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Article

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The effects of individual and collective labor market status on employment and earnings during the COVID-19 crisis

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Abstract

Based on a unique longitudinal survey conducted between April 2020 and April 2021 in Israel, this study estimated the effect of labor market status during the outbreak of COVID-19 on continuity of employment, worktime and earnings throughout the crisis. Labor market status has both an individual dimension (the type of employment contract) and a collective one (membership in a trade union or coverage by a collective agreement). Findings from curvilinear growth models show that those whose labor market status was more precarious, characterized by deviations from the standard employment relationship and the absence of collective representation and voice, fared less well than those whose labor market status was more secure. At the same time, evidence suggests a negotiated compromise whereby workers with collective representation enjoyed greater employment security but also experienced greater earnings reductions than their counterparts who remained employed but had no collective representation.

Key words: collective bargaining, employment, inequality, labor market institutions, employment contract, trade unions

JEL classification: J5 labor-management relations, trade unions, and collective bargaining; J3 wages, compensation, and labor costs; D3 distribution

1. Introduction

A cornerstone of labor markets in capitalist economies is that workers differ in their likelihood of being employed and in the scope of their earnings. But what happens to labor market inequality in times of economic, social and health crises such as the one during the

coronavirus disease 2019 (COVID-19) pandemic? In this article, we investigated the effects of individual employment contracts and collective protection on three individual labor market outcomes—employment continuity, stability in working hours and earnings—during the pandemic in Israel.

We used curvilinear growth models to analyze data from a unique longitudinal survey conducted between April 2020 and April 2021 of over 1800 salaried Israeli workers who were employed in the first week of March, before the spread of COVID-19. Our main findings confirmed our expectations of a decline, mainly in employment, for workers whose labor market status was more precarious, deviated from the standard employment relationship, and lacked a collective representation and voice, relative to those whose labor market status was more secure. The evidence also suggested, however, a negotiated compromise whereby workers with collective representation had greater employment security but also experienced larger earning reduction than their counterparts who remained employed but had no collective representation.

At the outset of COVID-19, politicians and activists asserted that all people are equal in the face of the pandemic, reflecting and upholding mutual social responsibilities. Yet, it quickly became clear worldwide that such statements were untrue from both the health and the economic perspectives (Stiglitz, 2020). Scholarship on COVID-19, based largely on cross-sectional data collected in the first few months of the pandemic, describes the immediate transformation of work and economic activity due to the ensuing lockdowns, which created new forms of disparities (Qian and Fan, 2020; Loustaunau *et al.*, 2021), but mainly widened enduring inequalities. Preliminary findings on labor market outcomes suggest that the pandemic increased inequality, especially by gender (Kristal and Yaish, 2020; Landivar *et al.*, 2020; Moen *et al.*, 2020; Reichelt *et al.*, 2021), and unevenly affected minorities (Moen *et al.*, 2020), the low-educated (Kim *et al.*, 2021; OECD, 2021), younger and elderly workers (Goda *et al.*, 2021; Truc *et al.*, 2020) and people with disabilities (Goda *et al.*, 2021).

The present research combines theoretical frameworks from organizational, industrial relations and stratification fields to develop a new conceptualization of 'labor market status' and its enduring while occasionally conflicting effects on workers' employment and compensation. Particularly, we use the pandemic case to suggest three contributions to the literature on labor market inequality.

The first contribution concerns labor market status as a primary explanatory variable, uniquely identified in this article along two dimensions: individual and collective. The individual dimension pertains to the type of employment relationship workers have with their employer, considering the rights and responsibilities that are assigned to the relationship by law and practice. We distinguish between standard and nonstandard employment relationships (SER and non-SER) following organizational studies that developed several classification schemes that describe and categorize non-SER (e.g. Kalleberg, 2000; Cappelli and Keller, 2013). Non-SER, therefore, includes part-time work, several categories for temporal arrangements (renewal contract, fixed-term contract or on demand), and fissured employment relationships (employed by temp work agencies or service contractors). We move beyond the distinction between SER and non-SER to contend that the individual dimension alone cannot fully explain labor market outcomes and should be understood in conjunction with a collective dimension. The collective dimension refers to the workers' proximity to collective industrial relations as indicated by membership in a trade union and coverage by collective agreements, including three main categories: fully organized (covered and a

member), partially organized (covered but not a member) and unorganized (neither covered nor a member).

The second novel contribution is showing that under certain conditions, in particular social and economic shocks, labor market status may have conflicting effects on various dimensions of labor market outcomes. In an economic downturn, workers may compromise for worse working conditions in favor of continuity of employment. Employers may try to keep as many workers as possible continuously employed but with an agreement to reduce labor costs. Based on past research, the tradeoff between employment and working conditions should be particularly salient for the collective dimension of labor market status. In general, unions seek higher wages for their members, acknowledging potential tradeoffs with job losses. In economic downturns, however, unions often compromise between pay increases and job security (Kaufman, 2002; Glassner *et al.*, 2011; Valizade *et al.*, 2022). Such reciprocal collective bargains between labor unions and employers based on mutual concessions are commonly termed 'negotiated compromises' or 'concessions bargaining'.

The third contribution of the present research is applying an important insight from stratification research for understanding the lasting effect of labor market status on the continuity of employment, worktime and earnings. Following stratification research that emphasizes cumulative advantage as a mechanism of inequality (Merton, 1988; DiPrete and Eirich, 2006), suggesting that an initial advantage in access to a particular resource tends to grow over time, we contend that the combined effect of labor market status on both employment and income expand beyond the initial shock. In other words, labor market status should be treated as an important resource; a snapshot view cannot fully capture its effects. These arguments are tested by a longitudinal survey, conducted in eight waves between April 2020 and April 2021, approximately every six weeks, before and after three nationwide lockdowns. Stretching the timeline beyond the initial shock enables us to identify income collective concessions and uneven effects of individual status. We find that not all forms of non-SER have a lasting impact, noting the exceptional precarity of temporary employment arrangements.

By incorporating organizational, industrial relations and stratification theoretical frameworks into the study of the pandemic consequences, we deepened our understanding of inequality regulation. The findings point to the limitations incurred by state-structured vulnerability (Mantouvalou, 2023), allowing some forms of nonstandard employment arrangements, known to be precarious, while downplaying the role of collective voice in ordinary times. Because both dimensions of labor market status are embedded in legal and industrial policies, dualism and segmentation in ordinary times strongly affect the workers' employment resilience when a social-economic crisis hits. Short-term responses to aid those whose employment and wages are less secure can never offset the basic structures that constitute labor market rights and privileges to begin with.

The article proceeds as follows. Part Two provides a general introduction to the two dimensions of labor market status: individual (type of employment contract) and collective (union membership and coverage). The general description is followed by a discussion of the two dimensions in Israel. Part Three describes the knowledge that has accrued on the effects of the COVID-19 pandemic. Together, Parts Two and Three lead to our hypotheses. Part Four outlines the methodology of the study and describes its data. Part Five presents the findings, followed by concluding observations on the importance of strengthening labor

market status in routine times, or as the International Labor Organization (ILO) put it, 'rewriting the normal', as a way of alleviating the precarity associated with volatile changes.

2. Individual and collective labor market status

In recent decades, new norms and institutional forms regarding employment, working hours and compensation have been spreading across labor markets in rich countries. Precarious employment contracts have been on the rise, overlapping, albeit not fully, with employment arrangements that deviate from SER. Nonstandard work arrangements, which have been shown to be precarious, including involuntary part-time work as well as temporal and fissured employment, have become typical for a large and growing proportion of the labor force in liberal countries such as the US (Kalleberg, 2011, 2012) and the UK (McGovern *et al.*, 2004), as well as in corporatist countries such as Germany and the Netherlands (Hipp *et al.*, 2015).

The study of precarity indicates that in contrast to the stability of SER, which was typical of the postwar employment system, employers now often rely on employment arrangements that increase organizational flexibility by externalizing administrative control, limiting the duration of employment, offering performance pay and outsourcing work to small companies that compete fiercely with one another (Kalleberg *et al.*, 2003; Bidwell *et al.*, 2013). Researchers agree that even if nonstandard arrangements are beneficial for some workers, they have reduced wage growth at the aggregate level of workers (Wilmers and Massenkoff, 2020) and eroded benefits (Kristal *et al.*, 2020). This has led to inadequate health and safety conditions (Gevaert *et al.*, 2021), hampering the employees' ability to balance work and family life (Choper *et al.*, 2022) and widening income inequality between workers (Kristal and Cohen, 2017). It has also had significant negative consequences for various measures of wellbeing and decent work.

This gradual transformation of the employment relationship has taken place in tandem with the declining organizational strength of the labor movement in the political and economic spheres in most developed countries, although at a variable pace and to different degrees (Bhuller *et al.*, 2022). Since the seminal work of Freeman and Medoff (1984), the literature on trade unions has demonstrated their contribution to their members' employment security (Emmenegger, 2014), wages (Farber *et al.*, 2021) and benefits (Kristal *et al.*, 2020). Therefore, the decline of union strength has deepened labor market inequalities.

The concrete effects of trade unions are strongly dependent on the dominant level of bargaining: national, by industry and occupation or by establishment (Pencavel, 2017). Social bargaining with broad coverage is different from enterprise bargaining; coverage for all workers in the bargaining unit is different from coverage for union members only. The two axes that inform much of the comparison between systems of collective representation are membership in trade unions and coverage of collective agreements. Systems may feature an extensive share of both (as in the 'Ghent model'), a low share of both (as in the Anglo-American model), or a hybrid nature where coverage remains high despite declining membership (Mundlak, 2020). Therefore, studying the interaction between membership and coverage is essential for identifying the differences between labor systems and their effects on measures such as inequality.

The extent of non-SER employment arrangements, as well as coverage and membership in trade unions, are strongly dependent, among others, on the degree of statutory

protections and social security provisions that apply to different types of contracts. They are also dependent on the rules that prescribe collective bargaining, the scope of negotiations, and the labor process. Market, legal and social norms are therefore essential for understanding labor market status.

The Israeli labor market increasingly distinguishes between standard and nonstandard employment arrangements, where the latter enjoy a patchy and uneven level of employment and welfare protection. Research suggested that the share of non-SER employees in Israel has been on the rise since the late 1980s (Cohen and Haberfeld, 1993; Cohen and Stier, 2006). As in other countries, Israeli workers employed under SER are more likely, on average, to obtain voluntary employer-provided benefits and higher levels of earnings and benefits than non-SER workers (Kristal, 2017).

In parallel, the collective regime of representation in Israel changed dramatically with the abolishment of the 'Ghent system' and the erosion of corporatist institutions (Cohen *et al.*, 2003). The magnitude of the decline in the Israeli collective system was exceptional, with membership rates plummeting from 80% of the workforce in the 1980s to well below 30% at the turn of the century (Kristal *et al.*, 2015; Mundlak, 2020). The change in coverage was less pronounced, with a decline from approximately 80% before state-wide extension decrees would have been applied in the corporatist era to a stable coverage of around 50% with the decline of the corporatist regime in the 1990s. Israeli unions have a positive effect on levels of earnings and benefits (Kristal, 2017), and the decline in trade union representation has been shown to be detrimental to workers' wellbeing (Kristal and Cohen, 2007).

Increasing precarity and declining collective representation do not align neatly. Some precarious sectors, such as cleaning and security workers, are covered by sectoral agreements and nation-wide pacts (e.g. a guarantee of pension for all workers). At the same time, there is a growing use of two-tiered bargaining in which new hires receive lower wages, less job security, longer trial periods and lesser fringe benefits than senior workers employed in the same job (Racabi, 2020). Strategies to further extend agreements to workers in fissured arrangements or to accommodate organizing for workers employed for short durations are difficult to carry out because of collective bargaining norms that still resemble those pertaining to the corporatist foundations of the past (Mundlak, 2020).

3. The effects of the COVID-19 pandemic

As noted, many of the studies on inequality during the COVID-19 pandemic have examined factors related to individuals' demographic characteristics, such as gender, race and disability. To the best of our knowledge, there has been little systematic research on whether and how individual and collective employment status mediated the effects of the pandemic. The leading strand of research on the consequences of employment precarity on the individual dimension during the COVID-19 crisis focuses on health outcomes. For example, using survey data on workers from 27 EU member states, Wu (2023) found that employment precarity was associated with workers' mental and subjective wellbeing (see also Brown and Ciciurkaite, 2023). The few studies on the employment outcomes of flexible work arrangements have focused on the shift to work from home triggered by social distancing policies and lockdowns. They found greater gender inequality in families (Yaish *et al.*, 2021) and

greater risks of substantial changes in employment (whether decrease or increase) than stability in working time for women (Fan and Moen, 2022).

On the collective dimension, comparative studies suggest that national differences in industrial relations institutions and policies played a protective role in the decommodification of labor during the financial crisis of 2007–2008 (Amossé *et al.*, 2019) and the COVID-19 pandemic (Brandl, 2023; Dobbins *et al.*, 2023). These studies found that the concrete institutional setting matters. Drawing on a large-scale study of German employee experiences during the COVID-19 pandemic, Behrens and Pekarek (2023) reported that employees who were covered by a collective agreement fared better in their subjective job security than those who lacked this coverage, while employees represented by work councils were more likely than unrepresented workers to participate in training during the pandemic.

For the most part, these studies have not investigated how individual and collective labor market status mediated the objective effects of the pandemic, nor used longitudinal data designed to test this question empirically. The following hypotheses and research strategy contribute to this growing body of knowledge.

Despite national and sectoral differences, SER and collective representation have sheltered workers from fluctuating market forces in ordinary times, extending a greater level of stability and security in employment and wages. Therefore, we expected to find a similar effect in times of economic shutdown and national lockdown following the outbreak of COVID-19. This informed our predictions of how labor market status mediated the effects of the economic shock caused by the pandemic:

> *Hypothesis 1: The continuity of employment, worktime, and earnings of workers employed under a standard employment contract is expected to be less vulnerable to the COVID-19 crisis than those of workers in nonstandard forms of employment.*
>
> *Hypothesis 2: The continuity of employment, worktime, and earnings of fully organized workers is expected to be less vulnerable to the COVID-19 crisis than those of unorganized workers, with those who are partially organized in between.*

H1 focuses on the individual dimension of labor market status and generally compares SER to non-SER workers. In the empirical analysis, we also compare SER with several categories of temporal arrangements (part-time, employed with a renewal contract, fixed-term contract, or on demand) and fissured employment relationships (employed by temp work agencies or service contractors). We did not formulate hypotheses for each category but because of the Israeli institutional context, as described below, we expected part-time workers to be less vulnerable to the shock than other non-SER workers.

Our third hypothesis concerned the crossing between the individual and collective dimensions. The relationship between the declining strength of trade unions (collective labor market status) and the rise of nonstandard employment relations (individual labor market status) is multifaceted in the understanding of what unions do. An insider-outsider approach suggests that unions are interested in the conditions of insiders at the expense of outsiders (Lindbeck and Snower, 2001). Others, however, have noted that the decline of collective representation allows for growing employer reliance on nonstandard employment arrangements, causing trade unions to identify measures that extend coverage to workers in these categories (Hyman and Gumbrell-McCormick, 2017; Doellgast *et al.*, 2018; and in Israel, Nissim and De Vries, 2014). We expected non-SER workers who are neither union

members nor covered by a collective agreement to be the most vulnerable in the economic situation following the pandemic, and this, without assuming that trade unions contribute to exclusionary tendencies toward outsiders. In some instances, sectoral bargaining extends protection to non-members. Nevertheless, non-SER workers are at a perpetual disadvantage in gaining collective representation. The regulatory norms are based on the assumption of stable SER communities of workers in direct relationship with their employer and are less adapted to contingent and fissured employment relations (Doellgast *et al.*, 2018; Mundlak, 2020).

Hypothesis 3: The continuity of employment, worktime, and earnings of union members covered by a collective agreement in a standard employment contract is expected to be less vulnerable to the COVID-19 crisis than that of nonstandard and nonmember non-covered workers.

4. Data, variables, and method of analysis

4.1 COVID-19 in Israel

Because of the importance of labor market status for the following discussion, we briefly outline the institutions that were incrementally developed and the choices that the state made during the pandemic. The outbreak of the pandemic in Israel was similar to other countries. Initial reports of the pandemic appeared in late 2019 and by March 2020 it was clear that it could not be stopped at the Israeli border. In the middle of March 2020, initial restrictions were followed by a comprehensive lockdown. The first lockdown was the most hermetic, leading to the almost complete cessation of economic activity. It was lifted in early May 2020, but the optimism about controlling the pandemic was quickly dampened by the realization that it was an ongoing event, with waves of escalation and regression. Consequently, two more lockdowns were imposed in the first year of the pandemic, the second lasting three weeks from the end of September to the middle of October 2020. In December 2020, Israel was among the first countries to launch a comprehensive vaccination campaign, in addition to which another lockdown was ordered starting in late December 2020, then gradually removed in early February 2021. The early introduction of vaccinations did prevent further lockdowns during subsequent waves of the epidemic. Instead, fewer restrictions were put in place, distinguishing between those who were immunized (by vaccination or prior COVID illness) and those who were not. This strategy made possible a gradual opening of the economy both in the areas of production and consumption. Figure 1 shows the pandemic waves against the background of data on one of the common health measures: the number of daily deaths attributed to COVID.

Figure 1 also presents data on unemployment in the first year of the pandemic. We use the official definition of the Central Bureau of Statistics (CBS) for measuring 'wide unemployment', which includes the unemployed and employed individuals who were temporarily absent from their work all week for reasons related to COVID-19 (sent on unpaid leave to receive unemployment insurance or sent home to be paid from their annual vacation days). This broader indicator of unemployment was used in all official Israeli publications, based on the ILO guidelines for the collection of labor statistics data during the pandemic (2020) in national labor force surveys. Together, the groups of workers who lost touch with their workplace reached a staggering 36.7%, gradually decreasing, with temporary reversals during the succeeding lockdowns.

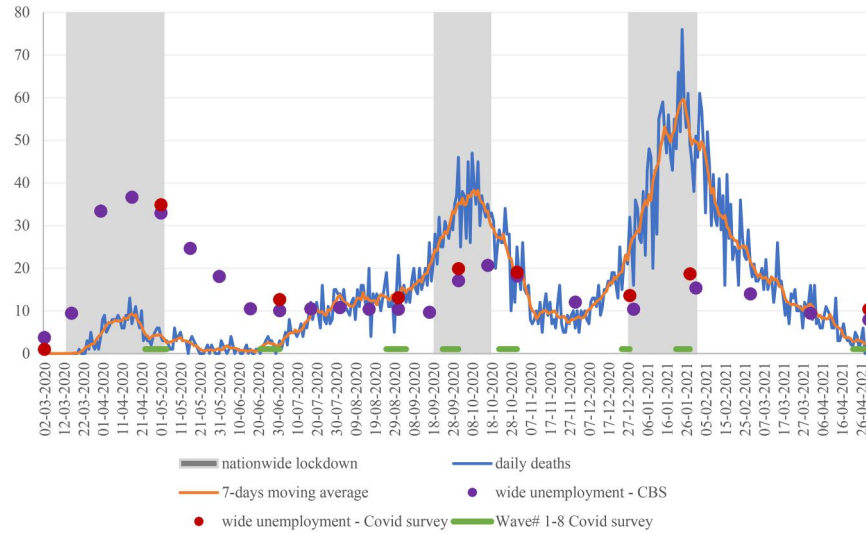

Figure 1. Number of daily deaths from COVID-19 in Israel and wide unemployment, March 2020 to April 2021.

Source: data on daily deaths from COVID-19 in Israel was derived from the Israel Ministry of Health. 'Wide unemployment' is defined as the percentage of unemployed plus the percentage of employed persons temporarily absent from work all week due to reasons related to the pandemic. Data derived from the Israeli Central Bureau of Statistics (CBS) publications.

The indicator for wide unemployment requires further specification of segmented state policies intended to cushion the economic effects of the pandemic (Albin and Mundlak, 2020). First, centralized collective agreements for the public sector, broadly defined, required the use of vacation days accumulated for annual leave to fund workers who could not continue their work and facilitated work from home for some of the employees. Second, temporary legislation and executive orders allowed employers in the private sector to place their employees on unpaid leave, entitling the latter to unemployment compensation in a manner akin to furlough arrangements in other countries. The state relaxed the rules for qualifying for unemployment compensation and extended eligibility until June 2021. In the official statistics, employees on unpaid leave were defined as 'employed persons temporarily absent from work all week due to reasons related to the pandemic', and were part of the wide unemployment measure. A third category of wide unemployment includes those who permanently lost their jobs. In Israel, the unemployed are entitled to unemployment compensation, and those who are not eligible because of restrictive qualifying conditions are referred to the welfare services, contingent on income tests and proof of a state of poverty and need. Finally, independent (self-standing) contractors, freelancers, and other forms of non-employee workers were granted occasional aid (in the form of grants), with variable rules of eligibility and levels of aid. Because of their classifications as non-employees, these were not included in the wide unemployment statistics and therefore are outside the scope of our study.

4.2 Data

The initial population of the longitudinal survey used here consisted of 2,027 adult Israeli men and women (age 18+) who were employed or self-employed in the first week of March 2020 (based on answers provided in the first wave of April 2020), before the first nationwide lockdown. The first wave of the survey was conducted in the last week of April (during the first lockdown). We collected data in eight waves between April 2020 and April 2021, approximately every six weeks, before and after three nationwide lockdowns. In this article, we focus on those who were employed as wage and salary workers in both the private and public sectors ($N = 1833$; see Appendix A). Of the 1833 employees, we have data for 1795 on their individual labor market status (Table 1), 1757 on their collective status (Table 2) and 1726 regarding both status dimensions (Table 3). Our data span the entire year and three full lockdowns. Data from March 2020 (pre-lockdown, based on data provided by the respondents in the first wave) served as the benchmark for comparison of future changes. Over the entire year, we have observations for both dimensions in at least two waves for 1710 employees (observed in the first wave, with at least one additional observation in later waves). The main findings presented in Figures 2–5 relate to these 1710 employees.

The data were collected by *Panel4all*, an online research company that maintains an Internet panel of tens of thousands of Israeli panelists representing the adult population of the country. This was not a probability sample of the population because only those registered with the panel could be sampled, but it was a random sample of the panelists, stratified by age, gender, geographic region, and religiosity, and at least regarding unemployment rates (Figure 1), the data are similar to those of the CBS, measuring unemployment for the Israeli population as a whole.

4.3 Dependent variables

We studied three outcome variables, all measured as binary variables: continuity in employment, continuity in worktime, and continuity in earnings. For *continuity in employment*, we constructed a binary variable that distinguishes between those who continued to work ($N = 1199$ in April 2020) and those whose work was stopped ($N = 634$ in April 2020). The latter category included two groups: (a) those who were fully unemployed according to the conventional pre-COVID definition of unemployment, that is, they no longer had a *de jure* relationship with an employer; and (b) workers who were put on leave. In the public sector, the latter were required to use their accumulated (or borrowed) annual vacation days, and in the private sector, they were insured by the special provisions in the National Insurance unemployment funds. In the official statistics presented in Figure 1 and in our study, the two groups together were defined as part of the wide unemployment.

Although continuity in employment represents one dimension of security, it does not necessarily entail continuity with the same workload and income. Hence, the two other dependent variables examined continuity of worktime and earnings (data on monthly earnings were available only for the first and third lockdowns). The *continuity in worktime* variable measured whether workers continued to work the same amount of time (or more) compared to those not working or working fewer hours. The *continuity in earnings* variable measured whether workers earned the same amount of income (or more), in monthly earnings deciles, compared to those not working or working for lower income.

Table 1. Demographic and employment characteristics of wage and salary workers by type of contract, 2020–2021 COVID survey

Employment relationship:	SER	Non-SER							
	SER		Temporal arrangements			Fragmented work			
	Standard employment relationship	Part-time work	A renewal contract	A fixed term contract	On demand	Temp work agencies (TWAs)	Service contractors (SC)	TWAs or SC in IT	Total Sample
Demographic and education									
Mean age	40.9	38.7	36.1	32.8	36.5	33.2	34.5	37.3	39.0
Percent men	45.2	38.2	44.9	45.2	47.8	38.7	56.4	64.3	44.6
Percent Arabs	13.6	15.0	25.0	12.9	10.4	16.1	36.4	3.6	15.9
Percent at least B.A.	47.6	43.6	57.4	45.2	22.4	38.7	25.5	60.7	46.8
Employment									
Mean weekly hours	47.6	11.7	36.3	36.5	29.4	34.5	37.2	43.1	38.8
Percent part-time	0.0	100.0	28.9	33.9	53.7	35.5	34.5	7.1	24.1
Mean tenure (years)	8.7	8.2	5.1	3.4	3.6	2.5	7.4	5.4	7.5
Percent large establishment	29.3	20.5	27.3	33.9	6.0	22.6	25.5	57.1	26.9
Occupation and industry									
Percent professionals, technical and managerial	43.6	32.9	42.9	47.5	19.7	6.5	18.2	85.7	40.4
Percent public sector	30.2	29.3	48.3	45.2	17.9	35.5	38.2	35.7	33.1
Percent employed in industries severely affected by COVID-19[a]	21.0	27.8	23.8	29.0	29.8	19.3	16.4	7.1	22.6
Compensation									
Percent pension	94.6	88.5	88.1	81.5	66.0	57.1	87.8	100.0	90.4
Percent Keren Hishtalmut	69.3	53.0	59.5	34.0	20.4	35.7	55.3	64.3	61.5
Mean monthly income (SD)	10 940 (8614)	7015 (6677)	7981 (6369)	6824 (5365)	4735 (3754)	4858 (3573)	5690 (2733)	14 161 (9913)	9294 (7932)
Number of cases	1027 (57%)	269 (15%)	256 (14%)	62 (3%)	67 (4%)	31 (2%)	55 (3%)	28 (2%)	1795

[a]An industry is defined as severely affected by the pandemic if more than 50% of employees were temporarily absent from work all week in April due to the pandemic. Industries include accommodation and food service activities, education, arts, entertainment and recreation, and other service activities such as personal services. Data for industries severely affected by COVID-19 are derived from CBS LFS.

Table 2. Demographic and employment characteristics of wage and salary workers by union membership and coverage, 2020–2021 COVID survey.

Type	Both covered and a member Fully organized	Covered but not a member Partially organized	Neither covered nor a member Unorganized	Total sample
Demographic and education				
Mean age	42.5	37.6	37.8	39.4
Percent men	42.6	44.2	46.8	49.8
Percent Arabs	19.0	20.1	11.6	15.3
Percent at least B.A.	57.0	46.1	40.3	47.0
Employment				
Mean weekly hours	40.0	40.0	37.5	38.8
Percent part-time	18.6	20.5	27.8	23.6
Mean tenure (years)	11.4	6.0	5.5	7.6
Percent large establishment	40.6	36.0	15.6	27.2
Occupation and industry				
Percent professionals, technical and managerial	48.7	38.9	35.6	40.6
Percent public sector	62.7	41.9	10.9	33.2
Percent employed in industries severely affected by COVID-19	30.0	17.4	19.5	22.8
Compensation				
Percent pension	98.1	91.2	85.6	90.8
Percent Keren Hishtalmut	85.1	70.1	43.5	62.2
Mean monthly income	9841 (7.123)	9969 (8.283)	9009 (8.445)	9428 (7.995)
Number of cases	601 (34%)	258 (15%)	898 (51%)	1757

Notes: Covered workers are those that meet at least one of the three criteria for coverage: covered by a collective bargaining agreement, paying union dues, or working in an establishment that has a workers' committee (local union).

4.4 Measurement strategy for individual labor market status: the employment relationship

The SER remains the most prevalent contractual form for the provision of work and is therefore used as the benchmark for comparing the 'other' nonstandard forms. We defined SER workers as those who reported working under a permanent contract (a term typically derived from collective agreements) or contract for an unlimited period, receiving their salary from the establishment in which they performed the work, and working more than half of a statutory workweek (that is, 21 h or more per week).

We classified the alternatives to SER along three axes: (a) fragmented or fissured employment; (b) temporal work arrangements, sorted on a 'continuum of temporality'; and (c) part-time work.

Table 3. Dependent variables according to individual and collective labor market status, April 2020

Dependent variables:		Employment	Worktime	Earnings
	N	Employed (=1) (%)	Employed for the same (or more) number of hours (=1) (%)	Employed in the same (or higher) monthly earnings decile (=1) (%)
Individual dimension				
SER	1003	71.1%	47.9%	20.0%
Non-SER	723	60.9%	40.3%	23.1%
Collective dimension				
Organized	593	75.6%	49.1%	24.0%
Unorganized	1133	62.2%	42.4%	20.0%
Individual and collective dimensions				
SER, Organized	365	77.0%	48.2%	22.2%
SER, Unorganized	638	67.7%	47.7%	18.8%
Non-SER, Organized	228	73.3%	50.4%	26.8%
Non-SER, Unorganized	495	55.2%	35.6%	21.4%
All	1726	66.8%	44.7%	21.3%

Notes: Included in the table are individuals with no missing values on outcome variables, individual and collective labor market status measures.

4.4.1 Fragmented employment

Two categories in the survey correspond to the situation of fragmented or fissured employment: those employed by temp work agencies (TWAs) and those employed by service contractors. Both were identified using the survey question: 'From whom do you receive your salary?' TWAs contract out workers on a temporary basis to various users of services, mostly in the private sector. Legally, their assignments are limited to nine months, after which they retroactively become employees of the user of services, who assimilate them into a SER. The only exception is information technology (IT) workers who can be assigned to a user for an unlimited period of time. By contrast, all workers employed by service contractors can be assigned to a user of services for an indefinite period of time without affecting their direct employment relationship with the contractor (Mundlak, 2017). Service contractors provide comprehensive services, including raw materials, supervision, together with legal responsibility for the service or production. Employment by service contractors is typical in the cleaning and security sectors, but also in transportation, the provision of personal services on behalf of the state, and various industrial supply chain arrangements.

4.4.2 Temporal arrangements

This non-SER group includes workers hired on a temporary basis. Based on the survey question 'What type of employment contract do you have?' we constructed several categories of temporality that can be presented on a continuum, including those who are (a) employed by renewed fixed-term contracts (e.g. a year-long contract that is renewed annually), (b) employed for a fixed but substantial period of time (e.g. nine months or a year), (c) commissioned for a short period of time (a few weeks), and (d) on-demand workers, called in sporadically whenever the employer needs an extra set of working hands. Unlike fissuring

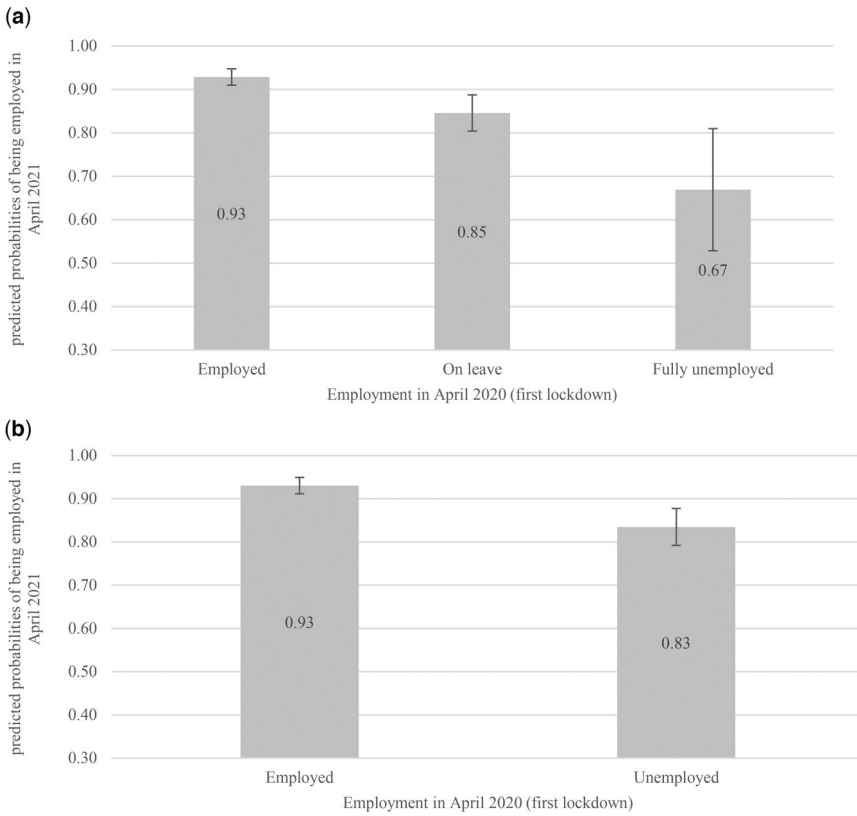

Figure 2. Predicted probabilities of being employed in April 2021 (moving out of the third lockdown) by employment in April 2020 (first lockdown). (a) Employment in April 2020 measured by three categories—employed, on leave, and fully unemployed. (b) Employment in April 2020 measured by two categories—employed and unemployed (including those who were put on leave and those who were fully unemployed).

Notes: Results from linear probability models. The plot bars are flanked by 95% confidence intervals to illustrate their statistical significance. The vector of explanatory variables includes age, gender, nationality, education, large establishment, and employment in industries severely affected by the pandemic.

arrangements, temporal arrangements are not directly regulated and workers are *de jure* entitled to all rights granted to employees except those dependent on length of employment, whether by statute, such as severance and convalescence pay, or by collective agreements.

4.4.3 Part-time work

The third form of non-SER employment is part-time work. Because a 'full-time job' is not explicitly defined in law, we used 50% of the statutory work week to differentiate between part-time and full-time work. All the above groups may be employed part-time or full-time. Conceptually, such a classification should not make a significant difference because the SER

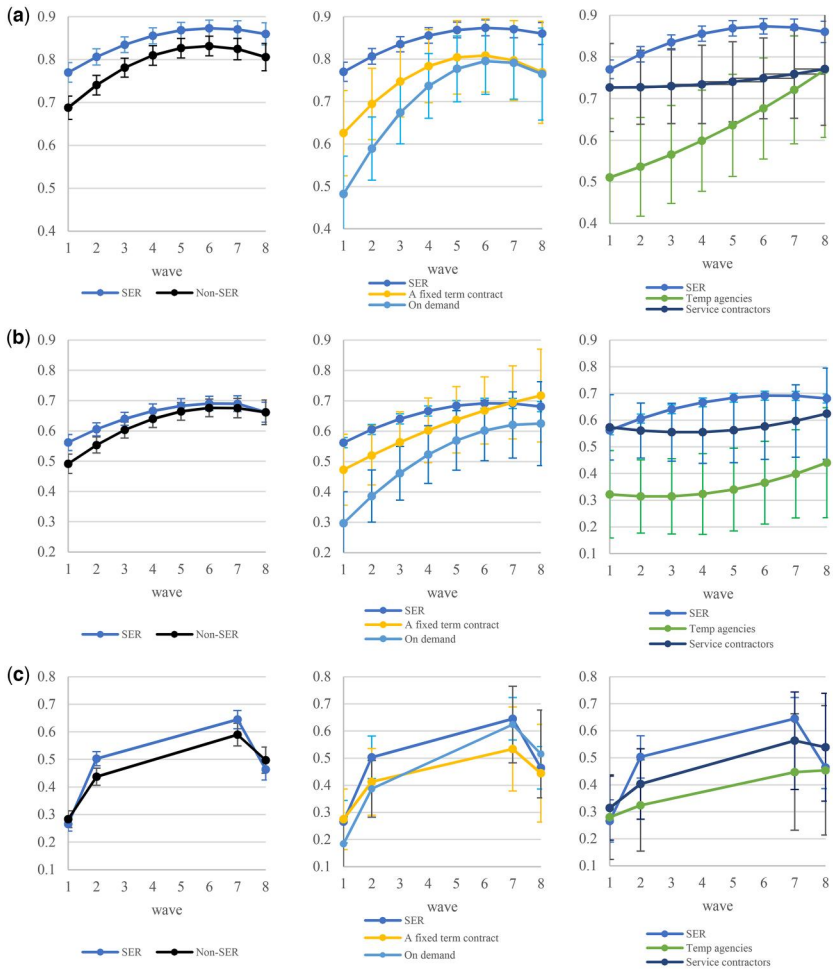

Figure 3. Labor market outcomes during the first year of the COVID-19 crisis by individual employment relationship. (a) Probability of being employed relative to March 2020. (b) Probability of being employed for the same amount (or more) of weekly hours relative to March 2020. (c) Probability of being employed in the same (or higher) monthly earnings decile relative to March 2020.

Note: Results from curvilinear Growth models with random intercept and cross-level interaction. The vector of explanatory variables includes age, gender, nationality, education, large establishment, employment in industries severely affected by the pandemic, collective employment relationship (in accordance with the classification in Table 2), and individual employment relationship (in accordance with the classification in Table 1) interaction with time (8 waves). Full results from the models are presented in Appendix B.

legal regime is indifferent to part-time work and applies rights proportionately to the number of working hours. In this matter, Israel is more similar to EU countries that ensure *de jure* equality for part-time workers (Directive 97/81/EC). Some part-timers provide unique

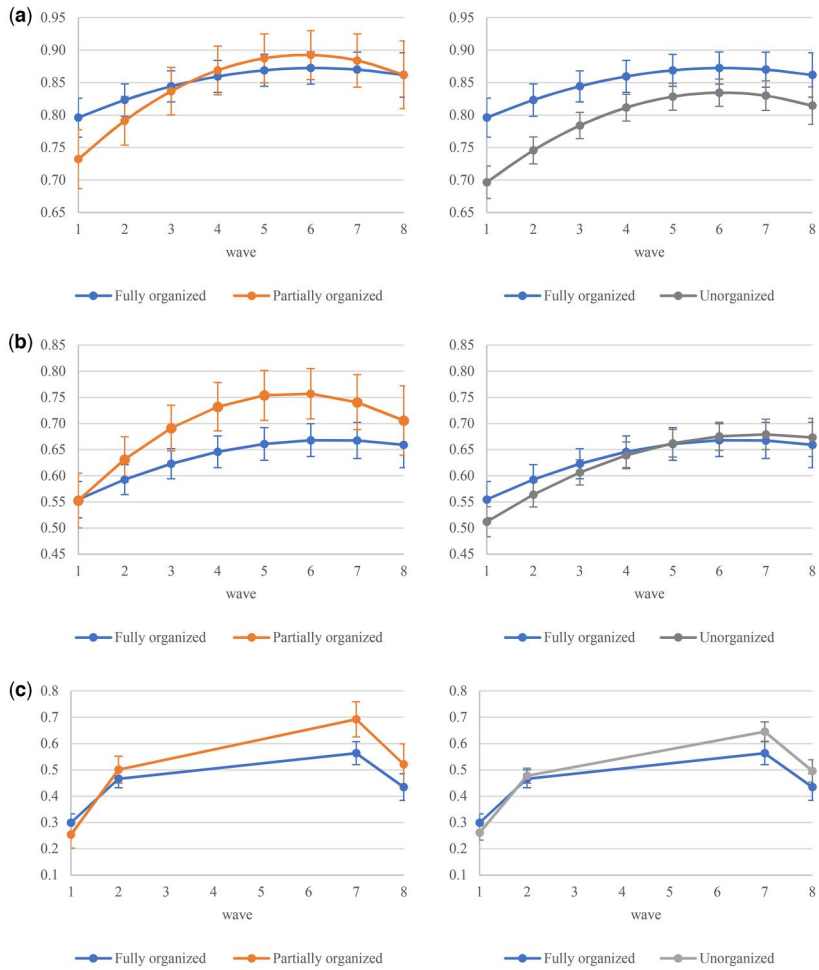

Figure 4. Labor market outcomes during the first year of the COVID-19 crisis by collective employment relationship. (a) Probability of being employed relative to March 2020. (b) Probability of being employed for the same amount (or more) of weekly hours relative to March 2020. (c) Probability of being employed in the same (or higher) monthly earnings decile relative to March 2020.

Note: Results from curvilinear Growth models with random intercept and cross-level interaction. The vector of explanatory variables includes age, gender, nationality, education, large establishment, employment in industries severely affected by the pandemic, individual employment relationship (in accordance with the classification in Table 1), and collective employment relationship (in accordance with the classification in Table 2) interaction with time (8 waves). Full results from the models are presented in Appendix C.

professional services, of which organizations need no more than several hours. These may be workers with strong market leverage who voluntarily negotiate part-time work to accommodate their work-life balance. Others who are employed part-time, however, may be

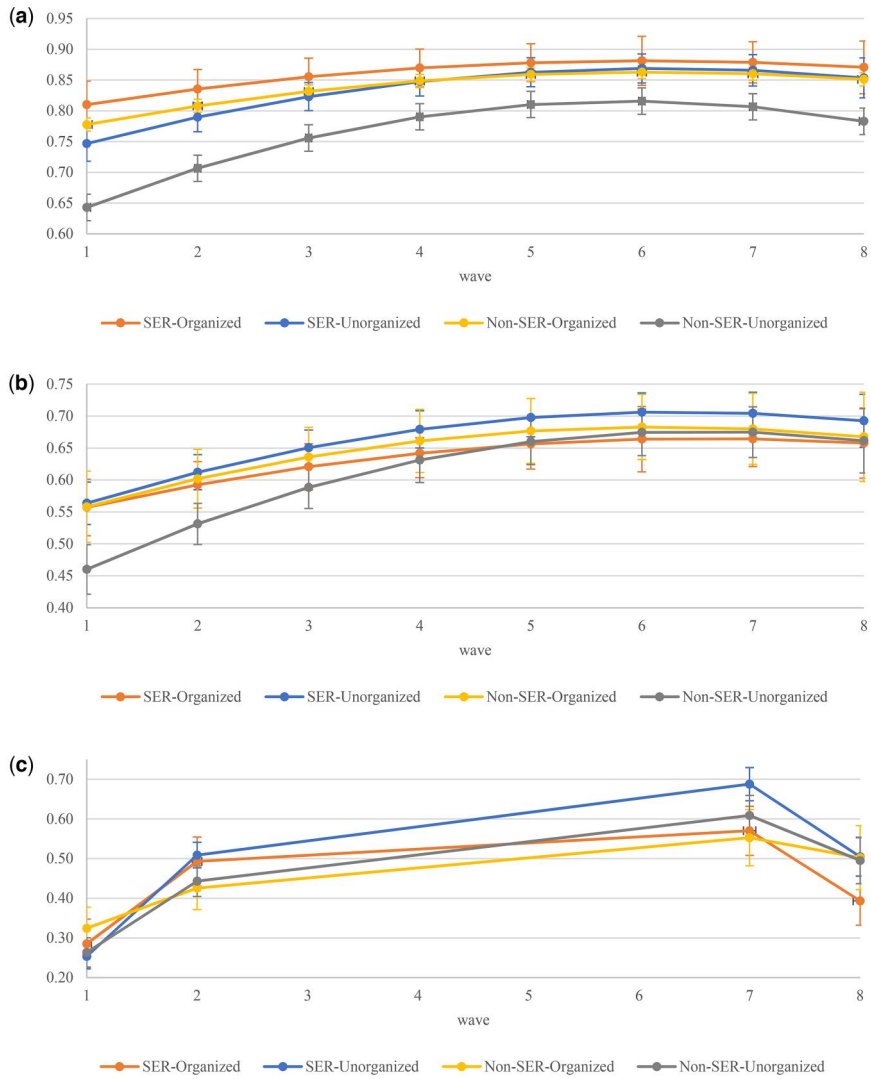

Figure 5. Labor market outcomes during the first year of the COVID-19 crisis by both individual and collective employment relationship. (a) Probability of being employed relative to March 2020. (b) Probability of being employed for the same amount (or more) of weekly hours relative to March 2020. (c) Probability of being employed in the same (or higher) monthly earnings decile relative to March 2020.

Note: Results from curvilinear Growth models with random intercept and cross-level interaction. The vector of explanatory variables includes age, gender, nationality, education, large establishment, employment in industries severely affected by the pandemic, and four categories of employment relationship (SER, non-SER, insider, non-insider) interaction with time (8 waves). Full results from the models are presented in Appendix B.

susceptible, like their temporary counterparts, to being situated at the periphery of the organizational core and used to adjust the workforce to changing levels of demand. They may hold several part-time jobs because of difficulties in negotiating a full-time job.

Table 1 shows the demographic and employment characteristics of our sample by employment relationship in March 2020 (before the pandemic). SER was the dominant employment status, covering almost 60% of the workforce. The other 40% were employed under non-SER arrangements. As expected, SER workers had higher tenure and were more likely to be employed in large establishments than non-SER workers. SER workers also had, on average, the highest earnings and fringe benefits. These included legally mandated benefits (pension, 95%) and negotiated benefits, such as study fund (*keren hishtalmut*, almost 70%). At the other end of the continuum, those situated in what is commonly known as the 'gig economy', including 'on demand' and temp work agency workers, together constituting 6% of the workforce, had the lowest earnings (on average, approximately 40% of SER earnings), pension savings (63% for the two groups, owing to employers' slack compliance and short-term employment, in which pension rights do not accumulate), and study fund (only 30% for the two groups).

For the analysis, the group of IT contract workers was separated from both TWAs and service contractors because it was difficult to determine where they fit in between the two. The group appeared to be exceptionally privileged, with the highest earnings and high coverage of fringe benefits, but it was small (2% of the sample), therefore comparison with the broad SER category is misleading. Compared with their occupational equals within the SER group (data not shown), we found that their status as contract workers carried a negative premium of approximately 15% in earnings. This group also appeared to be exceptional in the following analyses of the COVID pandemic, most likely because of their technological skills, which made it possible for them to work from home (all of them used a computer at work, compared to 64% of non-SER workers, data not shown) and the high demand for their skills at the time work shifted to cyberspace.

4.5 Measurement strategy for collective labor market status: collective labor relations

Previous studies have shown that the effects of trade unions in Israel are best understood by observing the cross-cutting of workers' membership in a trade union and the coverage of collective agreements (Cohen *et al.*, 2003). Although membership is voluntary (workers decide whether or not to join as members), the coverage of collective agreements is determined first and foremost by the Law of Collective Agreements (1957) and by the decisions made by the bargaining agents. Generally, membership rates serve as a useful proxy for the bottom-up power of trade unions to organize at the grassroots, while coverage rates demonstrate the institutional power bestowed on trade unions by the state as social partners in labor market governance (Mundlak, 2020).

Union members were those who answered positively on the question, 'Are you a member of a workers' organization?' Following Cohen *et al.* (2003), union coverage was defined based on three questions: (a) 'Are you covered by a collective-bargaining agreement?' (b) 'Is there a deduction from your wages for a trade union, a workers' committee, or a Histadrut?' and (c) 'Is there a workers' committee in your workplace?' We considered workers to be covered by a collective agreement if they answered at least one of the three questions affirmatively.

Cross-cutting membership and coverage yields four groups: (a) *fully organized workers*, who are both members and covered by a collective agreement; (b) *unorganized workers* who are neither members nor covered by a collective agreement, except for nationwide agreements and extension decrees (such as mandatory pensions or the reduction in working time); (c) *partially organized workers* who are covered by collective agreements but are not members of a trade union (any trade union, not necessarily the exclusive trade union, as determined by law, which negotiated the collective agreement)—a situation that may arise for numerous reasons, ranging from rational free-riding ('Why should I pay membership dues if I'm already covered by the collective agreement?') to apathy and ideological objections and (d) *members but not covered by a collective agreement*, a group significantly smaller than the others, because typically individuals do not pay membership dues if they do not enjoy the major benefit of trade unions: collective representation at work. For the present analysis, we discarded the last group, which was too small for analysis ($N = 3$). Table 2 shows the demographic and employment characteristics by collective relationship.

4.6 The crossing of individual and collective labor status

The two dimensions of labor market status are distinct. A simplistic assumption may correlate an individual's SER with 'organized' status in collective relations. Indeed, a considerable (if shrinking) share of the public sector is organized, and employment relations conform to the SER, whereas segments of the private sector are less organized and use non-SER arrangements. Some sectors, however, are characterized by fragmented work (e.g. security, construction, and cleaning), which are nevertheless covered by sector-wide collective agreements despite a very low rate of trade union membership among the workers in the sector (hence their partially organized status). Temporary work agencies are also covered by a sector-wide collective agreement, albeit an exceptionally weak one. Other forms of non-SER status may also be governed by a collective agreement, for example, part-time work and even short-term employment. At the same time, unorganized sectors still rely on the SER template for its economic logic, whether involving low-waged workers in retail or high earners in high-tech. The data in Table 3 indicate that 62% of organized workers were employed under SER arrangements, compared to a somewhat lower proportion (56%) of unorganized workers. Table 3 shows the dependent variables in the aggregate, sorted by the interaction between individual status and collective status (measured by dummy variables).

4.7 Method of analysis

To examine our study hypotheses, we used the panel structure of the data to estimate curvilinear growth models with random intercept and cross-level interaction. Growth curve modeling (usually estimated within a multilevel regression framework or with a structural equation modeling framework, the latter known as latent growth curve models) is commonly used for continuous, normally distributed, dependent variables. In recent years, however, growth curve models with binary data have been used increasingly in studies in the social and behavioral sciences (Finch, 2017; Newsom and Smith, 2020). The growth curve model can be understood as a two-level hierarchical model, in which individual workers' observed characteristics in the eight waves are the level-one units (i.e. person-wave) and the eight waves the level-two units. This analytic technique requires observing at least one time point for each respondent but does not require observing the same number of time points for each respondent (Muthén and Khoo, 1998; Bliese and Ployhart, 2002). The two-level

model can be represented by a set of equations for each of the three binary dependent variables:

$$Y_{i,j} = \beta_{0,j} + \beta_{1,j}(wave_{i,j} * wave_{i,j}) + \varepsilon_{i,j} \quad (1)$$

$$\beta_{0,j} = \gamma_{00} + \gamma_{0,j}X_{i,j} + \mu_{0,j} \quad (2)$$

$$\beta_{1,j} = \gamma_{10} + \gamma_{1,j}(labor\ market\ status) + \mu_{1,j} \quad (3)$$

where $\beta_{0,j}$ is the random intercept (the first wave), the vector $X_{i,j}$ denotes a vector of explanatory variables (labor market status, age, gender, nationality, education, large establishment, employed in industries severely affected by the pandemic), $\gamma_{0,j}$ denotes their coefficients, and $\mu_{0,j}$ is the error term. To estimate the trajectories of outcomes during the first year of the pandemic by our main predictor variables, we included in the models a three-way interaction between the indicator of labor market status, linear, and quadratic terms of survey waves (equation 3). A quadratic term for survey waves (taken approximately every 6 weeks) was included because the slopes best fit the observed data, implying that the data are curving in one time point.

Together, the models make it possible to estimate differences in the continuity of employment, worktime, and earnings between workers who differ in their individual and collective status, controlling for their observed (e.g. gender, education, and other variables included in the level-one model) and some time-invariant unobserved (e.g. motivation, unmeasured skills) characteristics. Because all the data were collected during the COVID-19 pandemic, we are unable to consider workers' non-random selection into the categories of individual and collective status. This selection probably biased our estimations. Nevertheless, based on Alon's (2023) study, it is reasonable to assume that the results presented below underestimate the effect of labor market status, particularly the individual dimension, on employment opportunities following the COVID-19 crisis.

5. Findings

5.1 Loss of work and the scars of unemployment

Figure 2 points at what may be the most pressing question: How did the unemployed fare a year later, when the economy started to recover? Beyond the economic and personal hardship of unemployment at the time of crisis, there is a concern that unemployment has negative effects on future earnings and employability (Gangl, 2004). Those who are expected to be most vulnerable to the negative effects fall into two categories: (a) workers who were fully unemployed in the first lockdown (April 2020), that is, they no longer had a *de jure* relationship with an employer; and (b) workers who were put on leave, which enabled them to receive unemployment compensation, or were sent home to be paid by their annual vacation days and therefore no longer had a *de facto* relationship with their employer. The latter category may have been immune to immediate income insecurity because their leave from work was eventually funded either by the state (National Insurance) or by the workers themselves, who were required to use their accrued vacation days and 'borrow' against future statutory vacation entitlements if necessary. But this group may still suffer from the lingering effects of *de facto* joblessness, such as reduces chances of being hired in the future, loss of hands-on experience, loss of security that is related to stability, socialization, and routine, or other forms of psychological instability.

Estimating linear probability models for the likelihood of being employed in April 2021 as a function of employment during the first lockdown in April 2020, we found a scarring effect on employment a year later for both groups, the fully unemployed and those who were put on leave in the first lockdown. Those who were fully unemployed in the first lockdown had a predicted probability of 0.67 of being employed in April 2021, compared to 0.93 of those who remained employed in the first lockdown, controlling for participants' demographic characteristics (age group, gender, nationality), higher education (college degree holder or not), and employers' classification (large establishments, employers in sectors that were severely affected by the pandemic). We also found a scarring effect for those who were put on leave, which according to the confidence intervals was not statistically different from the effect for the fully unemployed. This finding suggests that the loss of work was not only a problem of income insecurity at the time the workers were removed from their jobs but appeared to have a lasting effect that included aspects such as future signaling in hiring as well as noneconomic outcomes of isolation from work life and routine.

Consistent with the official state statistics, the analyses below amalgamate the two groups. Hence, according to Figure 2b, those who were away from work (i.e. fully unemployed or put on leave) in the first lockdown have a predicted probability of 0.83 of being employed in April 2021, compared to 0.93 for those who remained employed in the first lockdown.

5.2 The effects of individual and collective status during the pandemic

To examine our study hypotheses, we used the panel structure of the data to estimate curvilinear growth models with random intercept and cross-level interaction. To estimate the growth models, we interacted the individual and collective statuses, in March 2020, before the pandemic, in accordance with the classifications in Tables 1 and 2, respectively, with the eight survey waves. The results reveal how individuals' pre-COVID employment status shaped their labor market outcomes in the first lockdown (wave 1, the intercept in the growth model) and the trajectories of those outcomes during the first year (waves 2–8, informed by the slopes of the interaction between an individual's employment and collective status and time). Based on these models, in Figures 3 and 4, we present the predicted values in each of the eight waves for the probability of being employed, working for the same number of hours (or more), and earnings in the same monthly decile (or more). The full results by model are presented in Appendices B and C.

Regarding the findings presented in Appendix B, as confirmed by other studies, being male, from the dominant ethnic group (Jewish), and with higher education had positive effects on all three measures, and the combination of these characteristics explained important differences in avoiding the negative consequences of the crisis. Similarly, being employed in a large establishment had a positive effect on continuity of employment and worktime but less so on income stability. Not surprisingly, a strong negative effect on employment outcomes was found in sectors that were more severely harmed by the pandemic, such as leisure and tourism.

Regarding the individual status of employment (Figure 3), we found partial support for our first hypothesis that the continuity of employment, worktime, and earnings of SER workers (in blue) were less vulnerable to the shock than those of most non-SER workers (other colors). Comparing SER with all non-SER workers (left columns), we found that the employment security of SER workers was better than that of non-SER workers at least until

September (wave 4), and that they fared better in worktime and earnings only until June (wave 2). If part-time workers are omitted, the differences between the two groups of workers are significant over the entire year (data not shown).

Disaggregating non-SER workers into seven groups, the largest negative effect on the discontinuity of employment was found for on-demand workers (in light blue), workers under a fixed-term contract (in yellow), and workers employed through temp work agencies (in green). These groups were the most severely harmed by the first economic lockdown (wave 1), and their recovery from the lockdowns took longer (waves 2–8). Employees of service contractors (in dark blue) suffered from some decline in employment during waves 3–6, but some were employed without interruption, albeit in a fissured situation. The continuity of employment, worktime and earnings of three other groups of non-SER workers (renewal contract, temporary work agencies and service contractors in IT, and part-time workers) was not significantly different from that of SER workers. For ease of presentation, the results for these groups are shown only in the appendixes. Additional data that could distinguish between voluntary and involuntary part-time work may shed light on further differences but could not be gleaned from the survey.

The effect of collective status was less pronounced but nevertheless clear (Figure 4). Entirely unorganized workers (in grey) were less secure in the continuity of their employment during the first lockdown and subsequently than were fully organized workers (in blue), and the employment of partially organized workers (in orange) was similar to that of fully organized ones. At the same time, the worktime and earnings of those partially organized were found to be more secure than that of those who were fully organized. To restate these findings, proximity to the core of collective labor relations provided a greater level of employment (job) security, but not income security, and offered no greater promise of maintaining the same number of employment hours. In the aggregate, these are indications of a tradeoff.

5.3 The effects of individual and collective status combined during the pandemic

Finally, we estimated models in which we interacted the crossing between individual and collective labor market status in March 2020 (in accordance with the classification in Table 3) with the eight survey waves. Figure 5 presents the predicted values in each of the eight waves for the probability of being employed, working for at least the same number of hours, and earning in at least the same monthly decile for workers with similar demographic characteristics and other time-invariant unobserved characteristics. The full results yielded by the models are presented in Appendix D.

Figure 5 describes the core of what we hypothesized to be the more secure workers: those employed in a SER arrangement and those who were fully organized, that is, both members in the trade union and covered by a collective agreement (third hypothesis). In the first lockdown (wave 1), the position of organized SER workers (in orange) regarding employment continuity (Figure 5a) and worktime (Figure 5b) was considerably stronger than that of all non-SER workers who were unorganized (in grey). Although some differences are apparent when we compare the core of organized SER workers with those who enjoyed one form of secure market status (being either organized *or* in SER), it was the combination of being both in non-SER and unorganized that significantly decreased the probability of

being employed during the first lockdown. By contrast, the findings on earnings stability (Figure 5c) indicate that organized SER workers enjoyed no advantage over the others.

The trajectories of the four groups during the first year of the COVID-19 crisis indicate that organized SER workers had a higher probability of being employed throughout the entire year than unorganized non-SER workers. Their advantage in worktime vanished in August (wave 3), before the second lockdown, and unorganized SER workers (in blue) who remained on the job enjoyed greater earning stability than organized SER workers (in orange) in the last two waves. The significance of this finding requires clarification. Organized SER workers did not have lower monthly earnings but experienced a greater decline in their monthly earnings than their unorganized SER counterparts.

6. Concluding remarks

This study used panel data from Israel to identify the individual and collective effects of labor market status on workers' employment during the first year of the COVID pandemic, including continuity of employment, worktime, and earnings. The findings lend further support to the well-established consequences of individual and collective labor-market status differentials for employment and earnings inequality in routine times, and uniquely to the current research to the outcomes of a combination between the individual and collective statuses. In addition, and in line with our research questions, we also found that in times of economic, social, and health crises, such as the COVID-19 pandemic, labor market status was as well pivotal in explaining why workers differed in the likelihood of being employed and in the scope of their earnings.

Although we found that many non-SER workers fared worse than their SER counterparts, it was in particular those who were in temporal arrangements (on-demand and under fixed-term contracts) and those employed by temp work agencies who experienced a high rate of insecurity that expanded beyond the initial shock. We also found that trade union members who were covered by collective agreements fared better in general and enjoyed a higher degree of employment security during the crisis, although having made concessions in matters of earning and worktime.

Cross-cutting the two dimensions of labor market status, individual and collective, we found that unorganized workers employed in non-SER were the most vulnerable in employment security. Nevertheless, SER-unorganized workers who remained employed experienced a lesser decline in the continuity of worktime and earnings than did their more secure (SER-organized) counterparts. A possible explanation for the organized workers' tradeoff between employment and earnings is the fact of a negotiated compromise. Workers who were employed in establishments featuring collective relations were covered by formal and informal agreements that tried to keep as many workers as possible continuously employed with an agreement to reduce labor costs. Reduction in labor costs may be associated with reduced work hours but may also be the result of concession bargaining. This finding resonates with past studies in other countries based on the content of collective agreements of negotiated concessions between pay increases and job security during economic downturns (Glassner *et al.*, 2011; Valizade *et al.*, 2022).

In Israel, there are ample examples of formal collective agreements and informal (unregistered) collective arrangements in decentralized bargaining units in which concession bargaining featured during the COVID-19 pandemic. Some agreements allowed for a

certain number of layoffs, conditioned on prioritizing retirement and voluntary resignations with improved benefits (Klal Insurance 7.9.2020, Agreement 20200348). More typical was a compromise on wage adjustments, whether by halting existing agreements that mandated a general wage hike (Regba Furnitures, Registered Agreements 20200215, 20200428, 202110096) or by mandating wage cuts and a shift to part-time work (ECI Telecom, Registered Agreement 20200277). Some agreements provided for greater managerial flexibility without the usual compensation for workers, for example, for nighttime shiftwork that was required to comply with social distancing requirements (Israeli Aviation and Alta Ltd, Registered Agreement 20210017). Some agreements provided for compensating the costs of working from home, such as Internet connection, but also halted payments for transportation and per diem expenses at work (Partner, Registered Agreement 20200179). Overall, more collective agreements were concluded during 2020–2021 than in previous years (Ministry of Labor, Unit of Industrial Relations, Collective Agreements Public database).

It should come as no surprise that workers who experience precarity in regular times suffer more during economic crises. But these findings refute the political myth of equality before the virus. Moreover, the findings should caution, in the words of the ILO, 'against wishing to get back to the "normal" state'. The precarious baseline, demonstrated in Tables 1 and 2, is not merely the product of market forces. It is based on the state sanctioning nonstandard forms of employment despite evidence of their aggregate precarious implications, including the legal authorization of ongoing fissuring, permanent temporality and arrangements that deny equal terms to temp workers. The prevalence of nonstandard forms is the result of regulatory endorsements of such forms and neglect of their precarious outcomes.

Similarly, the dilution of the power attributed to corporatist bargaining structures leads to limited capacity to negotiate sector- and occupation-tailored arrangements in times of crisis. The public sector benefited from the remains of coordinated bargaining but not so the troubled segments of the private sector (Mundlak, 2020). In times of crisis, coordinated arrangements that rely on agreements between the social partners provide greater security and address inequality (OECD, 2019). In itself, this is not enough, however. Bargaining in sectors with limited membership (designated as the group of the 'partially organized') has been found to capture only some of the benefits of the security associated with collective representation.

Thus, a constructive reading of the findings about the effects of labor market status on continuity, stability, and protection from social risks is twofold. First, it calls for a reconsideration of precarious institutions, already well established in law and practice, prevalently using temporal arrangements. Second, it requires us to identify where desirable outcomes have been achieved in times of crisis, such as negotiated agreements for the public sector. Even if such agreements have been criticized for protecting workers either too little or too much, the advantage of a sector-sensitive comprehensive arrangement is evident. The objective is therefore to draw on the pandemic as a lesson for the future and reconsider rather than reinstate 'the normal'.

Finally, can these findings be generalized and applied outside Israel? An easy answer would be that they are consistent with prior studies of precarious work arrangements and collective representation and should therefore reinforce similar hypotheses in other countries. Indeed, the OECD report (2021) shows that the first wave of the COVID-19 crisis in European countries hit temporary workers the hardest. But our study also points out the importance of institutional detail. It is colored by the segmentation of state policies and by

the reliance on the method of furlough to extend security, as opposed to the trajectory of trying to keep as many workers as possible on the job by means of short-time work and work sharing. Similarly, 'precarious relations' are legally different. The distinction that was used here between different types of employment mediators (fissuring) is not identical in all countries and the implications of subcontracting vary. On-demand arrangements are treated differently. Finally, collective agreements in Israel are managed simultaneously at the centralized level (in this study, affecting mainly the public sector) and at the decentralized enterprise level. No single country can serve as a natural baseline to which all others can be compared. The rich data available from the Israeli panel can provide some answers with regard to Israel and at the same time raise awareness of the importance of institutional detail that governs the formation of individual and collective status.

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Appendix A. Number of observations by wave, type of contract and union membership and coverage

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8
Year	2020						2021	
Months	March–April	June	August	September	October	December	January	April
Type of contract								
SER	1027	842	745	761	774	676	729	647
Part-time work	269	209	181	181	187	155	168	159
Renewal contract	256	202	176	176	184	157	174	147
Fixed-term contract	62	40	37	40	43	35	41	35
On demand	67	52	43	43	42	41	39	37
Temp work agencies (TWAs)	31	20	17	19	20	18	19	19
Service contractors (SC)	55	38	32	29	35	25	26	26
TWAs or SC in IT	28	23	17	23	23	20	20	16
Missing type of contract	38	28	44	26	24	22	23	18
Union membership and coverage								
Fully organized	601	490	437	442	454	393	421	374
Partially organized	258	213	182	183	189	165	179	160
Unorganized	898	702	609	626	644	550	596	533
Missing union	76	49	64	47	45	41	43	37
Total	1,833	1,454	1,292	1,298	1,332	1,149	1,239	1,104

Appendix B The effects of individual status on labor market outcomes during the pandemic—results from curvilinear growth models with random intercept and cross-level interaction; dependent variables: probability of being employed, being employed for the same (or more) number of hours, and being employed in the same (or higher) monthly earnings decile prior to the lockdown of the economy

Dependent variable	Employed		Employed for the same (or more) number of hours		Employed in the same (or higher) monthly earnings decile	
	Model 1		Model 2		Model 3	
Age 25–54 (ref: age 18–24)	0.027	(0.021)	0.085**	(0.025)	−0.019	(0.029)
Age 55+ (ref: age 18–24)	0.012	(0.024)	0.066**	(0.029)	−0.035	(0.028)
Male	0.059**	(0.013)	0.068**	(0.016)	0.005	(0.015)
Non–Arabs	0.081**	(0.020)	0.106**	(0.024)	0.110**	(0.023)
BA	0.060**	(0.014)	0.058**	(0.017)	0.027	(0.016)
Large establishment	0.045**	(0.015)	0.078**	(0.018)	0.017	(0.018)
Employed in industries severely affected by the pandemic	−0.128**	(0.017)	−0.167**	(0.021)	−0.090**	(0.020)
Type of union status (relative to insiders)						
Partials	−0.010	(0.020)	0.052*	(0.025)	0.017	(0.024)
Outsiders	−0.059*	(0.015)	−0.014	(0.018)	0.003	(0.018)
Type of contract (relative to SER):						
Part-time work	−0.053	(0.036)	−0.040	(0.043)	0.181**	(0.064)
Renewal contract	−0.087*	(0.036)	−0.142**	(0.043)	0.109	(0.065)
Fixed-term contract	−0.185*	(0.073)	−0.088	(0.088)	0.140	(0.132)
On demand	−0.373**	(0.066)	−0.316**	(0.079)	−0.030	(0.119)
Temp work agencies (TWAs)	−0.237*	(0.101)	−0.171	(0.122)	0.272	(0.181)
Service contractors (SC)	0.002	(0.077)	0.083	(0.093)	0.248	(0.143)
TWAs or SC in IT	0.022	(0.097)	0.118	(0.116)	−0.126	(0.174)
Part-time work × wave	0.014	(0.016)	0.038	(0.021)	−0.125**	(0.050)
Renewal contract × wave	0.023	(0.016)	0.035	(0.021)	−0.137**	(0.050)
Fixed-term contract × wave	0.045	(0.034)	−0.003	(0.043)	−0.147	(0.104)
On demand × wave	0.092**	(0.030)	0.053	(0.039)	−0.061	(0.092)
Temp work agencies (TWAs) × wave	−0.028	(0.047)	−0.078	(0.060)	−0.289*	(0.142)
Service contractors (SC) × wave	−0.050	(0.037)	−0.080	(0.047)	−0.225*	(0.114)
TWAs or SC in IT × wave	0.029	(0.043)	0.013	(0.055)	0.133	(0.133)
Part-time work × wave^2	−0.001	(0.002)	−0.003	(0.002)	0.014*	(0.005)
Renewal contract × wave^2	−0.002	(0.002)	−0.003	(0.002)	0.016*	(0.006)

continued

Appendix B *Continued*

Dependent variable	Employed		Employed for the same (or more) number of hours		Employed in the same (or higher) monthly earnings decile	
	Model 1		Model 2		Model 3	
Fixed-term contract × wave^2	−0.004	(0.004)	0.002	(0.005)	0.016	(0.012)
On demand × wave^2	−0.007*	(0.003)	−0.003	(0.004)	0.009	(0.010)
Temp work agencies (TWAs) × wave^2	0.006	(0.005)	0.009	(0.007)	0.032*	(0.016)
Service contractors (SC) × wave^2	0.005	(0.004)	0.008	(0.005)	0.025*	(0.013)
TWAs or SC in IT × wave^2	−0.005	(0.005)	−0.004	(0.006)	−0.016	(0.015)
Wave	0.048**	(0.007)	0.057**	(0.009)	0.342**	(0.022)
Wave^2	−0.004**	(0.001)	−0.004**	(0.001)	−0.035**	(0.002)
Constant	0.616	(0.032)	0.289	(0.039)	−0.127	(0.043)
N Individuals	1710		1710		1710	
N Observations	10 040		10 040		5287	

Source: A survey of adult Israeli men and women (age 18+) who were employed as wage and salary workers in the first week of March (N=1833). The coefficients are followed by standard errors in parentheses.
*$P < 0.05$;
**$P < 0.01$ (two-tailed test).

Appendix C The effects of collective status on labor market outcomes during the pandemic—results from curvilinear growth models with random intercept and cross-level interaction; dependent variables: probability of being employed, being employed for the same (or more) number of hours, and being employed in the same (or higher) monthly earnings decile prior to the lockdown of the economy

Dependent variable	Employed		Employed for the same (or more) number of hours		Employed in the same (or higher) monthly earnings decile	
	Model 1		Model 2		Model 3	
Age 25–54 (ref: age 18–24)	0.027	(0.021)	0.085**	(0.025)	−0.021	(0.024)
Age 55+ (ref: age 18–24)	0.012	(0.024)	0.066**	(0.029)	−0.038	(0.028)
Male	0.059**	(0.013)	0.069**	(0.016)	0.005	(0.015)
Non-Arabs	0.082**	(0.020)	0.106**	(0.024)	0.109**	(0.023)
BA	0.060**	(0.014)	0.058**	(0.017)	0.028	(0.016)
Large establishment	0.045**	(0.015)	0.078**	(0.018)	0.018	(0.018)
Employed in industries severely affected by the pandemic	−0.128**	(0.017)	−0.167**	(0.021)	−0.090**	(0.020)

continued

Appendix C *Continued*

Dependent variable	Employed		Employed for the same (or more) number of hours		Employed in the same (or higher) monthly earnings decile	
	Model 1		Model 2		Model 3	
Type of contract (relative to SER):						
Part-time work	−0.027	(0.019)	0.035	(0.022)	0.027	(0.022)
Renewal contract	−0.045*	(0.019)	−0.071**	(0.023)	−0.044*	(0.023)
Fixed-term contract	−0.094*	(0.039)	−0.057	(0.048)	−0.039	(0.047)
On demand	−0.161*	(0.035)	−0.176**	(0.043)	−0.074	(0.041)
Temp work agencies (TWAs)	−0.218*	(0.054)	−0.289**	(0.066)	−0.072	(0.065)
Service contractors (SC)	−0.091*	(0.042)	−0.054	(0.051)	−0.012	(0.049)
TWAs or SC in IT	0.030	(0.050)	0.085	(0.061)	0.014	(0.061)
Type of union status (relative to insiders)						
Partially organized	−0.104*	(0.038)	−0.053	(0.046)	−0.146*	(0.068)
Unorganized	−0.126*	(0.028)	−0.058*	(0.033)	−0.100*	(0.049)
Partially organized × wave	0.043*	(0.017)	0.057*	(0.022)	0.111*	(0.052)
Partially organized × wave^2	0.029*	(0.012)	0.016	(0.016)	0.067	(0.037)
Unorganized × wave	−0.004*	(0.002)	−0.006*	(0.002)	−0.010	(0.006)
Unorganized × wave^2	−0.002	(0.001)	−0.001	(0.002)	−0.006	(0.004)
Wave	0.036*	(0.009)	0.050**	(0.012)	0.241**	(0.029)
Wave^2	−0.003*	(0.001)	−0.004**	(0.001)	−0.025**	(0.003)
Constant	0.644	(0.034)	0.305	(0.041)	0.011	(0.049)
N Individuals	1710		1710		1710	
N Observations	10 040		10 040		5287	

Source: A survey of adult Israeli men and women (age 18+) who were employed as wage and salary workers in the first week of March ($N = 1833$). The coefficients are followed by standard errors in parentheses.
$^{*}P < 0.05$;
$^{**}P < 0.01$ (two-tailed test).

Appendix D. The effects of collective status on labor market outcomes during the pandemic—results from curvilinear growth models with random intercept and cross-level interaction; dependent variables: probability of being employed, being employed for the same (or more) number of hours, and being employed in the same (or higher) monthly earnings decile prior to the lockdown of the economy

Dependent variable:	Employed		Employed for the same (or more) number of hours		Employed in the same (or higher) monthly earnings decile	
	Model 1		Model 2		Model 3	
Age 25–54 (ref: age 18–24)	0.041	(0.021)	0.105**	(0.025)	−0.013	(0.025)
Age 55+ (ref: age 18–24)	0.020	(0.024)	0.078**	(0.029)	−0.032	(0.028)
Male	0.058**	(0.013)	0.066**	(0.016)	0.003	(0.015)
Non-Arabs	0.079**	(0.020)	0.108**	(0.024)	0.111**	(0.023)

continued

Appendix D. *Continued*

Dependent variable:	Employed		Employed for the same (or more) number of hours		Employed in the same (or higher) monthly earnings decile	
	Model 1		Model 2		Model 3	
BA	0.064**	(0.014)	0.058**	(0.017)	0.026	(0.016)
Large establishment	0.054**	(0.015)	0.088**	(0.018)	0.019	(0.018)
Employed in industries severely affected by the pandemic	−0.126**	(0.017)	−0.164**	(0.021)	−0.090**	(0.020)
Non-SER	−0.038	(0.043)	−0.010	(0.051)	0.184*	(0.077)
Unorganized	−0.084*	(0.034)	−0.010	(0.040)	−0.088	(0.059)
Non-SER × unorganized	−0.092	(0.053)	−0.120*	(0.063)	−0.075	(0.094)
Unorganized × wave	0.023	(0.015)	0.018	(0.019)	0.061	(0.045)
Non-SER × wave	0.006	(0.019)	0.012	(0.025)	−0.164**	(0.059)
Non-SER × unorganized × wave	0.023	(0.024)	0.017	(0.031)	0.053	(0.072)
Unorganized × wave^2	−0.002	(0.002)	−0.001	(0.002)	−0.004	(0.005)
Non-SER × wave^2	−0.000	(0.002)	−0.001	(0.003)	0.019**	(0.007)
Non-SER × unorganized × wave^2	−0.002	(0.003)	0.046	(0.015)	−0.007	(0.008)
Wave	0.034**	(0.012)	−0.001	(0.003)	0.304	(0.036)
Wave^2	−0.003**	(0.001)	−0.003	(0.002)	−0.032**	(0.004)
Constant	0.625**	(0.038)	0.276	(0.046)	−0.072	(0.057)
N Individuals	1710		1710		1710	
N Observations	10 040		10 040		5287	

Source: A survey of adult Israeli men and women (age 18+) who were employed as wage and salary workers in the first week of March ($N = 1833$). The coefficients are followed by standard errors in parentheses.
*$P < 0.05$;
**$P < 0.01$ (two-tailed test).

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