ABSTRACT

SUSPENDED FROM WORK AND SCHOOL: IMPACTS OF LAYOFF EVENTS AND UNEMPLOYMENT INSURANCE ON DISCIPLINARY INCIDENCE

by Jordan Rylee King

The use of exclusionary discipline to mitigate students' bad behavior in schools has been associated with numerous undesirable outcomes for students subjected to these practices. Moreover, links between family economic stability and child socio-emotional and academic performance have been well documented and are implicitly associated with a student's behavior in school. The establishment of the relationship between an economically destabilizing event and changes in disciplinary incidence is of utmost importance for education and social policymakers. To our knowledge, this is the first paper to consider how layoff events affect disciplinary incidence when also considering the stabilizing impact of unemployment insurance (UI). Through use of administrative panel data on discipline for grades 6-12 and on layoff events in 20 states, we estimate the effects of layoff events on school disciplinary incidence in both the presence and absence of UI benefits in a two-way fixed effects model. We find that in the absence of UI benefits, disciplinary incidence increases by 40 to 112 percent with a one standard deviation increase in layoff prevalence. These undesirable effects, however, are successfully mitigated and even reversed as UI benefits become more generous, suggesting that these benefits are essential for stabilizing students in otherwise destabilized families.

SUSPENDED FROM WORK AND SCHOOL: IMPACTS OF LAYOFF EVENTS AND UNEMPLOYMENT INSURANCE ON DISCIPLINARY INCIDENCE

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Table of Contents

1 Introduction	. 1
2 Background	3
3 Data	7
3.1 Layoff and UI Data	7
3.2 Discipline Data	9
3.3 Measurement Error and Limitations	11
4 Empirical Strategy	12
5 Effects of Layoff Events on Discipline	13
5.1 Base Specification	13
5.2 Mitigation of Layoff Effects through UI	15
5.3 Lagged Effects	17
5.4 Heterogeneous Effects by Sex	19
5.5 Robustness Checks	19
6 Discussion	22
References	23
Tables and Figures	27
Appendix	36

List of Tables

Table 1: Data Definitions	28
Table 2: States Included in Sample	30
Table 3: Summary Statistics	30
Table 4: UI Generosity by State (\$ per week)	31
Table 5: Impact of Layoffs on School Disciplinary Incidences	31
Table 6: Effect of Layoffs on Total Suspensions and Expulsions by State	32
Table 7: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence	33
Table 8: Mitigating Effects of UI Benefits as Percent Changes from Mean Disciplinary	
Incidence	33
Table 9: Lagged Impact of Layoffs and Unemployment Insurance on Disciplinary	
Incidence	34
Table 10: Heterogeneous Impacts of Layoffs on Disciplinary Incidence by Sex	34
Table 11: Heterogeneous Impacts of Layoffs and Unemployment Insurance on	
Disciplinary Incidence by Sex	35
Table A. 1: Lagged Impact of Layoffs on Disciplinary Incidence	36
Table A. 2: Dropping Possible Sample Drivers	36
Table A. 3: Including Locations with Population<5000	. 37
Table A. 4: Increasing Sample's Population Mean	38
Table A. 5: Impact of Lagged Layoff Prevalence and Lagged UI on Disciplinary	
Incidence	. 39
Table A. 6: Lagged Impact of Unemployment Insurance and Lagged Layoff Prevalence	е
Interaction on Disciplinary Incidence	40
Table A. 7: Impact of Layoffs on Disciplinary Incidence with July UI Schedules	41
Table A. 8: Impact of Layoffs and Unemployment Insurance on Aggregate Disciplinary	у
Incidence	42
Table A. 9: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence	;
Including State-by-year Fixed Effects	42
Table A. 10: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence	e
for High-Discipline Schools	43
Table A. 11: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence	e
for Low-Discipline Schools	43
Table A. 12: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence	e
when Using Minimum UI Benefits	. 44

List of Figures

Figure 1: Average UI Benefits by States Included in Sample from 2010-2015 (\$ per	
week)	. 27
Figure 2: Layoff Effects on Suspensions & UI Benefits	. 28
Figure 3: Layoff Effects on Expulsions & UI Benefits	. 28

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1 Introduction

Schools and familial units are key environments for the creation of positive socioemotional and academic outcomes for a student. Since the adoption of zero-tolerance disciplinary policies in the 1990s, disciplinary action in the form of suspensions, expulsions, or even involvement of law enforcement, is the main framework for schools to manage and control their students, even for non-violent offenses such as tardiness, disrespect, or general disruptive behavior. Most action is taken as a result of these non-violent incidents (Heitzeg, 2009). The negative socio-emotional and academic effects of these exclusionary discipline practices have been well documented within literature (Rumberger & Losen, 2016).

If a student's involvement with exclusionary discipline results from bad behavior exhibited in the classroom, we would suspect that destabilizing events in a student's life would be likely to induce or exacerbate this bad behavior. Prior literature has documented that parental unemployment is a major source of stress within a household, both economically and psychologically, for both parents and children. In this way, we would expect a layoff event to destabilize a student; however, literature also documents opposing positive effects of unemployment through parents investing more time with their child in place of working.

In general, there is not a consensus as to how parental unemployment affects child wellbeing. We expect opposing effects, with negative effects stemming from income reductions and increased psychological stress in the household, but potential positive effects from parents spending more time with their children. The latter is implicitly linked to familial stability, which is plausibly impacted by social assistance programs targeted towards those unemployed subsequent to a layoff event. Unemployment insurance (UI) benefits that are activated after a parent becomes unemployed have been associated with greater familial stability, mitigating the negative destabilizing effects on a child that are caused by an unemployed parent.

Current literature has effectively documented both the positive and negative relationships between parental unemployment and child's wellbeing and academics. We also see that social assistance programs such as UI are able to improve family stability for a household experiencing unemployment. However, to our knowledge, there is no evidence regarding the link between these lines of literature. We thus examine this link to address the following question: how do layoff events affect school disciplinary incidence when considering the stabilizing impact of social assistance programs? Previous studies regarding relationships between unemployment and child's wellbeing have not considered the effects of UI generosity and studies regarding UI generosity have not examined their effects of child behavior in an educational setting. We provide this link.

We look to determine if disciplinary incidences are exacerbated by a labor market shock when considering the generosity of UI benefits through a two-way fixed effects framework using administrative panel data on school discipline and layoff prevalence in Census designated places, cities, and towns for nearly 7500 different schools across 20 different U.S. states.¹ Our fixedeffects model is motivated by the need to control for numerous unobservables that are associated with disciplinary incidence by school and over time. Within this framework, we consider two specifications, the first without considering the interaction between UI generosity and impacts of layoff events on discipline, with the second providing this interaction. Our first specification thus identifies the general effect of layoffs on disciplinary incidence, with the second allowing for analysis of layoff effects based on varying levels of UI generosity. In both specifications, our use of fixed effects allows us to control for school-specific and time-specific confounding effects, with the remaining variation coming from these plausibly exogenous layoff events that identify the causal effect of involuntary unemployment on different metrics of disciplinary incidence.

Our base results from our non-interacted model suggests that layoff events in general have a desirable effect on disciplinary incidence — increases in layoffs per 10,000 workers appear to reduce disciplinary incidence in most disciplinary measures. These results are consistent with the narrative that perhaps parents staying home with their kids subsequent to a layoff event is positively impacting the behavior of a child. However, this model masks considerable heterogeneity in regard to UI generosity across states and time. When considering this heterogeneity, our point estimates indicate that without weekly UI benefits, disciplinary incidences would increase between 40 to 112 percent from their means with a one standard deviation increase in layoff prevalence. Even at the minimum level of weekly UI benefits (\$240) a one standard deviation increase in layoffs still increases different disciplinary incidences by 3 to 39 percent from their means. These effects are concentrated among more punitive disciplinary practices such as zero-tolerance expulsions, expulsions with no services, and multiple out-of-school suspensions. Our primary results also indicate, however, that disciplinary incidence is not always exacerbated by a labor market shock *so long as* UI benefits are sufficiently generous. More specifically, our

¹ It should be noted that our data does not directly link laid off parents to their children, and instead considers a holistic view of the location in which a layoff event took place.

estimates suggest that at a weekly benefit of \$466.40 is able to nullify the effect that a layoff event has on any measure of disciplinary incidence in grades 6-12. This implied weekly benefit is \$67 greater than our sample mean, which suggests that increases in social assistance could prove beneficial for reducing disciplinary incidence.

These results are consistent with the narrative of the importance of UI benefits for familial stability and in turn children's behavior. In the absence of UI benefits, perhaps the undesirable economic and psychological effects of a layoff event overpower the potential positive effects of parents investing more time with their child. However, our results provide evidence for UI benefits mitigating the undesirable behavior of a child in an unemployed household and in some cases, allowing for positive behavioral effects potentially from parents spending more time with their children to be observed and overshadow the prior economic and psychological stressors that were present in the absence of UI benefits.

Moreover, we suspect that the benefits of increased UI generosity are not just concentrated among the student that is directly affected by a layoff event. UI benefits are significant in reducing the incidence of misbehavior, which reduces class disruption and the domino effects of "bad behavior" that have been documented by Carrell & Hoekstra (2010). Furthermore, our results are consistent with the narrative that improvements to familial stability through social assistance improves behavior outcomes of children. Given the established links between disciplinary incidence and negative academic and emotional-social outcomes, especially for low-income and Black, Indigenous, and people of color (BIPOC) students, we suggest that UI benefits are not just labor market policy: these benefits are essential for education policy and equity.

2 Background

The negative effects of exclusionary discipline have been well documented, with these practices resulting in active discrimination against students of color, sexual minorities, students with disabilities, and an exacerbation of the school-to-prison pipeline (Bacher-Hicks et al., 2019; Education Commission of the States, 2018; National Education Association, 2016; Smith & Harper, 2015; Terriquez et al., 2013). These punitive actions do little to restore justice and promote equity within the educational system, nor do they assist a student in effectively addressing their misbehavior.

Pushes to reform school disciplinary measures have become more prominent within the past decade. We see that exclusionary discipline does little to nothing to improve the behavior of

a disciplined student, and instead observe a negative correlation between exclusionary discipline and academic outcomes, including a higher likelihood of dropping out, lower academic achievement, a lower likelihood of graduation, and lower earnings in their careers compared to their peers (Ryan & Goodram, 2013). Effects of suspension on academic outcomes are suspected to be even worse for a student suspended in middle school (Losen & Skiba, 2010). Not only does exclusionary discipline affect a student academically, but negative social consequences have also been documented: students report feeling alienated from their peers and teachers subsequent to a suspension and are not offered an opportunity to learn from or correct their misbehavior. Instead, they are punished and further shunned (Rumberger & Losen, 2016). These adverse social circumstances are also likely to exacerbate the negative aforementioned academic effects.

The impact of these "bad behaviors" and their corrective action, however, are not concentrated on solely the student exhibiting these behaviors. Carrell & Hoekstra (2010) document that "a single disruptive student can negatively affect the short-run outcomes of all other students in the classrooms" (pp. 213). They find that troubled students, as determined by their exposure to domestic abuse, are more likely to misbehave, be subjected to exclusionary discipline, do worse in mathematics and reading, and notably, negatively impact their peers' math and reading scores. In a follow-up study, Carrell et al. (2018) find that in the long-run, a disruptive peer in elementary school contributes to long-run losses in career earnings, explains 5 percent of the wealth gap in the U.S, and also reduces high school achievement in the form of test scores and college enrollment. Taken together, the long- and short-run effects of misbehavior in the classroom are harsh, not only for the student misbehaving, but also for their classroom peers.

Poverty, which is directly influenced by the employment status of a household, has been identified as a prominent determinant of a student's academic achievement and behavior. The Urban Institute found that poverty doubled for families with children during the 2008 recession if the parent was unemployed for just two months (Zedlewski & Nichols, 2012). Unemployment has tangible effects on the material circumstances of a family, especially for those toeing the poverty line and ultimately slipping under it. These families are more likely to be more unstable economically and socio-emotionally, resulting in adverse behavioral and academic outcomes for children in these households (Sandstrom & Huerta, 2013). More specifically, Brooks-Gunn & Duncan (1997) observed that 11.9 percent of poor children had been expelled or suspended at least once, compared to only 6.1 percent of non-poor children and had greater instances of negative

behavioral and emotional outcomes. Logically, this increase in undesirable behavior would also be exacerbated the domino effect that was documented by Carrell & Hoekstra (2010).

As poverty caused by unemployment is a major event that causes familial instability, adverse labor market shocks in general are of interest for the motivation of this paper. Unfavorable labor market shocks at a local and national level are associated with negative impacts on familial dynamics and outcomes of children. The effects of parental unemployment on children are two-fold: unemployment of a parent or a mass layoff event creates undue stress in the family unit and the permanent income effect that a job loss has. The former subjects a child to mental health issues of their own (Powdthavee & Vernoit, 2013; Schaller & Zerpa, 2017) as well as potential neglect from their parents (Lindo et al., 2018). The latter disadvantages a child materially and is also correlated with behavioral issues that may be a result of the psychological stress as well as material circumstances of a child with an unemployed parent (Oreopolous et al., 2005; Stevens & Schaller, 2011; Kalil & Ziol-Guest, 2008). Taken together, a child subject to the psychological and economic stress of a household experiencing unemployment is ripe for behavioral issues that may present themselves in a school setting.

Additionally, as noted in Lindo (2011), even if a child is not part of an unemployed household, the general effects of a mass layoff event or the economic conditions of the greater area may still affect the child's behavior via familial stress. Even if a parent has not personally lost their job, an area with a large labor market shock may indicate bad economic outcomes, causing indirect stress to the family unit.

On one hand, we would expect labor market shocks like a mass layoff event to negatively impact behavioral outcomes of a child, as parents will have less resources to "invest" in their child's academic achievement (Becker & Tomes, 1986). These negative income effects may be observed within an educational setting in the form of increases in disciplinary incidence. However, there is potential for opposing effects to offset the behavioral effects of worsened economic and psychological conditions for children caused by unemployment. Human capital theory documents the importance of childcare as an input in the development of a child's human capital, suggesting that parents reducing time spent in the labor force and instead with their child may have benefits (Becker & Tomes, 1986). Social work literature has also theorized on the improved child wellbeing subsequent to a layoff event due to parents spending more time with their children (Jones 1991).

Nonetheless, these effects are heterogeneous and dependent upon pre-existing gender roles in the household prior to a layoff event.

Empirically, Page et al. (2019) find that child health as measured by a variety of proxies, including child mental health, is better off when male employment growth is higher, whereas the opposite holds true for women: child health is worse off when female employment growth is higher. Lindo et al. (2018) also find similar heterogenous effects when examining mother and father labor market conditions and child maltreatment — paternal unemployment seems to increase instances of maltreatment with the reverse holding true for maternal unemployment. Nikolova & Nikolaev (2021) also document heterogeneous effects of involuntary parental unemployment on a child's future well-being. They find varying effects depending on the age and gender of the child at the time of the unemployment event, as well as maternal versus paternal unemployment. They find females aged 6-10 benefitted from maternal unemployment and males aged 0-5 benefitted from paternal unemployment.

Further evidence in heterogeneous effects is observed by Kalil & Ziol-Guest (2008) in which they examine involuntary unemployment of fathers compared to mothers and their effects on a child's academic progress. They find that an unemployed father results in increased likelihood for suspension and expulsion, but only in households in which the mother earned more than the father. They further extrapolate that the effects that they observe are not necessarily driven by income effects, but instead link more so to family dynamics.

As we expect changes to familial dynamics to be important for the changes in the behavior that a child exhibits, current social assistance programs that mitigate the severity of the effects of a layoff event are of importance when constructing our analysis. Undesirable changes in family dynamics due to involuntary unemployment have been well-documented, with the unemployed's spouse also being negatively affected economically and psychologically (Nikolova & Ayhan, 2018), and divorce becoming more likely (Charles & Stephens, 2004). Social assistance programs, such as UI, are observed to help stabilize families. These programs and their generosity vary state-by-state, but in general aim to provide stability to familial units subsequent to the involuntary unemployment of a breadwinner.² Renahy et al. (2018) conduct a systematic review of the literature on UI and its links to poverty and health and find support for the hypothesis that UI benefits mitigate the negative effects that unemployment has on health and income.

² See Figure 1 for a map of UI generosity by state for all states included in our sample.

Swensen et al. (2020) look to further explore links between UI generosity and familial stability, and document that UI is effective in mitigating the likelihood of divorce after a layoff, providing evidence for the efficacy of UI for familial stability. Moreover, providing economic resources to families assists in offsetting the reduction in income that accompanies unemployment, potentially mitigating one of the mechanisms we expect negative child behavior to stem from. UI generosity would thus be expected to reduce the effects that layoff events have on general disciplinary incidence.

With improvements to familial stability from UI benefits, we suspect that the negative effects from unemployment due to reduced income and increased stress will plausibly be offset. If these negative effects are successfully offset, it is reasonable to suspect that the positive behavioral effects from unemployment due to parents spending more time with their children and investing in their development will be observable.

3 Data

3.1 Layoff and UI Data

We are concerned with the effect that labor market shocks have on the use of punitive discipline in schools. Pursuant to the Worker Adjustment and Retraining Notification (WARN) Act of 1988, large employers with 100 or more full-time workers are required to give at least 60 days' notice prior to a layoff of 50 or more workers. These announcements are public information and allow us to construct a measure for layoff prevalence in specific locations. Data was collected from the WARN Database, which has consolidated layoff information for the majority of U.S. states, including the number of workers laid off by each employer and the location of the layoff event. At the time of collection, however, there are a variety of states that do not regularly publish city-specific data and others are still pending public information requests for this data. Consequently, our sample consists of locations from 20 different states.³ Furthermore, the WARN Act is only applicable to large employers, which means that there are a variety of layoffs from smaller employers that may not be reported within the WARN database.⁴ Additionally, some entities, such as government and Tribal entities, are not subjected to this requirement and sudden layoff events due to, for example, natural disaster are not covered under the WARN Act.

³ A location refers to a place defined by the Census to have a "concentration of population." These are generally cities, towns, or Census Designated Places. See Table 2 for full list of states included.

⁴ It should be noted that employers of less than 100 are also encouraged (but not required) to give notification.

While inconsistencies of small employer layoffs and government layoffs reported in the WARN database represent some data shortcomings, it is the most standardized and methodical procedure that contains city-specific and date-specific layoff data. Furthermore, by construction, the WARN data's exclusion of unforeseeable layoff events helps ensure that we are isolating the behavioral effect that stems from only layoffs and not from other confounding factors such as natural disaster or other location-specific factors.

We further limit our sample to WARN notices that occurred between the 2010 and 2016 calendar years. In order to allow for matching between the discipline data from the Urban Institute and the layoff data, we redefine these calendar years to reflect academic years ranging from July 1 of year t to June 30 of year t + 1.5 Ultimately, we include six academic years of layoff data. To further match the suspension and WARN data, we aggregate the WARN notices to the location level by academic year using the following equation:

$$Layoffs_{it} = \sum_{n} Layoffs_{nit}$$
.

One observation consists of all layoffs from n events in location i in year t.6

We also collect data on the working population aged 15-65 for each location included in the sample from the Census Bureau Population Tables. This allows us to transform the layoff data into percent of the overall population that was laid off, allowing for us to normalize the layoff data relative to the size of the location in which the event occurred. Locations without readily available working-age population data were excluded and neighborhoods located in larger cities (i.e., Canoga Park in Los Angeles, California) were absorbed into their respective city. Our final layoff prevalence measure is transformed to layoffs per 10,000 workers. Considering only locations that experienced at least one layoff event between 2010 and 2015, average cumulative annual layoffs involve 24 layoffs per 10,000 workers and have much less variation in magnitude compared to our full sample. Across our entire sample, cumulative annual layoffs average 5.9 layoffs per 10,000 workers, with the variation in the magnitude of these events being relatively high. This variation in our key regressor across our entire sample is key for identification of the causal effects of a layoff event on disciplinary incidence.

Additionally, pursuant to recent work by Swensen et al. (2020) as well as our conceptual framework, we expect that the generosity of state unemployment insurance (UI) benefits will affect

⁵ This specification is taken pursuant to Acton (2021).

⁶ "Location" is defined as a city, town, or Census Designated Place.

familial stability subsequent to a layoff event. They find that greater generosity of UI benefits, the lower the probability that a family will experience divorce. This suggests that UI benefits play a substantial role in familial stability on a behavioral level. We utilize the same data as Swensen et al. (2020): the maximum weekly UI benefit allotted by state and year.⁷ This is transformed to 100s of dollars per week. Across all states and years, our mean weekly UI benefit is approximately \$400 with little variation across time and state in our sample.

3.2 Discipline Data

The discipline data is taken from the Urban Institute Education Data Portal, which has compiled data from the U.S. Department of Education's (DOE) Civil Rights Data Collection (CRDC) on discipline action taken by schools across the U.S.. The Urban Institute reports the number of students subjected to various types of expulsions (with or without educational services and zero-tolerance expulsions), suspensions (in- or out-of-school), and law enforcement involvement (referrals or arrests).⁸ To allow for a more complete understanding of how school suspension rates are affected by mass layoff events, data was also collected on enrollment for each academic year such that suspension rates could be converted to suspensions as a share of enrollment.⁹ This is done in an effort to control for reductions in enrollment that may occur as families move away from an area that experienced a mass layoff event in an attempt to find work elsewhere. Instead of observing absolute changes, we are more interested in the relative change before and after a mass layoff event. For example, larger schools potentially have on average less support for teachers and students, causing behavior to be especially affected in larger schools. Our dependent variables are reported as the number of students subjected to a specific disciplinary action per 100 pupils. Their summary statistics are reported in Table 3.

In general, we see that less punitive measures are more commonly and consistently used with the most punitive measures being used at a lower, more a variable rate. We consider expulsions to be less punitive than involvement of law enforcement, but more punitive than suspensions. Within expulsions, zero-tolerance and no service expulsions are more punitive than expulsions with services, and within suspensions, multiple out-of-school suspensions are more punitive than single out-of-school suspensions or in-school suspensions. The relationship between

⁷ These reports are published by the U.S. Department of Labor in January of each year.

⁸ See Table 1 for full data definitions from the CRDC.

⁹ Enrollment data was also gathered from the Urban Institute.

more punitive measures being less common and less punitive measures being more common holds across and within discipline types.

More specifically, our most-used disciplinary action is in-school suspensions, where we expect approximately 9.1 percent of students on average to be subjected to this action. The most uncommon, yet most variable, actions are zero-tolerance expulsions and expulsions with no services, which .10 and .14 percent of students on average are subjected to. Key sex disaggregations are also reported, allowing us to explore how mass layoff events may affect the behavior of males and females differently. Unsurprisingly, we observe that males make up the majority of students that disciplinary action is taken against, with their disciplinary rates being over double that of females across all types of disciplinary action.

The data from the Urban Institute does not contain information on the location of the school. However, the unique National Center for Education Statistics (NCES) codes corresponding to each school allow us to match the Urban Institute data to enrollment data gathered from the National Center for Education Statistics' (NCES) Common Core of Data. This data provides a location for each specific school, allowing for matching with the layoff data. The sample was further narrowed to schools that were located within states that reported consistent and accurate data on layoffs.¹⁰ Moreover, the dataset does not span the entire nation, meaning that states without a dataset may very well have experienced layoffs, but we are unable to identify when and where these layoffs took place. Thus, we focus on schools in states that have ubiquitous information on these dimensions since the cause of change in discipline rates would be unidentifiable for schools in out-of-sample states.

We also focus our analysis on middle and high schools as recent policy pushes against punitive school disciplinary action have been targeted at mostly Pre-Kindergarten through 5th grade (Education Commission of the States, 2018; U.S. Department of Health and Human Services, 2016).¹¹ To further reduce noise in our data, we only consider schools with a full panel of suspension data in locations with a population of greater than 5000, with complete enrollment and location information, and also exclude schools that are outliers or contain data inconsistencies

¹⁰ See Table 2.

¹¹ We define middle school as grades 6-8 and high school as grades 9-12. Combination schools (i.e., K-12) are eliminated as well.

(i.e., disciplinary incidence greater than enrollment or layoffs greater than population).¹² Ultimately, our final dataset contains 44,880 observations consisting of three academic year waves: 2011, 2013, and 2015, with 7480 distinct schools in 2103 distinct locations. Of these schools, 3955 were in a location that experienced at least one layoff event.

3.3 Measurement Error and Limitations

While the disciplinary data that we use is perhaps the most widespread and standardized for the U.S., the CRDC only collects this information every other year making it difficult to establish a continuous panel. Due to these year gaps, we are unable to observe the direct effect that a layoff in year 2010 has on discipline in the same year. There could also be residual effects from layoffs in 2010 on observable discipline actions in 2011. We examine this possibility through use of lagged values of layoffs. Furthermore, the collection process of this data relies on the accurate reporting from schools, which the CRDC ensures through numerous checkpoints in the reporting process. Some schools, however, simply do not report all data points, leading to slightly differing samples for types of disciplinary actions and across sex.

Other data sources, such as the Census Survey of Income and Program Participation (SIPP), allow for households to individually report their parental employment and child disciplinary circumstances, but this does not allow us to observe effects at a school-level, which is what we are interested in. Furthermore, we expect layoff events to have spillover effects on the greater community (Lindo, 2011), even if the events do not directly affect one school, and misbehavior of one student to spill over into the rest of a classroom (Carrell & Hoekstra, 2010), making school-level analysis preferable to individual-level analysis on two dimensions. Furthermore, the SIPP is survey data that may be subject to parent-reporting bias, whereas the CRDC data is administrative and taken directly from school records of discipline.

We are also posed with the issue that UI benefits are not provided during the same timeframe as the disciplinary and layoff data. We observe disciplinary and layoff data at the academic-year level, but UI data is taken from the January benefit schedules for each state. This provides the opportunity for UI benefits to potentially change throughout the year, depending on

¹² We consider outliers in terms of schools with disciplinary incidence and/or layoffs 4 standard deviations above the mean after the initial data cleaning process. It should be noted that some locations provided were neighborhoods or suburbs that were located in a larger city. For example, 15 neighborhoods (ie Canoga Park, Sherman Oaks, etc.) were aggregated into Los Angeles' observations. Locations with populations of less than 5000 are defined as small towns by the Census.

the state, which we are originally unable to account for. We address this concern by providing estimates using the UI benefit schedule from July of each year.¹³ Additionally, changes in UI benefit generosity across years and within states are minimal.¹⁴

Lastly, our conceptual framework indicates heterogeneity in behavioral outcomes dependent upon maternal and paternal unemployment. Ideally, we would be able to have data on the industry in which the layoff event took place, but the data collected by Arain (2020) is not ubiquitous on this dimension. Therefore, the results that we present will consider paternal and maternal unemployment as having homogenous effects on disciplinary incidence and provide a baseline for future analysis.

4 Empirical Strategy

Previous literature has outlined the variable impacts that a mass layoff event can have on a community and individual families. Furthermore, we expect that UI benefit generosity plays a significant role in familial stability, which can mitigate the effects that layoffs have on the behavior of students through stabilization of both economic and psychological circumstances of these students subsequent to a layoff event. We thus construct a base model to estimate the contemporaneous effects of layoff prevalence on disciplinary rates, modifying it slightly to examine the efficacy of UI benefits. We examine the lagged effects of layoff events and UI benefits and lastly conduct key robustness checks.

Our base specification is a two-way fixed effect model of the following functional form:

 $Discipline_{stj} = \alpha + \beta Layoffs_{st} + \eta UI_{st} + \lambda (HS_s * Layoffs_{st}) + \gamma_s + \delta_t + \varepsilon_{st}$ (1)

where Discipline_{stj} is the number of students of sex *j* disciplined per 100 students enrolled in school s during academic year t.¹⁵ Layoffs_{st} is the total number of layoffs per 10000 workers that occurred in the same location as school *s* during academic year t. UI_{st} is the maximum weekly unemployment insurance in \$100s allotted by the state in which school s is located in year t. HS_s * Layoffs_{st} is an interaction term between layoff prevalence and a binary variable for whether a school is a middle or high school, allowing us to observe differing effects between middle and

¹³ See Appendix: Table A.7.

¹⁴ See Table 4.

¹⁵ We estimate eight different measures of discipline for males, females, and sex-pooled samples. These summary statistics can be found in Table 3.

high schools.¹⁶ γ_s is a time-invariant school fixed effect that is used to control for unobserved differences across schools that may affect disciplinary incidence. δ_t is a school-invariant time fixed effect that accounts for unobserved time trends in discipline rates. ε_{st} is an idiosyncratic error term. Standard errors are clustered at the school level in all analyses to account for potential correlation of residuals within each school across time.

The fixed effects for both time and schools are necessary due to multiple sources of unobservable heterogeneity within our sample. The school fixed effects allow us to control for differences in school climate and culture surrounding discipline across schools as well as differences in school type (i.e., charter vs. private vs. public schools), which have inherent differences in funding, student composition, and culture. Furthermore, the school fixed effects implicitly capture location-specific effects, such as varying state laws on permittable disciplinary actions or, for example, city-wide initiatives to place police officers in schools. These unquantifiable or unobservable sources of heterogeneity are accounted for with γ_s .

Likewise, the time fixed effects allow us to control for unobserved heterogeneity across time. This heterogeneity may encompass national shifts in discipline culture over years, specifically in response to growing research and evidence regarding discipline and academic outcomes. It may also be possible that over time schools in general are moving to restorative justice practices in substitute for punitive discipline, which is unobservable in the data.¹⁷

5 Effects of Layoff Events on Discipline 5.1 Base Specification

Table 5 reports regression results for equation (1) for our sex-pooled sample for all dependent variables considered within the analysis. We examine three groups of dependent variables: expulsions, suspensions, and law enforcement involvement. Within our sex-aggregated results, we observe negative, statistically significant coefficients for expulsions with services, expulsions as a result of zero-tolerance policies, in-school suspensions, and out-of-school single suspensions, indicating that an additional layoff per 10000 workers is associated with a reduction in each type of disciplinary incidence by .0020 percentage points (pp), .00083pp, .0115pp, and

 $^{^{16}}$ Note that we do not include HSs in the model as this is accounted for by $\gamma_s.$

¹⁷ It is important to note that this identification strategy assumes that these discipline cultures, procedures, and laws across schools and time are not correlated with the occurrence of a layoff event as defined by the WARN Act. We must also assume that there is not feedback in our model, i.e., disciplinary incidence predicts layoff prevalence.

.0073pp, respectively. Suspensions are affected by a greater magnitude compared to expulsions, with a one standard deviation increase in layoff prevalence decreasing in-school suspensions by .1777pp and out-of-school single suspensions by .1133pp. At the mean in-school suspension rate of 9.45 percent, a one standard deviation increase in the layoff prevalence is associated with a 1.9 percent decrease in in-school suspensions, with single out-of-school suspensions being reduced by 3.0 percent from its mean of 3.78 percent for the same increase in layoff prevalence. We also observe a positive, statistically significant coefficient for arrests, with a one standard deviation increase in layoffs being indicative of a .0244pp increase in student arrests, or a 7.6 percent increase from the mean arrest prevalence of .319 percent of students. This effect is antithetical to the effects that layoffs have on the use of other aforementioned disciplinary actions.

A potential channel in which these generally desirable effects of layoffs are observed is through parents spending more time with their children subsequent to a layoff event. While previous studies have found a negative general relationship between parental unemployment and child disciplinary rates, they do not control for the presence of social assistance.¹⁸ By adding in UI generosity to our specification, we are able to provide preliminary evidence that UI is playing a role in improving familial stability, translating to better behavioral outcomes. We further explore this concept in the subsequent section. There is also the possibility that schools are substituting away from less punitive discipline (i.e., single out-of-school suspensions or expulsions with services) towards more punitive measures, like arrests. This is less likely due to the small magnitude of the increases in arrests.

Our base model is not sufficient to adequately observe the relationship between layoffs and disciplinary incidence, as it does not account for the channel in which UI benefits may reduce the effect that layoffs have on discipline rates. Moreover, the variation in UI benefits within states across time is negligible to identify the true effect of UI generosity on disciplinary incidence. As it currently stands, our model treats the effects of UI generosity and layoffs as removed from each other, which is not the case. It is, however, helpful to have a starting point for our analysis.

¹⁸ Oreopolous (2005) estimates the effect of father displacement on UI and Social Assistance receipts. Kalil & Ziol-Guest (2008) estimate the effect of unemployment on suspension and expulsion rates at the individual level, but do not control for social assistance programs.

5.2 Mitigation of Layoff Effects through UI

We further our analysis through exploring the interaction between layoff events and UI benefits. To motivate a basis for our analysis, we estimate the heterogeneous contemporaneous effects of a layoff event on aggregate suspensions and expulsions based upon the state in which a school is located. We construct our aggregate measures of suspensions and expulsions through summing the incidences of in-school suspensions and single and multiple out-of-school suspensions and our aggregate measure of expulsions through summing zero-tolerance, no-service, and with service expulsions, respectively. State-by-state regression results are reported in Table 6.¹⁹ From these regression coefficients, we are able to compare the effect that layoff events have on suspensions and expulsions given a state's 2010-2015 average UI benefit generosity. Figures 2 and 3 suggest that the greater UI benefit, the lesser effect that a layoff event has on aggregate suspensions and expulsions, respectively.

Given our conceptual framework and our state-level examination, we suspect that UI benefits possess an important effect on the severity of the impact that layoffs have on disciplinary rates. We address this prospect by adding an interaction term to our main specification, resulting in the following econometric specification:

Discipline_{stj} = α + β Layoffs_{st} + η UI_{st} + ζ UI_{st} * Layoffs_{st} + λ HS_s * Layoffs_{st} + γ_s + δ_t + ε_{st} (2) All variables included from equation (1) retain their same interpretation, with the new variable UI_{st} * Layoffs_{st} being our interaction term of interest.²⁰ When estimating equation (2), we expect negative coefficients on our interaction term between UI benefits and layoff prevalence — UI generosity is key in mitigating the undesirable effects of layoffs on school disciplinary incidence.

Regression results for the estimation of equation (2) are reported by Table 7. Upon inclusion of the interaction term between layoff prevalence and UI benefits, we observe the changes previously hypothesized. Coefficients on expulsions with no services, zero-tolerance expulsions, and multiple out-of-school suspensions are positive and significant, indicating a layoff event increases the use of these disciplinary practices, and should be interpreted as the expected change in discipline if UI benefits were to equal zero. We observe negative, statistically significant coefficients on our interaction term, providing evidence for our hypothesis that UI benefits hold

¹⁹ See Appendix: Table A.8 for estimation using our full sample.

 $^{^{20}}$ As the difference in the effects of layoffs between middle and high schools was not significant, we do not fully interact our model with the HS_s binary variable.

an important relationship in mitigating the effect that layoffs have on a child's behavior. More specifically, the benefits of UI generosity are especially important in reducing more punitive disciplinary measures.²¹

Our point estimates for layoff prevalence indicate that an additional layoff per 10000 workers in the absence of UI benefits increases expulsions with no services by .00372pp, zero-tolerance expulsions by .00732pp, and students subjected to multiple out-of-school suspensions by .0254pp. Accordingly, these point estimates also indicate that a one standard deviation increase in layoff prevalence without UI benefits increases expulsions with no services by .057pp, no tolerance expulsions by .113pp, and students subjected to multiple out-of-school suspensions by .392pp. In relation to the means of these metrics, this one standard deviation increase in layoff prevalence increases no-service expulsions by 40.7 percent, no tolerance expulsions by 112.0 percent, and students subjected to multiple out-of-school suspensions by 7.1 percent when UI benefits are equal to zero. While these are out-of-sample predictions, these estimates highlight the exceptional importance of UI benefits for mitigating the undesirable effects that could be observed in the absence of social assistance for unemployed households.

For each of these metrics, we also observe significant, negative coefficient estimates on our interaction term between UI benefits and layoff prevalence, indicating that increases in the generosity of UI reduces the undesirable effect that layoffs have on disciplinary incidence. This may be attributed to parents that have been laid off being better able to stabilize their family both economically and psychologically when receiving more generous UI benefits, especially when compared to receiving no UI benefits. This narrative is in line with previous studies in this realm, such as Swensen et al. (2020), in which greater UI generosity was associated with a lower likelihood of divorce, indicating greater household stability. The results presented follow this same line of reasoning: increases to UI generosity result in mitigation of disciplinary incidence that would be expected to occur subsequent to a layoff event. Additionally, greater UI generosity reduces the effect that layoffs have on disciplinary incidence for more punitive measures, but their effects are negligible for less punitive measures, such as in-school suspensions or one-time (single) out-of-school suspensions.

²¹ Expulsions with no services, zero-tolerance expulsions, and multiple out-of-school suspensions are harsher than in-school suspensions or expulsions with services.

While UI benefits in general mitigate the effects that a layoff event has on disciplinary incidence, the generosity of benefits varies across the states within our sample, with weekly maximum benefits ranging from \$240 in Arizona to \$707 in Rhode Island.²² It is thus informative to examine the implied effects of layoff events at varying levels of UI generosity. We calculate the effects of layoffs at the minimum, mean, and maximum UI generosity in our sample as well as the minimum UI benefit amount needed to nullify the effect of layoffs on disciplinary incidence for zero-tolerance expulsions, no-service expulsions, and multiple out-of-school suspensions.²³ We find that at the minimum level of UI generosity layoffs still do not mitigate the undesirable effect of layoffs on all disciplinary outcomes considered.

More specifically, with a one standard deviation increase in layoffs per 10,000 workers, we still expect zero-tolerance expulsions to increase by 38.55 percent at the mean zero-tolerance expulsion. No-service expulsions are still expected to increase by 16 percent from its mean given a one standard deviation increase in layoff prevalence. Multiple out-of-school suspensions still increases by 3.4 percent from its mean. At the mean level of UI generosity, multiple out-of-school suspensions are still affected by layoff events, but the layoff effects on both expulsion outcomes revert to be negative. It is not until we reach the maximum UI generosity in our sample that all layoff effects become negative, indicating that the undesirable effects from layoffs have been reversed. We find that the nullifying threshold for UI generosity for zero-tolerance expulsions, no-service expulsions, and multiple out-of-school suspensions to be \$366.23, \$393.29, and \$466.40, respectively. In general, we conclude that states with greater UI benefits are better able to mitigate the behavioral and, in turn, disciplinary consequences that ensue subsequent to a layoff event. Implications of these results are discussed in Section 6.

5.3 Lagged Effects

To explore the persistence of layoff effects and determine whether there is a compounding behavioral effect subsequent to a layoff event, we estimate a lagged specification of equation (2) of the following form, replacing our contemporaneous layoff measures with one-year lagged measures:

$$\begin{split} \text{Discipline}_{stj} &= \alpha + \beta \text{Layoffs}_{st-1} + \eta \text{UI}_{st} + \zeta(\text{UI}_{st} * \text{Layoffs}_{st-1}) + \lambda(\text{HS}_s * \text{Layoffs}_{st-1}) + \gamma_s + \delta_t + \epsilon_{st} \end{split}$$

²² See Figure 1 for a visual representation of varying UI generosity across our sample.

²³ See Table 8. These dependent variables were chosen as all independent variables of interest were significant within our estimates.

Our interests lie primarily with an interacted lagged model as the base lagged model does not consider that UI benefits can mitigate the effect that layoffs have on disciplinary incidence.²⁴ Table 9 present results for this estimation.²⁵

When examining the differences between coefficient estimates for our contemporaneous and lagged interacted model, we observe total loss of significance of all layoff coefficients in our lagged model, with the exception of no-service expulsions and multiple out-of-school suspensions. We observe that the layoff coefficient on no-service expulsions is now negative, indicating that a layoff event while controlling for UI has desirable effects on school disciplinary incidence, compared to a previously positive coefficient upon impact of the layoff event.²⁶ The layoff coefficient for multiple out-of-school suspensions is still positive and slightly larger in magnitude, indicating lagged layoffs have an undesirable impact on this metric, but our coefficient for the UI interaction term is still negative and now a larger magnitude. Correspondingly, the effect of layoffs on multiple out-of-school suspensions in our contemporaneous model was not mitigated by the mean level of UI benefits provided in our sample. This may be a potential explanation as to why the lagged effect of layoffs on multiple out-of-school suspensions has persisted into our lagged model.

Notably, our interaction terms that were previously significant to the 1 or 5 percent level have lost most if not all significance. This is to be expected as UI benefits last for approximately 6 months on average, yet our lag is at the yearly level. These lagged results for both our base specification and our interacted model taken together tell us that the immediate effects on disciplinary incidence from layoff events are, in general, not compounded over time. Our interacted lagged model is most informative in this aspect: by the next academic year subsequent to a layoff event, we suspect that if UI benefits are generous enough, the adverse effects that layoff events had on disciplinary incidence are at least mitigated and potentially reversed in the long run. This is especially prevalent for more punitive measures, like expulsions with no services, as UI

²⁴ Estimates for the lagged base specification can be found in Appendix: Table A.1.

²⁵ We do not use a lagged value for UI_{st} in our main lagged results. We present robustness checks in Tables A.6 and A.7 using lagged values of UI_{st} and find no significant difference in our general results.

²⁶ The positive coefficient on the interaction term in this specification is trivial for our analysis. Back-of-theenvelope calculations indicate that the effect of layoffs on no-service expulsions would not revert to positive unless states provided at least \$600.00 of weekly UI benefits, which is only observed for one state in our sample: Rhode Island.

benefits on average likely maintained or even improved familial stability and dynamics, allowing for a long-term decrease in this punitive measure.

5.4 Heterogeneous Effects by Sex

Our primary dataset on disciplinary incidence also contains sex disaggregations for males and females. From our summary statistics, we observe that the prevalence of disciplinary actions in our sex-pooled sample is driven by the higher prevalence for male students. Furthermore, previous findings suggest that males are subjected to disciplinary action more often than females, providing cause for separate estimation by sex (Losen & Skiba, 2010; Terriquez et al., 2013). Additionally, males are expected to respond more drastically to a destabilized household compared to females potentially due to a lack of capacity for emotional regulation (Nikolova & Nikolaev, 2021).

For our base specification (Table 10), results do not vary qualitatively across sex, with the exception of males experiencing a slightly significant increase in multiple out-of-school suspensions and point estimates of the effects of layoffs for our female specification being noticeably smaller in magnitude from our sex-pooled and male specifications. This becomes more prominent in our interacted model (Table 11), with point estimates of layoff effects in our male specification being double the magnitude of our female specification. Additionally, we observe a positive, statistically significant coefficient on the effects that layoffs have on male arrests, which is not mitigated by UI generosity — a layoff event is expected to increase arrests of male students. These results align with our prior expectation that males would experience greater increases in disciplinary incidence compared to females subsequent to a destabilizing layoff event (Nikolova & Nikolaev, 2021). Compared to our sex-pooled interacted model, our qualitative results in general do not differ — regardless of sex, greater UI generosity is able to mitigate the undesirable effects of a layoff event.

5.5 Robustness Checks

We conduct a variety of robustness checks in regard to sample and data changes in order to alleviate concerns outlined in Section 3.3. First, we ensure that our results are not being driven by specific states in our sample. Table 6 reports state-by-state estimations of equation (1) using the sum of all suspension incidents (in-school and out-of-school single and multiple) and the sum of all expulsion incidents (with and without services and zero-tolerance) as the dependent variables. We see that Kansas, Rhode Island, and Vermont present statistically significant, highmagnitude coefficients, indicating that they may be driving our results. We then re-estimate equations (1) and (2) after dropping all schools from our sample that are located in these three states. Qualitatively, our results remain robust in our preferred, interacted model.²⁷ With this sample, we also see that layoff effects on arrests are now significant and not mitigated by UI benefits, which follows our results from the male specification for our interacted model using our main sample. Effects of layoffs on multiple out-of-school suspensions are also no longer mitigated by UI benefits. This is likely due to dropping Rhode Island and Kansas from our sample, which were two of the four states that had sufficient UI benefits to nullify the undesirable effect of layoffs on multiple out-of-school suspensions.

We also test the robustness of our specifications to the size of the locations included in our sample. Appendix: Table A.3 presents estimates when including schools in locations with a population with less than 5000 people and Appendix: Table A.4 presents estimates with a greater mean population in our sample. We find that results are once again fairly robust to specification change, with the effects of layoffs (and its interaction with UI benefits) being more pronounced in the sample with larger cities compared to our main sample. In contrast, we find layoff (and interaction) effects to be less pronounced when including less-populated areas. This is likely due to the fact that within our sample, less populated areas do not have many disciplinary incidents in general, with 20 percent of these schools never utilizing multiple out-of-school suspensions, compared to only 10 percent of schools in more populated areas. In general, however, our qualitative results are still retained for both models estimated and we see no unexpected changes in sign of the point estimates that were significant with our primary sample.

We address concerns regarding the timing of UI benefits within our lagged specification. We modify the lagged specifications, which originally only lagged the layoff prevalence and its interaction, to also have a one-year lag on UI benefits. These estimates can be found in Appendix: Table A.5 and Appendix: Table A.6. We find no significant differences in our results for our base specification, but we do see varying changes to significance of layoffs and its interaction with UI benefits in our sex-aggregated sample specifications except for the multiple out-of-school specification. However, the male sample specifications remain robust to this change. We also

²⁷ See Appendix: Table A.2.

examine our results' robustness to using July's UI benefit schedules instead of January's and find no qualitative and little quantitative change to our general results.²⁸

We are also concerned about changes to state policy and culture regarding discipline in middle and high schools across time affecting our results. To account for these effects, we check the robustness of our results to the inclusion of state-by-year fixed effects. While this measure accounts for shifts in discipline at a state-level, we also lose considerable variation in layoff prevalence. Nonetheless, our results are still qualitatively robust, with the exception of the effect of layoffs on multiple out-of-school suspensions losing significance.²⁹ However, the effect of layoffs on the more punitive actions of no service and zero-tolerance expulsions remain significant and indicate increases in layoff prevalence translate to an undesirable effect on expulsions. These effects are still mitigated by UI benefits, with the nullifying level of UI generosity still falling within our range of \$366 to \$466.

Additionally, we are curious as to how different types of school disciplinary cultures respond to layoff events. To examine this heterogeneity, we stratify our sample by low- and high-discipline schools.³⁰ Unsurprisingly, we find that high-discipline schools have more pronounced effects and move to more punitive disciplinary measures, with arrests now being undesirably affected by layoffs and the effect of layoffs on zero-tolerance and no service expulsions both increasing in magnitude.³¹ This falls in line with the narrative that high-discipline schools are overly reliant upon exclusionary discipline to manage their students. Thus, subsequent to a layoff event these institutions lack other resources to effectively stabilize their students and, in turn, rely more heavily on more punitive forms of discipline to manage student misbehavior that emerges or compounds after a destabilizing event. Low-discipline schools' use of exclusionary discipline, however, remains unaffected by layoffs, likely due to the fact that many of these schools had zero disciplinary incidents — regardless of disciplinary action, low-discipline schools have a high

²⁸ See Appendix: Table A.7.

²⁹ See Appendix: Table A.9.

³⁰ To stratify the sample, the median in-school suspension rate was calculated for each school during our time period. The sample median was then calculated and schools whose median suspensions were greater than the sample median were considered high-discipline schools and schools below the sample median were low-discipline schools. This sample stratification cuts our sample size in half, with 50 percent of schools being designated as high-discipline and 50 percent as low-discipline

³¹ See Appendix: Table A.10.

prevalence of these "zero" observations, especially when compared to high-discipline schools or our full sample.³²

Lastly, we modify our measure of UI generosity, examining the mitigating effect of the minimum level of UI benefits, compared to the maximum level of UI benefits. When using this measure, we find insignificant effects of layoffs as well as insignificant mitigating effects of UI benefits on disciplinary action.³³ This is likely due to the lack of variation in the minimum level of UI benefits across states and years, making the maximum level of UI benefits as a measure of generosity to be preferred.

6 Discussion

We examine the effects that layoff events have on disciplinary incidence in grades 6-12 with and without UI benefits. We provide statistical evidence that UI benefits are necessary for mitigating the effects that a layoff event has on a child's behavior as observed through disciplinary actions taken by schools. Specifically, our results show that when UI benefits are equal to 0 dollars per week, we can expect a one standard deviation increase in layoff prevalence to cause disciplinary incidence to increase between 40 to 112 percent from the mean, depending on the type of disciplinary action taken. Even at the minimum level UI generosity of \$240 per week, a one standard deviation increase in layoff prevalence still causes a 3 to 40 percent increase from the mean of different metrics of disciplinary incidence. These results are concentrated among more punitive disciplinary measures.

Moreover, we are able to determine approximate levels of UI generosity to nullify the undesirable effects from layoffs, and potentially reverse them. We find that this ranges from \$366 to \$466 weekly for our sample. We suspect that the increases in UI generosity allow for more stabilized families, allowing for the negative income effects to be nullified and eventually reversed at the higher end of the UI generosity spectrum. We suspect that this reversal is likely due to parents spending more quality time with their children, which falls in line with economic theory and some prior empirical evidence.³⁴ Moreover these results, accompanied by the domino effect of misbehavior suggested by Carrell & Hoekstra (2010), suggest that the benefits to reducing and/or nullifying the layoff effects on disciplinary incidence are not concentrated solely on the

³² See Appendix: Table A.11.

³³ See Appendix: Table A.12.

³⁴ See Section 2: Background.

child that is in a household experiencing unemployment due to a layoff — reducing the incidence of misbehavior through UI benefits reduces the effect that an otherwise misbehaved child may have on the greater classroom.

Further research is still needed to directly identify the mechanism that is allowing UI benefits to reduce the impact that layoffs have on disciplinary incidence. While we suspect that the primary mechanism is through counteracting the negative income shock due to unemployment and in turn allowing parents to spend more time with their children, these effects may be more or less pronounced for paternal or maternal unemployment. These effects are also likely to differ across socio-economic status, racial and ethnic groups, for students with disabilities, and differing family structures. Examination of these heterogeneous effects is essential to further our understanding of how education and social policy can ensure equity across groups. Furthermore, other factors may be at play. A disciplinarian that is aware of a student's parental employment status may be more understanding towards instances of misbehavior, potentially reducing their willingness to carry out disciplinary action.

Given the documented undesirable effects disciplinary action have on a student, especially for racial and ethnic minorities, examining what affects these incidences should be of utmost importance to education policymakers. While we do not examine heterogeneous effects other than differences across the sex of the student, we provide a baseline for this line of research — we have identified layoff events to have a significant effect on disciplinary incidence and find that these effects can be mitigated by UI benefits. However, these UI benefits must be at a sufficient threshold in order to nullify or reverse these effects. Ensuring families are supported through social assistance programs like UI upon involuntary unemployment is of significant importance to secure the academic success and future of their children and those children indirectly affected by a layoff event.

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Tables and Figures



□ 240.0 - 300.0 □ No data

Figure 1: Average UI Benefits by States Included in Sample from 2010-2015 (\$ per week)

Source: United States Department of Labor: Employment & Training Administration. Note: States in grey are not included within our sample due to limitations outlined in section 3.





Note: Layoff effects were estimated state-by-state using equation (1) with the dependent variable being the sum incidences per 100 pupils of all suspension types and are plotted against the corresponding state's average UI generosity. These estimates can be found in Table 6. The coefficient estimates indicate the percentage point change in aggregate expulsions due to an increase of 1 layoff per 10,000 workers.

Figure 3: Layoff Effects on Expulsions & UI Benefits



Note: Layoff effects were estimated state-by-state using equation (1) with the dependent variable being the sum incidences per 100 pupils of all expulsion types and are plotted against the corresponding state's average UI generosity. These estimates can be found in Table 6. The coefficient estimates indicate the percentage point change in aggregate expulsions due to an increase of 1 layoff per 10,000 workers.

Table 1: Data Definitions

	ТҮРЕ	DEFINITION
SUSPENSIONS	In-School	An instance in which a child is temporarily removed from his or her regular classroom(s) for at least half a day for disciplinary purposes but remains under the direct supervision of school personnel. Direct supervision means school personnel are physically in the same location as students under their supervision.
	Out-of-school (multiple) Out-of-school (single)	An instance in which a child is temporarily removed from his/her regular school for at least half a day (but less than the remainder of the school year) for disciplinary purposes to another setting (e.g., home, behavior center). Out-of-school suspensions include removals in which no educational services are provided, and removals in which educational services are provided (e.g., school provided at home instruction or tutoring).
EXPULSIONS	With Services	Refers to an action taken by the local educational agency of removing a child from his/her regular school for disciplinary purposes, and providing educational services to the child (e.g., school-provided at home instruction or tutoring; transfer to an alternative school) for the remainder of the school year (or longer) in accordance with local educational agency policy.
	No Services	Refers to an action taken by the local educational agency of removing a child from his/her regular school for disciplinary purposes, and not providing educational services to the child for the remainder of the school year or longer in accordance with local educational agency policy.
	Zero-Tolerance	Refers to an action taken by the local educational agency of removing a child from his/her regular school for the remainder of the school year or longer because of zero-tolerance policies. A zero-tolerance policy is a policy that results in mandatory expulsion of any student who commits one or more specified offenses (e.g., offenses involving guns, or other weapons, or violence, or similar factors, or combinations of these factors).
LAW ENFORCEMENT	Referrals	Is an action by which a student is reported to any law enforcement agency or official, including a school police unit, for an incident that occurs on school grounds, during school related events, or while taking school transportation, regardless of whether official action is taken. Citations, tickets, court referrals, and school-related arrests are considered referrals to law enforcement.
	Arrests	Refers to an arrest of a student for any activity conducted on school grounds, during off campus school activities (including while taking school transportation), or due to a referral by any school official. All school-related arrests are considered referrals to law enforcement.

Source: Civil Rights Data Collection 2015-2016 Definitions Note: The order of these definitions corresponds to the severity of these practices and are presented from least to most severe.

Alabama	Maryland
Arizona	Michigan
California	Missouri
Delaware	New Mexico
Florida	Oklahoma
Idaho	Rhode Island
Iowa	South Dakota
Kansas	Tennessee
Maine	Texas

Table 2: States Included in Sample

Table 3: Summary Statistics

Dependent Variables: Sex-Pooled (per 100 students)

	Obs.	Mean	Std. Dev.	min	max
Suspensions (in-school)	22384	9.448	11.28	0	61.67
Suspensions (out of school, multiple)	22420	5.546	5.10	0	36.36
Suspensions (out of school, single)	22420	3.775	5.21	0	39.34
Expulsions (with education services)	22427	.338	1.55	0	84.54
Expulsions (without education services)	22438	.14	1.13	0	46.32
Expulsions (result of zero-tolerance)	22438	.101	.93	0	84.54
Referral to law enforcement	22379	.915	2.30	0	78.48
Arrested (on or off school grounds)	22379	.319	1.50	0	55.56
Dependent Variables: Female (per 100 students)					
Suspensions (in-school)	22384	3.163	4.28	0	30.26
Suspensions (out of school, multiple)	22420	1.901	2.11	0	23.53
Suspensions (out of school, single)	22420	1.108	1.86	0	28.57
Expulsions (with education services)	22427	.088	.54	0	40.77
Expulsions (without education services)	22438	.04	.44	0	18.92
Expulsions (result of zero-tolerance)	22438	.027	.40	0	40.77
Referral to law enforcement	22379	.282	.85	0	39.24
Arrested (on or off school grounds)	22379	.094	.52	0	24.13
Dependent Variables: Male (per 100 students)					
Suspensions (in-school)	22384	6.285	7.27	0	48.05
Suspensions (out of school, multiple)	22420	3.645	3.34	0	30.77
Suspensions (out of school, single)	22420	2.667	3.61	0	32.81
Expulsions (with education services)	22427	.25	1.14	0	66.67
Expulsions (without education services)	22438	.099	.75	0	35.79
Expulsions (result of zero-tolerance)	22438	.074	.57	0	43.77
Referral to law enforcement	22377	.633	1.59	0	40
Arrested (on or off school grounds)	22377	.225	1.06	0	55.56
Key Regressor (per 10,000 workers)					
Layoff Prevalence	44880	5.943	15.45	0	129.53
Layoff Prevalence when layoffs>0	11080	24.072	23.04	.022	129.53
Control (per week in \$100s)					
Unemployment Insurance (UI)	44880	3.996	.804	2.4	7.07

State							
	2010	2011	2012	2013	2014	2015	Change in benefits
							(2010-2015)
Alabama	265	265	265	265	265	265	0.00%
Arizona	240	240	240	240	240	240	0.00%
California	450	450	450	450	450	450	0.00%
Delaware	330	330	330	330	330	330	0.00%
Florida	275	275	275	275	275	275	0.00%
Idaho	334	336	343	357	383	398	7.61%
Iowa	459	461	473	486	501	511	4.66%
Kansas	436	435	444	456	469	474	3.63%
Maine	534	533	549	558	567	579	3.51%
Maryland	410	430	430	430	430	430	2.07%
Michigan	362	362	362	362	362	362	0.00%
Missouri	320	320	320	320	320	320	0.00%
New Mexico	526	486	447	457	456	462	-5.63%
Oklahoma	430	358	368	386	440	490	5.67%
Rhode Island	682	688	707	707	707	707	1.56%
South Dakota	309	314	323	333	345	352	5.66%
Tennessee	275	325	325	325	275	275	0.00%
Texas	406	415	426	440	454	465	5.89%
Vermont	425	425	425	425	425	436	1.11%
Wisconsin	363	363	363	363	370	370	0.83%
Full Sample (mean)	391.55	390.55	393.25	398.25	403.20	409.55	1.83%

Table 4: UI Generosity by State (\$ per week)

Source: United States Department of Labor: Employment & Training Administration

Table 5: Impact of Layoffs on School Disciplinary Incidence

Sex-Pooled								
	Expulsions				Suspensions	Law Enforcement		
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff prevalence	-0.00199*** (0.000593)	-0.000137 (0.000218)	-0.000831** (0.000338)	-0.0115** (0.00553)	0.00319 (0.00242)	-0.00733*** (0.00254)	8.62e-06 (0.00141)	0.00158** (0.000629)
UI	-0.338*** (0.103)	-0.488*** (0.155)	-0.273*** (0.0610)	1.412*** (0.371)	0.708*** (0.174)	1.534*** (0.167)	-0.158* (0.0940)	0.0922* (0.0476)

State	All Suspensions	All Expulsions	Observations
Alabama	-0.244	0.0009	42
	(0.152)	(0.00468)	
Arizona	-0.031	-0.0008	1,254
	(0.0500)	(0.00149)	
California	0.009	-0.0007	5,670/5,695
	(0.0115)	(0.00128)	
Delaware	0.081	-0.002	57
	(0.0486)	(0.00142)	
Florida	-0.003	-0.0006**	2,105
	(0.0290)	(0.000318)	
Idaho	0.049*	0.0006	287
	(0.0275)	(0.00283)	
Iowa	-0.0845*	-0.002	549
	(0.0444)	(0.00283)	
Kansas	-0.167***	0.001	420
	(0.0361)	(0.00185)	
Maine			381
Maryland	0.0003	0.002	813
	(0.0215)	(0.00227)	
Michigan	0.021	-0.004	1,342
	(0.0417)	(0.00259)	
Missouri	0.063	0.011*	972
	(0.0473)	(0.00560)	
New Mexico	0.029	-0.001	594
	(0.125)	(0.00317)	
Oklahoma	-0.044	-0.009*	576/594
	(0.0321)	(0.00507)	
Rhode Island	-0.298**	-0.005	207
	(0.126)	(0.00401)	
South Dakota	0.027	0.003	150
	(0.0296)	(0.00164)	
Tennessee	0.046	0.0009	672
	(0.0518)	(0.00331)	
Texas	-0.018	-0.004***	5,095
	(0.0132)	(0.00156)	
Vermont	0.341***	0.0007	90
	(0.0704)	(0.000938)	
Wisconsin	0.056	0.005	1,108
	(0.0408)	(0.00361)	
Full Sample	-0.0166**	-0.00211***	22,384/22,427
	(0.00791)	(0.000598)	

Table 6: Effect of Layoffs on Total Suspensions and Expulsions by State

Maine's sample only contains schools in areas without a layoff event Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Sex-Pooled								
VARIABLES	Expulsions				Suspensions	Law Enforcement		
	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.00129	0.00372***	0.00732**	-0.0105	0.0254**	-0.0223**	-0.00337	0.00380
prevalence	(0.00370)	(0.00122)	(0.00288)	(0.0233)	(0.0109)	(0.0111)	(0.00422)	(0.00246)
UI	-0.329***	-0.477***	-0.250***	1.415***	0.769***	1.492***	-0.168*	0.0984**
	(0.102)	(0.153)	(0.0555)	(0.371)	(0.176)	(0.165)	(0.0960)	(0.0478)
UI*Layoff	-0.000804	-0.000946***	-0.00200***	-0.000251	-0.00545**	0.00368	0.000829	-0.000546
prevalence	(0.000916)	(0.000306)	(0.000713)	(0.00538)	(0.00252)	(0.00259)	(0.00108)	(0.000609)

Table 7: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence

Note: Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. See Table 1 for dependent variable data definitions. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Mitigating Effects of UI Benefits

Sex-Pooled Sample for Statistically Significant Results									
				Null Effect UI					
	Minimum UI	Mean UI	Maximum UI	Benefit					
	(\$240)	(\$399.60)	(\$707)						
Expulsions (zero-tolerance)	38.55%	-10.21%	-104.03%						
	(0.00252)	(-0.00067)	(-0.00682)	\$366.23					
Expulsions (no service)	16.00%	-0.66%	-32.67%						
	(0.00145)	(-0.00006)	(-0.00297)	\$393.29					
Out-of-School Suspensions (multiple)	3.45%	1.01%	-3.65%						
	(0.01233)	(0.003640)	(-0.01311)	\$466.40					

Note: Implied coefficient estimates (in parentheses) were calculated using the coefficient estimates found in Table 7. For example, the implied coefficient on layoff prevalence at \$240 of weekly UI benefits for zero-tolerance expulsions is equal to 0.00732 + (-0.002 * 2.40) = .00252. Percentages are calculated as the implied percent change due to a one standard deviation increase in layoffs from the mean of each respective disciplinary action given a level of UI benefits. A one standard deviation increase in layoff prevalence is equivalent to an additional 15.45 workers per 10,000, which is then used to determine the implied effect of an increase in layoff prevalence at each level of UI generosity around the mean of a disciplinary action. For example, the mean of multiple out-of-school suspensions is 5.546 students per 100 pupils, so at the minimum level of UI, we calculate $\frac{.01233*15.45}{.01233*15.45}$ * 100 percent.

5.546

Sex-Pooled								
	Expulsions				Suspensions	Law Enforcement		
VARIABLES					Out-of-school	Out-of-school		
	With Services	No Services	No Tolerance	In-School	Multiple	Single	Referrals	Arrests
Layoff	0.00662	-0.00406**	0.00223	-0.00646	0.0321**	0.0160	0.00119	-0.00354
Prevalence _(t-1)	(0.00429)	(0.00167)	(0.00209)	(0.0300)	(0.0144)	(0.0126)	(0.00658)	(0.00313)
UI	-0.319***	-0.490***	-0.264***	1.460***	0.743***	1.575***	-0.155	0.0823*
	(0.102)	(0.154)	(0.0590)	(0.369)	(0.173)	(0.166)	(0.0952)	(0.0476)
UI*Layoff	-0.00218**	0.000676*	-0.000995*	-0.00170	-0.00816**	-0.00380	-0.000533	0.000967
Prevalence _(t-1)	(0.00106)	(0.000370)	(0.000579)	(0.00693)	(0.00333)	(0.00293)	(0.00169)	(0.000761)

Table 9: Lagged Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence

Note: Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. See Table 1 for dependent variable data definitions. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Heterogeneous Impacts of Layoffs on Disciplinary Incidence by Sex

	Expulsions			Suspensions		Law Enf	orcement
With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
-0.000628*** (0.000217) -0.104*** (0.0363)	-8.13e-06 (8.54e-05) -0.202*** (0.0609)	-0.000212* (0.000120) -0.113*** (0.0264)	-0.00414* (0.00215) 0.287* (0.150)	0.000279 (0.001000) 0.269*** (0.0756)	-0.00178* (0.000963) 0.477*** (0.0637)	0.000135 (0.000540) -0.0488 (0.0363)	0.000519** (0.000235) 0.0152 (0.0185)
	Expulsions		Suspensions			Law Enforcement	
With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
-0.00137*** (0.000422) -0.234*** (0.0725)	-0.000129 (0.000154) -0.286*** (0.0961)	-0.000619** (0.000241) -0.160*** (0.0366)	-0.00737** (0.00362) 1.125*** (0.242)	0.00291* (0.00160) 0.439*** (0.117)	-0.00555*** (0.00173) 1.057*** (0.117)	-0.000126 (0.000928) -0.109* (0.0641)	0.00106** (0.000431) 0.0769** (0.0326)
	With Services -0.000628*** (0.000217) -0.104*** (0.0363) With Services -0.00137*** (0.000422) -0.234*** (0.0725)	Expulsions With Services No Services -0.000628*** -8.13e-06 (0.000217) -8.13e-06 -0.104*** -0.202*** (0.0363) -0.202*** With Services No Services With Services No Services -0.00137*** -0.000129 (0.000422) -0.286*** -0.234*** -0.286*** (0.0725) (0.0961)	ExpulsionsWith ServicesNo ServicesNo Tolerance -0.000628^{***} (0.000217) $-8.13e-06$ (8.54e-05) -0.000212^{*} (0.000120) -0.104^{***} (0.0363) -0.202^{***} (0.0609) -0.113^{***} (0.0264)ExpulsionsWith ServicesNo ServicesNo Tolerance -0.00137^{***} (0.000422) -0.000129 (0.000154) -0.000619^{**} (0.000241) -0.234^{***} (0.0725) -0.286^{***} (0.0961) -0.160^{***} (0.0366)	Expulsions No With Services No Services $\frac{No}{Tolerance}$ In-School -0.000628*** -8.13e-06 -0.000212* -0.00414* (0.000217) (8.54e-05) -0.000120) -0.00414* -0.104*** -0.202*** -0.113*** 0.287* (0.0363) -0.202*** (0.0264) (0.150) Expulsions No In-School With Services No Services No Tolerance In-School -0.00137*** -0.000129 -0.000619** -0.00737** (0.000422) (0.000154) -0.160*** (0.00362) -0.234*** -0.286*** -0.160*** 1.125*** (0.0725) (0.0961) (0.0366) 1.225**	ExpulsionsSuspensionsWith ServicesNo Services $\frac{No}{Tolerance}$ In-SchoolOut-of-school Multiple-0.000628*** (0.000217)-8.13e-06 (8.54e-05)-0.000212* (0.000120)-0.00414* (0.000120)0.000279 (0.00215)-0.104*** (0.0363)-0.202*** (0.0609)-0.113*** (0.0264)0.287* (0.150)0.269*** (0.0756)Volume ToleranceSuspensionsWith ServicesNo ServicesNo ToleranceOut-of-school (0.0756)With ServicesNo ServicesNo ToleranceOut-of-school Multiple-0.00137*** (0.000422)-0.000129 (0.000154)-0.000619** (0.000241)-0.00737** (0.000362)0.00291* (0.00160)-0.234*** (0.0725)-0.286*** (0.0961)-0.160*** (0.0366)1.125*** (0.242)0.439*** (0.117)	ExpulsionsSuspensionsWith ServicesNo Services $\frac{No}{Tolerance}$ In-SchoolOut-of-schoolOut-of-school-0.000628***-8.13e-06-0.000212*-0.00414*0.000279-0.00178*(0.000217)(8.54e-05)-0.0113***0.287*(0.001000)(0.000963)-0.104***-0.202***-0.113***0.287*(0.269***0.477***(0.0363)(0.0609)(0.0264)(0.150)Out-of-school0.477***With ServicesNo ServicesNo ToleranceSuspensionsOut-of-schoolWith ServicesNo ServicesNo ToleranceIn-SchoolOut-of-school MultipleOut-of-school Single-0.00137***-0.000129-0.000619**-0.00737**0.00291*-0.00555***(0.000422)(0.000154)(0.000241)-0.00737**0.00291*-0.00555***-0.234***-0.286***-0.160***1.125***0.439***1.057***(0.0725)(0.0961)(0.0366)(0.242)(0.117)(0.117)	Expulsions Suspensions Law Enform With Services No Services $\frac{N_0}{Tolerance}$ In-School $\frac{Out-of-school}{Multiple}$ $\frac{Out-of-school}{Single}$ Referrals -0.000628*** -8.13e-06 -0.000212* -0.00414* 0.000279 -0.00178* 0.000135 (0.000217) (8.54e-05) (0.000120) (0.00215) 0.000279 $-0.00178*$ 0.000135 -0.104*** -0.202*** -0.113*** $0.287*$ $0.269***$ $0.477***$ -0.0488 (0.0363) (0.0609) -0.113*** $0.287*$ $0.269***$ $0.477***$ -0.0488 (0.0363) -0.202*** 0.00264 0.0756 $0.477***$ -0.0488 (0.0363) -0.00609 0.0264 $0.287*$ $0.269***$ $0.477***$ -0.0488 (0.0363) -0.00609 0.0264 $0.287*$ $0.269***$ $0.477***$ -0.00488 (0.0363) In-School Multiple Single Referrals * No Folerance In-Sc

Table 11: Heterogeneous Impacts of Layoffs and Unemployment Insure	ince on
Disciplinary Incidence by Sex	

Female								
		Expulsions			Suspensions		Law Enfe	orcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.000875	0.00150***	0.00293**	0.00389	0.00780*	-0.00300	-0.000490	0.000530
prevalence	(0.00150)	(0.000481)	(0.00131)	(0.00865)	(0.00442)	(0.00382)	(0.00170)	(0.000981)
UI	-0.0999***	-0.197***	-0.104***	0.309**	0.290***	0.474***	-0.0505	0.0153
	(0.0349)	(0.0601)	(0.0237)	(0.149)	(0.0762)	(0.0634)	(0.0372)	(0.0185)
UI*Layoff	-0.000369	-0.000370***	-0.000771**	-0.00197	-0.00184*	0.000300	0.000153	-2.69e-06
prevalence	(0.000374)	(0.000118)	(0.000324)	(0.00201)	(0.00104)	(0.000900)	(0.000429)	(0.000241)
Male								
	Expulsions				Suspensions		Law Enfe	orcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.000410	0.00222***	0.00439***	-0.0144	0.0176**	-0.0193**	-0.00288	0.00327**
prevalence	(0.00236)	(0.000832)	(0.00164)	(0.0158)	(0.00728)	(0.00806)	(0.00296)	(0.00166)
UI	-0.229***	-0.280***	-0.146***	1.105***	0.479***	1.019***	-0.117*	0.0831**
	(0.0730)	(0.0950)	(0.0339)	(0.244)	(0.118)	(0.116)	(0.0653)	(0.0328)
UI*Layoff	-0.000436	-0.000576***	-0.00123***	0.00172	-0.00360**	0.00338*	0.000676	-0.000543
prevalence	(0.000585)	(0.000209)	(0.000406)	(0.00362)	(0.00170)	(0.00187)	(0.000746)	(0.000412)

Appendix Table A. 1: Lagged Impact of Layoffs on Disciplinary Incidence

Sex-Pooled								
		Expulsions			Suspensions		Law Enf	orcement
VARIABLES					Out-of-school	Out-of-school		
	With Services	No Services	No Tolerance	In-School	Multiple	Single	Referrals	Arrests
Layoff Prevalence _(t-1)	-0.00241** (0.000940)	-0.00126** (0.000562)	-0.00189*** (0.000567)	-0.0135*** (0.00410)	-0.00172 (0.00206)	0.000312 (0.00187)	-0.00101 (0.00146)	0.000459 (0.000616)
UI	-0.330*** (0.103)	-0.486*** (0.154)	-0.269*** (0.0605)	1.451*** (0.370)	0.700*** (0.173)	1.555*** (0.167)	-0.157* (0.0940)	0.0873* (0.0474)

Note: Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. See Table 1 for dependent variable data definitions. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table A. 2: Dropping Possible Sample Drivers

Sex-Pooled

Main Specifica	ation							
		Expulsions			Suspensions		Law Enf	orcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of- school Multiple	Out-of- school Single	Referrals	Arrests
Layoff	-0.00186***	0.000116	-0.00110***	-0.00527	0.00590**	-0.00469*	-0.00122	0.00110*
prevalence	(0.000620)	(0.000200)	(0.000338)	(0.00561)	(0.00251)	(0.00249)	(0.00145)	(0.000622)
UI	-0.356***	-0.496***	-0.274***	1.224***	0.667***	1.513***	-0.164*	0.0974**
	(0.104)	(0.157)	(0.0617)	(0.371)	(0.175)	(0.166)	(0.0945)	(0.0476)
Interacted Mo	del							
Layoff	0.000475	0.00372***	0.00844**	-0.00628	0.0216*	-0.0264**	0.00297	0.00529**
prevalence	(0.00421)	(0.00130)	(0.00332)	(0.0236)	(0.0114)	(0.0111)	(0.00399)	(0.00256)
UI	-0.349***	-0.486***	-0.247***	1.221***	0.711***	1.452***	-0.152	0.109**
	(0.103)	(0.155)	(0.0553)	(0.371)	(0.176)	(0.164)	(0.0966)	(0.0476)
UI*Layoff	-0.000581	-0.000894***	-0.00237***	0.000252	-0.00391	0.00540**	-0.00104	-0.00104
prevalence	(0.00106)	(0.000325)	(0.000832)	(0.00549)	(0.00270)	(0.00259)	(0.00104)	(0.000636)

Note: Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. Kansas, Rhode Island, and Vermont were identified as sample drivers and dropped from the sample used to estimate the above results (see Table 6). See Table 1 for dependent variable data definitions. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Sex-1 Utieu								
Main Specifica	ation							
		Expulsions			Suspensions		Law Enf	orcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	-0.000824***	0.00120	-0.000243**	-0.00142	0.00249*	-0.00225**	0.000215	0.000432
prevalence	(0.000231)	(0.000871)	(0.000115)	(0.00234)	(0.00132)	(0.00105)	(0.000659)	(0.000287)
UI	-0.255**	-0.315***	-0.171***	0.930***	0.669***	1.333***	-0.145*	0.0146
	(0.103)	(0.119)	(0.0599)	(0.359)	(0.170)	(0.151)	(0.0833)	(0.0485)
Interacted Mo	del							
Layoff	0.00147	0.000261	0.00234**	0.0106	0.0135**	-4.77e-05	0.000867	0.00202
prevalence	(0.00156)	(0.00229)	(0.00104)	(0.0131)	(0.00666)	(0.00598)	(0.00368)	(0.00130)
UI	-0.249**	-0.318***	-0.165***	0.959***	0.696***	1.339***	-0.144*	0.0185
	(0.103)	(0.118)	(0.0591)	(0.360)	(0.171)	(0.150)	(0.0841)	(0.0484)
UI*Layoff	-0.000583	0.000238	-0.000656**	-0.00304	-0.00278*	-0.000558	-0.000166	-0.000402
prevalence	(0.000393)	(0.000722)	(0.000267)	(0.00306)	(0.00163)	(0.00141)	(0.000866)	(0.000328)

Table A. 3: Including Locations with Population<5000

Sex-Pooled

Sex-1 Utieu									
Main Specificat	tion								
		Expulsions			Suspensions		Law Ent	Law Enforcement	
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests	
Layoff	-0.00289***	-6.54e-05	-0.00143***	-0.0204***	0.00519*	-0.0127***	-0.00257	0.00125*	
prevalence	(0.000719)	(0.000288)	(0.000481)	(0.00649)	(0.00285)	(0.00303)	(0.00157)	(0.000677)	
UI	-0.394***	-0.779***	-0.437***	1.037**	0.767***	1.604***	-0.387***	0.000428	
	(0.136)	(0.221)	(0.0881)	(0.457)	(0.217)	(0.218)	(0.117)	(0.0583)	
Interacted Mod	lel								
Layoff	0.00511	0.00168	0.00886**	-0.0196	0.0362***	-0.0315**	-0.00631	0.00291	
prevalence	(0.00470)	(0.00115)	(0.00374)	(0.0282)	(0.0115)	(0.0138)	(0.00511)	(0.00254)	
UI	-0.367***	-0.773***	-0.402***	1.039**	0.873***	1.540***	-0.400***	0.00613	
	(0.134)	(0.220)	(0.0792)	(0.456)	(0.218)	(0.216)	(0.121)	(0.0582)	
UI*Layoff	-0.00195*	-0.000425	-0.00250***	-0.000193	-0.00755***	0.00458	0.000911	-0.000404	
prevalence	(0.00116)	(0.000285)	(0.000925)	(0.00641)	(0.00272)	(0.00319)	(0.00126)	(0.000618)	

Table A. 4: Increasing Sample's Population Mean

Sex-Pooled

Note: Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. We increased the sample mean by first dropping schools in locations with a population of less than 5000, then dropping observations that were greater than 4 standard deviations from the mean. See Table 1 for dependent variable data definitions. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Sex-Pooled								
		Expulsions			Suspensions		Law Enf	forcement
VARIABLES					Out-of-school	Out-of-school		
	With Services	No Services	No Tolerance	In-School	Multiple	Single	Referrals	Arrests
Layoff	-0.00240**	-0.00135**	-0.00186***	-0.0137***	-0.00217	-0.000335	-0.00111	0.000398
Prevalence _(t-1)	(0.000935)	(0.000590)	(0.000556)	(0.00411)	(0.00206)	(0.00186)	(0.00147)	(0.000620)
UI (t-1)	-0.114	0.0665	-0.148**	0.735*	1.038***	1.570***	0.180*	0.165***
	(0.0898)	(0.0439)	(0.0586)	(0.410)	(0.189)	(0.193)	(0.0946)	(0.0505)
Female								
		Expulsions			Suspensions		Law Enf	orcement
VARIABLES					Out-of-school	Out-of-school		
	With Services	No Services	No Tolerance	In-School	Multiple	Single	Referrals	Arrests
Layoff	-0.000785**	-0.000559**	-0.000641***	-0.00493***	-0.000896	0.000437	-0.000339	8.19e-05
Prevalence _(t-1)	(0.000307)	(0.000228)	(0.000244)	(0.00166)	(0.000852)	(0.000641)	(0.000505)	(0.000217)
	0.0271	0.0156	0.064044	0.0570		0.400%	0.0670*	0.0270*
UI (t-1)	-0.0271	0.0156	-0.0643**	0.0572	0.456***	0.488***	0.0670*	0.0372*
	(0.0342)	(0.0202)	(0.0265)	(0.164)	(0.0825)	(0.0725)	(0.0390)	(0.0204)
Mala								
Iviale								
		Expulsions			Suspensions		Law Enf	forcement
VARIABLES					Out-of-school	Out-of-school		
	With Services	No Services	No Tolerance	In-School	Multiple	Single	Referrals	Arrests
X 00		0.000,000	0.00100.00	0.00001.001	0.00106	0.000	0.000	0.00001.5
Layoff	-0.00162**	-0.000790**	-0.00122***	-0.00881***	-0.00128	-0.000772	-0.000776	0.000316
Prevalence _(t-1)	(0.000714)	(0.000388)	(0.000329)	(0.00266)	(0.00146)	(0.00139)	(0.00104)	(0.000443)
TT	0.0967	0.0500	0.0923**	0 679**	0 591***	1 001***	0.112*	0 1 2 9 * * *
UI (t-1)	-0.0807	0.0309	-0.0832^{**}	0.078^{**}	(0.120)	1.081^{++++}	0.113^{*}	0.128^{***}
	(0.0040)	(0.0520)	(0.0340)	(0.203)	(0.129)	(0.155)	(0.0003)	(0.0347)

Table A. 5: Impact of Lagged Layoff Prevalence and Lagged UI on Disciplinary Incidence

Sex-Pooled								
		Expulsions			Suspensions		Law Enf	orcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.00879**	-0.000117	0.00388*	-0.0161	0.0289**	0.00759	0.00287	-0.00375
Prevalence _(t-1)	(0.00441)	(0.00156)	(0.00224)	(0.0304)	(0.0145)	(0.0124)	(0.00654)	(0.00312)
UI _(t-1)	-0.108	0.0672	-0.144**	0.734*	1.055***	1.574***	0.183*	0.163***
	(0.0892)	(0.0440)	(0.0576)	(0.410)	(0.189)	(0.192)	(0.0949)	(0.0506)
$UI_{(t-1)}$ *Layoff	-0.00270**	-0.000297	-0.00139**	0.000581	-0.00750**	-0.00192	-0.000964	0.00100
Prevalence _(t-1)	(0.00109)	(0.000440)	(0.000618)	(0.00701)	(0.00334)	(0.00289)	(0.00168)	(0.000759)
Female								
		Expulsions			Suspensions		Law Enf	orcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.00264*	0.000332	0.00121	-0.00870	0.00881	-0.000248	0.00152	3.69e-05
Prevalence _(t-1)	(0.00138)	(0.000665)	(0.00106)	(0.0135)	(0.00602)	(0.00447)	(0.00316)	(0.00164)
UI (t-1)	-0.0216	0.0160	-0.0589**	0.0589	0.466***	0.496***	0.0677*	0.0366*
	(0.0320)	(0.0200)	(0.0234)	(0.165)	(0.0826)	(0.0720)	(0.0389)	(0.0203)
$UI_{(t-1)}$ *Layoff	-0.000852**	-0.000215	-0.000476	0.000886	-0.00237*	0.000114	-0.000448	1.52e-05
Prevalence _(t-1)	(0.000382)	(0.000179)	(0.000309)	(0.00311)	(0.00140)	(0.00105)	(0.000763)	(0.000383)
Male								
		Expulsions			Suspensions		Law Enf	orcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.00621*	-0.000450	0.00274**	-0.00739	0.0201*	0.00796	0.00134	-0.00379*
Prevalence _(t-1)	(0.00335)	(0.00109)	(0.00140)	(0.0188)	(0.0104)	(0.00991)	(0.00545)	(0.00205)
UI (t-1)	-0.0823	0.0511	-0.0810**	0.679**	0.593***	1.086***	0.115*	0.126***
	(0.0638)	(0.0321)	(0.0341)	(0.265)	(0.129)	(0.134)	(0.0664)	(0.0347)
$UI_{(t-1)} *Layoff \\ Prevalence_{(t-1)}$	-0.00189**	-8.20e-05	-0.000958**	-0.000344	-0.00517**	-0.00211	-0.000512	0.000993**
	(0.000795)	(0.000295)	(0.000372)	(0.00437)	(0.00239)	(0.00231)	(0.00135)	(0.000504)

Table A. 6: Lagged Impact of Unemployment Insurance and Lagged LayoffPrevalence Interaction on Disciplinary Incidence

Sex-Pooled								
Main Specifica	ation							
		Expulsions			Suspensions		Law Enf	forcement
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	-0.00188***	6.33e-05	-0.000746**	-0.0119**	0.00294	-0.00771***	9.02e-06	0.00154**
prevalence	(0.000590)	(0.000212)	(0.000336)	(0.00552)	(0.00241)	(0.00254)	(0.00141)	(0.000628)
UI	-0.444***	-0.519***	-0.377***	2.107***	0.880***	2.453***	-0.388***	0.0897
	(0.139)	(0.179)	(0.0860)	(0.523)	(0.239)	(0.244)	(0.135)	(0.0718)
Interacted Mo	del							
Layoff	0.00120	0.00217**	0.00666**	-0.0104	0.0240**	-0.0212*	-0.00556	0.00356
prevalence	(0.00363)	(0.000991)	(0.00278)	(0.0238)	(0.0110)	(0.0114)	(0.00436)	(0.00254)
UI	-0.434***	-0.512***	-0.354***	2.111***	0.946***	2.410***	-0.406***	0.0962
	(0.137)	(0.178)	(0.0798)	(0.522)	(0.241)	(0.241)	(0.138)	(0.0721)
UI*Layoff	-0.000758	-0.000517**	-0.00182***	-0.000366	-0.00517**	0.00333	0.00137	-0.000498
prevalence	(0.000899)	(0.000244)	(0.000687)	(0.00550)	(0.00256)	(0.00267)	(0.00112)	(0.000629)

Table A. 7: Impact of Layoffs on Disciplinary Incidence with July UI Schedules

Table A. 8: Impact of Layoffs and Unemployment Insurance on Aggregate Disciplinary Incidence

Sex-Pooled		
VARIABLES		
	Total	Total
	Suspensions	Expulsions
Layoff	-0.00489	0.0123*
Prevalence	(0.0338)	(0.00636)
UI	3.720***	-1.056***
	(0.511)	(0.255)
	0.00207	0.00275**
U1*Layoff	-0.00287	-0.003/5**
Prevalence	(0.00783)	(0.00158)
	1	

Note: "Total" measures are constructed through summing the sub-categories of each measure (i.e., "Total Suspensions" is the sum of in-school, out-of-school single and multiple suspensions for a given school-year combination). Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table A. 9: Impact of Layoffs and Unemployment Insurance on DisciplinaryIncidence Including State-by-year Fixed Effects

Sex-Pooled								
	Expulsions			Suspensions			Law Enforcement	
VARIABLES	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.00395	0.00775***	0.00815***	0.0257	0.00228	0.0247**	0.00236	0.00324
Prevalence	(0.00383)	(0.00210)	(0.00313)	(0.0245)	(0.0113)	(0.0107)	(0.00451)	(0.00290)
UI	1.125***	-0.103	0.206	-1.424	5.552**	6.367**	1.179	0.355
	(0.352)	(0.261)	(0.142)	(4.126)	(2.807)	(2.497)	(2.983)	(1.480)
UI*Layoff	-0.00138	-0.00193***	-0.00220***	-0.00882	0.000494	-0.00741***	-0.000489	-0.000414
Prevalence	(0.000966)	(0.000518)	(0.000781)	(0.00569)	(0.00266)	(0.00255)	(0.00115)	(0.000716)

Table A. 10: Impact of Layoffs and Unemployment Ins	surance on Disciplinary
Incidence for High-Discipline Schools	

Sex-Pooled								
VARIABLES	Expulsions			Suspensions			Law Enforcement	
	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.000623	0.00505***	0.0111**	0.0284	0.0261*	-0.00915	-0.00192	0.00677**
Prevalence	(0.00588)	(0.00178)	(0.00453)	(0.0347)	(0.0141)	(0.0146)	(0.00528)	(0.00326)
UI	-0.474***	-0.702***	-0.261***	4.521***	0.371*	2.232***	-0.221*	0.0103
	(0.128)	(0.214)	(0.0659)	(0.571)	(0.225)	(0.241)	(0.124)	(0.0614)
UI*Layoff	-0.000808	-0.00120***	-0.00311***	-0.0106	-0.00544	-0.000811	0.000489	-0.00155*
Prevalence	(0.00150)	(0.000442)	(0.00114)	(0.00832)	(0.00336)	(0.00349)	(0.00137)	(0.000833)

Note: To stratify the sample, the median in-school suspension rate was calculated for each school during our time period. The sample median was then calculated and schools whose median suspensions were greater than the sample median were considered high-discipline schools and schools below the sample median were low-discipline schools. This sample stratification cuts our sample size in half, with 50 percent of schools being designated as high-discipline and 50 percent as low-discipline. Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. See Table 1 for dependent variable data definitions. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table A. 11: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence for Low-Discipline Schools

Sex-Pooled								
VARIABLES	Expulsions			Suspensions			Law Enforcement	
	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	0.000310	0.000533	0.00300	0.0186	0.0129	-0.0149	-0.00388	-0.00297
Prevalence	(0.00427)	(0.00116)	(0.00334)	(0.0150)	(0.0162)	(0.0161)	(0.00742)	(0.00359)
UI	-0.0715	0.0866	-0.107	0.188	1.092***	1.358***	0.184	0.267***
	(0.172)	(0.0648)	(0.0828)	(0.304)	(0.319)	(0.256)	(0.150)	(0.0700)
UI*Layoff	-0.000204	-0.000245	-0.000708	-0.00625*	-0.00277	0.00376	0.000979	0.00152*
Prevalence	(0.00103)	(0.000290)	(0.000805)	(0.00343)	(0.00376)	(0.00374)	(0.00178)	(0.000897)

Note: To stratify the sample, the median in-school suspension rate was calculated for each school during our time period. The sample median was then calculated and schools whose median suspensions were greater than the sample median were considered high-discipline schools and schools below the sample median were low-discipline schools. This sample stratification cuts our sample size in half, with 50 percent of schools being designated as high-discipline and 50 percent as low-discipline. Layoff prevalence is reported in layoffs per 10,000 workers and all dependent variables are per 100 students enrolled. We include school and year fixed effects in all specifications. As differences across middle and high schools were not significant in any specification, we exclude this coefficient from the results presented above. See Table 1 for dependent variable data definitions. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Sex-Pooled								
VARIABLES	Expulsions			Suspensions			Law Enforcement	
	With Services	No Services	No Tolerance	In-School	Out-of-school Multiple	Out-of-school Single	Referrals	Arrests
Layoff	-0.000282	0.00112*	0.00104	-0.000374	3.35e-05	-0.00351	0.153	-0.000989
Prevalence	(0.00137)	(0.000579)	(0.000979)	(0.00989)	(0.00469)	(0.00491)	(0.102)	(0.00252)
UI	0.115	0.0376	0.0356	1.294*	-0.550	3.193***	2.109	0.306
	(0.0897)	(0.0758)	(0.0602)	(0.726)	(0.404)	(0.367)	(3.516)	(0.193)
UI*Layoff	-0.00252	-0.00158	-0.00298*	-0.0205	0.00416	-0.00534	-0.258	0.00235
Prevalence	(0.00229)	(0.00106)	(0.00174)	(0.0155)	(0.00759)	(0.00801)	(0.175)	(0.00321)

Table A. 12: Impact of Layoffs and Unemployment Insurance on Disciplinary Incidence when Using Minimum UI Benefits