What to expect when COVID-19 lockdown ends? Individual expectations about the labor market and re-openings*

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Abstract

We study how individual subjective expectations about the labor market responded to re-openings after lockdowns. State governments issued strict lockdown orders to stop the spread of COVID-19 in spring 2020. Officials planned that subsequent re-openings would kick-start the economy, bring back jobs, and install optimism about a fast economic recovery. We argue that re-openings were largely unsuccessful in shifting labor market expectations in a positive direction. Analyzing survey data on expectations about earnings from employment and the probability of job loss, we estimate the causal effect of re-openings on these expectations. We find that in May 2020 individuals expected significantly lower earnings compared to their levels before the pandemic and incomplete recovery in six months' time. Using a difference-in-differences model, we find causal evidence that long-run earnings expectations improved significantly as a result of the re-opening. In contrast, expectations about the immediate future and about job loss were unaffected. As previous studies analyzed if lockdowns had a dampening effect on economic activity, our results add the dimension of expectations as important predictors and drivers of economic outcomes.

Keywords: COVID-19, Pandemic, Lockdown, Re-opening, Labor markets, Labor Income, Job Loss, Beliefs, Expectations.

JEL classification: J2, J3, D84, H12

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1. Introduction

In response to the coronavirus pandemic, numerous governments around the world issued stay-at-home orders and initiated shutdowns of large parts of the economy to mitigate the spread of the virus. In the spring of 2020, more than half of the global population lived under some form of lockdown regulation issued by their respective governments (Sandford 2020). Like many other countries, the United States was struck hard by the pandemic, with both stay-at-home and business closure orders issued in most states.[1] These lockdown orders were largely viewed as one main cause of the substantial slowing down of the economy and the grim state of the labor market that followed the global spread of COVID-19. Perceiving a clear trade-off between mitigating the spread of the virus and ensuring economic stability, US governors initiated re-openings in most states a few weeks after initial lockdown orders had been issued.

In this paper, we study the causal effect of re-openings after initial government-ordered shutdowns on individual expectations. Unlike most previous contributions analyzing the economic impact of lockdowns, we focus on a different time period and the transition out of lockdowns, rather than their initial introduction or their progression of varying length. We analyze two dimensions of subjective beliefs about the labor market at the end of the first wave of COVID-19 infections in the US. Like many other scholars, we study perceptions about unemployment risk. Besides expectations about job loss, we also study expectations about earnings from employment, which have not received much attention thus far. In the context of the pandemic, the repeal of lockdown orders represented a key policy tool that targeted both real and expected economic recovery. Governments considered re-openings the most important step toward stabilization in consumption and employment. We argue that, contrary to this belief, re-openings were largely unsuccessful in shifting labor market expectations in a positive direction. In line with other studies, we find that expectations concerning unemployment risk did not respond to the policy, but were driven by large-scale state-overreaching factors. In addition, the repeal of lockdown orders did not improve expectations for the immediate future in either dimension.

We base our analysis on a survey in which we measured expectations regarding persons' own labor earnings and their perceived probability of job loss conditional on employment in May 2020. In two survey rounds, participants from the states of Illinois (IL) and Georgia (GA) were asked about their labor market expectations in two pairs of survey items. In the first pair of questions, we elicited expectations about the very near future and, in the second pair, we asked about expectations as far into the future as November 2020. Respondents filled out the survey while either living under a lockdown or having already experienced a re-opening of the economy: Illinois was still under lockdown in wave one, but had reopened prior to wave two, whereas Georgia was not under lockdown in either wave. Based on the data we collected, we find that expected income from employment in May 2020 is significantly lower than what individuals used to earn before the COVID-19 outbreak in both states. We find evidence that individuals expected some recovery later in the year. In six-month time, respondents expect an earnings increase, but they do not expect full convergence back to pre-pandemic earnings levels. In alignment, a significantly lower probability of job loss in the five months after next month is expected in both states. Our survey design allows us to estimate the causal effect of the re-opening on subjective expectations in a difference-in-difference

[1] According to the US Centers for Disease Control and Prevention (CDC), at the peak of the first wave of the COVID-19 pandemic, there were up to 34,893 new infections reported in a single day (CDC 2021*b*); 635,000 Americans are estimated to have died for reasons attributable to the SARS-CoV-2 virus spread between January 1 and June 30, 2020 (CDC 2021*a*).

model. We find that six-month ahead job earnings expectations improve significantly. In contrast, job loss expectations are unaffected. Our interpretation of this result is that expectations about earnings and job loss were driven by different factors. The repeal of state-wide lockdown orders was perceived as a positive signal only as far as earnings are concerned. While the government's decision to reopen likely made the commitment of the government to contain the economic crisis salient to its citizens, it did not act to decrease individual fear of job loss.

In the period since the onset of the COVID-19 pandemic, many scholars have studied the negative effects of lockdowns on the economy as a whole and on labor markets in particular (Adams-Prassl et al. 2020, Albanesi & Kim 2021, Cajner et al. 2020, Chetty et al. 2020). In previous contributions, authors are primarily interested in estimating the direct effect of business closures and stay-at-home orders on important economic and labor market indicators, like unemployment insurance (UI) claims (Baek et al. 2021, Kong & Prinz 2020) and vacancy postings (Forsythe et al. 2020). In contrast, this paper focuses on the interrelation between re-openings and subjective expectations. Our work is motivated by the growing literature on expectations measurement in economics (Manski 2004) and on the growing body of evidence on the relevance of subjective beliefs for decision making.[2] In the context of COVID-19, we add to a number of studies that examine how subjective beliefs and expectations developed as the first wave of the COVID-19 pandemic progressed. Armantier et al. (2021) look at inflation expectations in the New York Fed's Survey of Consumer expectations and report high levels of uncertainty and conflicting views on future inflation among respondents. Based on a survey experiment, Binder (2020) further shows that individuals were largely unaware of the Fed's interest rate cut in the wake of the pandemic and that an information treatment did not decrease disagreement in inflation expectations significantly. Similarly, Coibion et al. (2020) do not find an effect of various types of information presented to survey respondents on their plans and expectations. In our survey analysis, we focus on a different set of expectations - namely expectations concerning the labor market. We analyze the shifts and causal responses to the re-opening on earnings and job loss expectations. Expectations regarding the probability of job loss are discussed in Adams-Prassl et al. (2020) in the case of the US, the UK, and in Germany, and in Von Gaudecker et al. (2020) based on survey data for the Netherlands. Both papers provide mostly descriptive evidence, agreeing that fears and uncertainty about employment were greater in the US as compared to the UK and Europe. In the absence of short-time work and furlough schemes, it is likely that managing expectations with regards to labor market stability was a much more pressing policy target in the US than in other developed countries - a consideration that further adds to the importance of measuring and analyzing beliefs. We contribute to this literature by introducing a novel dataset specifically aimed at measuring shifts in labor market expectations in response to re-openings. Hence, this study is one of the few that contribute any evidence on the relationship between re-openings and individual expectations.

We further speak to the literature on the direct effect of non-pharmaceutical interventions on the labor market. In addition to employment and job loss during COVID-19 that is extensively analyzed, we add the dimension of earnings from employment and study individual beliefs associated with this variable. So far, evidence on the extent to which lockdowns contributed to the COVID-19 economic recession is not entirely conclusive. According to the most conservative estimates from Baek et al. (2021), at most half of the unemployment insurance claims in the US in March and April 2020 were due to stay-at-home orders. Based on Google Search data as a proxy for labor market statistics,

[2]To name a few, several topics where belief elicitation and its usefulness are now long established include college major choice (Wiswall & Zafar 2015), school dropout decisions (Stinebrickner & Stinebrickner 2012), career choice (Arcidiacono et al. 2020), and choices about retirement savings (Dominitz et al. 2002).

Kong & Prinz (2020) analyze non-pharmaceutical interventions announcement in an event study and conclude that only the restrictions on bars and restaurants, and non-essential businesses contributed significantly to the surge in unemployment insurance claims. Goolsbee & Syverson (2021) estimate that 12% of consumption decline was caused by shelter-in-place orders. As the authors note, the results suggest that lockdown measures were one, but not necessarily the primary, cause of the economic decline in 2020 as a whole and of the US labor market slowdown in particular. Instead, the epidemiological situation itself (Rojas et al. 2020), the subjective individual fear of infection (Goolsbee & Syverson 2021), and resulting "self-imposed behaviors" (Mendolia et al. 2021) were equally important. To the best of our knowledge, to date the effect of re-openings is only discussed in Chetty et al. (2020). While we focus on the causal relation between re-openings and expectations, Chetty et al. (2020) estimate the effect of re-openings on spending, small business activity, and employment in a difference-in-difference regression based on different states and earlier time windows than the one we study. The authors find that consumer spending was almost identical between states still under lockdown versus states that had already reopened. The same holds true for employment and time spent outside the home. There was a noticeable increase in small businesses that had opened after they were allowed to, which, however, did not generate overall noticeable alterations in spending or employment. The authors conclude that it was not the shutdowns themselves, but rather people's health concerns that were the main drivers of the economic decline during the time of the lockdown. The current study differs from that of Chetty et al. (2020) in the states and time periods that are analyzed as well as the outcome variables, thereby further enhancing the understanding of the effects that re-openings had on the labor market.

The remainder of this paper is organized as follows. In Section 2 we elaborate on our survey design and the data we collected. Section 3 outlines our empirical strategy. Section 4 presents and discusses our results. Section 5 concludes.

2. Survey Implementation

2.1 Survey Design

To measure changes in individual labor market expectations as states moved past the period of business closures and stay-at-home orders, we designed a survey that was distributed online to participants from the US states of Georgia and Illinois. Re-openings happened gradually in most states with some types of businesses opening earlier than others. For this analysis, we define a state's re-opening as the point in time when the stay-at-home order was lifted and businesses were allowed to be visited by customers. Each participant in our survey was contacted once between May 20 and May 28, 2020, and a second time between June 11 and June 25, 2020. The survey was implemented in *Qualtrics* and sent out to the representative panel of respondents of an international survey provider. Respondents were remunerated for completing the survey.

The panel data we collected with the survey informs about two key dimensions of individual perceptions about the labor market in the context of the COVID-19 pandemic: their expected monthly earnings from their main job and the perceived probability to lose that job conditional on employment at the time of the survey. In both waves of our survey, all participants were requested to state their expected earnings in the current month and in November 2020, as well as their perceived probability of job loss in the next thirty days and in the next six months. We elicited expected monthly earnings by asking participants to assign their earnings to one of seven net monthly earnings brackets (less than 800 USD, from 801 to 1,200 USD, from 1,201 to 2,000 USD, from 2,001

to 3,000 USD, from 3,001 to 5,000 USD, from 5,001 to 10,000 USD, or more than 10,001 USD). The corresponding net yearly earnings amounts were provided in parenthesis in addition to the monthly amounts. While measuring income in answer categories introduces loss of details in the collected information, these reductions in detail are typically not severe enough to influence data quality for most of the population (Micklewright & Schnepf 2010). In addition, this simplified way of eliciting information on an underlying continuous variable is shown to reduce non-responses and mitigate the occurrence of outliers (Yan et al. 2010). Prioritizing high response rates given the limited sample size our budget would allow, we opted for answer categories versus, for example, an open text field. To measure expectations about job loss, we asked about the perceived probability of job loss within the next thirty days and within the next six months (including the next month) on a slider-scale between 0 and 100 percent in 1 point increments. The exact wording of the four survey items is included in 6.1. In addition to the main outcomes of interest, we elicited a set of demographic characteristics and controls related to the individual's past and current employment situation. Important control variables include, among others, age, gender, education level, and pre-pandemic level of labor earnings, further referred to as "Earnings BP".

2.2 Survey States

In order to measure the change in subjective beliefs not only as a function of calendar time elapsed since the global spread of the Sars-CoV-2 virus but also as a result of state re-openings, we surveyed a state that experienced a repeal of stay-at-home and business closure orders between the two survey rounds, as well as a suitable control state. At the time the survey went in the field, one large, politically, and economically important state that was yet awaiting re-opening was Illinois. Georgia was a state comparable to Illinois according to a number of demographic and economic indicators that was certain to not experience any major changes in COVID-19 restrictions in the weeks to come. Therefore, we chose to survey Illinois and Georgia. Table 1 below summarizes data on demographics and economic activity in the two states.

Table 1: State Comparison

	Illinois	Georgia
Population in million	12.7	10.6
Age (median)	38.0	36.5
Share of population that is female	50.9	51.4
Share of population that is White	76.8	60.2
Share of population that is Black	14.6	32.6
Share of population that is Hispanic	17.5	9.6
Share of population holding a Bachelor's degree	34.1	30.7
Average household size	2.6	2.7
Average per capita income in 2018 (USD)	34.463	29.523
Share of population in labor force between 2014 and 2018	65.1	62.4
GDP in Q4, 2019 (USD)	908.913	625.329
GDP growth in 2019 in %	1.6	2.0
Share of small business employees in 2018	44.8	42.8

Source: U.S. Census Bureau (2019), U.S. Bureau of Economic Analysis (2020), Statistics of US Businesses (2021)

The two states are relatively similar in population size, age, and household size. Illinois has a lower share of Blacks and Hispanics, individuals are on average better educated, and average per capita income is higher ($34.462 versus $29.523). While Georgia had higher GDP growth in 2019, labor

force participation and the share of small businesses in the two states are comparable. We note that while major structural differences would undermine the causal interpretation of re-opening effects, state comparability is most important in terms of trends of the outcomes we analyze. As our outcomes of interest are perceptions, it is not parallel trends in economic macro indicators, but parallel trends in general sentiments that determine validity directly. We discuss evidence on the latter in Section 3; next we turn to the timeline and specific details of the shutdown regulation in Illinois and Georgia.

2.3 Lockdown Orders

Illinois was still under lockdown during survey wave one, but not during survey wave two. Georgia had no lockdown order in place during either wave. The following provides a detailed timeline of events. In Illinois, the "COVID-19 Executive Order No. 8" took effect on March 21. This order required all residents of Illinois to stay at home, except for pursuing essential activities or running essential businesses and operations. These included healthcare operations, essential governmental functions, and infrastructure as well as agriculture, stores that sell groceries and medicine, media, gas stations, and financial institutions. All non-essential businesses had to shut down operations, except for remote work. Gatherings of any number of people not living in the same household were prohibited, the same held true for any non-essential travel. Initially, the order was set to expire on April 7 but was first prolonged to April 30 on March 31, and then, on April 23, it was announced that the order would stay in place until May 29 (COVID-19 Executive Order No. 8 2020). After May 29, Illinois entered its re-opening phase, with non-essential retailers and manufacturers being allowed to reopen, restaurants being allowed to reopen with outside seating and gatherings of up to 10 people being allowed (Ballotpedia 2021*b*).

In contrast, the timeline of shutting down the economy and its re-opening in Georgia differed significantly. On April 3, with order number 04.02.20.01, a far-reaching statewide shelter in place order became effective. As in Illinois, this executive order commanded residents "to shelter in place within their homes or place of residence" (Executive Order No. 04.02.20.01 2020) except for obtaining food supply and engaging in activities essential for their health. Non-essential travel was not allowed and gatherings of more than ten people were prohibited both in private contexts as well as in any establishment, business, or organization. It was further issued that all non-essential businesses only performed minimum basic operations to maintain their business. On April 30, the shelter in place order expired except for vulnerable groups. At the same time, businesses like gyms, barbers, and restaurants were allowed to reopen (McKibben 2020, Ballotpedia 2021*a*)

In sum, while the stay-at-home order and closure of restaurants and businesses had already been lifted in Georgia when we collected our first wave data, these restrictions were still in place in Illinois. Thus, when referring to the effects of re-opening in the context of our estimations, we specifically mean the effects of the repeal of stay-at-home orders and re-opening of restaurants, offices, and non-essential businesses for customers.

2.4 Survey Data

In total, we collected repeated responses on both the earnings and job loss expectations questions from 435 individuals in the state of Georgia and 481 individuals in the state of Illinois. All respondents were working for pay at the time they completed the first round of the survey.[3] Individuals in our sample are aged between 18 and 69, with mean ages 49.41 and 48.34 years in GA and IL, respectively. The largest group has a college education, or a Bachelor's degree (Middle Education). The fraction of individuals with a Master's Degree or higher (High Education) is 0.21 in the GA sample, and 0.23 in the IL sample. The female shares are 71.4% in GA and 58.6% in IL. This gender imbalance is due to the fact that response collection was slower than the survey provider we worked with predicted, especially so in Georgia. In order to collect a higher number of responses in the field time we defined *ex-ante*, several days after the survey went in the field, we loosened sampling restrictions and allowed for gender quotas to diverge from observed shares in the population. Since response rates were higher among women, our survey samples have higher shares of females.[4]

Table 2: Sample Statistics

	Illinois			Georgia		
	Man/Share	Max	Min	Man/Share	Max	Min
Earnings BP	4748.61	20000.00	400.00	4253.79	20000.00	400.00
Age	48.35	69.00	18.00	49.41	69.00	19.00
Female	0.59			0.71		
Education Level						
Low	0.11			0.15		
Middle	0.66			0.64		
High	0.23			0.21		
Individuals	962			870		

Summary of survey samples by state. The upper panel states means and standard deviations in parenthesis for our four outcomes of interest. Female and Education Level categories as fractions of the total number of respondents in the respective state. Mean of Earnings BP is calculated based on assigning a single value to each earnings category as discussed in the main text.

Finally, the average monthly labor Earnings BP amount to $4,253 in GA and $4,758 in IL. This is well in line with the fact that the average per capita income is lower in Georgia (see Table 2). We elicit the level of pre-pandemic earnings by asking about the "net (after-tax) amount of money [the individual] would usually earn per month from [their] current main job," "before the COVID-19 outbreak." For the calculations in this summary table and for our regressions, we assign each (expected) earnings category a single value. Details on how we transform and use our measurements as outcome variables, and on our empirical strategy follow in the next section.

[3] We also collected information from unemployed individuals. Due to the small sample size overall, we would expect estimations based on the responses of the sub-sample of the unemployed to lack any statistical power. Therefore, we refrain from performing additional analyses regarding the unemployed, while yet recognizing the importance of their experiences.

[4] According to the US census, see Table 1, women make up 51.4% of the population in Georgia and 50.9% of the population in Illinois. We verify that the results in the following sections of this paper are not driven by the gender imbalance, see Appendix 6.3

3. Empirical Strategy

3.1 Regression Framework

Given the timing and the design of our survey, we seek to analyze people's perceptions about labor market risks, as well as how these perceptions change as a direct result of the end of stay-at-home orders and the re-opening of the majority of non-essential businesses. In particular, we are interested in labor income and unemployment risks.

We use the data collected in the two survey waves to, first, describe how subjective expectations vary with gender, age, and the individual level of education. Next, we quantify how the time elapsed between the survey wave correlates with the expectations we elicit. Finally, we estimate difference-in-difference (DiD) regressions and pin down the local mean effect of loosening lockdown restrictions on expected monthly labor earnings and the expected probability to lose one's job conditional on employment in the month of May 2020. We define the treated state to be Illinois and we define the treatment period to be the period after the restrictions in Illinois were loosened. Thus, the treated observations are those collected in Illinois during the second wave of our survey. In particular, we estimate

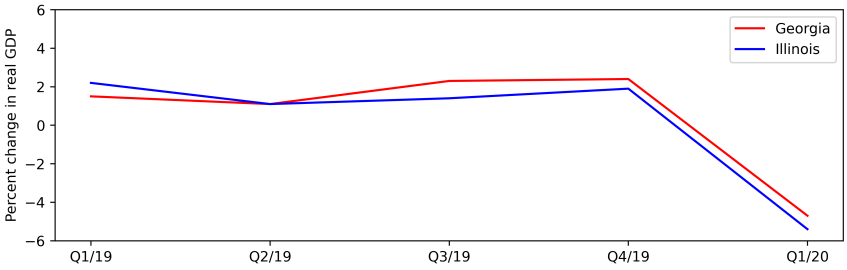
$$Outcome_j = \beta_{0j} + \beta_{stj} StateTime + \beta_{tj} Time + \beta_{sj} State + \beta_j X + \epsilon_{itj}. \tag{1}$$

We explain in detail how we define each outcome and control in the following subsection 3.1. The validity and the causal relevance of our DiD estimates hinge on the following assumptions, which we discuss next: i) unexpected policy change, ii) common trend before treatment, and iii) random treatment.

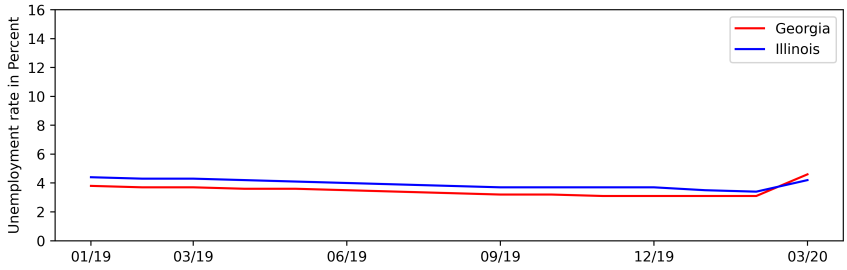
As stated in Section 2.2, the policy we analyze is the repeal of the strict lockdown orders in the state of Illinois at the end of May 2020. The status quo in the state of Illinois changed on May 29th in that the stay-at-home order was lifted, with restaurants and non-essential businesses allowed to fully open again. The end date of the strict lockdown in IL was publicly known at the time our first wave survey was in the field. As noted in section 2.3 though, two re-openings on earlier dates had already been announced before and then postponed on short notice. Some may have thought that a further postponement was possible. Any awareness about the change in governmental regulation in this particular setting, however, is unlikely to induce changes in individual behavior that, in turn, result in less or more exposure to the effect of the policy. Arguably, due to the fact that this study is interested in expectations, it can be the case that some of the effects that the policy had are already factored into our first wave measurements. In the scenario, our estimates would be biased downward, such that the effects we report can be interpreted as lower bounds. Alternatively, one can think of our estimates as the shift in expectations the end of lockdown induced via a specific channel. Namely, treated individuals could observe the extent to which peer behavior, consumer demand, and business operations return to pre-pandemic levels only after re-opening actually happened. This is an important margin since individual behavior in the wake of the pandemic was not only determined by restrictions but, to a great extent, by individual decisions to self-isolate and minimize in-person social interactions. Our estimates, thus, measure the changes in expectations induced by the actual changes observed in daily life upon the end of stay-at-home orders that were not fully predictable upon the announcement of the re-opening.

With our dependent variables being expectations, it is challenging to provide empirical evidence on parallel trends. In order to gain as much understanding as possible regarding the development of expectation in the period preceding the end-of-lockdown event, we look into a) trends of the underlying variables and b) indicators of overall concern regarding COVID-19 and the economy. Figure 1 shows that both GDP growth and the unemployment rate followed similar trends prior to the pandemic.

Figure 1: Common trends of GDP growth and the unemployment rate in Illinois and Georgia



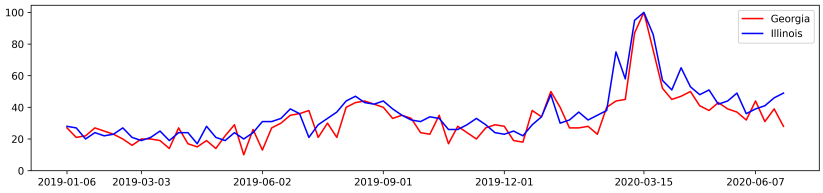
(a) GDP growth, IL and GA, 2019-2020



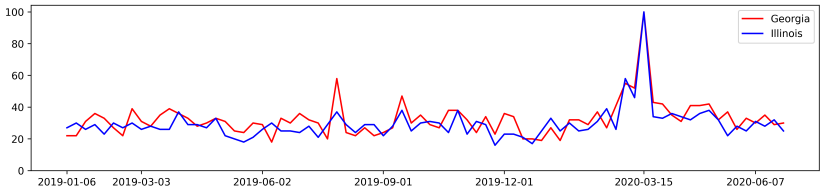
(b) Unemployment rate, IL and GA, 2019-2020

Figure 2 displays interest in the gold price, the interest rate, and unemployment benefits quantified in terms of volumes of Google searches per week from January 2019 to June 2020. In our view, the search terms "gold price" and "interest rate" are indicative of general concerns about the economy, while the term "unemployment benefit" relates to people's interest in government support in case of job loss. Since people might search for the term "unemployment benefit" the moment they believe their job to be at risk, we consider it a good proxy for labor market expectations. All three terms show similar fluctuations prior to the pandemic, with the highest volume occurring within the same week for each term.

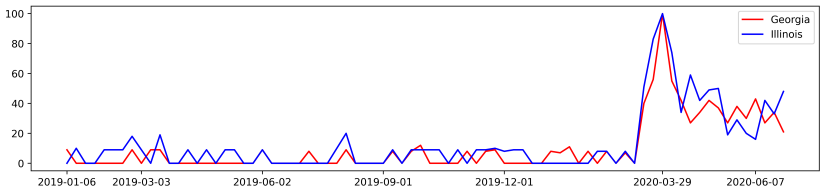
Figure 2: Google search volume over time, Georgia and Illinois



(a) Google searches for "gold price", January 2019 - June 2020



(b) Google searches for "interest rate", January 2019 - June 2020



(c) Google searches for "unemployment benefit", January 2019 - June 2020

Finally, it is unsurprising that the Democrat-governed state of Illinois decided to impose a lockdown order for longer than the Republican-governed state of Georgia. With a fair degree of certainty, however, one can expect that individuals did not move across states at this very early stage of the pandemic in order to avoid being in lockdown. Further, we have no reason to believe that re-opening should be interpreted as less a strong signal for daily life returning to normality in one state than in the other.

3.2 Outcome Variables

Subject to the assumptions discussed above, we analyze four outcomes all related to perceptions of labor market risks that were potentially exacerbated by the COVID-19 pandemic. The first pair of outcomes is related to the uncertainty of labor income flows. In the first wave, participants are asked to state their expected earnings for the months of May and November 2020. In the second survey round, the same individuals report their expectations for June and November 2020. This information allows us to assess changes in very short-run expectations, which we expect to be much less uncertain, and approximate six-months ahead expectations, which are potentially highly uncertain in the context of the 2020 crisis.[5]

In our survey, we ask respondents to choose one of seven earnings brackets to match their expected

[5]We elicit uncertainty measures for all expectations but we have not analyzed information on the expectation variances thus far.

monthly earnings from their current main job. For our empirical analysis, we assign each category a single value. We set the expected earnings variable of all individuals who reported to expect less than $800 to $400, and the earnings variable of all individuals who reported to expect more than $10,001 USD to $20,000 USD.[6] For reported earnings in all other categories, we assign the mean value of the category (e.g., an expectation of $801 to $1,200 is assigned the value of $1,000). This particular approach to coding the earnings variables has drawbacks; however, it is straightforward, tractable, and feasible given the modest size of our sample. An unfortunate feature of categorically recorded wages and wage expectations certainly is the fact that switches within - versus between - the categories are left unaccounted for. Given the categorical earnings expectations data, we can, as an alternative to using category means, either impose some assumption on the distribution within the category or focus on estimating the probability of switching to a different category. We believe distributional assumptions in our small sample are more problematic than insightful and, thus, refrain from taking the former approach. Since expectations in one category could switch to any other category, the latter approach is not as straightforward as using category means, because the results are hard to interpret. Therefore, we focus on analyzing the categorical data after assigning each category a single value as described above.

The second pair of outcomes we examine is related to individual subjective assessment of unemployment risk. In both survey waves, we elicit the probability of losing one's job, first, "within the next month" and, second, "within the next six months (including next month)." The short-run job loss probability outcome we use in our descriptive and regression analyses is given by the probability reported in the first question. We construct the six-months ahead job loss expectation outcome by subtracting the probability reported in the second question from the report in the first question. In this way, we obtain the expected probability for the subsequent five months. Provided that the survey participants understood the questions correctly, the latter outcome should be non-negative, i.e. the second probability respondents report should be larger than, or equal to, the first. We exclude 105 cases for which this is not the case.

Having discussed the specification of our outcomes of interest and the empirical methods we use, we now turn to our results.

4. Results

In this section we, first, provide a descriptive overview of the four expectations outcomes: the short- and long-run earnings expectations, as well as the short- and long-run job loss expectations. Second, we discuss time trends and correlations. Third, we turn to the estimation results of the causal effect of re-opening on expectations. Finally, we show suggestive evidence on treatment effect heterogeneity.

4.1 Tampered down expectations and expectations of modest recovery

Table 3 presents means and standard deviations of our four outcomes of interest.

In May 2020, our survey respondents expected to earn less than what they used to earn in their

[6] We recognize that the choice of latter value is arbitrary. As earnings are typically heavily right-skewed, we believe the mean of the highest category to be significantly higher than $10,000 USD. At the same time, we do not want our results to be driven by too high a value assigned to the top category. We regard $20,000 as a suitable value to impute. We verify that our results are robust to varying that value to $15,000 and to $30,000 USD.

Table 3: Descriptive Overview

	Illinois		Georgia	
	Wave 1	Wave 2	Wave 1	Wave 2
Expected Earnings 1-month	4222.42	4433.91	3843.99	3883.22
	(4417.78)	(4430.87)	(4068.36)	(3912.79)
Expected Earnings 6-month	4416.20	4511.44	4131.96	3888.85
	(4227.70)	(4327.49)	(4336.58)	(3731.12)
Probability Job Loss 1-month	18.31	17.93	15.23	13.15
	(24.92)	(25.00)	(21.58)	(19.95)
Probability Job Loss 6-month	8.99	6.39	7.73	5.55
	(15.37)	(11.22)	(13.53)	(10.19)
Individuals	412	418	301	295

Summary of outcomes of interest by state and survey wave. Means and standard deviations in parenthesis. Calculations for earnings variables are performed based on assigning a single value to each earnings category in the survey questionnaire.

main job before the COVID-19 crisis. As a reminder, the mean reported Earnings BP, as we present in an earlier section, are around $4,750 in Illinois and roughly $500 less in Georgia. In alignment, mean expected earnings in IL are higher than mean expected earnings in GA. As the recession in early 2020 was equally severe across the US., the proportional drop in expected earning we see here speaks to the relevance of expectations for predicting actual outcomes. The negative deviation of the expected income in May 2020 from individuals' typical monthly earnings is somewhat higher in IL, -11.0%, versus -9.6% in GA. The difference between the two is not statistically significant. According to the reports of the perceived probability of job loss in the current month conditional on employment in May 2020 from survey wave one, Illinois respondents perceive the risk of becoming unemployed as higher - the elicited mean probabilities are 18.3% and 15.3%, respectively. This difference is significant.

The two findings are consistent with the hypotheses that, one, regions with lockdown orders in place, and, two, regions where stay-at-home orders and business closures lasted longer experienced greater economic difficulties in 2020. Comparing IL and GA, the former state still had restrictive measures in place in May 2020, with the associated shutdown exceeding Georgia's total shutdown duration. However, many studies find that stay-at-home orders and business shutdowns had only modest effects on the surge in UI claims (Baek et al. 2021, Forsythe et al. 2020), the consumption decline (Goolsbee & Syverson 2021), and the decrease in discretionary mobility (Cronin & Evans 2020). By extension, these regulations might also not be the primary cause of the low labor earnings expectation reports we observe in our study. An alternative hypothesis is that fear of the virus itself induced people to act with caution, regardless of official regulations in place. Private information about one's own propensity to restrict social activity at the cost of foregone labor income as a response to one's personal assessment of the chances of infection and the severity of the COVID-19 disease is another key determinant of individual behavior that mediates expectations downward.

Given the two hypotheses, both a repeal of lockdown orders and a drop in the rate of infections should result in increased optimism about future labor income flows and the probability of keeping one's job. Indeed, respondents' answers in the first survey wave regarding the six-months ahead earnings expectation indicate that an increase in labor earnings later in the year was projected in both states. However, individuals do not expect that their earnings would return to their pre-

pandemic level by November 2020. Mean expected earnings for November 2020 still stand 4.8% below typical earnings before the Sars-CoV2 virus spread in IL, and 4.5% lower than their pre-pandemic level in GA. Similarly, we calculate a mean expected probability of job loss of 9.0% for IL and of 7.7% for GA over the five months following next month. This implies that respondents calculate, they stand a higher chance of keeping their current job over the next six months, as long as they do not lose it in the next thirty days.

Looking at the reports from the second survey wave, in Illinois, the earnings expectation for the current month - now June 2020 - increases by 5.1%, and the long-run expectation increases by 2.6%. In Georgia, expected earnings in the current month practically remain unchanged, while the expectation for earnings in November 2020 actually decreases. With respect to job loss expectations, all of the mean probabilities reported in the second round of the survey are lower compared to the reports from the first wave. The drop is significant for the long-run expectation in both states.

Contrasting employment and job loss expectations elicited in wave one versus wave two in GA, where no change in governmental regulation took place, distinct patterns emerge. While individuals become more optimistic in the case of employment prospects, earnings expectations do not improve. Thus, the time trend in GA is unclear, pointing to the fact that different factors determine sentiments about the two margins we measure. The weeks between the two survey rounds were marked with persistently high levels of uncertainty about the pandemic's development. On the one hand, the ongoing state of public health crisis could have contributed to rising levels of pessimism. On the other hand, the prospects of a breakthrough in vaccine development and the downward trend in new COVID-19 cases at the time could have improved expectations instead. As it is unclear which effect is stronger, both a positive and a negative time trend in general sentiments seem plausible. Our data points to the fact that while developments unrelated to shutdowns might have tempered down fears of job loss, they did not provide a basis for rising optimism when it comes to earnings. In turn, this suggests that the respondents' expectations about developments on the extensive and the intensive margins did not necessarily evolve in a parallel fashion.

In Illinois, apart from a general time trend, any changes in expectations are potentially also due to the state re-opening. We hypothesize that it is more likely that the end of the lockdown induced an improvement of expectations. We expect that the prospect of business operations resuming contributed both to higher expected earnings and lower expected probability of job loss. In addition, we expect that individuals might have interpreted the government's decision to reopen as a signal that policymakers wish to prioritize economic stability and seek to communicate that the state is capable of handling the public health crisis even when social life resumes. Yet, as Aum et al. (2021) show in a modeling exercise, a plausible scenario at the time was that restarting social activities would result in an immediate spike of infections triggering a new round of unavoidable closures, and, ultimately, an even more severe recession. We hypothesize that former effects still dominate and expect a positive shift in expectations as a result of the re-opening. In this, we argue that lockdown orders and subsequent re-openings were a policy tool that helped governments manage expectations as the COVID-19 pandemic progressed. If this is so, over and above any direct effects on employment and earnings, shutdowns and re-openings may have played a key role in shaping people's labor market expectations and may have influenced economically relevant decisions and outcomes to a greater extent than currently assumed.

Before we turn to the analysis of the causal impact of the re-opening on the expectations we measured, we perform and discuss some basic regressions, which help gain further insight into the

interplay between states, time points, and demographic characteristics in our data.

4.2 Distinct patterns in trends and correlations between job loss and earnings expectations

Table 4 summarizes our regression coefficients from three sets of regressions on the short- and long-term earnings expectations each. Columns (1) present regressions where we pool together data on each outcome over both states and survey waves. The explanatory variables in these pooled ordinary least squares (OLS) regressions are gender, age, and education. In columns (2) we add time fixed effects, thus focusing on within panel variation. In columns (3) we estimate individual fixed effects regression and, in turn, isolate time-varying effects. The results of the time fixed effects regressions summarize the within-individual changes of expectations from survey wave one to survey wave two. Table 5 follows the same structure and presents the three types of regression results for the job loss expectation outcomes.

Table 4: Expectations about monthly earnings

	1-month Expectation			6-month Expectation		
	(1)	(2)	(3)	(1)	(2)	(3)
Female	−1605.216***	-1605.216***		−1690.800***	-1605.216***	
	(0.000)	(0.000)		(0.000)	(0.000)	
Age	−2.086	-2.086		−0.338	-2.086	
	(0.790)	(0.818)		(0.965)	(0.818)	
Education	1984.030***	1984.030***		1934.292***	1984.030***	
	(0.000)	(0.000)		(0.000)	(0.000)	
State	326.172	326.172		304.467	326.172	
	(0.132)	(0.141)		(0.158)	(0.141)	
Time	103.811		103.951	−68.341		-63.318
	(0.634)		(0.356)	(0.750)		(0.550)
Constant	2736.186***	2788.167***	4082.056***	3002.157***	2788.167***	4305.546***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1378	1378	1378	1375	1378	1375

The dependent variable in the left part of the table is the value of labor earnings individuals expect to receive in the month in which they were surveyed; the dependent variable in the right part of the table is the value of labor earnings individuals expect to receive six months after the months in which they were surveyed. Regressions are performed with a strongly balanced sample. Significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01.

Looking at earnings expectations, we see that the coefficients of *education* and *female* are highly significant. The higher the education level, the higher the expected earnings. Women expect significantly lower earnings than men. This pattern is known from standard Mincer wage regressions. As the general level of earnings of the individual is likely to be strongly positively correlated with earnings expectations, the coefficients of our regressions capture both the correlation between the covariates and the general level of individual earnings and the expectation. In Appendix 6.2 we add Earnings BP to the pooled OLS regression. As expected, the coefficient on the additional regressor contributes significantly to explaining the variation in the reported expectations of labor earnings. The female dummy and the level of education coefficients change level but remain significant at the five percent level (expect for *female* in the 1-month expectation regression, which is significant only at the 10% level). In sum, this implies that women and less educated individuals are more pessimistic about their earnings prospects. These demographic groups typically place lower on the

earnings distribution. In previous research, Adams-Prassl et al. (2020) and Cajner et al. (2020) show that they have also been struck harder by the COVID-19 pandemic. The current regression results hint at the fact that women and the lower educated were also more pessimistic in their beliefs implying alignment between perceptions and experiences. We choose to not carry Earnings BP further through our regression analysis since the coding of the variable is subject to the lack of accuracy error we introduce by assigning categorical responses a single numerical value. Finally, age is typically a proxy for labor market experience and is, therefore, another key predictor of earnings from employment. According to our regressions, it, however, does not appear to be significantly correlated with expected earnings. Individuals of all ages expect uniformly lower earnings than what they used to earn before the pandemic.

Table 5: Expectations about job loss

	1-month Expectation			6-month Expectation		
	(1)	(2)	(3)	(1)	(2)	(3)
Female	−1.940	-1.940		0.187	0.187	
	(0.133)	(0.132)		(0.808)	(0.810)	
Age	−0.254***	-0.254***		0.026	0.026	
	(0.000)	(0.000)		(0.390)	(0.404)	
Education	−2.225*	-2.225**		1.065**	1.065	
	(0.052)	(0.041)		(0.042)	(0.108)	
State	3.702**	3.702**		1.060	1.060	
	(0.002)	(0.003)		(0.150)	(0.159)	
Time	−1.159		-0.863	−2.433***		-2.355***
	(0.343)		(0.295)	(0.001)		(0.001)
Constant	30.799***	30.219***	16.913***	5.233**	4.034**	8.431***
	(0.000)	(0.000)	(0.000)	(0.003)	(0.029)	(0.000)
Observations	1425	1425	1425	1215	1215	1215

The dependent variable is the individual expected probability to lose one's main job in the short-run (left) and in the longer run (right); Regressions are performed with a strongly balanced sample. Significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01.

Our demographic controls appear to correlate very differently with the unemployment risk expectations; see Table 5. In particular, while expected earnings do not seem to differ by age, older individuals report a significantly lower expected probability of job loss in the immediate future. The coefficients imply a decrease in the expected probability to lose one's job of 0.25 percentage points for a unit increase in age.[7] As higher age usually implies more years on the job, this suggests that experienced workers feared job loss less than young, inexperienced workers. Women and persons with lower education degrees also assess the probability of losing their job within the next month lower than men and the high educated individuals. It follows that these two groups appear to be more pessimistic about their earnings chances, but more optimistic about their chances to keep their main job in the immediate future. There is no significant correlation between the controls and long-run job loss expectations, with one exception: individuals with higher education are more pessimistic. In sum, heterogeneity appears to take different forms on the intensive and extensive margin when it comes to subjective expectations.[8] Gender and education, which are typically predictive

[7]The inclusion of Earnings BP is not crucial for interpreting the regression results for this set of outcomes. The last two columns of Table 7 in Appendix 6.2 show that including Earnings BP does not change the results. The coefficient on Earnings BP is insignificant.

[8]We note that this interpretation is not to be generalized without caution, because the sample we study is selected based on employment in the month of May 2020.

of occupational choices, appear strongly correlated with expected earnings during the pandemic. Age, which is typically a proxy for tenure, and the level of job and task-specific experience, in turn, correlates with the expected probability of job loss. This suggests that expected labor income losses at the beginning of the COVID-19 crisis were related to the type of job, contract type, and occupation the person had at the start of the pandemic. Expected job loss appears to be rather associated with lack of tenure - less experienced workers feel they will be the ones to lose their job, should their employer experience difficulties due to the crisis.

In column (2) we add time fixed effect thus eliminating all variation across time. The results from this specification do not differ much from the estimates in the pooled OLS regressions. The inclusion of state as an independent variable in the time-fixed effects model alters neither the significance nor the magnitude of most other coefficients. The state dummy is significant only for the 1-month job loss expectation, thus indicating that, in the short run, persons in Illinois were assigning a higher probability to the prospect of losing their job. Last, in column (3) we include the result of the individual fixed-effects model. In line with the discussion of sample means by survey round in the previous section, the *time* coefficient capturing changes within each individual between the two points in time is significant only in the case of the long-run views on subjective probability to lose one's job. The mean probability of job loss decreases in both states from wave one to wave two. Pooling all data together, the mean decrease discussed in the previous subsection results in a significant decrease in the fear of unemployment in the long run. Within individual changes of the earnings expectation across time in the pooled sample are insignificant. This is consistent with the fact that the mean expected earnings in IL increase from wave one to wave two, while mean expected earnings remain unchanged, or even tend downward in GA. We proceed to disentangle the time and re-opening effect in the next section.

4.3 The re-opening does not boost expectations unanimously

In order to separate the shift in individual expectations due to the loosening of restrictions in Illinois from general changes in sentiments regarding the progression of the COVID-19 crisis, we estimate difference-in-difference regressions as specified in equation 1. We conjecture that the lift of the stay-at-home orders can have a positive effect on labor market expectations via several channels. First, as businesses reopen and social activity intensifies, jobs should be created and earnings should rise. In response, expected earnings should rise too. Second, the re-opening is a signal that governments seek to prioritize economic stability and are prepared to act in order to ensure it. Expectations are also likely to experience a positive shift through this signaling channel. In our estimation, we actually find proof that speaks against this hypothesis. Table 6 summarizes the results of the regressions for our four outcomes. The causal effect of the end of the stay-at-home order and the re-opening of non-essential businesses on individual expectations is reported as β_{st}.

We detect a causal relationship between the re-opening and subjective expectations only on expected earnings in the November of 2020. The effect is positive and it is significant at the 10% level. The change also appears to be economically significant, with a 9% increase with respect to the mean expected income reported in wave one in the Illinois sample, but we urge readers to interpret the magnitude of the coefficient with caution. The coefficient of interest is also positive in the regression on current month labor earnings expectations. The coefficient value is smaller in magnitude and not significant at conventional significance levels. In sum, the results indicate that individuals become more optimistic about an earnings recovery toward the end of 2020. On the contrary, we do not find evidence that the re-opening had any significant effect on improving expectations of job security.

Table 6: Expectations and re-opening: DiD regressions

	Earnings Expectation		Job Loss Expectation	
	1-month	6-months	1-month	6-months
β_{st}	232.557	386.443*	1.866	−0.420
	(0.304)	(0.076)	(0.263)	(0.733)
Time	−31.405	-292.373*	-2.246*	−2.188**
	(0.856)	(0.090)	(0.061)	(0.011)
State	209.937	111.165	2.770	1.267
	(0.497)	(0.726)	(0.108)	(0.283)
Female	−1606.585***	-1692.497***	-1.945	0.185
	(0.000)	(0.000)	(0.225)	(0.828)
Age	−2.161	-0.471	-0.254***	0.026
	(0.834)	(0.963)	(0.000)	(0.444)
Education	1984.624***	1935.146***	-2.221	1.063*
	(0.000)	(0.000)	(0.122)	(0.089)
Constant	2807.038***	3119.885***	31.361***	5.109**
	(0.000)	(0.000)	(0.000)	(0.012)
Observations	1378	1375	1425	1215

Regressions of earnings expectations (left) and job loss expectations (right) on a treatment indicator, state, time, and further controls as described in the text. Regressions are performed with a strongly balanced sample. P-values in parentheses. Significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01.

The β_{st} coefficients in the job loss expectation regressions are not significant and disagree in sign - while the effect is at 1.87 percentage points in the short-run expectation regression, it stands at negative 0.42 in the long-run expectation regression. At the same time, short-run and long-run assessments of the likelihood of job loss shifted downward significantly as time passed between the two survey waves. This means that it is not the re-opening, but rather other time-varying factors that have brought about optimism with respect to avoiding unemployment. In contrast, the coefficient on the time dummy in the earnings expectations regressions implies that earnings expectations have stayed unchanged or have even become more pessimistic between waves one and two of our survey. The coefficients on the remaining explanatory variables are largely unchanged compared to the pooled OLS regression discussed in the previous subsection.[9]

Overall, this set of results suggests that subjective beliefs about developments in employment security and employment remuneration evolved differently as the pandemic progressed and responded to different signals and policy changes. On the one hand, repealing initial lockdown orders seems to have sparked optimism about a recovery of labor earnings in our survey sample. This is consistent with the fact that, as businesses reopen and social activity intensifies, hours worked, business visits, and commissions will increase. This implies an increase in earnings and earnings expectations. As only long-run expectations increase significantly as a result of the re-opening, we conclude that respondents think that positive changes both via the direct and the signaling channel will take place only slowly. On the other hand, the re-opening does not have a paralleled positive effect on the expected probability to keep one's job. While respondents become significantly more optimistic about keeping their job from wave one to wave two, the improvement in expectations is not causally

[9]These results are robust to changing the value we assign to the highest earnings category, including a measure of the level of infections, and weighting the sample as to achieve gender balance. For details, see 6.3.

related to the re-opening. This result supports the conclusion of Forsythe et al. (2020), who state: "[...] the economic collapse was not caused solely by the stay-at-home orders, and is therefore unlikely to be undone simply by lifting them", see Forsythe et al. (2020), abstract. Several scholars independently find that the surge in UI claims (Baek et al. 2021, Kong & Prinz 2020) and decrease in vacancy postings (Forsythe et al. 2020) was not primarily caused by the restrictions imposed by governments. Looking at expectations and re-opening rather than closures, we reach the same conclusion: it was not the policy that determined fears about job loss, but some economy-wide phenomenon that is more likely related to the spread of the virus and the fear of infection itself. At a first glance, the re-opening does seem to install optimistic beliefs about the labor market. A detailed analysis, however, shows, that optimism on the extensive margin was not due to the re-opening. The re-opening did not provide an immediate boost in expectations either. It only improved expectations about an earnings recovery towards the end of the year. In sum, the re-opening did not succeed in unanimously influencing sentiments about labor market developments in a positive direction.

Before concluding, we provide some evidence on treatment effect heterogeneity and analyze how much different groups of our survey population experienced a shift in beliefs to differing extents. We test if demographic factors are statistically relevant for the way individuals formed beliefs. Our regression results are summarized in Appendix 6.4. We analyze heterogeneity by gender, level of education, age, and Earnings BP. We split the sample into two groups along each dimension. We note that the heterogeneity results are no longer significant after controlling for multiple hypothesis testing and are, therefore, to be interpreted with caution. The set of regression results by groups is consistent with our previously discussed finding that the drivers of individual subjective beliefs about unemployment risks were at play economy-wide, affecting large majorities irrespective of demographics and socioeconomic status as we do not find strong evidence of heterogeneity along the dimensions we study. In contrast, the change in earnings expectations seems to be less uniform. In particular, there are two characteristics that emerge as relevant heterogeneity dimensions. The first one is gender: females seem to have improved their expectation of an earnings increase after compared to before the re-opening more than men. The second relevant factor is the level of earnings before the pandemic. Here the results suggest that the higher the typical monthly income reported by the individual, the lower the expected improvement.

5. Conclusion

In this paper, we study how individual subjective expectations about the labor market responded to re-openings after lockdowns. We focus on the time period between May and June 2020, and the transition out of lockdowns. We analyze two dimensions of subjective beliefs about the labor market. We study perceptions about unemployment risk and expectations about earnings from employment. We base our analysis on a repeated survey which we implemented in the states of Georgia and Illinois. We elicit a short-run and a long-run expectation for each outcome. The timeline of the survey implementation was such that Illinois was still under lockdown in survey wave one, but had reopened prior to survey wave two, whereas Georgia was not under lockdown in either wave. We compare the expected earnings we elicit with the level of earnings individuals had before the pandemic, we analyze time trends and the causal effect of re-opening on expectations. We find that in May 2020 individuals expected significantly lower earnings compared to their levels before the pandemic and incomplete recovery in six months' time. While governments considered re-openings the most important step toward stabilization in consumption and employment, we find that the re-opening was largely unsuccessful in shifting labor market expectations in a positive

direction. In line with other studies that find that lockdowns were not the primary cause of the increase in UI claims, and the decrease in vacancy postings in the spring of 2020, we find that expectations concerning unemployment risk did not respond to the re-opening policy. In addition, we do not find evidence that the repeal of lockdown orders improved expectations about earnings in the immediate future. The re-opening only improved expectations about an earnings recovery towards the end of the year. We, thus, conclude that the re-opening did not succeed in unanimously influencing sentiments about labor market developments in a positive direction as governments had hoped.

References

Adams-Prassl, A., Boneva, T., Golin, M. & Rauh, C. (2020), 'Inequality in the impact of the coronavirus shock: Evidence from real time surveys', *Journal of Public Economics* **189**, 104245.

Albanesi, S. & Kim, J. (2021), 'Effects of the covid-19 recession on the us labor market: Occupation, family, and gender', *Journal of Economic Perspectives* **35**(3), 3–24.

Arcidiacono, P., Hotz, V. J., Maurel, A. & Romano, T. (2020), 'Ex ante returns and occupational choice', *Journal of Political Economy* **128**(12), 4475–4522.

Armantier, O., Koşar, G., Pomerantz, R., Skandalis, D., Smith, K., Topa, G. & Van der Klaauw, W. (2021), 'How economic crises affect inflation beliefs: Evidence from the covid-19 pandemic', *Journal of Economic Behavior & Organization* **189**, 443–469.

Aum, S., Lee, S. Y. T. & Shin, Y. (2021), 'Covid-19 doesn't need lockdowns to destroy jobs: The effect of local outbreaks in korea', *Labour Economics* **70**, 101993.

Baek, C., McCrory, P. B., Messer, T. & Mui, P. (2021), 'Unemployment effects of stay-at-home orders: Evidence from high-frequency claims data', *Review of Economics and Statistics* **103**(5), 979–993.

Ballotpedia (2021*a*), 'Documenting georgia's path to recovery from the coronavirus (covid-19) pandemic, 2020-2021', `https://ballotpedia.org/Documenting_Georgia\%27s_path_to_recovery_from_the_coronavirus_(COVID-19)_pandemic,_2020-2021`. [Online; accessed 20-Jan-2021].

Ballotpedia (2021*b*), 'Documenting illinois' path to recovery from the coronavirus (covid-19) pandemic, 2020-2021', `https://ballotpedia.org/Documenting_Illinois\%27_path_to_recovery_from_the_coronavirus_(COVID-19)_pandemic,_2020-2021`. [Online; accessed 20-Jan-2021].

Binder, C. (2020), 'Coronavirus fears and macroeconomic expectations', *The Review of Economics and Statistics* **102**(4), 721–730.

Cajner, T., Crane, L. D., Decker, R. A., Grigsby, J., Hamins-Puertolas, A., Hurst, E., Kurz, C. & Yildirmaz, A. (2020), The us labor market during the beginning of the pandemic recession, Technical report, National Bureau of Economic Research.

CDC (2021*a*), 'Cdc data', `https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm#references`. [Online; accessed 17-Dec-2021].

CDC (2021*b*), 'Cdc data infections', `https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html`. [Online; accessed 17-Dec-2021].

Chetty, R., J.N., F., Hendren, N., Stepner, M. & The Opportunity Insights Team (2020), How did covid-19 and stabilization policies affect spending and employment? a new real-time economic tracker based on private sector data, Working Paper 27431, National Bureau of Economic Research.

Coibion, O., Gorodnichenko, Y. & Weber, M. (2020), Does policy communication during covid work?, Working Paper 27384, National Bureau of Economic Research.

COVID-19 Executive Order No. 8 (2020), 'Executive order in response to covid-19 (covid-19 executive order no. 8)', https://www2.illinois.gov/Pages/Executive-Orders/ExecutiveOrder2020-10.aspx. [Online; accessed 01-Feb-2022].

Cronin, C. J. & Evans, W. N. (2020), Private precaution and public restrictions: what drives social distancing and industry foot traffic in the covid-19 era?, Working Paper 27531, National Bureau of Economic Research.

Dominitz, J., Manski, C. F. & Heinz, J. (2002), Social security expectations and retirement savings decisions, Working Paper 8718, National Bureau of Economic Research.

Executive Order No. 04.02.20.01 (2020), 'Executive order to ensure a safe and healthy georgia, order number 04.02.20.01', https://gov.georgia.gov/executive-action/executive-orders/2020-executive-orders. [Online; accessed 20-Jan-2022].

Forsythe, E., Kahn, L. B., Lange, F. & Wiczer, D. (2020), 'Labor demand in the time of covid-19: Evidence from vacancy postings and ui claims', *Journal of public economics* **189**, 104238.

Goolsbee, A. & Syverson, C. (2021), 'Fear, lockdown, and diversion: Comparing drivers of pandemic economic decline 2020', *Journal of Public Economics* **193**, 104311.

Kong, E. & Prinz, D. (2020), 'Disentangling policy effects using proxy data: Which shutdown policies affected unemployment during the covid-19 pandemic?', *Journal of Public Economics* **189**, 104257.

Manski, C. F. (2004), 'Measuring expectations', *Econometrica* **72**(5), 1329–1376.

McKibben, B. (2020), 'With the last remaining restrictions lifted, georgia is officially open for business', https://atlanta.eater.com/2021/4/8/22373375/georgia-governor-lifts-capacity-restrictions-restaurants-bars-lifts-ban-large-gatherings-covid19. [Online; accessed 17-Dec-2021].

Mendolia, S., Stavrunova, O. & Yerokhin, O. (2021), 'Determinants of the community mobility during the covid-19 epidemic: The role of government regulations and information', *Journal of Economic Behavior & Organization* **184**, 199–231.

Micklewright, J. & Schnepf, S. V. (2010), 'How reliable are income data collected with a single question?', *Journal of the Royal Statistical Society: Series A (Statistics in Society)* **173**(2), 409–429.

Rojas, F. L., Jiang, X., Montenovo, L., Simon, K. I., Weinberg, B. A. & Wing, C. (2020), Is the cure worse than the problem itself? immediate labor market effects of covid-19 case rates and school closures in the us, Working Paper 27127, National Bureau of Economic Research.

Sandford, A. (2020), 'Coronavirus: Half of humanity on lockdown in 90 countries', *euronews* . [Online; accessed 12-Jan-2022].
URL: *https://www.euronews.com/2020/04/02/coronavirus-in-europe-spain-s-death-toll-hits-10-000-after-record-950-new-deaths-in-24-hou*

Statistics of US Businesses (2021), '2018 susb annual data tables by establishment industry', https://www.census.gov/data/tables/2018/econ/susb/2018-susb-annual.html. [Online; accessed 26-Jan-2022].

Stinebrickner, T. & Stinebrickner, R. (2012), 'Learning about academic ability and the college dropout decision', *Journal of Labor Economics* **30**(4), 707–748.

U.S. Bureau of Economic Analysis (2020), 'Gross domestic product by state, 1st quarter 2020', `https://www.bea.gov/news/2020/gross-domestic-product-state-1st-quarter-2020`. [Online; accessed 20-Jan-2022].

U.S. Census Bureau (2019), 'Quick facts: Illinois, georgia', `https://www.census.gov/quickfacts/fact/table/GA,IL/PST045219"`. [Online; accessed 26-Jan-2022].

Von Gaudecker, H.-M., Holler, R., Janys, L., Siflinger, B. & Zimpelmann, C. (2020), Labour supply in the early stages of the covid-19 pandemic: Empirical evidence on hours, home office, and expectations, Technical report, IZA Discussion Paper.

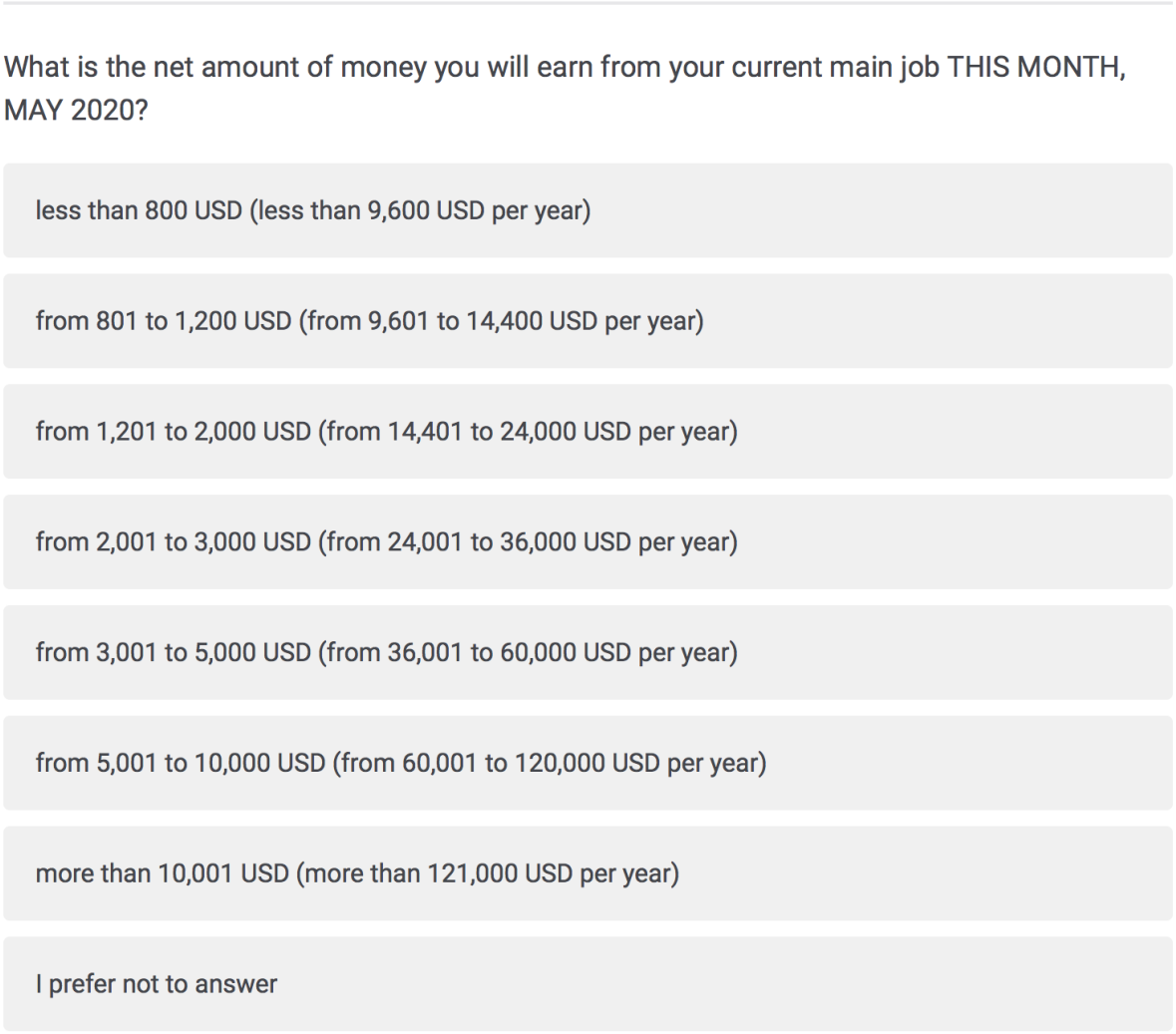
Wiswall, M. & Zafar, B. (2015), 'Determinants of college major choice: Identification using an information experiment', *The Review of Economic Studies* **82**(2), 791–824.

Yan, T., Curtin, R. & Jans, M. (2010), 'Trends in income nonresponse over two decades', *Journal of Official Statistics* **26**(1), 145.

6. Appendix

6.1 Appendix A: Survey Questions

Figure 3: Earnings Expectation One Month

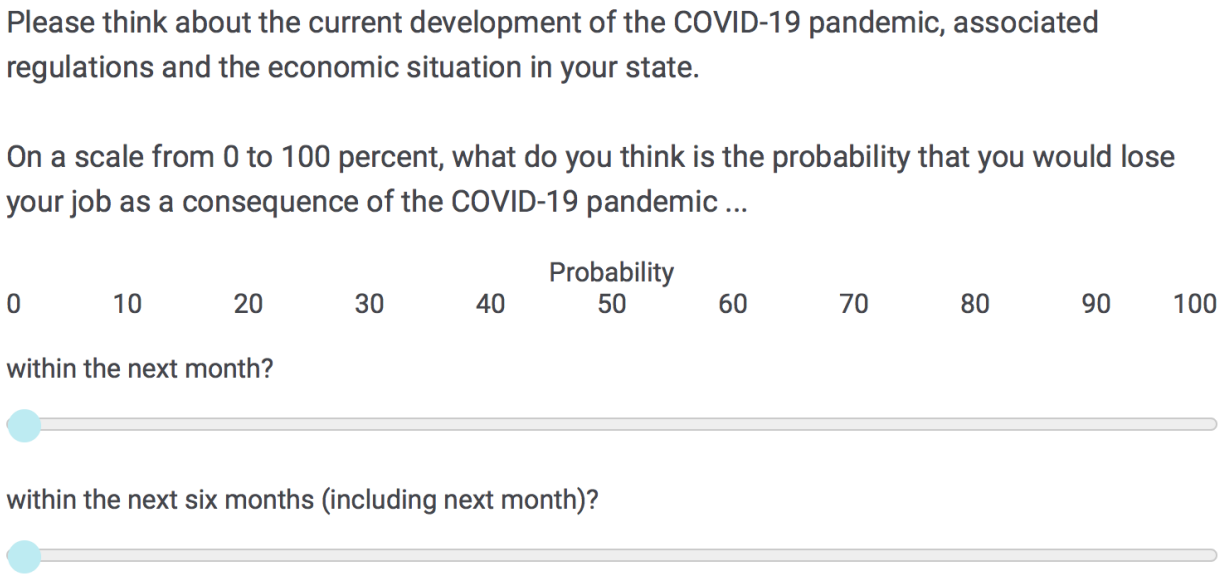


Survey question design as presented to respondents in web browser.

Figure 4: Earnings Expectation Six Month

Survey question design as presented to respondents in web browser.

Figure 5: Job Loss Expectation



Survey question design as presented to respondents in web browser.

6.2 Appendix B

Table 7: Regression Analysis: Earings Before COVID-19 Control

	Earnings		Job Loss	
	1-month	6-month	1-month	6-month
Female	−291.228*	−353.693**	−1.641	0.185
	(0.07)	(0.02)	(0.21)	(0.82)
Age	−2.381	−0.881	−0.249***	0.032
	(0.63)	(0.86)	(0.00)	(0.31)
Education	395.121**	321.210**	−1.438	1.293**
	(0.00)	(0.01)	(0.23)	(0.02)
Earnings BP	0.768***	0.782***	−0.000**	−0.000
	(0.00)	(0.00)	(0.04)	(0.44)
State	93.244	64.720	3.503**	1.012
	(0.51)	(0.62)	(0.00)	(0.19)
Time	128.076	−49.315	−1.028	−2.603***
	(0.36)	(0.70)	(0.41)	(0.00)
Constant	369.843	599.061*	30.938***	5.163**
	(0.22)	(0.05)	(0.00)	(0.00)
Observations	1343	1341	1356	1155

Pooled ordinary least squares regressions. We include the the earnings individuals typically received from their main job before the COVID-19 pandemic, Earnings BP, as a control. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

6.3 Appendix C

Table 8: Expectations about earnings: Alternative specification highest category

	1-month Expectation		6-month Expectation	
	15k	30k	15k	30k
β_{st}	202.793	292.085	605.913*	386.443*
	(0.247)	(0.400)	(0.059)	(0.076)
Time	−7.991	−78.232	−471.343*	−292.373*
	(0.952)	(0.768)	(0.059)	(0.090)
State	156.744	316.321	66.365	111.165
	(0.533)	(0.475)	(0.886)	(0.726)
Female	−1393.102***	−2033.551***	−2136.873***	−1692.497***
	(0.000)	(0.000)	(0.000)	(0.000)
Age	−2.260	−1.963	2.382	−0.471
	(0.796)	(0.888)	(0.866)	(0.963)
Education	1714.250***	2525.372***	2480.669***	1935.146***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	2781.987***	2857.141***	3149.820***	3119.885***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1378	1378	1375	1375

DiD regressions. As an alternative to assigning \$20k to the highest earnings category, we assign \$15k (columns 1, and 3), and \$30k (columns 2, and 4). Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 9: Expectations about earnings: Infection rates control

	1-month Expectation		6-month Expectation	
	3-day av.	5-day av.	3-day av.	5-day av.
β_{st}	266.468	257.735	403.115	478.423
	(0.322)	(0.402)	(0.130)	(0.119)
Time	−38.066	−36.546	−295.657*	−311.517*
	(0.828)	(0.835)	(0.089)	(0.076)
State	193.847	207.806	103.139	102.812
	(0.531)	(0.501)	(0.745)	(0.747)
Female	−1608.418***	−1606.251***	−1693.374***	−1691.613***
	(0.000)	(0.000)	(0.000)	(0.000)
Age	−2.260	−2.185	−0.520	−0.560
	(0.827)	(0.832)	(0.960)	(0.956)
Education	1983.484***	1983.266***	1934.554***	1930.147***
	(0.000)	(0.000)	(0.000)	(0.000)
3-day-MA cases	233.884		114.888	
	(0.822)		(0.913)	
5-day-MA cases		182.965		666.830
		(0.905)		(0.662)
Constant	2811.355***	2803.870***	3122.203***	3109.446***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1378	1378	1375	1375

DiD regressions. We include the 3-day moving average (columns 1, and 3) and 5-day moving average (columns 2, and 4) of the percent change in new COVID-19 cases as a control. We calculate the moving averages based on the exact day on which each respondent answered the survey. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 10: Expectations about job loss: Infection rates control

	1-month Expectation		6-month Expectation	
	3-day av.	5-day av.	3-day av.	5-day av.
β_{st}	0.742	0.268	−0.695	−0.603
	(0.701)	(0.895)	(0.620)	(0.690)
Time	−2.015*	−1.905	−2.142**	−2.157**
	(0.095)	(0.108)	(0.014)	(0.013)
State	3.312*	2.923*	1.402	1.282
	(0.063)	(0.088)	(0.258)	(0.280)
Female	−1.870	−1.953	0.200	0.184
	(0.244)	(0.223)	(0.814)	(0.830)
Age	−0.251***	−0.253***	0.027	0.026
	(0.000)	(0.000)	(0.432)	(0.443)
Education	−2.186	−2.134	1.073*	1.073*
	(0.129)	(0.138)	(0.086)	(0.087)
3-day-MA cases	−7.654		−1.951	
	(0.194)		(0.623)	
5-day-MA cases		−11.539		−1.370
		(0.154)		(0.793)
Constant	31.206***	31.550***	5.081**	5.138**
	(0.000)	(0.000)	(0.012)	(0.011)
Observations	1425	1425	1215	1215

DiD regressions. We include the 3-day moving average (columns 1, and 3) and 5-day moving average (columns 2, and 4) of the percent change in new COVID-19 cases as a control. We calculate the moving averages based on the exact day on which each respondent answered the survey. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 11: Expectations: Gender balanced sample

	Expectation Earnings		Expectation Job Loss	
	1-month	6-month	1-month	6-month
β_{st}	240.074	395.050*	1.874	−0.447
	(0.287)	(0.069)	(0.262)	(0.717)
Time	−37.918	−300.214*	−2.243*	−2.174**
	(0.827)	(0.082)	(0.062)	(0.012)
State	202.732	103.370	2.684	1.271
	(0.510)	(0.744)	(0.120)	(0.281)
Female	−1606.996***	−1692.936***	−1.960	0.184
	(0.000)	(0.000)	(0.222)	(0.829)
Age	−2.485	−0.696	−0.252***	0.026
	(0.808)	(0.945)	(0.000)	(0.442)
Education	1983.725***	1934.066***	−2.216	1.055*
	(0.000)	(0.000)	(0.123)	(0.093)
Constant	2829.327***	3138.441***	31.314***	5.111**
	(0.000)	(0.000)	(0.000)	(0.012)
Observations	1378	1375	1425	1215

DiD regressions. We construct and implement survey weights to balance the sample such that it is representative in gender for each state. Significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

6.4 Appendix D: Heterogeneity Analysis

Table 12: Heterogeneity in Earnings Expectation: Gender

	Women		Men	
	1-month	6-month	1-month	6-month
β_{st}	445.237*	626.900**	−257.869	−257.869
	(0.081)	(0.010)	(0.554)	(0.554)
Time	−201.260	−499.605**	378.848	378.848
	(0.323)	(0.020)	(0.243)	(0.243)
State	8.997	−107.420	730.578	730.578
	(0.980)	(0.767)	(0.233)	(0.233)
Age	−17.795*	−14.009	26.154	26.154
	(0.094)	(0.176)	(0.231)	(0.231)
Education	1920.733***	1893.617***	1972.282***	1972.282***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	2158.481***	2279.146***	1100.476	1100.476
	(0.000)	(0.000)	(0.362)	(0.362)
Observations	896	892	482	482

DiD regressions. We split the sample in men and women. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 13: Heterogeneity in Job Loss Expectation: Gender

	Women		Men	
	1-month	6-month	1-month	6-month
β_{st}	2.235	−1.374	1.236	1.343
	(0.276)	(0.356)	(0.664)	(0.537)
Time	−2.145	−1.823*	−2.310	−3.007**
	(0.144)	(0.082)	(0.261)	(0.049)
State	−0.084	1.437	8.046**	0.907
	(0.969)	(0.326)	(0.005)	(0.649)
Age	−0.175**	0.042	−0.382**	−0.006
	(0.033)	(0.351)	(0.001)	(0.908)
Education	−2.416	0.738	−1.375	1.735*
	(0.173)	(0.377)	(0.575)	(0.069)
Constant	27.277***	4.897*	33.286***	5.991**
	(0.000)	(0.060)	(0.000)	(0.035)
Observations	922	788	503	427

DiD regressions. We split the sample in men and women. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 14: Heterogeneity in Earnings Expectation: Age

	Above 50		Below 50	
	1-month	6-month	1-month	6-month
β_{st}	598.833*	446.543	−76.852	−76.852
	(0.062)	(0.165)	(0.812)	(0.812)
Time	−79.508	−215.950	61.652	61.652
	(0.751)	(0.403)	(0.804)	(0.804)
State	92.021	94.946	565.967	565.967
	(0.834)	(0.839)	(0.199)	(0.199)
Female	−2262.148***	−2318.879***	−1000.478**	−1000.478**
	(0.000)	(0.000)	(0.022)	(0.022)
Age	−87.227**	−92.268**	82.023**	82.023**
	(0.018)	(0.014)	(0.002)	(0.002)
Education	1356.885***	1388.325***	2202.871***	2202.871***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	8719.342***	9308.929***	−1068.939	−1068.939
	(0.000)	(0.000)	(0.314)	(0.314)
Observations	621	617	725	725

DiD regressions. We split the sample at the approximate mean age of the sample. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 15: Heterogeneity in Job Loss Expectation: Age

	Above 50		Below 50	
	1-month	6-month	1-month	6-month
β_{st}	4.985**	−3.161	−0.212	2.131
	(0.044)	(0.116)	(0.927)	(0.176)
Time	−3.259**	−1.732	−1.554	−2.786**
	(0.049)	(0.186)	(0.379)	(0.018)
State	1.243	3.912**	3.726	−1.124
	(0.621)	(0.046)	(0.119)	(0.437)
Female	1.412	1.789	−5.144**	−1.054
	(0.538)	(0.200)	(0.024)	(0.333)
Age	−0.390*	−0.155	−0.592***	−0.016
	(0.072)	(0.254)	(0.000)	(0.806)
Education	−0.576	1.685	−1.181	0.584
	(0.782)	(0.114)	(0.581)	(0.450)
Constant	36.900**	13.375	43.663***	8.765**
	(0.007)	(0.102)	(0.000)	(0.001)
Observations	640	553	753	633

DiD regressions. We split the sample at the approximate mean age of the sample. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 16: Heterogeneity in Earnings Expectation: Education

	Low Education		Middle/High Education	
	1-month	6-month	1-month	6-month
β_{st}	405.179	379.626	185.093	185.093
	(0.305)	(0.328)	(0.458)	(0.458)
Time	185.129	62.722	−28.150	−28.150
	(0.518)	(0.831)	(0.884)	(0.884)
State	−500.151	−544.015	273.538	273.538
	(0.293)	(0.237)	(0.430)	(0.430)
Female	−1118.652**	−1135.019**	−1571.786***	−1571.786***
	(0.038)	(0.025)	(0.000)	(0.000)
Age	12.050	12.089	−3.986	−3.986
	(0.532)	(0.518)	(0.730)	(0.730)
Constant	2407.585**	2526.206**	5344.549***	5344.549***
	(0.017)	(0.014)	(0.000)	(0.000)
Observations	127	127	1251	1251

DiD regressions. We split the sample by education. We group middle and high educated versus low educated, because, led by economic theory and previous findings, we are interested in testing for heterogeneity in the treatment effect for the low educated. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 17: Heterogeneity in Job Loss Expectation: Education

	Low Education		Middle/High Education	
	1-month	6-month	1-month	6-month
β_{st}	0.046	−5.654**	1.877	0.165
	(0.994)	(0.020)	(0.271)	(0.901)
Time	−8.460*	3.322*	−1.503	−2.794**
	(0.085)	(0.083)	(0.214)	(0.003)
State	0.160	2.096	3.143*	1.060
	(0.983)	(0.213)	(0.070)	(0.408)
Female	3.327	0.009	−2.423	0.191
	(0.636)	(0.995)	(0.147)	(0.838)
Age	−0.353	−0.016	−0.255***	0.033
	(0.166)	(0.803)	(0.000)	(0.383)
Constant	39.116**	2.867	28.146***	6.657**
	(0.002)	(0.350)	(0.000)	(0.003)
Observations	133	106	1292	1109

DiD regressions. We split the sample by education. We group middle and high educated versus low educated, because, led by economic theory and previous findings, we are interested in testing for heterogeneity in the treatment effect for the low educated. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 18: Heterogeneity in Earnings Expectation: Earnings BP

	Lower Earnings		Higher Earnings	
	1-month	6-month	1-month	6-month
β_{st}	951.980	1572.967**	18.247	18.247
	(0.167)	(0.017)	(0.909)	(0.909)
Time	−1460.736**	−2446.804***	298.315**	298.315**
	(0.005)	(0.000)	(0.023)	(0.023)
State	383.914	−198.536	118.103	118.103
	(0.608)	(0.798)	(0.456)	(0.456)
Female	−1021.998	−863.388	−224.641	−224.641
	(0.122)	(0.199)	(0.137)	(0.137)
Age	4.670	4.718	−12.568**	−12.568**
	(0.867)	(0.866)	(0.027)	(0.027)
Education	1669.729**	1508.720**	641.949***	641.949***
	(0.008)	(0.019)	(0.000)	(0.000)
Constant	6368.414***	7320.309***	2271.655***	2271.655***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	417	415	961	961

DiD regressions. We split the sample at the mean category $4,000. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.

Table 19: Heterogeneity in Job Loss Expectation: Earnings BP

	Lower Earnings		Higher Earnings	
	1-month	6-month	1-month	6-month
β_{st}	0.796	−1.742	2.256	0.231
	(0.760)	(0.416)	(0.284)	(0.878)
Time	−0.982	−0.295	−2.646*	−3.054**
	(0.487)	(0.842)	(0.100)	(0.004)
State	5.414**	0.992	1.427	1.298
	(0.046)	(0.624)	(0.508)	(0.369)
Female	−7.936**	−2.588*	0.401	1.455
	(0.001)	(0.061)	(0.848)	(0.160)
Age	−0.421**	−0.056	−0.216**	0.046
	(0.002)	(0.340)	(0.006)	(0.269)
Education	−2.084	1.974	−1.479	0.820
	(0.387)	(0.115)	(0.423)	(0.261)
Constant	38.729***	8.769**	28.640***	3.756
	(0.000)	(0.017)	(0.000)	(0.119)
Observations	453	389	972	826

DiD regressions. We split the sample at the mean category $4,000. Regressions are performed with a strongly balanced sample, significance levels are indicated as * for p-value < 0.10, ** for p-value < 0.05, *** for p-value < 0.01. P-values in parenthesis.