Breaking Bad/GoodPatterns and Consequences of Public School Teachers' Multiple Jobholding

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Stagnating teacher salaries and the widening gap between public school teachers and similar workers have led to growing concerns that teachers will seek out additional employment—possibly impacting their instructional practice in the process. Using data from the Schools and Staffing Survey and the National Teacher and Principal Survey from 1994–2021, we show that teacher multiple jobholding has been remarkably stable over time. When examining the predictors of multiple jobholding, we find a high degree of variation across the timing, focus, and setting of teachers' additional work. Using regression analysis, we show that teachers who work an additional job have lower turnover rates, with the exception of teachers who work outside of school, who leave teaching at higher rates.

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Multiple Jobholding**

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Abstract
Stagnating teacher salaries and the widening gap between public school teachers and similar workers have led to growing concerns that teachers will seek out additional employment—possibly impacting their instructional practice in the process. Using data from the Schools and Staffing Survey and the National Teacher and Principal Survey from 1994–2021, we show that teacher multiple jobholding has been remarkably stable over time. When examining the predictors of multiple jobholding, we find a high degree of variation across the timing, focus, and setting of teachers' additional work. Using regression analysis, we show that teachers who work an additional job have lower turnover rates, with the exception of teachers who work outside of school, who leave teaching at higher rates.

Teacher multiple jobholding—or "moonlighting"—has been a longstanding feature of many teachers' work lives (Blair, 2018; Smith & Cooper, 1967; Winters, 2010). Representations of teachers often include working a side job (Raffel & Groff, 1990), the apotheosis of which is Walter White, a high school chemistry teacher whose second job drives the plot of the critically acclaimed television show, *Breaking Bad*. Though teachers have long been found more likely to hold multiple jobs than other full-time professionals (Krantz-Kent, 2008; Smith & Cooper, 1967), stagnating teacher salaries and the widening pay gap between public school teachers and similar college-educated workers have stoked concerns that more teachers than ever will seek out additional employment (Allegretto, 2022). Teacher multiple jobholding is of concern to educational leaders and policymakers as (a) teachers who work beyond contract hours have less time for their primary teaching assignment (Ballou, 1995; Raffel & Groff, 1990; Smith & Cooper, 1967; Winters, 2010) and/or (b) this "overwork" may lead teachers to leave the profession (Fitchett et al., 2016; Nápoles et al., 2022, Raffel & Groff, 1990; Taft, 2022; Webster et al., 2019), both of which stand to impact student outcomes (Elacqua & Marotta, 2020).

Additional work also stands to benefit teachers, both financially (Gilpin, 2020; Raffel & Groff, 1990) and otherwise (e.g., career development or psychological fulfillment; Pittard, 2017; Raffel & Groff, 1990). Furthermore, in a context when teachers increasingly voice concerns over exploitative norms (Singer, 2022)—whereby they are uncompensated for carrying out responsibilities outside their contract hours (Krantz-Kent, 2008)—additional compensated opportunities for additional responsibilities may decrease teacher burnout and attrition (Cardina & Seymour, 2021; Johnson & Papay, 2009; Rogers, 2001; Taft, 2022).

Those studying teacher multiple jobholding have considered everything from working in retail (Averett, 2001; Raffel & Groff, 1990; Taft, 2022; Webster et al., 2019) to sponsoring

extracurriculars (Cardina & Seymour, 2021), to social media influencing (Carpenter et al., 2022).

To consider different forms of work, we define teacher multiple jobholding as any paid work

beyond teachers' contract hours. We then distinguish the focus (i.e., teaching or non-teaching),

timing (i.e., summer or school year), and setting (i.e., school-based or nonschool-based) of

teachers' additional work. These distinctions are conceptually and empirically important. First,

they help explain why some teachers may be more or less likely to take on additional work. They

also bring nuance to the diverse ways holding an additional job can shape labor market patterns.

For example, in a recent study of secondary music teachers, Taft (2022) found that multiple

jobholding predicted greater organizational commitment, which mediated the relationship

between role stress and intent to leave. Finally, allowing for different types of jobs offers clearer

implications for those with the common goal of improving teacher and student outcomes.

This study aims to answer the following research questions:

(1) What fraction of teachers work an additional job? How has this rate changed over time?
To what extent are these additional jobs concentrated in the summer versus the school
year (i.e., timing), teaching versus non-teaching (i.e., focus), and inside versus outside of
their school system (i.e., setting)?

(2) What are the characteristics of teachers who work an additional second job compared to
those that do not? How do these differences vary by timing, focus, and setting?

(3) To what extent are teachers' background characteristics, job structure, and job attitudes
associated with teacher multiple jobholding? Do these relationships vary based on timing,
focus, and setting?

(4) To what extent does teacher multiple jobholding predict higher or lower levels of
turnover? Does this relationship vary based on timing, focus, and setting?

To answer these questions, we draw on eight waves of the nationally representative Schools and Staffing Survey (SASS) and the National Teacher and Principal Survey (NTPS) from the 1994–2021 school years. Through both descriptive and regression analysis, we provide a comprehensive picture of teachers' multiple jobholding.

Literature Review

There is little consensus among researchers on how to define teacher multiple jobholding. While some do not regard paid work for the same employer (i.e., the district) as multiple jobholding (Averett, 2001; Ballou, 1995; Smith & Cooper, 1967; Webster et al., 2019), we question whether this distinction is meaningful when the work itself (e.g., tutoring or coaching) mirrors the work teachers may undertake for another employer. At the other extreme, some do not explicitly define multiple jobholding (e.g., Cardina & Seymour, 2021; Fox et al., 2019; Gilpin, 2020; Han, 2021), making it difficult to evaluate which distinctions amongst multiple jobholders *are* meaningful. We define teacher multiple jobholding as paid work beyond contract hours before distinguishing when the teacher is working (i.e., summer/school year), the nature of their additional employment (i.e., teaching/non-teaching), and where they are working (within/outside their school system). These distinctions help motivate predictors of different types of teacher multiple jobholding and their association with labor market patterns.

Predictors of Multiple Jobholding

Teacher Background Characteristics

Those studying teacher multiple jobholding have given much attention to background characteristics as predictors, including gender, race/ethnicity, and age. They have consistently established an association between teachers' gender and multiple jobholding. Men—especially married—are more likely to hold multiple jobs (Fitchett et al., 2016; Fox et al., 2019; Gilpin,

2020; Han, 2021; Maninger et al., 2011; Paxson & Sicherman, 1990; Raffel & Groff, 1990; Ransom & Lambson, 2011; Smith & Cooper, 1967; Winters, 2010). Assuming financial motivation, this is thought to stem from men's role as "breadwinner," with women taking on additional, unpaid work in the home (Fox et al., 2019; Krishnan, 1990; Ransom & Lambson, 2011). Men may also have more school-based employment opportunities, a pattern that aligns with men's overrepresentation in school administration (Goldring et al., 2021; Grissom et al., 2021). Smith and Cooper (1967) found that moonlighters were more likely to be White, which they hypothesized was related to the then more limited job opportunities for Black teachers. Those studying teacher multiple jobholding have also considered age, though no consistent patterns emerge (Gilpin, 2020; Fox et al., 2019). Gilpin (2020) found a negative correlation between age and nonschool-based secondary employment for teachers on a year-round calendar, suggesting the relationship between age and multiple jobholding may depend on the timing and setting of additional work, further reinforcing the need for a typology.

Job Structure

Several features of teachers' job structure are predictive of multiple jobholding, including experience, school level, subject area, and salary. The characteristics of a teachers' school (e.g., size, urbanicity, and student body composition) also shape job structure, though there is no clear theoretical basis for how they would predict multiple jobholding.

Although—like age—researchers studying teacher multiple jobholding have not drawn firm conclusions about experience (Gilpin, 2020; Fox et al., 2019), there are reasons to believe experience predicts certain types of multiple jobholding. Teachers' uniform salary schedule, with lower salaries earlier in teachers' careers (Fox et al., 2019; Han, 2021), possibly motivates less experienced teachers to seek additional work. Additionally, some types of employment may be

informed by seniority considerations. That is, more experienced teachers may have greater opportunities to take on additional compensated school-based roles.

Teaching at the secondary level is also positively associated with multiple jobholding (Gilpin, 2020; Raffel & Groff, 1990), with significant variation by subject area. Early work by Smith and Cooper (1967) suggests that teachers of social studies, math, physical education (PE), and science are more likely to moonlight. More recently, some researchers have focused on teachers of PE and the arts (Cardina & Seymour, 2021; Nápoles et al., 2022; Rabkin, 2013; Taft, 2022), further suggesting an association between subject area and multiple jobholding. This may be due to greater opportunities to take school-based work, especially through sponsoring school-based extracurriculars relevant to one's teaching assignment (e.g., a PE teacher coaching).

Surprisingly few researchers have directly examined pay's relationship to teachers' multiple jobholding. Perhaps even more surprising is that pay seems to have little or no relationship with the average teacher's likelihood to hold multiple jobs (Ballou, 1995; Winters, 2010), unlike multiple jobholders *en masse* (Krishnan, 1990; Conway & Kimmel, 2016). However, Fitchett and colleagues (2016) found that single male teachers with lower salaries were more likely to hold a second job outside of education. Indirectly, researchers have asked teachers if they would continue to moonlight if their salary was higher (Maninger et al., 2011; Raffel & Groff, 1990). While Maninger and colleagues found that teachers would not moonlight if their salary were higher, Raffel and Groff's (1990) mixed results motivated them to consider "willing" versus "reluctant" moonlighters—and thus different motivations for moonlighting.

Job Attitudes

Although different motivations for multiple jobholding is nothing new (Raffel & Groff, 1990), few have been able to measure the varied reasons teachers work additional jobs. The

present study is similarly positioned, with attitudinal measures such as "satisfaction with salary" offering only a proxy of financial versus non-financial motivations (e.g., career development and personal fulfillment). Accounts of teachers' multiple jobholding speak to the ways additional jobs can be personally and professionally fulfilling. Cardina and Seymour (2021) suggest that PE teachers take on additional responsibilities related to coaching, which helps develop skills that extend to new leadership responsibilities. Studies on "teacherpreneurs," including teachers who sell on Teachers Pay Teachers (TpT; Pittard, 2017) and teacher social media influencers (Carpenter et al., 2022) suggest that—more than money (Koehler et al., 2020)—these activities are pursued because they result in psychological fulfillment.

Outcomes of Multiple Jobholding

Most researchers studying teacher multiple jobholding have explored the relationship between multiple jobholding and job attitudes (Bernhard, 2016; Fitchett et al., 2016; Mellor & Decker, 2020; Nápoles et al., 2022, Raffel & Groff, 1990; Roberts et al., 2019; Rogers, 2001; Sessions et al., 2022; Taft, 2022; Webster et al., 2019). As a whole, their seemingly conflicting findings suggest tremendous variation by the nature of the work (Cardina & Seymour, 2021), its setting (Fitchett et al., 2016), its timing, and the motivations for undertaking it (Raffel & Groff, 1990; Webster et al., 2019). For example, drawing on data from the 2015–16 SASS, Cardina and Seymour (2021) found that most secondary PE teachers (a) have additional paid responsibilities and (b) report more satisfaction, professional support, and positive attitudes toward teaching. This suggests that school-based employment can further embed the teacher in their school and profession, while nonschool-based employment could have the opposite effect. In smaller scale survey studies, researchers established a positive relationship between multiple jobholding and work-family conflict; however, they also established a positive relationship between multiple

jobholding and work engagement when the reasons for taking the additional job were not financial (Mellor & Decker, 2020; Webster et al., 2019). Taft (2022), in a survey study of secondary music teachers, also found a mixed relationship with job attitudes, finding multiple jobholding is associated with both role stress and organizational commitment.

Multiple jobholding has been shown to be positively related to burnout (Bernhard, 2016; Fitchett et al., 2016), emotional exhaustion (Nápoles et al., 2022; Sessions et al., 2022), and depressive symptoms (Roberts et al., 2019) and negatively related to time spent on the primary job (Winters, 2010). Authors of these studies speculate a relationship with turnover itself, though no studies we identified actually examined this behavioral outcome. Using SASS data from the 2011–12 school year, Fitchett and colleagues (2016) found that multiple jobholding is associated with dissatisfaction with teaching and intention to leave the field, especially when the additional employment is not in education, though they did not examine actual turnover.

Conceptual Framework

We now formalize our hypotheses, including how multiple jobholding varies by timing, focus, and setting before describing how working different types of additional jobs may shape teacher turnover. To do so, we adapt Campion and colleagues' (2020) enrichment-depletion framework, which describes the varied reasons why someone may take on additional jobs and how these motivations and experiences outside their primary occupation differentially predict turnover (see Figure 1).

Predictors of Multiple Jobholding

Like Campion and colleagues' (2020), our model of multiple jobholding includes several predictors, including teacher background characteristics (i.e., gender; race/ethnicity; age), job

structure (i.e., experience level; school level; subject area; salary), and job attitudes (i.e., financial; career development; personal fulfillment), as shown on the left side of Figure 1.

Teacher Background Characteristics

Evidence suggests that male teachers work additional jobs at higher rates than female teachers (Fitchett et al., 2016; Fox et al., 2019; Gilpin, 2020; Han, 2021; Maninger et al., 2011; Paxson & Sicherman, 1990; Raffel & Groff, 1990; Ransom & Lambson, 2011; Smith & Cooper, 1967; Winters, 2010). There is less conclusive evidence to support whether race/ethnicity or age predict teachers' multiple jobholding. Unlike other predictors of teachers' work described below, we don't expect to find evidence of sharp variation by employment timing, focus, and setting. Our specific hypotheses pertaining to teacher background characteristics include:

H_1: Male teachers are more likely to work multiple jobs than female teachers, regardless of employment timing, focus, and setting.

H_2: Teachers of color are no more or less likely to work multiple jobs than White teachers, regardless of employment timing, focus, and setting.

H_3: Younger teachers are more likely to work multiple jobs than older teachers, regardless of employment timing, focus, and setting.

Job Structure

Teachers' job structure is facilitative of working an additional job (Miller et al., 1973). For example, summer break and school days that typically end in the middle of the afternoon allow for additional work, both within and outside the school system. Though this helps explain why teachers might work additional jobs at elevated rates compared to other occupations, it does not indicate the degree of variation among teachers, including the timing, focus, and setting of teachers' multiple jobholding.

It is unclear whether experience predicts teachers' multiple jobholding; however, lower salaries at the beginning of teachers' careers and seniority-determined job opportunities within schools suggest that experience may predict certain types of multiple jobholding. Additionally, teaching at the secondary level is positively associated with multiple jobholding (Raffel & Groff, 1990; Gilpin, 2020), though with significant variation by subject area (Cardina & Seymour, 2021; Nápoles et al., 2022; Rabkin, 2013; Smith & Cooper, 1967; Taft, 2022). Salary seems to have little or no relationship with the teacher multiple jobholding, particularly when accounting for other features of teachers' job structure (Ballou, 1995; Winters, 2010).

H_4: More experienced teachers are less likely to work multiple jobs than less experienced teachers unless it is additional school-based employment, in which case they are more likely to work multiple jobs.

H_5: Secondary school teachers are more likely to work multiple jobs than elementary school teachers, with their elevated multiple jobholding driven by additional school-based employment.

H_6: Special education, early childhood education (ECE), and English as a second language (ESL) teachers work multiple jobs at similar levels to elementary school teachers. English language arts (ELA), foreign languages, health, math, natural sciences, social sciences, and career and technical education (CTE) teachers work multiple jobs at higher rates than elementary school teachers.

H_{6a}: Arts and music and health teachers work multiple jobs at the highest levels of any subject area teachers, with their elevated multiple jobholding driven by additional school-based and nonschool-based employment.

H_7: An increase in teacher salaries will not be associated with teacher multiple jobholding.

Job Attitudes

While it has typically been assumed that teachers work a second job to supplement their income (Hirsch et al., 2016), empirical support has not always been forthcoming. Though some teachers may take additional jobs to meet regular expenses, multiple jobholding may also be explained by pull factors, such as career development or psychological fulfillment (Campion et al., 2020).

Evidence on the job attitudes of teachers with multiple jobs is mixed, likely given the failure to distinguish the types of second jobs. Those who *do* make this distinction find that job attitudes depend on the nature of the work (Cardina & Seymour, 2021), its setting (Fitchett et al., 2016), and the motivations for undertaking it (Raffel & Groff, 1990; Webster et al., 2019). Additionally, most who consider job attitudes regard it as an outcome of multiple jobholding. The present study regards satisfaction with salary and teaching as proxies for motivation. We might expect teachers who are not satisfied with their salary to take on additional work for financial reasons. Contrastingly, multiple jobholders who are satisfied with their salary and teaching, more broadly, are unlikely to have purely financial motivations, as are those who are *not* satisfied with teaching and exploring alternate career paths.

H_8: Teachers who are satisfied with their salary are no more or less likely to work multiple jobs than teachers who are not satisfied with their salary, unless it is additional teaching and school-based jobs, which they will be more likely to take on than teachers who are not satisfied with their salary.

H_9: Teachers who are satisfied with teaching are no more or less likely to work multiple jobs than teachers who are not satisfied with teaching unless it is additional teaching and school-based employment, which they will be more likely to take on.

Multiple Jobholding and Teacher Turnover

Varying motivations imply some elements of working an additional job may be depleting (i.e., negative personal and workplace outcomes), while others might be enriching (i.e., the benefits outweigh the costs; Campion et al., 2020). This depletion-enrichment framework provides a way to categorize the real and perceived costs and benefits of multiple jobholding, including across financial, career, performance, and personal outcomes. For instance, working an additional job is undoubtedly financially enriching, with teachers earning 7–12 percent of their income from working beyond their primary teaching role (Walker, 2019). Yet the relationship between multiple jobholding and turnover is more ambivalent and likely depends on the specific nature of teachers' additional jobs.

Outside of teaching, evidence between multiple jobholding and career outcomes is quite positive (Campion et al., 2020). Multiple jobholding can be personally and professionally fulfilling, often in ways that expand on teachers' instructional role, which may make them more likely to stay in teaching. Working as a sponsor for an extracurricular activity can provide a new way to build relationships, strengthening the connections of teachers to their school and making them less likely to move. Other jobs outside the school system, say, tutoring or teaching a community college class, might bring increased personal control and autonomy than is normally experienced in teachers' day-to-day work.

Working an additional job also provides the opportunity to develop new skills. When the additional job is within the same field, research from outside of education indicates that it may further embed an individual in their current field of work, resulting in lower turnover rates (Panos et al., 2014). When teachers work jobs outside of education, however, it is more likely to be a steppingstone into a new occupation, making them more likely to leave teaching.

H_{10}: Multiple jobholders with additional school-based jobs move schools at lower rates than teachers without a second job and multiple jobholders with additional nonschool-based jobs.

H_{11}: Multiple jobholders turn over at lower rates than teachers without a second job.

H_{11a}. Non-school jobholders turn over at higher rates than single jobholders, a pattern that is driven by leaving teaching.

Data and Methods

To characterize the patterns and consequences of public school teachers' multiple jobholding, we draw on eight waves of the SASS and the NTPS. These surveys—which have been administered by the National Center for Educational Statistics (NCES) in the 1993–94, 1999–2000, 2003–04, 2007–08, and 2011–12, 2015–16, 2017–18, and 2020–21 school years—provide data on the types of teachers' additional employment as well as background characteristics, features of job structure, and job attitudes. The 2000–12 SASS also includes data on turnover and retention, allowing us to test features of multiple jobholding within our enrichment-depletion framework. Though SASS/NTPS' sampling design has changed over time, they consist of nationally representative samples of teachers and schools for public schools in the United States. To recover population-level estimates, survey weights are used in all analyses.

Measure

This study uses a comprehensive set of measures related to teacher multiple jobholding, background characteristics, job structure, job attitudes, and turnover. We provide a brief overview of study variables, with additional details about their coding available in Appendix A1.

Teacher Multiple Jobholding

Our measures of teacher multiple jobholding are developed from questions about whether the teacher had employment other than teaching and their earnings from this employment.

Teachers are asked if, during the prior summer, they had earnings from teaching summer school, working in a non-teaching job in this or any other school, or working in any non-school job. They are then asked if, during the current school year, they have earned additional compensation (a) from their school system for additional activities or (b) from a job outside their school system. We draw on these questions to create three variables characterizing teacher multiple jobholding. In some cases, we report earnings from different forms of employment.

The first of these measures is the timing of multiple jobholding, which includes whether or not the teacher was working in the summer, the school year, or both. This and the other multiple jobholding variables are in reference to teachers who reported having no additional employment. Next we measure whether multiple jobholding was characterized as teaching, non-teaching, or included both types of positions. Third, we distinguish where teacher multiple jobholding is taking place (i.e., school-based, nonschool-based, or both). In some analyses we collapse these variables to compare teacher multiple jobholders to teachers with no additional employment.

Teacher Background Characteristics

Teacher background characteristics include indicators of whether or not the teacher identifies as male, White, Black, Hispanic, or another race (i.e., Asian American, Pacific Islander, American Indian, multiracial) or is less than 30 years old. In supplementary analyses, we examine differences in multiple jobholding by marital status and number of children.

Teacher Job Structure

Teacher job structure includes experience, school level, primary teaching assignment, and base salary. We create a categorical experience variable including 0–2, 3–5, 6–10, 11–20, and 21 or more years. Subject areas include ECE, elementary, special education, arts and music, ELA,

ESL, foreign languages, health, mathematics and computer science, natural sciences, social

sciences, CTE, and miscellaneous, with general education elementary teachers as the reference

group. Base salary and measures of outside earnings are inflation-adjusted to 2020 dollars. We

also include a binary variable indicating whether or not a teacher works full time.

School Characteristics. This study includes several school characteristics as control

variables, including student enrollment, the fraction of students eligible for free or reduced price

lunch, the fraction of students of color, and indicators of whether or not the school was located in

an urban area or was a charter school.[1]

Teacher Job Attitudes

Our two measures of teacher job attitudes are satisfaction with teaching salary and

satisfaction with being a teacher in the school. Each item is measured on a 4-point scale, which

we reverse coded so 3 is "strongly agree" and 0 is "strongly disagree." Satisfaction with teaching

is not available in the 1993–94 SASS, while neither attitudinal measure is available in the 2017–

18 NTPS. We include these survey waves when documenting trends in teacher multiple

jobholding but exclude them for the descriptive and regression analyses.

Teacher Turnover

Teacher turnover data comes from principal reports of whether teachers stayed in the

same school in the year after they were surveyed. In some analyses, we compare stayers with

teachers who turned over from their school. In others, we compare stayers with teachers who

either moved schools or left teaching.

Data Analysis

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[1] As the cost of living may also shape patterns of multiple jobholding, some analyses also include the Regional Price Parity (RPP) index. Created by the Bureau of Economic Analysis at the U.S. Commerce Department, this index examines overall prices in an area and prices for goods, housing, utilities, and other services. It is available for metropolitan and non-metropolitan areas in a state from 2008–21.

Our first research question asked about the fraction of teachers who work an additional job, how this rate has changed over time, and the extent to which it varies by timing, focus, and setting. To answer this question, we conduct a graphical analysis examining rates of teacher multiple jobholding over time. Our second research question asks about the characteristics of multiple jobholders. For this, we examine the background characteristics, job structure, and job attitudes of multiple jobholders and teachers without an additional job before disaggregating multiple jobholding by timing, focus, and setting.

Next, we estimate a series of linear probability models to understand the predictors of teacher multiple jobholding (Research Question 3). This equation can be expressed as follows:

$$Pr(Multiple\ Job)_{ist} = \beta_0 + \boldsymbol{T_{it}}\beta + \boldsymbol{S_{st}}\beta + \delta_t + e_{ist} \tag{1}$$

where the probability that teacher i in school s in year t is working an additional job is a function of teacher background characteristics, job structure, job attitudes ($\boldsymbol{T_{it}}$), school characteristics ($\boldsymbol{S_{st}}$), a year fixed effect (δ_t) and an error term (e_{ist}). We extend this model by including state and district-by-year fixed effects, respectively, to account for unobserved differences in cost of living and labor market conditions that may shape the probability of teacher multiple jobholding either at the state or district level. Standard errors are clustered at the district-by-year level.

To examine differences in the timing, focus, and setting of teachers' multiple jobholding, we estimate three separate multinomial logistic regression models predicting the timing of multiple jobholding (summer, school year, or both), focus (teaching, non-teaching, or both), and location (school-based, nonschool-based, or both). The base outcome for each model is teachers without any additional employment. Models control for teacher and school characteristics and year fixed effects. Standard errors are clustered at the school level. To facilitate comparison with the results in Equation 1, we report these results as the marginal effects.

Our final analysis helps answer Research Question 4 regarding the extent to which teacher multiple jobholding predicts levels of turnover, as expressed in Equation 2:

$$Pr(Turnover)_{isdt} = \beta_0 + \beta_1 Multiple\ Job_{isdt} + \boldsymbol{T_{it}}\beta + \boldsymbol{S_{st}}\beta + \gamma_{dt} + e_{isdt} \qquad (2)$$

where the probability that teacher i in school s in district d in year t turns over is a function of teacher background characteristics and job structure, school characteristics, district-by-year fixed effects, and an error term e_{isdt}. This analysis allows us to determine the extent to which teacher multiple jobholding is associated with turnover, whether measured overall or separated by moving schools and leaving teaching, accounting for fixed differences across districts, including local labor market conditions and additional employment opportunities within the school district, that may bias this relationship. Standard errors are clustered at the district-by-year level.

Trends in Teachers' Additional Jobs

Our first research question asks about the extent to which teachers work an additional job and how this rate has changed over time or differs by features of the job. Figure 2 presents the fraction of teachers with second jobs over time, separating the results by when the teacher is working (i.e., summer versus school year), the nature of their second job (i.e., teaching versus non-teaching), and where they are working (in their school system or not).

Overall, the rates at which teachers work a second job have been stable. Since 2000, most teachers (60%) report earnings outside of their primary teaching responsibilities. The rates at which teachers work during the summer, school year, or both have also been consistent (Figure 2a), with more than three times as many teachers working during the school year versus the summer. The overwhelming majority of teachers who hold an additional job do so outside of teaching (Figure 2b). While only 6.2% of teachers hold an additional teaching job either in the summer or school year, 42% have a non-teaching job and 11% have both a teaching and non-

teaching job. Table A2 shows the types of additional non-teaching jobs teachers have. Of those

who have a non-teaching role, most work for their school system as sponsors for extracurriculars.

A nonnegligible share of teachers who take on additional nonteaching job(s) work in a

nonschool-based job, including 31% in the summer and 26% in the school year. Figure 2c

examines differences in whether or not teachers are working in their school system. Not

surprisingly, given the large fraction of teachers who work in their school system as

extracurricular sponsors, 35% of teachers work in their own school system. Only 9.3% of

teachers work outside their school system, with an additional 14.5% working jobs both within

and outside their school system.

Describing the Teacher Multiple Jobholders

To describe the characteristics of teachers who work additional job(s), Table 2 compares

differences in background characteristics, job structure, job attitudes, and school characteristics.

In terms of teacher background characteristics, 15% of the teachers who do not work an

additional job identify as male, compared to 30% of those who do—consistent with Hypothesis

1. Approximately 40% of male-identifying teachers work in the summer and the school year and

work both a school- and nonschool-based job.[2] No differences are observed by race/ethnicity.

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[2] To more fully describe how gender dynamics intersect with marital status and child-rearing, Table A3 examines gender differences in whether teachers are working based on whether they report being married or have a long-term partner, have children, or a combination of the two for the years in which these data are available. In terms of marital status, approximately 75% of male-identifying teachers work an additional job, regardless of whether they are married. Female teachers who are not married or living with a long-term partner work at a higher rate than married teachers (62% versus 52%). Examining number of children—which is only available in 1994—shows sharp gender differences. For male teachers, there is a consistent, positive relationship between number of children and working at least one additional job. Among male teachers with no children, 72% worked an additional job. For male teachers with three or more children, 84% worked an additional job. In contrast, female teachers without children work at the highest rate—51%—compared to 44% of female teachers with one child and 43% of female teachers with two children. Finally, we consider differences in the rate of working an additional job by gender, marital status, and whether the teacher has children or not. Among male teachers, the elevated rate of working is clearly driven by whether they have children. Eighty percent of male teachers with children work an additional job, with no significant difference by marital status. For female teachers, unmarried teachers are most likely to work—approximately 57%—with no differences by whether not they have children. In fact, 41% of married female teachers with children worked an additional job—the lowest rate of any group examined in this table.

Age is related to holding an additional job: 14% of teachers who do not work an additional job are under 30 years old, compared to 22% of those who do. For teachers 30 years old or younger, additional employment is most likely to take place outside of their school system, or they take a school-based job alongside other employment. Though teachers less than 30 years old are only 18% of the teacher workforce (Table 1, column 1), 26% work school-based and nonschool-based jobs. These patterns generally support the hypothesis that younger teachers are more likely to work multiple jobs than older ones, though with smaller differences for employment that is during the school year or school based.

Rates of multiple jobholding also differ by features of teachers' job structure. More teachers with 0–2 years of experience are multiple jobholders than not (21% versus 16%). This difference narrows as teachers gain experience, with a smaller fraction of teachers with 11 years of experience working an additional job than not. This difference disappears when looking at school-based employment, with teachers with 6 or more years of experience comprising 73% of the teacher workforce—a fraction that represents their relative share in the overall teacher workforce. Though we had expected to find that more experienced teachers would be less likely to work multiple jobs than less experienced teachers (H_4), we expected that they would be more likely to take on additional school-based employment, which we didn't find evidence of.

There are differences in the school level and main subject taught by teachers who hold multiple jobs and those who do not. Thirty-seven percent of those who worked an additional job are secondary teachers, compared to only 23% of teachers who did not work an additional job. We find evidence for Hypothesis 5—that secondary teachers' multiple jobholding includes high

rates of school-based employment (36%)—though this descriptive analysis also shows that secondary teachers are most likely to hold more than one additional job, whether measured by working in the summer and school year (39%), an additional teaching and non-teaching job (36%), and a school-based and nonschool-based job (42%). Teachers who work at markedly higher rates include arts and music, health, mathematics and computer sciences, natural and social sciences, and CTE teachers—consistent with Hypothesis 6. We expected a large fraction of arts and music and health teachers to work both school-based and nonschool-based employment; 19% of all school-based employment and nonschool-based employment taught these subjects, though they only comprise 12% of the overall teacher workforce (see Table 1).

On average, teachers who do not work an additional job have a base salary $1000 higher than those who work an additional job. Multiple jobholders earn $6,412 annually from jobs separate from primary teaching responsibilities (i.e., 11% of their base salary). Nearly two-thirds of teachers' additional earnings are during the school year, with $2,239 being from school-based work and $1,847 from nonschool-based work. Teachers who work in the summer and hold a second job in the school year have the lowest base salaries.

Figure 3 shows trends in earnings. From 1994–2008, teachers' annual inflation-adjusted earnings from additional jobs were greater than $4000. In 2012 (following the Great Recession), teachers' non-salary earnings saw a low of $3,278. Since then, they increased gradually to $3,726 in 2018 before dropping to $3,245 during the pandemic. Though teachers earned more from non-school earnings during the school year in 1994, since then, school-based earnings have been the largest source of teachers' additional income.

We hypothesized that teachers' motivations, as measured by their satisfaction with salary and teaching, would relate to their patterns of multiple jobholding, particularly in terms of the

type and location of the job (Hypotheses 8–9). We find no overall difference in satisfaction with

salary between multiple jobholders and teachers without an additional job. The lowest level of

satisfaction with salary was among teachers who work a non-teaching job, a finding we expected

for teachers working nonschool-based jobs instead. We had hypothesized that teachers who are

satisfied with teaching will be no more or less likely to work multiple jobs than teachers who do

not work an additional job. We find this generally to be true, with multiple jobholders reporting

slightly higher satisfaction with teaching (3.12 versus 3.08). We found the lowest satisfaction

levels among multiple jobholders with nonschool-based employment (Hypothesis 9) and the

highest among teachers with both a teaching and non-teaching job (3.20).

We did not establish any *a priori* hypotheses regarding school characteristics but note

one descriptive difference: among teachers who work an additional job, their schools enroll 82

more students. This is likely attributable, at least in part, to the fact that working a second job is

more common in secondary schools, schools that tend to have larger student enrollments than

elementary schools.[3]

Predictors of Teacher Multiple Jobholding

The next analysis examines how background characteristics, job structure, and job

attitudes predict teacher multiple jobholding. Table 3 presents the results from a model with

teacher- and school-level covariates before adding state and year fixed effects, and district-by-

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[3] Appendix Table A4 examines the extent to which working an additional job is related to overall prices in an area using the Regional Price Parity (RPP) index. For this measure, 100 reflects the average prices for a particular category in a given year, with values above 100 reflecting costs higher than the average. The first two columns of the table shows that teachers with an additional job live in areas with regional costs that are slightly higher than multiple jobholders. When looking at the different cost categories, the most notable pattern is in terms of housing costs. Regardless of the category, teachers that hold additional jobs work in metropolitan or non-metropolitan areas that with higher housing costs. This regional price of housing is largest for teachers that work a non-teaching job and teachers that work both a teaching and non-teaching job (104.8 and 105.6, respectively), reflecting a sixth of a standard deviation difference from the average cost of housing nationwide.

year fixed effects. To facilitate interpretation of the teacher-level characteristics, Figure A1 plots

the estimates from column 3 of Table 3. This analysis confirms a number of the descriptive

findings from Table 2, while also highlighting new differences that emerge only after accounting

for fixed state and district characteristics. Unless otherwise noted, we interpret the results from

the preferred model, the district-by-year fixed effects.

In terms of background characteristics, we expected that male and younger teachers

would have a higher probability of multiple jobholding, with no differences expected by teacher

race/ethnicity (Hypotheses 1–3). Consistent with Hypothesis 1, the probability that a male

teacher holds an additional job is 12.3 percentage points more than female teachers in the same

district in the same year, accounting for other variables in the model. Counter to Hypothesis 2,

racial differences among teachers were observed for teachers in the same school district. Black

teachers have a higher predicted probability of working than White teachers (3 percentage

points), though the probability is lower for Hispanic teachers and other teachers of another race

(i.e., Asian American, Pacific Islander, American Indian, multiracial). Evidence also supported

Hypothesis 3; compared to teachers over 30 years old in the same district, the probability that

teachers 30 years old and younger work an additional job is 11.6 percentage points higher.

We hypothesized job structure would predict teacher multiple jobholding, including that

more experienced teachers will be less likely to work multiple jobs than less experienced

teachers, that elementary teachers will be less likely to work multiple jobs than secondary

teachers, that there would be differences by subject area, and that there would be no relationship

between teachers' base salaries and multiple jobholding (Hypotheses 4–7).

Compared to teachers with 0–2 years of experience, those with 3–10 years of experience

have a slightly higher probability of working an additional job, whereas teachers with 11 or more

years of experience have a reduced probability of working an additional job, holding all else constant. The probability that a secondary teacher works an additional job is 8.1 percentage points higher than that for an elementary teacher in the same district in the same year (Hypothesis 5). Compared to elementary teachers, most others have an elevated probability of multiple jobholding. The exceptions are ECE teachers, whose probability of working a second job is 4.8 percentage points less than that of elementary and foreign language teachers, where no difference is found. Counter to Hypothesis 6, special education and ESL teachers have a slightly higher rate of working multiple jobs than elementary teachers. More consistent with this hypothesis, the probability of multiple jobholding is highest for arts and music and health teachers, who are 16.7 and 21.3 percentage points more likely to have an additional job than elementary teachers, respectively. The probability that a mathematics and computer sciences, natural and social sciences, or CTE teacher works an additional job is roughly 10 percentage points higher than that of an elementary teacher.

We hypothesized that an increase in teacher salaries would not be associated with an increased probability of teacher multiple jobholding (Hypothesis 7) but find a positive relationship. A one percent change in base salary is associated with a 3.3 percentage point increase in multiple jobholding, controlling for other variables. This might be partially explained by teachers' satisfaction with their salary (Hypothesis 8), a one-unit increase in which was associated with a 0.9 percentage point decrease in the probability of teachers working an additional job. Teacher satisfaction (Hypothesis 9), however, was positively associated with multiple jobholding when conditioning on district-by-year fixed effects (1.8 percentage points).

Though we did not expect to find a strong relationship between school characteristics and teacher multiple jobholding, the probability of teacher multiple jobholding was higher in urban

schools and schools with more students of color, a relationship that was largest in magnitude

when conditioning on district-by-year fixed effects.[4,5]

Differences by Type of Additional Employment

Figure 3 plots the marginal effects estimated from three multinomial logistic regression

models predicting whether a teacher is working in the summer, school year, or both (Figure 3a),

whether their additional job(s) are teaching, non-teaching, or both (Figure 3b), and whether their

additional job(s) are within their school system, outside it, or both (Figure 3c). The tabular

results are included in Appendix Table 6. The base group for each model is teachers who do not

hold an additional job. While the previous analysis indicated strong associations between teacher

background characteristics and job structure and working an additional job, this analysis makes

clear that there is strong variation in the type of multiple jobholding.

We begin with the hypotheses developed in our conceptual framework before

highlighting a few broader patterns. First, we had hypothesized that more experienced teachers

would be less likely to work multiple jobs than less experienced teachers (Hypothesis 4), unless

the additional employment was in their school. The probability that teachers with more than

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[4] Models with state and district fixed effects implicitly control for local variation in cost of living that may shape teachers' decision to take on an additional job. To assess the extent to which variation in cost of living is associated with an increased probability of working an additional job, Appendix Table 5 estimates a series of models with the standardized RPP indices. A standard deviation increase in the overall RPP index is associated with a 1.3 percentage point increase in teachers' probability of working an additional job. To help give this coefficient a more practical interpretation, it reflects the difference in overall cost of living between metropolitan and non-metropolitan areas in large states, such as New York or Texas. The estimates in column 12, which include the area prices for goods, housing, utilities, and other services suggests that differences in the cost of housing is most predictive among these different elements of the cost of living. Specifically, a standard deviation increase in the RPP housing index is associated with a 2.7 percentage point increase in teachers' probability of working an additional job, holding all else constant.
[5] In an exploratory analysis, we also examined the extent to which there were meaningful changes in the relationship between teacher- and school-level characteristics and working an additional job. Predicted probabilities for the three teacher characteristics that changed the most over time—gender, age, and school level—are reported in Appendix Figure A2. Though not consistent over time, female teachers, teachers more than 30 years old, and secondary teachers were becoming more likely to work an additional job, though these decrease to 2000 levels in 2020. Though the probability of multiple jobholding for male, younger, and secondary teachers remained consistently high over time, it dropped to its lowest rates in 2020.

three years of experience work an additional school-based job is greater than that of beginning teachers. At the same time, more experienced teachers are less likely to work out of school. In support of this hypothesis, we find that, compared to beginning teachers, more experienced teachers are consistently less likely to work outside of their school. At the same time, we do not find that the most experienced teachers have more opportunities for school-based employment than less experienced teachers. It is teachers with 3–10 years of experience who are most likely to work in their school system.

Second, we had predicted that the elevated rate of multiple jobholding among secondary teachers would be driven by additional school-based employment (Hypothesis 5). We find strong support for this hypothesis. The probability that secondary teachers hold an additional job in their school is 6 percentage points greater than that for elementary teachers, and secondary teachers are 1.1 percentage points less likely to work a non-school job or work in the summer than elementary teachers.

We expected that arts and music and health teachers' rates of multiple jobholding would be driven by school-based and nonschool-based employment (Hypothesis 6). The additional employment of health teachers is driven by school-based employment (14.3 percentage points) or school-based and nonschool-based employment (10.2 percentage points); no difference was found between the nonschool-based employment rates of health teachers and elementary classroom teachers. Of note, health teachers' additional employment is predicted to take place in the school year, even finding a negative relationship with employment in the summer (-4.5 percentage points). For arts and music teachers, the largest differences in predicted probabilities compared to elementary classroom teachers are for school year employment (13 percentage

points), teaching positions (17.2 percentage points), and school- and nonschool-based work (11.2 percentage points).

In terms of job attitudes, Hypothesis 8 outlined how we expected teachers who were more satisfied with their salary to be less likely to work more than one job. We find consistent evidence for this, as illustrated by the negative and statistically significant estimate for the plot on the right of Figures 3a, 3b, and 3c. We also expected satisfaction with teaching to be positively associated with working additional teaching and school-based jobs (Hypothesis 9). We find evidence for the second of these types of additional employment. A one-unit increase in satisfaction with teaching is associated with a 1.5 percentage point increase in the probability that teachers were working an additional school-based job. No evidence was found with working an additional teaching job. We also expected satisfaction with teaching to be negatively associated with working a nonschool-based job, a pattern which is supported by evidence in Figure 3c (-0.7 percentage points).

Other than this evidence grounded in these study hypotheses, a couple other patterns from Figure 3 bring additional nuance to patterns of teacher multiple jobholding. Though we had no *a priori* hypothesis about how the gender differences in multiple jobholding would vary by the timing, type, or location of the job, we found the largest differences between male and female teachers in terms of employment during both the summer and school year (11.5 percentage points) and school-based and nonschool-based jobs (8.2 percentage points). The probability that a teacher 30 years or younger works is consistently higher than that of an older teacher, with the exception of non-teaching jobs where no significant difference is observed. There is no clear takeaway regarding racial/ethnic differences in the patterns of different types of multiple jobholding.

There are additional differences pertaining to teachers' job structure. Regarding Hypothesis 6, mathematics and computer science, natural science, and social sciences teachers' elevated probabilities of working an additional job are driven by working during the school year (or both the summer and school year), an additional teaching job (or an additional teaching and nonteaching job), and in the school system (or both within and outside their school system). Examining the relationship between teacher salary and the type of additional employment points to important nuance (Hypothesis 7). A one percent increase in teachers' base salary is associated with a 3.6 percentage point increase in the probability of working during the school year and a 6 percentage point increase in working within the school system. A one percent increase in teachers' base salary is also associated with a lower probability of working both during the summer (-0.7 percentage points), working a nonschool-based job (-2.1 percentage points), and both school- and nonschool-based employment (1 percentage point).

Teacher Multiple Jobholding and Teacher Turnover

In the final analysis, we examine the extent to which teacher multiple jobholding is associated with turnover (Hypotheses 10–11), including whether this relationship varies based on when the teacher is working, the nature of their second job, and where they are working. Table 3 presents the results from a series of models, with the results presented in the odd columns only controlling for year fixed effects and the model in the even columns controlling for teacher and school characteristics and district-by-year fixed effects. The analysis in this section is driven by two main hypotheses: (1) Multiple jobholders are predicted to turn over at lower rates than teachers without a second job and (2) non-school jobholders are predicted to turn over at higher rates than single jobholders, a pattern that will be driven by leaving teaching.

After adjusting for teacher and school characteristics and district-by-year fixed effects (column 2), multiple jobholding is associated with a 1.3 percentage point decrease in the probability a teacher will turn over compared to teachers who do not work an additional job. This relationship is largely driven by the decreased probability of leaving teaching (-1.7 percentage points). In contrast, nonschool-based employment is associated with an increased probability in turning over. The unadjusted model indicates that the probability of turnover for teachers with nonschool-based employment is 4.4 percentage points greater than for teachers without an additional job. The saturated model suggests that this finding is most robust in terms of leaving teaching. Teachers with nonschool-based employment have a 1.9 percentage point greater probability than teachers in the same district in the same year who do not work an additional job.

All this suggests that multiple jobholding can be enriching for teachers, a stylized finding that is supported by other results in Table 3. School-based employment is associated with a decreased probability of leaving teaching (2.5 percentage points). Moreover, teachers with multiple jobs—whether measured as jobs in the summer and school year, teaching and non-teaching jobs, or school-based and nonschool-based employment—have some of the lowest probabilities of leaving teaching compared to teachers without an additional job.

Discussion

Our purpose was to document the rate of teacher multiple jobholding—with attention timing, focus, and setting—and examine the extent to which it is associated with teacher turnover. In spite of stagnating salaries and the widening gap between public school teachers and similar workers (Allegretto, 2022), we found the rate of teacher multiple jobholding has been remarkably stable since the early 1990s. Year after year, about 60% of teachers report earnings from work outside of their primary teaching responsibilities, making it unsurprising that

representations of teachers often include "moonlighting." Acknowledging that our definition of

teacher multiple jobholding is broad, if we were to only include work outside of one's school

system or non-teaching work, these have been similarly stable—about 9.5% and 42%,

respectively. Although working in retail is an oft used example of teacher multiple jobholding

(Averett, 2001; Raffel & Groff, 1990; Taft, 2022; Webster et al., 2019), the extent to which

teachers take on work outside of their school system appears to be overstated.

By and large, teachers with multiple jobs are more likely to be male, less than 30 years

old, less experienced, work in a secondary setting, or have a primary teaching assignment in arts

and music or health. Differences by race/ethnicity were observed only within the same district,

with Black teachers being more likely to work an additional job than White teachers and

Hispanic teachers and those of another race (i.e., Asian American, Pacific Islander, American

Indian, multiracial) less likely to work an additional job. With the exception of experience, these

patterns are robust and consistent across different ways of looking at teachers' jobs (i.e., timing,

focus, and setting). Younger teachers' employment is most likely to take place outside of their

school system, including a school-based job alongside other employment, the implications of

which are discussed below.

Because teachers have "summers off," we might expect that summers are when teachers

are more likely to take on additional work. But as our findings and others' indicate (Startz,

2018), most teachers who take on additional work do so during the school year. Like summers,

the school schedule facilitates additional work, perhaps validating the concern that teachers with

multiple jobs have less time to devote to their primary teaching assignment (Winters, 2010). But

considering that most teachers' additional work takes place within their school system *and* that

most school-based work is related to extracurricular activities—which have been shown to have

a positive association with academic achievement (e.g., Covay & Carbonaro, 2010)—the concern that teacher multiple jobholding will negatively impact student outcomes appears overstated. Furthermore, this concern is predicated on exploitative norms within teaching (Singer, 2022), whereby teachers are uncompensated for carrying out additional responsibilities.

We found no overall difference in satisfaction with salary between multiple jobholders and teachers without an additional job. However, when considering the focus of teachers' work, teachers with an additional non-teaching job were least satisfied with their salary. Multiple jobholders reported a slightly higher satisfaction with teaching, with the lowest satisfaction level with teaching among teachers with additional nonschool-based work and the *highest* level of satisfaction with teaching among those with both an additional teaching and non-teaching job.

Despite the premise that teachers take on additional work to make ends meet (i.e., financial motivations), the present study is one of the few to (a) directly examine whether and how pay is related to teachers' multiple jobholding and (b) control for cost of living (see Ballou, 1995; Ransom & Lambson, 2011). One the one hand, we found that, on average, teachers who work an additional job (a) have a base salary that is $1000 lower than teachers who do not work an additional job, (b) earn 11% of their base salary from additional work, and (c) that teachers who work in the summer and hold a second job in the school year have the lowest base salaries. On the other, we found that teachers with higher salaries actually had a higher probability of multiple jobholding, controlling for other variables in our model. As with other areas of our study, there was variation based on the location of multiple jobholding; teacher base salaries were positively associated with the probability of school-based employment but negatively associated with nonschool-based employment.

Another oft-cited concern is that "overwork" may lead teachers to quit (Fitchett et al., 2016; Nápoles et al., 2022, Raffel & Groff, 1990; Taft, 2022; Webster et al., 2019), which also stands to impact students (Elacqua & Marotta, 2020). Our findings support the assertion that most types of multiple jobholding can be enriching for teachers, with additional employment in the school year, in a teaching position, and within their school system all being associated with a reduced probability of leaving teaching. This finding should not be taken as working multiple jobs as having an effect on retention. Instead, we suspect that it reflects, in large part, a deeper commitment to teaching and embeddedness in the school system that led the teacher to take on additional work roles—a view further supported by our finding that satisfaction with teaching represented one motivation to take on additional work, particularly within one's school system.

Limitations and Future Research

Though this study makes an important contribution to our study of teacher multiple jobholding, there are limitations which should be noted, limitations which help to form the basis for future research on this topic. First, the study would benefit from more granular measurement of the specific types of employment teachers take on. As an example, though we infer that the elevated school-based employment of health education is driven by athletics coaching, we do not explicitly measure this role with our measure of multiple jobholding. Similarly, though 9.5% of teachers work outside their school in a given year, there is likely great heterogeneity in their outside employment, heterogeneity that is likely quite consequential for understanding how this work affects teachers' work in schools (e.g., private tutoring versus retail).

Second, in supplementary analyses, we began to unpack how teacher multiple jobholding varied by cost of living. We see the need for much more research in this area. With evidence that the regional price of housing was positively associated with multiple jobholding suggests the

need for further research describing the work of teachers in these areas where financial motivations for multiple jobholding may be more acute (Dizon-Ross et al., 2019).

Though our conceptual framework suggests that teachers are motivated by a broader array of factors than satisfaction with salary and teaching when deciding to take on additional work, including perceived need for career development or personal fulfillment, we do not have measures for these constructs. Thus, researchers studying teacher multiple jobholding might consider directly studying teachers' motivations for taking on additional work. Qualitative work (e.g., Pittard, 2017) in this area will be particularly important as, overall, individual teachers' circumstances could look very different. Updating Raffel and Groff's (1990) foundational work at the current juncture seems particularly opportune, given what is arguably more opportunities for teachers to engage in additional work but also increased financial anxiety (Dizon-Ross et al., 2019). Such work could speak further to the circumstances in which teacher multiple jobholding is enriching and when it is depleting.

When examining the relationship between multiple jobholding and turnover, we recognize that teachers self-select into various roles, undoubtedly biasing the estimated relationship between multiple jobholding and turnover. To further unpack the causal relationship, researchers could leverage the introduction of new school-based employment opportunities available to teachers to examine whether they reduce teacher turnover.

While we can reason why teacher multiple jobholding in any or all of its forms may or may not impact student outcomes, very few researchers have directly examined this relationship, none with results generalizable to the U.S. teacher workforce at large (Elacqua & Marotta, 2020; Hébert, 2001). Our conditional results indicate that researchers studying this relationship should consider the timing, focus, and setting of teachers' additional work to offer clearer implications

for educational policymakers and leaders, especially considering that most teachers' additional

work takes place within their school system.

Researchers might also consider the relative costs and benefits of expanding teachers'

school-based opportunities for additional work. And while no researchers have directly studied

the relationship between United States public school teacher multiple jobholding and student

outcomes, teachers being paid to engage in practices that are known to support students' success

(e.g., delivering an evidence-based program during after school "tutoring") suggest this might be

an unanticipated benefit of teachers' multiple jobholding.

Implications for Policy and Practice

The high levels of multiple jobholding among teachers suggest that many teachers are

motivated to take on additional work and have ample opportunity to do so. Overall, our results

suggest that education leaders and policymakers should not be concerned *whether* teachers

engage in additional work but *where* that work occurs. The majority of teachers' so-called

"moonlighting" takes place within their own school system and our results suggest that these

teachers actually turn over at lower rates than those who do not take on additional work beyond

teaching. Such a view aligns with longstanding calls for a career-oriented teacher compensation

system that include complementary and hyphenated roles with additional compensation (Darling-

Hammond, 1997; Johnson & Papay, 2009). With evidence that a sizeable share of teachers'

overall pay comes from additional work, such a compensation system would support the

additional responsibilities that teachers take on throughout their career without losing what are

presumably highly effective educators to full-time roles outside of the classroom.

This general recommendation is supported by evidence that most teachers' additional

jobs do *not* involve teaching *and* that the lowest levels of satisfaction were among teachers who

work a non-teaching or nonschool-based job. This provides further support for creating

additional paid teaching opportunities within the school system. Importantly, considering the

positive association between extracurriculars and academic achievement (Covay & Carbonaro,

2010) alongside our finding that the highest satisfactions levels were among teachers with a

teaching *and* non-teaching job, these teaching opportunities should complement—not replace—

non-teaching opportunities within one's school system. The stability of these within-school work

opportunities is likely consequential, so as not to contribute to feelings of financial instability.

If school systems are to expand work opportunities for teachers, our results suggest a few areas

that might be most worthwhile. For one, younger, less experienced teachers disproportionately

take on additional work and, unlike more experienced teachers, this work typically takes place

outside of their school system. Expanding school-based opportunities for additional work for

younger, less experienced teachers stands to benefit not only the teacher workforce but the

students they serve. For instance, this additional work may take the form of practicum-based

professional development (PD) in the context of after-school or summer programming, allowing

beginning teachers to refine their practice while engaging in activities that support students'

academic achievement both directly (i.e., academic programming) and indirectly (i.e.,

extracurriculars). If such opportunities are integrated into summer school, they could also stand

to mitigate summer learning loss (von Hippel, 2019). That elementary school teachers are

underrepresented amongst teachers with multiple jobs suggests that more school-based

opportunities should be created for elementary teachers (e.g., tutoring and summer teaching),

possibly also improving student achievement in the educational stage in which students' learning

gains are largest (Lipsey et al., 2012).

Finally, our findings of the ubiquity of multiple jobholding over a nearly three-decade period should not be taken as an endorsement that multiple jobholding should be expected of teachers (Raffel & Groff, 1990). There are clearly ways in which working additional jobs—as tutors, coaches, extracurricular activity directors, and "teacherpreneurs," among many others—are personally enriching and help to create a more vibrant educational system for students and teachers alike, which challenges the longstanding archetype of the teacher moonlighting to make ends meet (Raffel & Groff, 1990). However, if our work has established anything with certainty, it is that we must break with the notion that teacher multiple jobholding is "good" or "bad" and instead look for the conditions under which it is most fulfilling or professionally meaningful.

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Figure 1. Enrichment-Depletion Framework of Teacher Multiple Jobholding
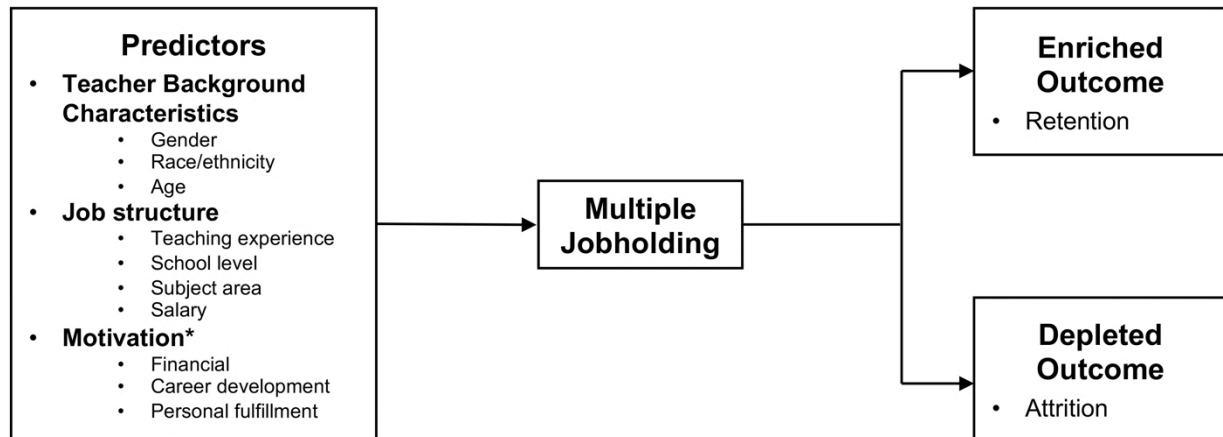
Notes. Adapted by the authors from Campion and colleagues (2020).

Figure 2. Teachers' Multiple Job-Holding, 1994-2021
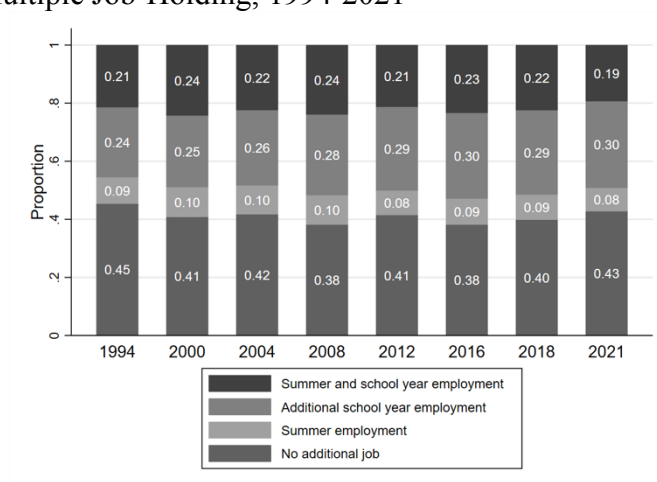
(a) Multiple Job-Holding by Time of Year
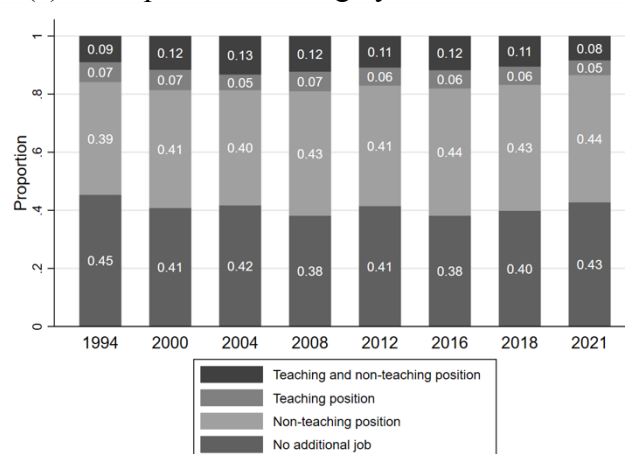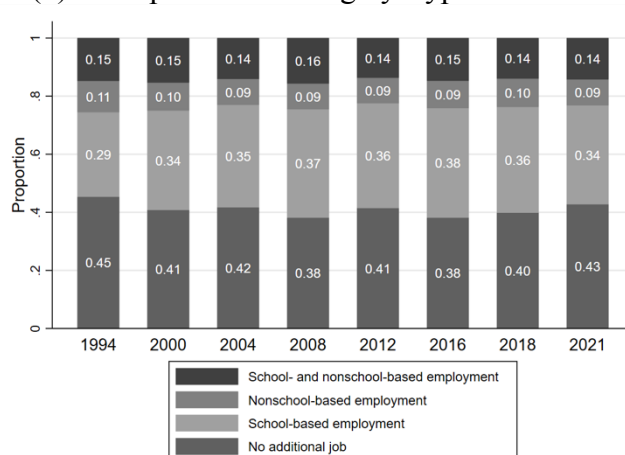
(b) Multiple Job-Holding by Type of Position

(c) Multiple Job-Holding by Location of Employment

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics.

Figure 3. Teacher Earnings from Additional Jobs
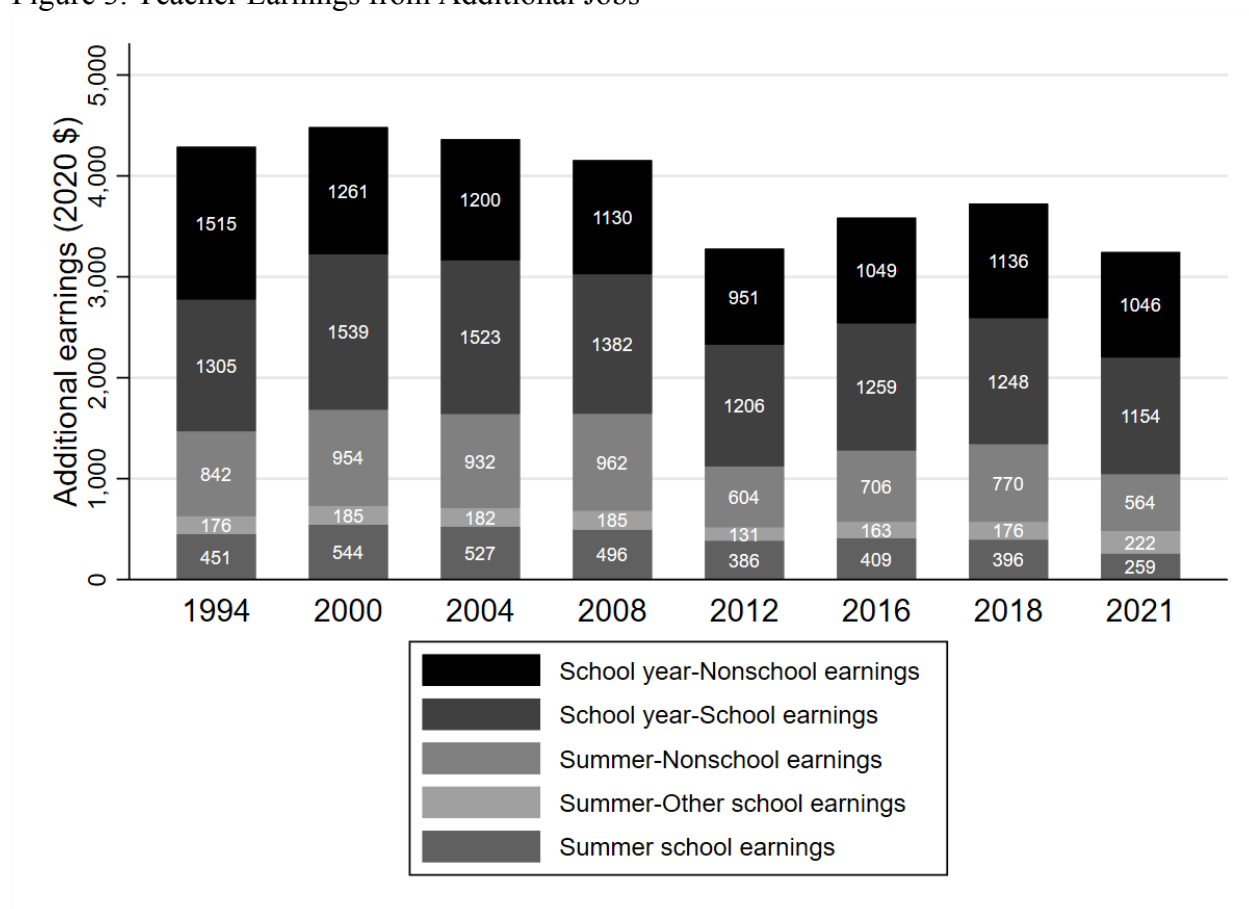
Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics.

Figure 3. Marginal Effects of Associations of the Timing, Type, and Location of Teacher Multiple Job-Holding
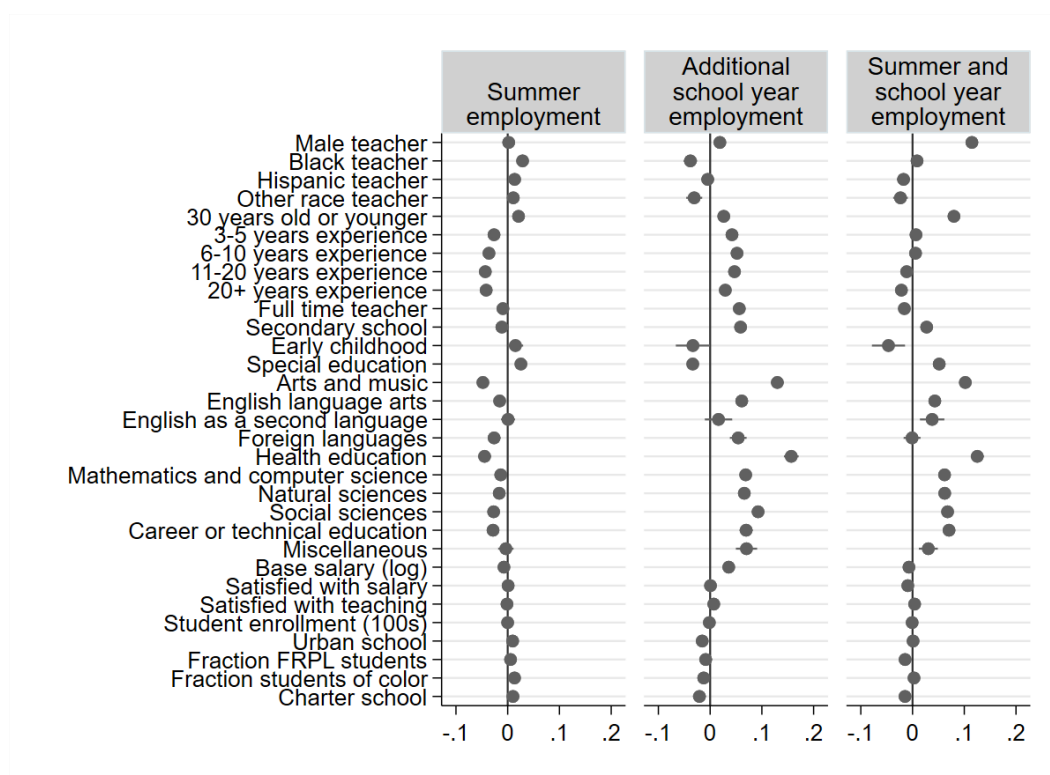
(a) Multiple Job-Holding by Time of Year
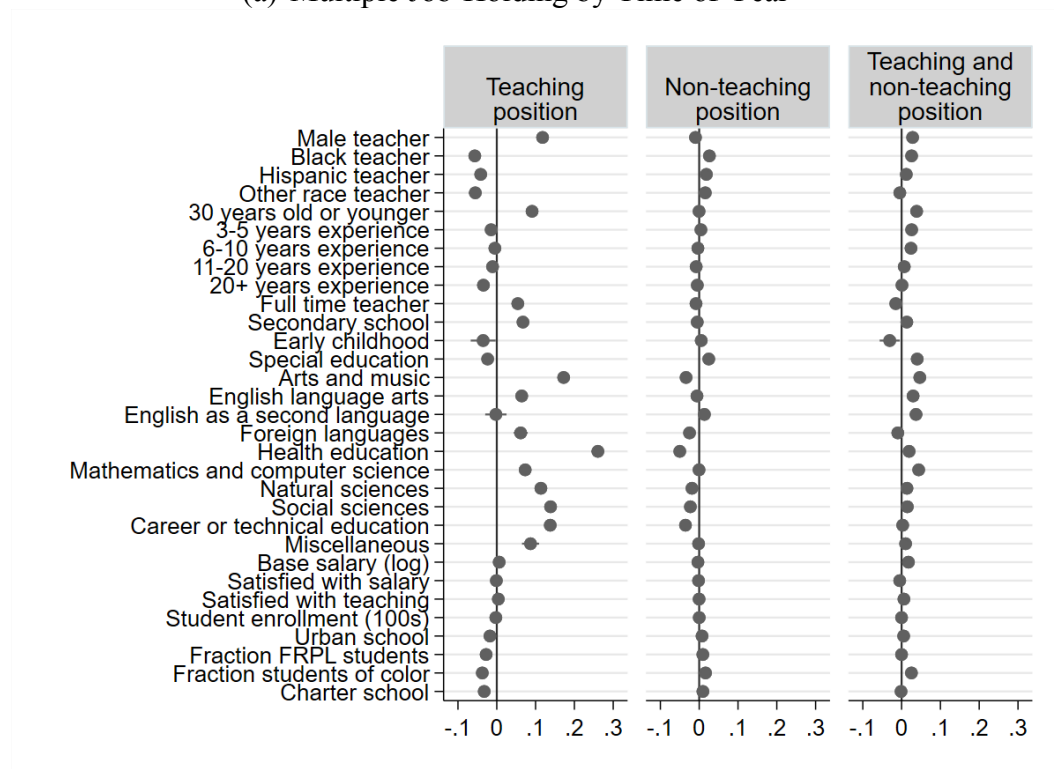
(b) Multiple Job-Holding by Type of Position

(c) Multiple Job-Holding by Location of Employment

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Full estimates reported in Appendix Table A6. Confidence intervals at the 95% level reported.

Table 1. Demographic Characteristics, Salary and Earnings, and School Characteristics of Teachers with and without Multiple Jobs

|	(1) Full sample	(2) No additional job	(3) Multiple job-holding	(4) Summer employment	(5) Additional school-year employment	(6) Summer and school-year employment	(7) Teaching position	(8) Non-teaching position	(9) Teaching and non-teaching position	(10) School-based employment	(11) Nonschool-based employment	(12) School- and nonschool-based employment
Teacher background characteristics												
Male teacher	0.24	0.15	0.30	0.20	0.28	0.37	0.32	0.17	0.29	0.27	0.28	0.39
Black teacher	0.07	0.07	0.07	0.10	0.06	0.07	0.06	0.12	0.09	0.07	0.07	0.07
Hispanic teacher	0.08	0.08	0.07	0.09	0.07	0.07	0.07	0.11	0.09	0.09	0.06	0.06
Other race teacher	0.03	0.04	0.03	0.04	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03
30 years old or younger	0.18	0.14	0.22	0.28	0.17	0.24	0.22	0.20	0.23	0.19	0.24	0.26
Job structure												
0-2 years experience	0.19	0.16	0.21	0.30	0.16	0.23	0.21	0.21	0.20	0.18	0.27	0.24
3-5 years experience	0.09	0.08	0.10	0.10	0.09	0.10	0.09	0.11	0.11	0.10	0.09	0.10
6-10 years experience	0.19	0.19	0.20	0.18	0.21	0.20	0.20	0.20	0.22	0.20	0.18	0.20
11-20 years experience	0.29	0.31	0.28	0.23	0.30	0.26	0.28	0.26	0.26	0.29	0.25	0.26
21+ years experience	0.24	0.26	0.22	0.19	0.24	0.21	0.22	0.22	0.21	0.23	0.21	0.20
Full time teacher	0.92	0.92	0.93	0.92	0.94	0.92	0.93	0.92	0.92	0.94	0.88	0.92
Secondary school	0.31	0.23	0.36	0.25	0.38	0.39	0.38	0.24	0.36	0.36	0.29	0.42
Early childhood	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Elementary education	0.31	0.40	0.25	0.36	0.24	0.22	0.24	0.35	0.24	0.27	0.28	0.19
Special education	0.12	0.14	0.12	0.18	0.09	0.12	0.10	0.20	0.15	0.11	0.14	0.11
Arts and music	0.07	0.04	0.08	0.04	0.09	0.09	0.09	0.04	0.08	0.06	0.09	0.11
English language arts	0.11	0.11	0.12	0.10	0.12	0.11	0.11	0.11	0.13	0.12	0.10	0.10
English as a second language	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.03	0.02	0.02	0.01	0.01
Foreign languages	0.03	0.03	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.03	0.03
Health education	0.05	0.02	0.06	0.03	0.07	0.08	0.08	0.02	0.05	0.06	0.05	0.08
Mathematics and computer science	0.08	0.07	0.09	0.07	0.09	0.10	0.09	0.08	0.11	0.09	0.08	0.10

|												
Natural sciences	0.06	0.05	0.07	0.05	0.07	0.08	0.08	0.05	0.06	0.07	0.07	0.08
Social sciences	0.06	0.04	0.07	0.04	0.08	0.08	0.08	0.04	0.06	0.08	0.05	0.08
Career or technical education	0.04	0.03	0.05	0.03	0.05	0.06	0.06	0.02	0.04	0.05	0.05	0.06
Miscellaneous	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Base salary	60781	61375	60378	57899	62058	59304	60251	60013	61047	61944	56618	58880
Additional compensation	275	253	290	270	278	313	277	288	339	282	272	321
Summer school earnings	430	0.00	722	1735	0.00	1206	0.00	2641	2384	848	0.00	864
Summer-other school earnings	178	0.00	300	432	0.00	619	322	0.00	377	216	0.00	691
Summer-Nonschool earnings	777	0.00	1305	1686	0.00	2775	1508	0.00	1249	0.00	3641	3049
School year-School-based earnings	1333	0.00	2239	0.00	2685	2607	2443	0.00	2687	2612	0.00	2717
School year-Nonschool-based earnings	1099	0.00	1847	0.00	1028	3630	1709	1220	2696	0.00	5153	4315
Motivations												
Satisfied with salary	2.35	2.35	2.35	2.33	2.38	2.32	2.37	2.28	2.31	2.36	2.32	2.33
Satisfied with teaching	3.10	3.08	3.12	3.13	3.10	3.14	3.10	3.14	3.20	3.14	3.07	3.11
School characteristics												
Student enrollment (100s)	8.18	7.69	8.51	7.76	8.61	8.69	8.54	7.89	8.73	8.56	7.88	8.79
Urban school	0.28	0.29	0.28	0.33	0.26	0.28	0.26	0.35	0.31	0.28	0.28	0.26
Fraction FRPL students	0.43	0.44	0.42	0.45	0.42	0.41	0.41	0.46	0.43	0.43	0.42	0.39
Fraction students of color	0.46	0.47	0.46	0.51	0.44	0.45	0.43	0.53	0.49	0.47	0.44	0.43
Charter school	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.04	0.03	0.03	0.04	0.03
Observations	222980	81500	141480	20120	65580	55790	103190	12610	25680	81240	21580	38670

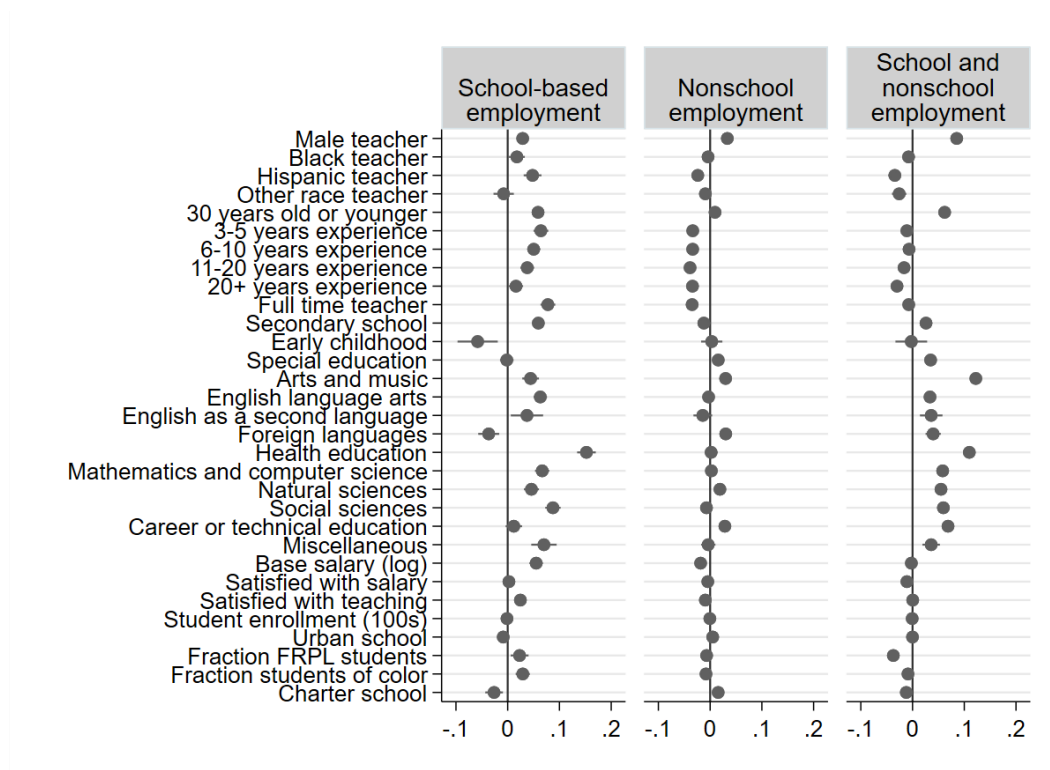*Notes.* Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Observations have been rounded to the nearest 10 per IES compliance. FRPL = free or reduced price lunch. Salary and earnings adjusted to reflect 2020 U.S. dollars.

Table 2. Predicting Teacher Multiple Jobholding

	(1)	(2)	(3)
Male teacher	0.132***	0.129***	0.123***
	(0.00)	(0.01)	(0.00)
Black teacher	0.003	0.026***	0.030***
	(0.01)	(0.01)	(0.01)
Hispanic teacher	-0.008	-0.018	-0.027**
	(0.01)	(0.01)	(0.01)
Other race teacher	-0.043***	-0.036***	-0.037***
	(0.01)	(0.01)	(0.01)
30 years old or younger	0.125***	0.124***	0.116***
	(0.01)	(0.00)	(0.01)
3-5 years experience	0.016*	0.016	0.018**
	(0.01)	(0.01)	(0.01)
6-10 years experience	0.016**	0.017	0.017**
	(0.01)	(0.01)	(0.01)
11-20 years experience	-0.013*	-0.012	-0.014*
	(0.01)	(0.01)	(0.01)
21+ years experience	-0.040***	-0.041***	-0.044***
	(0.01)	(0.01)	(0.01)
Full time teacher	0.031***	0.036***	0.026***
	(0.01)	(0.01)	(0.01)
Secondary school	0.074***	0.072***	0.081***
	(0.00)	(0.00)	(0.01)
Early childhood	-0.063***	-0.050***	-0.048**
	(0.02)	(0.01)	(0.02)
Special education	0.053***	0.052***	0.030***
	(0.01)	(0.01)	(0.01)
Arts and music	0.195***	0.192***	0.167***
	(0.01)	(0.01)	(0.01)
English language arts	0.097***	0.097***	0.069***
	(0.01)	(0.01)	(0.01)
English as a second language	0.059***	0.055***	0.036*
	(0.01)	(0.01)	(0.02)
Foreign languages	0.037***	0.036***	-0.003
	(0.01)	(0.01)	(0.01)
Health education	0.235***	0.234***	0.213***
	(0.01)	(0.01)	(0.01)
Mathematics and computer science	0.125***	0.127***	0.093***
	(0.01)	(0.01)	(0.01)

Natural sciences	0.122***	0.123***	0.086***
	(0.01)	(0.01)	(0.01)
Social sciences	0.142***	0.144***	0.109***
	(0.01)	(0.01)	(0.01)
Career or technical education	0.124***	0.126***	0.086***
	(0.01)	(0.01)	(0.01)
Miscellaneous	0.103***	0.108***	0.083***
	(0.01)	(0.01)	(0.01)
Base salary (log)	0.021***	0.018**	0.033***
	(0.00)	(0.01)	(0.01)
Satisfied with salary	-0.008***	-0.008***	-0.009***
	(0.00)	(0.00)	(0.00)
Satisfied with teaching	0.010***	0.010***	0.012***
	(0.00)	(0.00)	(0.00)
Student enrollment (100s)	-0.002***	-0.002***	-0.001*
	(0.00)	(0.00)	(0.00)
Urban school	-0.004	-0.013*	0.021*
	(0.00)	(0.01)	(0.01)
Fraction FRPL students	-0.019*	0.002	0.006
	(0.01)	(0.01)	(0.01)
Fraction students of color	0.005	0.015	0.060***
	(0.01)	(0.01)	(0.02)
Charter school	-0.024***	-0.028***	-0.008
	(0.01)	(0.01)	(0.01)
Year Fixed Effects	x	x	
State Fixed Effects		x	
District-by-Year Fixed Effects			x
Observations	222980	222980	222980

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Observations have been rounded to the nearest 10 per IES compliance. * $p<0.05$. ** $p<0.01$. *** $p<0.001$.

Table 3. Estimates of the Relationship Between Teacher Multiple Job-Holding and Teacher Turnover

|	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Overall	Turnover		Move Schools		Leave Teaching	
Teacher multiple jobholding	-0.005	-0.013*	0.008*	0.003	-0.014***	-0.017***
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Panel B. Timing of Teacher Multiple Job-Holding						
Summer employment	0.018	0.000	0.024**	0.011	-0.002	-0.010
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Additional school-year employment	-0.016**	-0.017**	-0.003	-0.005	-0.015***	-0.015**
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)
Summer and school employment	-0.002	-0.014*	0.016***	0.008	-0.017***	-0.024***
	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
Panel C. Type of Teacher Multiple Job-Holding						
Teaching position	-0.006	-0.013*	0.006	-0.001	-0.012**	-0.014**
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Non-teaching position	0.016	0.006	0.026**	0.021*	-0.006	-0.014
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Teaching and non-teaching position	-0.015*	-0.026**	0.007	0.004	-0.024***	-0.033***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Panel D. Location of Teacher Multiple Job-Holding						
School-based employment	-0.021***	-0.023***	-0.001	-0.001	-0.022***	-0.025***
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Nonschool-based employment	0.044***	0.019	0.029***	0.005	0.024**	0.019*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
School- and non-school employment	0.004	-0.009	0.020***	0.012	-0.015**	-0.022***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Year Fixed Effects	x		x		x	
Teacher Controls		x		x		x
School Controls		x		x		x
District-by-Year Fixed Effects		x		x		x
Observations	72600	72600	66750	66750	66750	66750

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Observations have been rounded to the nearest 10 per IES compliance. Standard errors reported in parentheses clustered at the district-by-year level. * $p<0.05$. ** $p<0.01$. *** $p<0.001$.

Figure A1. Estimates of the Relationship Between Techer Background Characteristics and Job Structure and Teacher Multiple Job-Holding
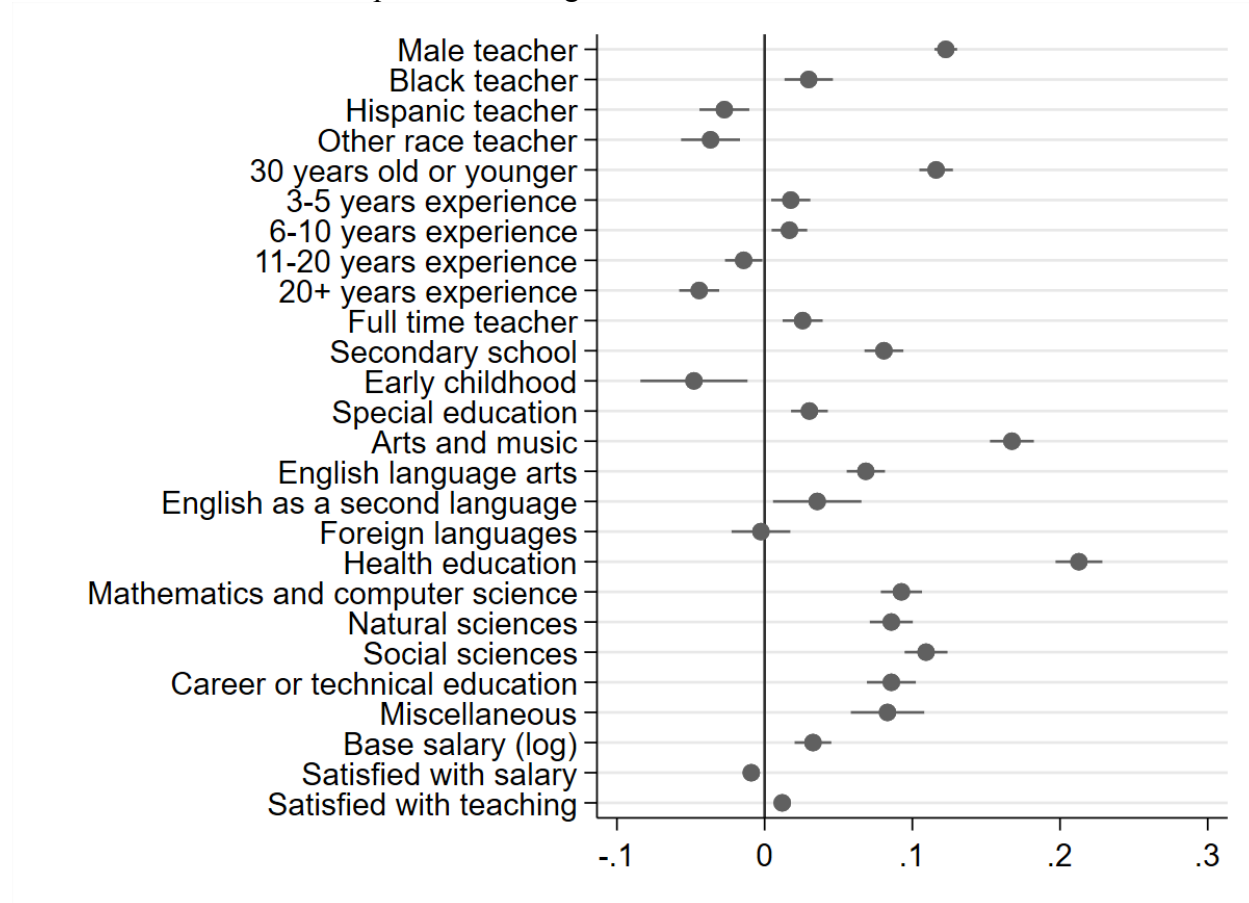
Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Estimates from Table 3, Column 3. Confidence intervals at the 95% level reported.

Figure A2. Predicted Probabilities of Teacher Multiple Job-Holding, Select Teacher Characteristics Over Time
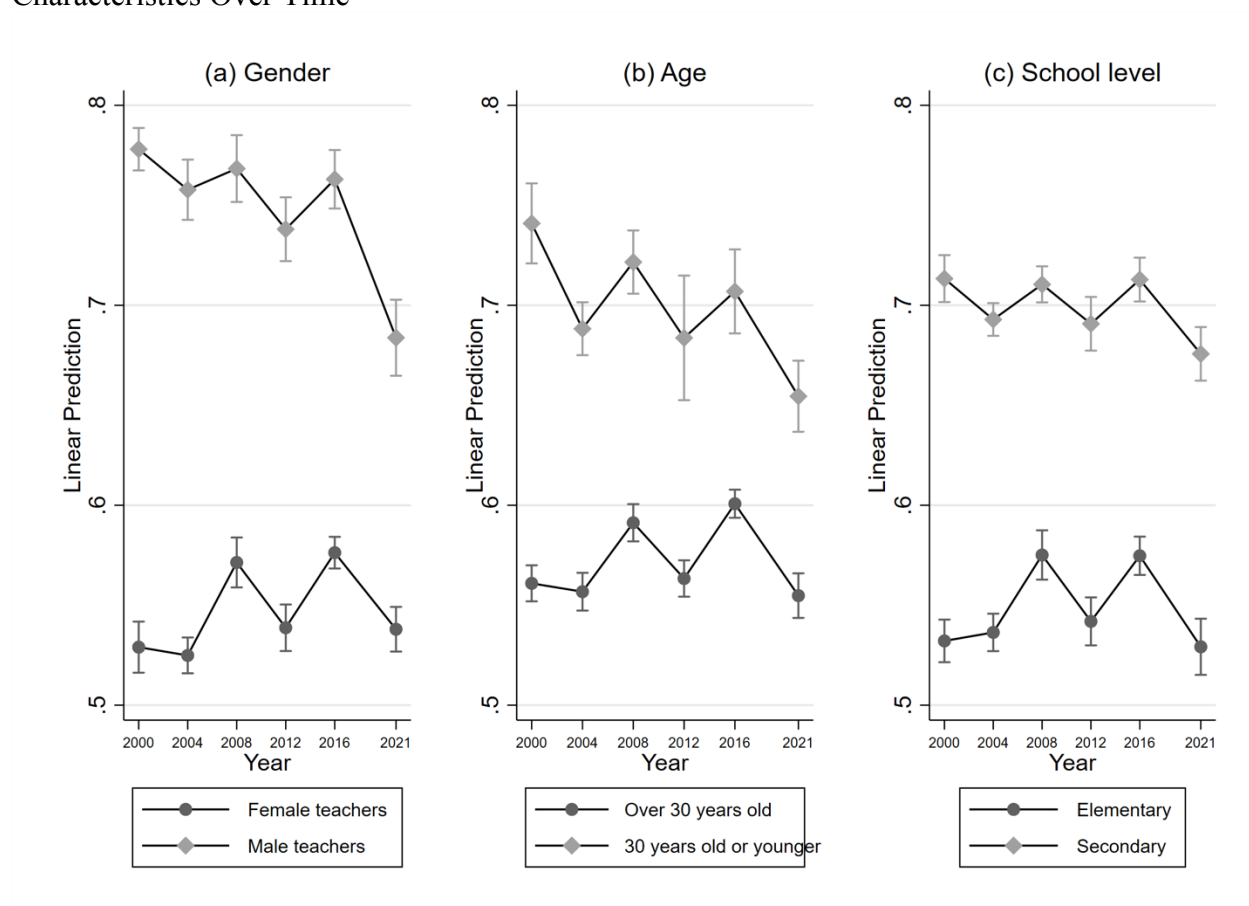

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Confidence intervals at the 95% level reported.

Table A1. Variable Descriptions

Teacher Multiple Jobholding	
Multiple Jobholding	A dichotomous variable where 1 = teacher had an additional job and 0 = no additional job.
Summer/School Year Employment	A categorical variable where 0 = no additional job, 1 = employment during the summer, 2 = employment during the school year, 3 = employment both during the summer and school year.
Teaching/Non-Teaching Employment	A categorical variable where 0 = no additional job, 1 = additional employment as a teacher, 2 = additional non-teaching employment, 3 = additional teaching and non-teaching employment.
School/Nonschool Employment	A categorical variable where 0 = no additional job, 1 = employment in the school system, 2 = employment outside the school system, 3 = employment both inside and outside the school system.
Teacher Background Characteristics	
Male	A dichotomous variable where 1 = male and 0 = female.
Black	A dichotomous variable where 1 = Black and 0 = other race/ethnicity.
Hispanic	A dichotomous variable where 1 = Hispanic and 0 = other race/ethnicity.
White	A dichotomous variable where 1 = White and 0 = race/ethnicity.
Other race	A dichotomous variable where 1 = Asian/ Pacific Islander; American Indian/Alaska Native; multiracial and 0 = non-race/ethnicity.
Under 30	A dichotomous variable where 1 = teacher is 30 years of age or younger and 0 = teacher is older than 30.
Job Structure	
Teaching experience	A categorical variable of total teaching experience where 0 = 0-2 years experience, 1 = 3-5 years experience, 2 = 6-10 years experience, 3 = 11-20 years experience, 4 = 21+ years of experience
Full time	A dichotomous variable where 1 = teacher is full time employed in the school and 0 = teacher is not full time.
Secondary	A dichotomous variable where 1 = teacher worked in middle and/or high school and 0 = the school is not a middle and/or high school.
Subject area	Dichotomous variables indicating the following subject areas: Early childhood, Elementary education, Special education, Arts and music, English language arts, English as a second language, Foreign languages, Health education, Mathematics and computer science, Natural sciences, Social sciences, Career or technical education, and Miscellaneous.
Base salary	A continuous variable of teachers' base salary, inflation adjusted to reflect 2020 dollars.
Additional compensation	A continuous variable of teachers' additional compensation (e.g., merit pay, retirement), inflation adjusted to reflect 2020 dollars.
Summer school earnings	A continuous variable of teachers' summer school earnings, inflation adjusted to reflect 2020 dollars.
Summer-other	A continuous variable of teachers' other school-based earnings in

school earnings	the summer, inflation adjusted to reflect 2020 dollars.
Summer-Nonschool earnings	A continuous variable of teachers' nonschool earnings in the summer, inflation adjusted to reflect 2020 dollars.
School year-School-based earnings	A continuous variable of teachers' school-based earnings, inflation adjusted to reflect 2020 dollars.
School year-Nonschool-based earnings	A continuous variable of teachers' non-school earnings in the school year, inflation adjusted to reflect 2020 dollars.
Job Attitudes	
Satisfaction with Teaching	On a scale of 1 = strongly disagree and 4 = strongly agree, teachers report on their general satisfaction with being a teacher at the school (reverse coded from original measure).
Satisfaction with Salary	On a scale of 1 = strongly disagree and 4 = strongly agree, teachers report on their satisfaction with their teaching salary (reverse coded from original measure).
Teacher Mobility	
Turnover	A categorical variable where 0 = stayer, 1 = move schools, and 2 = leave teaching.
School Characteristics	
School size	A continuous variable of the number of students enrolled in a school.
Urban	A dichotomous variable where 1 = school is located in an urban locale and 0 = the school is located in another urban locale.
Fraction economically disadvantaged students	A continuous variable of the fraction of economically disadvantaged students in a school.
Fraction students of color	A continuous variable of the fraction of students of color in a school.
Charter school	A dichotomous variable where 1 = school is a charter school and 0 = the school is a traditional public school.
Regional Price Parity	A continuous variable of the regional price parity for a metropolitan or non-metropolitan area in a state (from the Bureau of Economic Analysis), overall and disaggregated by price of goods, housing, utilities, and other services, respectively.

Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS) and National Teacher Principal Survey (NTPS)

Table A2. Type of Non-Teaching Jobs, 1994-2021

	1994	2000	2004	2008	2012	2016	2018	2021	Overall
Summer, non-teaching employment	0.12	0.11	0.11	0.12	0.09	0.11	0.10	0.14	0.11
Summer, non-school employment	0.35	0.35	0.31	0.32	0.28	0.29	0.30	0.30	0.31
School year, school-based employment	0.72	0.75	0.76	0.78	0.80	0.79	0.78	0.76	0.77
School year, related to teaching field	0.08	0.07	0.06	0.06	0.07	0.07	0.07	0.06	0.07
School year, other employment	0.24	0.20	0.19	0.18	0.17	0.19	0.20	0.21	0.19
Observations	18980	18520	18880	17800	17580	13590	18980	16840	141150

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Proportions not mutually exclusive as teachers can work more than one job. Observations have been rounded to the nearest 10 per IES compliance.

Table A3. Teacher Multiple Job-Holding, by Gender, Marital Status, and Number of Children

	(1)	(2)	(3)	(4)
Panel A. Gender and marital status	Male/ Unmarried	Male/ Married	Feale/ Unmarried	Female/ Married
Multiple job-holding	0.73	0.75	0.62	0.52
Observations	9190	35020	28200	78770
Panel B. Male teachers with children	Male, no children	Male, one child	Male, two children	Male, three+ children
Multiple job-holding	0.72	0.75	0.81	0.84
Observations	5480	2810	4100	2340
Panel C. Female teachers with children	Female, no children	Female, one child	Female, two children	Female, three+ children
Multiple job-holding	0.51	0.44	0.43	0.46
Observations	11340	5820	7460	3300
Panel D. Male teachers, by children and marital status	Male, unmarried, no children	Male, married, no children	Male, unmarried, 1+ child	Male, married, 1+ child
Multiple job-holding	0.73	0.71	0.79	0.80
Observations	2350	3120	620	8630
Panel E. Female teachers, by children and marital status	Female, unmarried, no children	Female, married, no children	Female, unmarried, 1+ child	Female, married, 1+ child
Multiple job-holding	0.57	0.45	0.56	0.41
Observations	5500	5850	2420	14160

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Observations have been rounded to the nearest 10 per IES compliance. Panel A includes data from 1994, 2012, 2016, and 2018. Panels B-E include data from 1994.

Table A4. Variation in Teacher Multiple Job-Holding by Regional Price Parity

	(1) No additional job	(2) Multiple job-holding	(3) Summer employment	(4) Additional school-year employment	(5) Summer and school employment	(6) Non-teaching position	(7) Teaching position	(8) Teaching and non-teaching position	(9) School-based employment	(10) Nonschool-based employment	(11) School- and nonschool employment
Regional Prices	98.98	99.29	99.51	99.27	99.23	99.05	99.73	99.92	99.50	98.59	99.17
Regional Price of Goods	99.27	99.41	99.56	99.42	99.34	99.26	99.67	99.81	99.56	98.98	99.29
Regional Price of Housing	101.26	102.78	103.66	102.57	102.68	101.70	104.83	105.60	103.74	99.38	102.44
Price of Utilities	99.62	99.18	99.54	99.14	99.10	99.11	99.51	99.27	99.29	99.34	98.82
Price of Other Services	99.93	99.89	100.01	99.90	99.82	99.83	100.06	100.00	99.95	99.81	99.80
Observations	35940	66750	8990	31350	26410	48560	6040	12150	38960	9780	18000

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Observations have been rounded to the nearest 10 per IES compliance. Table includes data for 2008, 2012, 2016, and 2021.

Table A5. Predicting Teacher Multiple Job-Holding with Measures of Regional Price Parity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Regional Prices (std)	0.010***	0.013***										
	(0.00)	(0.00)										
Regional Price of Goods (std)			0.008***	0.009***							0.004	0.001
			(0.00)	(0.00)							(0.00)	(0.00)
Regional Price of Housing (std)					0.011***	0.015***					0.021***	0.027***
					(0.00)	(0.00)					(0.00)	(0.00)
Price of Utilities (std)							-0.011***	-0.014***			-0.005	-0.007*
							(0.00)	(0.00)			(0.00)	(0.00)
Price of Other Services (std)									-0.003	-0.004	-0.023***	-0.024***
									(0.00)	(0.00)	(0.00)	(0.00)
Teacher Controls	x	x	x	x	x	x	x	x	x	x	x	x
School Controls	x	x	x	x	x	x	x	x	x	x	x	x
Year Fixed Effects	x	x	x	x	x	x	x	x	x	x	x	x
Observations	102680	102680	102680	102680	102680	102680	102680	102680	102680	102680	102680	102680

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Observations have been rounded to the nearest 10 per IES compliance. * p<0.05. ** p<0.01. *** p<0.001.

Table A6. Marginal Effects Predicting the Timing, Type, and Location of Teacher Multiple Job-Holding

	(1) Summer employment	(2) Additional school-year employment	(3) Summer and school employment	(4) Teaching position	(5) Non-teaching position	(6) Teaching and non-teaching position	(7) School-based employment	(8) Nonschool-based employment	(9) School- and nonschool employment
Male teacher	0.002	0.019***	0.115***	0.118***	-0.009***	0.028***	0.025***	0.030***	0.082***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Black teacher	0.029***	-0.038***	0.009	-0.057***	0.026***	0.026***	0.011	-0.003	-0.004
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Hispanic teacher	0.013***	-0.005	-0.017**	-0.041***	0.019***	0.012*	0.044***	-0.021***	-0.034***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Other race teacher	0.011*	-0.031***	-0.023**	-0.055***	0.016***	-0.005	-0.009	-0.009	-0.026***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
30 years old or younger	0.021***	0.026***	0.080***	0.091***	-0.000	0.039***	0.057***	0.011***	0.061***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
3-5 years experience	-0.026***	0.042***	0.007	-0.015*	0.004	0.026***	0.056***	-0.031***	-0.006
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
6-10 years experience	-0.036***	0.052***	0.006	-0.005	-0.003	0.024***	0.051***	-0.029***	-0.004
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
11-20 years experience	-0.043***	0.047***	-0.011*	-0.011	-0.008**	0.007	0.036***	-0.034***	-0.014***
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
21+ years experience	-0.042***	0.029***	-0.021***	-0.034***	-0.005	0.001	0.017**	-0.031***	-0.024***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Full time teacher	-0.009*	0.056***	-0.016**	0.054***	-0.008**	-0.015***	0.074***	-0.034***	-0.004
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Secondary school	-0.011***	0.059***	0.027***	0.068***	-0.005*	0.014***	0.060***	-0.011***	0.028***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Early childhood	0.015*	-0.033*	-0.047**	-0.035*	0.005	-0.031*	-0.056***	0.003	-0.004

	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Special education	0.025***	-0.034***	0.052***	-0.024***	0.025***	0.040***	0.002	0.015***	0.031***
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Arts and music	-0.048***	0.130***	0.102***	0.172***	-0.034***	0.047***	0.049***	0.026***	0.112***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
English language arts	-0.016***	0.061***	0.043***	0.064***	-0.006*	0.030***	0.062***	-0.005	0.031***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
English as a second language	0.001	0.016	0.038**	-0.002	0.014*	0.037***	0.037**	-0.019*	0.036***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Foreign languages	-0.026***	0.054***	-0.001	0.062***	-0.025***	-0.010	-0.035***	0.026***	0.038***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Health education	-0.045***	0.157***	0.125***	0.261***	-0.050***	0.019***	0.143***	0.002	0.102***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Mathematics and computer science	-0.013***	0.069***	0.062***	0.073***	-0.000	0.044***	0.065***	-0.000	0.053***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Natural sciences	-0.016***	0.066***	0.062***	0.114***	-0.019***	0.014**	0.045***	0.016***	0.052***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Social sciences	-0.027***	0.093***	0.068***	0.139***	-0.023***	0.015**	0.088***	-0.007	0.054***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Career or technical education	-0.028***	0.070***	0.071***	0.138***	-0.035***	0.003	0.025***	0.023***	0.066***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Miscellaneous	-0.004	0.070***	0.031**	0.087***	-0.001	0.010	0.069***	-0.005	0.033***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Base salary (log)	-0.007**	0.036***	-0.007	0.006	-0.003	0.018***	0.060***	-0.021***	-0.010***
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Satisfied with salary	0.001	0.001	-0.009***	-0.001	-0.002	-0.005***	-0.001	-0.001	-0.005***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Satisfied with teaching	-0.001	0.007***	0.004*	0.004	-0.000	0.006***	0.015***	-0.007***	0.002

	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Student enrollment (100s)	-0.000	-0.001***	-0.001***	-0.002***	0.000	-0.000	-0.001***	-0.000*	-0.001***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Urban school	0.010***	-0.015***	0.001	-0.018***	0.007***	0.005*	-0.008	0.004	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Fraction FRPL students	0.006	-0.009	-0.014*	-0.027***	0.009**	-0.000	0.018*	-0.003	-0.033***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Fraction students of color	0.013***	-0.012*	0.003	-0.037***	0.016***	0.025***	0.021***	-0.007	-0.011*
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Charter school	0.010**	-0.021**	-0.015*	-0.032***	0.010***	-0.001	-0.022**	0.012***	-0.014**
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Year Fixed Effects	x	x	x	x	x	x	x	x	x
Observations	222980	222980	222980	222980	222980	222980	222980	222980	222980

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Observations have been rounded to the nearest 10 per IES compliance. Standard error clustered at the school level in parentheses. * p<0.05. ** p<0.01. *** p<0.001.

Table A7. Marginal Effects of Associations of the Timing, Type, and Location of Teacher Multiple Job-Holding, Regional Price Parity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Summer employment	Additional school-year employment	Summer and school employment	Teaching position	Non-teaching position	Teaching and non-teaching position	School-based employment	Nonschool-based employment	School- and nonschool employment
Regional Price of Goods (std)	0.001	0.004	-0.004	-0.002	0.000	0.003	0.004	-0.002	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Regional Price of Housing (std)	0.004	0.003	0.021***	0.006	0.005*	0.016***	0.023***	-0.008**	0.012***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Price of Utilities (std)	0.000	-0.004	-0.003	-0.007**	-0.000	0.001	0.001	-0.001	-0.006**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Price of Other Services (std)	-0.002	-0.004	-0.018***	-0.007*	-0.003	-0.014***	-0.020***	0.008***	-0.012***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Teacher Controls	x	x	x	x	x	x	x	x	x
School Controls	x	x	x	x	x	x	x	x	x
Year Fixed Effects	x	x	x	x	x	x	x	x	x

Notes. Authors' calculations from the Staffing Survey (SASS) and National Teacher and Principal Survey (NTPS); National Center for Education Statistics. Estimates adjusted using probability weights. Standard error clustered at the school level in parentheses. * p<0.05. ** p<0.01. *** p<0.001.