	n/a	n/a
Commute time	Self-reported commute time home (in hrs)	1911	0.56	n/a	n/a
Family background and nearby network	At least one parent has BA or higher	1208	58.1%	n/a	n/a
	Teacher was FRPL-eligible as child	619	33.5%	n/a	n/a
	Teacher attended primarily Bay Area schools as child	871	56.5%	n/a	n/a

Notes: Total number of SFUSD teacher survey respondents is 2,266, though the number of respondents for each survey question varies by question. The percentages shown for SFUSD teachers are based on the subgroup of respondents who answered the given question. The data from the national Marketplace/Edison Research Survey is sourced from the February 2016 survey and the total number of respondents is 1,012. The percentages shown in column (4) are for the subset of national respondents who were employed at the time of the survey.

† Difference in question wording between teacher survey and national survey. See text for more detail.

**TABLE 4: Likelihood of Financial Stress, by Teacher Financial Profile and Access to Outside Support**

		LPM Coefficients		
Prompt		(1)	(2)	(3)
		Pr(frequently anxious)	Pr(very difficult, housing)	Pr(very difficult, \$1000)
Sources of household income	SFUSD salary is majority of household income	0.0727** (0.0261)	0.0542* (0.0218)	0.103*** (0.0254)
	Does not live with spouse/partner	0.124*** (0.0225)	0.101*** (0.0191)	0.164*** (0.0220)
	Has second job to help make ends meet	0.209*** (0.0279)	0.179*** (0.0278)	0.170*** (0.0291)
	Is financially supported by family members (other than partner/spouse)	-0.0573 (0.0319)	-0.0241 (0.0267)	-0.0425 (0.0316)
	Have or will receive inheritance or other wealth	-0.234*** (0.0429)	-0.146*** (0.0286)	-0.221*** (0.0385)
	Home ownership	Rents (relative to owns)	0.235*** (0.0245)	0.126*** (0.0195)
Student loans	Is currently paying off student loans	0.130*** (0.0261)	0.0872*** (0.0234)	0.202*** (0.0261)
Child care costs	Struggles to find affordable child care	0.0897* (0.0386)	0.0911* (0.0372)	0.0730 (0.0400)
Commute time	Self-reported commute time home (in hrs)	0.114*** (0.0275)	0.0554* (0.0228)	0.122*** (0.0267)
Family background and nearby network	At least one parent has BA or higher	-0.0120 (0.0223)	-0.0169 (0.0185)	-0.0476* (0.0217)
	Teacher was FRPL-eligible as child	0.0713** (0.0247)	0.0694*** (0.0208)	0.0903*** (0.0241)
	Teacher attended primarily Bay Area schools as child	-0.0632* (0.0255)	-0.0414 (0.0213)	-0.0509* (0.0251)
No. of observations		2055	2085	2043
Control for age		Yes	Yes	Yes

\* p<0.05 \*\* p<0.01 \*\*\* p<0.001

Notes: Each cell is a coefficient (with standard error in parentheses) from a separate regression, where the dependent variable is a dummy for a respondent indicating that they feel "frequently anxious" about their financial situation, that it is "very difficult" to pay their monthly rent or mortgage, or that it would be "very difficult" to cover an unexpected \$1000 expense. Missing flags for explanatory variables are used in all regressions to keep the sample size consistent across models for each dependent variable. R-squared's available upon request.

**TABLE 5: Impact on teachers' regard for teaching, plans for resignation, and attendance**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Positive regard for teaching		Pr(plan to resign)		Days absent		Chronically absent (10 days) illness,	
			All reasons	PD only	Illness only	Personal leave, emergency only	All reasons	personal leave, emergency only
Frequently anxious	-0.330*** (0.0437)	0.0406*** (0.0106)	1.664*** (0.359)	0.322* (0.156)	0.968*** (0.264)	0.582** (0.184)	0.116*** (0.0219)	0.0743*** (0.0172)
Very difficult to pay housing cost	-0.337*** (0.0561)	0.0502*** (0.0152)	0.992* (0.441)	0.105 (0.189)	0.621* (0.302)	0.293 (0.244)	0.0880*** (0.0267)	0.0573** (0.0220)
Very difficult to pay unexpected \$1000	-0.184*** (0.0457)	0.0256* (0.0112)	0.786* (0.366)	0.0675 (0.160)	0.735** (0.265)	0.189 (0.184)	0.0695** (0.0226)	0.0488** (0.0180)
Baseline proportions	0.00	0.06	11.06	3.49	4.06	2.93	0.46	0.19
Number of observations	2143	2087	2244	2244	2244	2244	2266	2266

\* p<0.05 \*\* p<0.01 \*\*\* p<0.001

Notes: Each cell is a coefficient (with standard error in parentheses) from a separate regression. The continuous outcome variables for columns (3) through (6) have the following standard deviations: 8.1 for all reasons, 3.5 for PD only, 5.9 for illness, and 4.2 for personal leave. Missing flags for explanatory variables are used in all regressions to keep the sample size consistent across models for each dependent variable. R-squared's available upon request.

## **APPENDIX I**

Appendix Table 1 presents descriptive statistics on our survey respondents, who make up our analytic sample. Column (1) shows the mean, and where applicable, the standard deviation for the various teacher and school characteristics that we use as explanatory variables in Table 2. Column (2) shows the same for the full sample of non-charter, public school teachers in SFUSD in 2016. Across all variables, the means for our survey sample and full sample are very similar.

In order to keep our sample sizes consistent across our many regression models that include different covariates, we use missing flags for our explanatory variables; sample sizes for each model, then, are determined by the number of non-missing responses to the dependent measure. For the regression results presented in Table 2, there is minimal missingness, since all explanatory variables come from administrative data. Missingness is more prevalent in the models shown in Tables 4 and 5, where the covariates are from survey data. In those cases, the missingness is often not random. In fact, for nearly all models shown in Table 4 in which the covariate comes from survey data, the missing flag is significant and negative, indicating that in general, those teachers who did not fill out the survey completely are less likely to feel financially insecure. In Table 5, the missingness is less systematic, although those teachers who did not answer the questions on anxiety about their financial situation and difficulty covering housing costs are also less likely to have a high regard for teaching. Although typically these patterns of non-random missingness should spark concern, in our case we suspect that, if anything, these patterns mean our results underestimate the relationships of interest.

**APPENDIX TABLE 1: Descriptive Statistics on Teacher Sample**

		(1)	(2)
		Analytic Sample	All Teachers 2016
		Mean	Mean
		(Std Deviation)	(Std Deviation)
i. Race	Black	0.04	0.05
	White	0.46	0.46
	Asian	0.25	0.24
	Hispanic/Latino	0.13	0.14
	Ntv. Amer/Multi-racial	0.02	0.02
	Decline to state	0.10	0.10
ii. Gender	Female	0.73	0.70
iii. Age	Age (in years)	42.73	43.48
		(12.21)	(12.43)
iv. Experience in SFUSD	1-2 years	0.12	0.11
	3-5 years	0.20	0.19
	6-10 years	0.18	0.18
	11-20 years	0.28	0.29
	20+ years	0.22	0.23
v. Teacher credential	Multi-subject	0.54	0.51
	Single subject	0.34	0.34
	ELL	0.53	0.52
	Special Ed	0.15	0.15
	English	0.14	0.14
	Math	0.11	0.11
	Science	0.76	0.76
vi. School level	PreK/Early Ed	0.04	0.06
	Elementary School	0.44	0.41
	K-8 School	0.08	0.08
	Middle School	0.15	0.15
	High School	0.28	0.28
	Admin/Other	0.02	0.03
vii. School's student population	Share Black	0.09	0.10
		(0.11)	(0.11)
	Share White	0.14	0.14
		(0.15)	(0.15)
	Share Hisp/Latino	0.31	0.32
		(0.23)	(0.23)
	Share Asian	0.39	0.39
	(0.25)	(0.25)	
	Share other race (non-White)	0.06	0.06
		(0.033)	(0.032)
	Share FRPL-eligible	0.57	0.57
		(0.20)	(0.20)
Number of observations		2266	3281

*Notes:* Both the analytical sample and the full sample of teachers do not include charter school teachers.