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Post-Dismissal Trajectories and Challenges to Professional Relocation in the Brazilian Labor Market

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Abstract This study investigates the employment and wage trajectories faced by dismissed workers in the Brazilian formal labor market. Using administrative data from RAIS and an event study model, with an emphasis on the impacts of mass layoffs, we analyzed the evolution of employment and income over five years after dismissal. Considering heterogeneities related to the economic sector and size of the companies, the results show significant differences in professional relocation, depending on the characteristics of the companies of origin. The study's conclusions provide subsidies for the improvement of public policies aimed at mitigating the negative impacts of unemployment and strengthening the resilience of workers in the labor market.

Introduction

The Brazilian labor market is marked by high levels of informality and intense turnover, affecting even workers with a formal contract. In this context, simple insertion in formal employment does not ensure, by itself, economic stability or overcoming the condition of vulnerability. The frequency of dismissals and the challenges in professional relocation amplify this scenario of uncertainty, making it essential to understand the impacts of dismissals and the obstacles faced by workers in the search for new opportunities in the labor market.

The dynamics of the labor market are shaped by a combination of factors, including economic changes, technological advances, and the institutional apparatus, which encompasses public policies, labor laws, and regulatory standards. In this context, layoffs represent a significant challenge, especially for workers who need to re-enter the formal market. This study investigates the trajectories of formal employment and the challenges faced by laid-off workers in Brazil, with an emphasis on the impacts of mass layoffs on employability and income. Although these dismissals are not the central focus of the research, its analysis is adopted as an empirical strategy to isolate the effects of voluntary turnover, which often reflects the search for better opportunities in the labor market. By focusing on abrupt shutdowns independent of individual decisions, the approach allows for a more accurate capture of the reaction of workers to adverse shocks, evidencing the impacts on their employability and income, as well as the challenges in professional relocation.

Mass layoff shocks represent critical events in the labor market, generating long-term repercussions for workers, firms, and the economy as a whole. These events, characterized by abrupt reductions in the workforce, lead to persistent wage losses and difficulties in relocation. The findings of the literature (Jacobson et al., 1993; Schmieder et al., 2010; Davis and von Wachter, 2011) indicate that the negative effects of mass layoffs can extend for years, compromising the financial stability of affected workers.

This study investigates the effects of mass layoffs in Brazil using administrative data from the RAIS (*Annual Report of Social Information*) between the years 2004 and 2019. Heterogeneities of impacts were evaluated, considering variables such as economic sector and size of the companies. Recent evidence suggests that the effects of layoffs ripple beyond the directly affected workers and their families, reaching adjacent productive sectors and highlighting the need for specific interventions (Gathmann et al., 2020).

The empirical approach adopted in this study, based on a study of events, allows us to assess the long-term impacts of mass layoffs on workers' employability and income, in line with the methodologies employed by Davis and von Wachter (2011), which analyze persistent wage losses and reemployment rates through the construction of comparable control groups.

The results of this study indicate that workers in larger companies face lower wage losses and have better prospects for relocation, possibly due to the greater accumulation of human capital and the breadth of their professional contact networks. On the other hand, those who were employed in smaller companies have more persistent difficulties in reintegration and suffer more lasting wage losses. Even when they manage to relocate, they return, on average, with salaries lower than those they received before dismissal, suggesting not only a penalty in income, but also a possible deterioration in the quality of the occupations available.

In addition, the impacts vary by economic sector, with workers from the manufacturing industry and trade facing the greatest challenges to reemployment and the most prolonged wage declines. On the other hand, sectors such as Financial Activities and Information Technology show a more accelerated recovery. These findings highlight the need for

public policies that not only promote professional retraining and encourage formal reintegration, but also take into account sectoral specificities, in order to mitigate the negative impacts of layoffs and expand opportunities for productive reintegration into the labor market.

Database

In this study, we used data from the Annual Report of Social Information (RAIS), a database of administrative records of the Ministry of Labor and Employment (MTE), whose annual completion is a requirement for all companies formally constituted in Brazil. The data cover the years 2004 to 2019. RAIS brings together three main categories of information:

1. **Firm Data:** Includes CNPJ (*National Registry of Legal Entities*), economic activity sector (CNAE - *National Classification of Economic Activities*), legal nature, municipality, size of the firm, among others.

2. **Information on Employment Relationships:** Includes all active or terminated employment relationships until December 31 of each year, including the worker's PIS (*Social Integration Program*) registration number, type of relationship, date of admission, salary, working hours, length of service, occupation in accordance with the CBO (Brazilian Classification of Occupations) and, in cases of dismissal, the respective reasons and the date of dismissal.

3. **Characteristics of Workers:** Record information such as date of birth, level of schooling, gender and race/skin color.

This information allows for detailed monitoring of the relationships between companies and workers, enabling the identification of professional trajectories and patterns of movement in the formal labor market.

Identifying a Mass Layoff

The analysis of the relocation of workers in the formal market requires a strategy that reduces the influence of endogenous factors. To this end, we have taken a judicious approach to identify companies that have suffered mass layoffs and based on them, select the affected workers.

Enterprise level. The selection of companies impacted by mass layoffs was carried out based on the following criteria, considering only active links in business entities and employment contracts for an indefinite term in the reference year:
i) companies with at least 30 active links on December 31 of the reference year (prior to the shock); ii) reduction of at least 30% of the active workforce in the reference year, due to dismissals at the firm's initiative in the year of the shock; iii) stable workforce, with maximum variations of 20 percentage points of active employment (workforce must be between 80% and 120% of the reference period) in the two years prior to the reference year; iv) only companies in which there was no significant migration of dismissals (70% or more) to a new establishment; In this way, we avoid considering firm restructuring as possible shocks. v) only the first shock of the firm in the period analyzed.

Level of worker. The treatment group is composed of workers who have been directly affected by mass layoffs in the selected companies. The identification of these workers abides by the following criteria:
i) active employment relationships in the reference year; ii) working hours: contracts with a minimum workload of 40 hours per week; iii) length of employment: at least 3 years in the same employment relationship iv) age: between 25 and 50 years;
The first three criteria (i, ii, and iii) ensure that selected workers have a relatively stable trajectory in employment before dismissal, reducing the likelihood of voluntary, atypical, or temporary dismissals. Criterion iv, age between 25 and 50 years, was adopted to mitigate possible biases related to education and retirement. In particular, the lower limit of 25 years was established to minimize potential biases arising from heterogeneity in the time of completion of formal education and transition to the labor market, since at this age most individuals have already reached their final educational training. On the other hand, the upper limit of 50 years seeks to mitigate distortions associated with retirement decisions, reducing the influence of definitive exits from the labor market that could compromise the identification of the effects of dismissal on the work trajectory of individuals.
To ensure a robust comparison, the control group was composed of workers with characteristics similar to the treatment group, but who were employed in companies that did not suffer mass layoffs. The selection considered individuals in companies with similar profiles, without a reduction in active employment equal to or greater than 30% in the reference year.

Panel construction. The panel was developed to follow the trajectory of the selected workers over a period of eight years, covering three years before and five years after the reference year. Eight independent panels were built, using RAIS data from 2004 to 2019, with reference years between 2007 and 2014. The temporal structure is illustrated in the Appendix (Table A1).
The workers included in the analysis were monitored annually, ensuring that they were present on the registers in the three years prior to the reference period and were dismissed in the year of the shock. The identification of the workers was carried out through the Social Identification Number

Table 1. Personal Characteristics

Distribution of Workers	Treatment	Control
Sex		
Female	31.1%	29.0%
Male	68.9%	71.0%
Age (in years)	36.11	37.19
Level of Education		
Complete Higher Education	5.7%	14.3%
Complete High School	41.5%	41.6%
Complete Junior High School	26.1%	21.3%
Incomplete Junior High School	26.8%	22.8%
Skin color/Race		
White	55.2%	63.8%
Non-white	40.0%	32.0%
Other	1.0%	0.5%
Not identified	3.8%	3.7%
Years of employment	6.06	8.54
Wage in December (ln)	1.22	1.48
Employment t_1	0.0%	89.5%
Total of observations	458,396	4,332,756

Table 2. Characteristics of Firms

Distribution of Firms	Treatment	Control
Geographic Region		
North	5.37%	3.21%
Northeast	20.17%	14.57%
Southeast	52.79%	58.19%
South	14.37%	19.22%
Midwest	7.30%	4.82%
Size (employees)		
Up to 99	36.47%	23.62%
100 to 999	44.56%	46.37%
1.000 or more	18.97%	30.01%
Activity Sector		
Agriculture + Extractive Industry	2.72%	2.59%
Manufacturing Industry	35.99%	45.31%
Electricity, water, sewage	1.81%	3.99%
Construction	7.45%	1.88%
Trade	16.66%	16.06%
Transportation, storage and mailing	7.72%	9.54%
Room and Board	3.99%	2.86%
Information and communication	1.83%	2.17%
Financial/insurance and administrative	16.81%	10.14%
Health and Education	1.71%	3.55%
Other	3.32%	1.92%
Total of observations	458,396	4,332,756

(NIS), while the companies were identified by the National Registry of Legal Entities (CNPJ). If they were not found in subsequent years, the workers were classified as absent from the formal market.

This procedure resulted in a sample of 458 thousand workers in the treatment group and 4.332 million in the control group, with about 455 thousand dismissed at t_{+1}, over the 8 panels built. The main characteristics of workers and companies are presented in Tables 1 and 2.

Empirical Strategy

To analyze the relocation of workers in the Brazilian formal market after a mass layoff and its impacts on individual outcome variables, we used an event-study approach. The specification adopted is as follows:

$$y_{i,t} = \sum_{k=-3}^{5} \left[\alpha_k \mathbb{1}(t'+k) + \beta_k \mathbb{1}(t'+k) \cdot trat_i\right] + \eta_i + \sigma_t + u_{i,k,t}$$

where $y_{i,t}$ represents the variable of interest, being a dummy that assumes a value of 1 if individual i is employed in year t, or the logarithm of individual i salary in December, conditional on being employed, and expressed in minimum wages of the respective year t[1]. The variables $\mathbb{1}(t'+k)$ are dummies that indicate the period (year) in relation to the period before the event t', while $trat_i$ identifies whether individual i belongs to the group of workers affected by the mass layoff. The terms η_i and σ_t capture the fixed effects of individual and year, respectively, and $u_{i,k,t}$ represents the error term. Standard errors are clustered at the firm level to correct possible correlations within firms.

[1]The balanced panel for the employment variable ensures that the sample continuously monitors individuals over time, allowing an identification of the effects of dismissal on permanence in the formal labor market. For wages, we adopted an unbalanced panel to prevent income loss from being captured mechanically only by leaving the job, focusing on the impacts on earnings conditional on reemployment. This approach also makes it possible to analyze whether workers who return to the labor market do so with lower wages, on average.

The main coefficients of interest of this regression are represented by β_k, which expresses the change in the outcome variable between the quarter $t' + k$ and the reference quarter as a result of the shock.

For heterogeneity analyses, the proposed specification is given by:

$$y_{i,t} = \sum_{k=-3}^{5} \Big[\alpha_k \mathbb{1}(t'+k) + \beta_k \mathbb{1}(t'+k) \cdot trat_i + \gamma_k \mathbb{1}(t'+k) \cdot het_i + \delta_k \mathbb{1}(t'+k) \cdot trat_i \cdot het_i\Big] + \eta_i + \sigma_t + u_{i,k,t}$$

where het_i[2] are dummies associated with the individual having the heterogeneous characteristic het pre-shock. In this case, coefficients γ_k express possible differentials in the evolution of outcome variable $y_{i,t}$ according to heterogeneity het_i of worker i before the shock, regardless of whether they have experienced a mass dismissal event. The δ_k coefficients of the interaction between the period dummies in relation to the pre-event year, the treatment dummy and the heterogeneous characteristic of the workers are the most interesting in this equation. They express how the effect of a mass dismissal shock in period k varies according to the heterogeneous characteristic explored.

Results

Figure 1 illustrates the evolution of the probability of being employed in the formal sector after a mass layoff event, compared to workers in the control group (without mass layoffs). The results indicate that, two years after the shock, affected workers are 23.8 percentage points less likely to be employed than workers in companies that have not experienced this type of shock. This result highlights the difficulties of relocating in the Brazilian formal labor market. In addition, the impact is persistent: even after five years, the probability of returning to formal employment is still 15.2 percentage points lower than in the control group.

Figure 2 shows the evolution of wages in the formal sector after a mass dismissal event, considering only the workers who managed to relocate. The results indicate an immediate and significant drop in income: in the first year after mass layoffs, employed workers recorded a salary 7.5% lower than in the control group. This effect persists over time, with reductions of 4.7% in the second year and 3.5% in the third

[2]In this study, we used subscript i to represent the heterogeneous characteristics associated with individuals, for simplicity of notation. However, it is important to highlight that the heterogeneities explored refer, in reality, to the characteristics of the firm where the worker was employed before the mass dismissal event. Thus, the het_i variable should be interpreted as a proxy for the firm's conditions, allowing us to evaluate how different business contexts influence the impacts of mass layoffs.

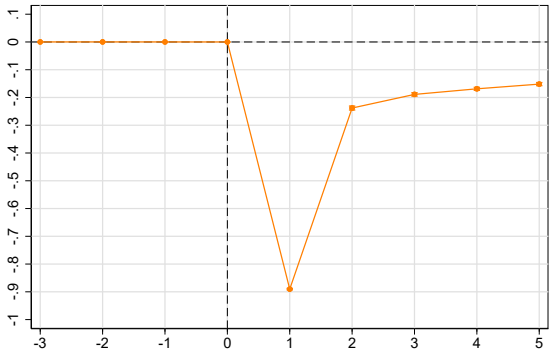

Figure 1. Effect on formal employment in mass layoff events.
Note: The estimated coefficients and the respective p-values are presented in Table A2 of the Appendix.

year. Even after five years, workers still receive, on average, 1.8 percent less than those who did not face the shock. These findings highlight not only the difficulty of relocating to the Brazilian labor market, but also the long-lasting wage loss, suggesting that dismissed workers face barriers to the full resumption of their professional trajectory.

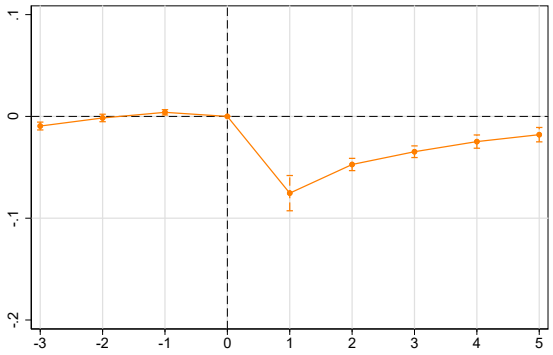

Figure 2. Effect on wages in the formal sector in mass layoff events.
Note: The estimated coefficients and the respective p-values are presented in Table A2 of the Appendix.

Heterogeneities. The results of this section show that characteristics of companies, such as size and sector of activity, play a relevant role in the trajectory of relocation of workers after a mass dismissal event. In particular, workers who were employed in larger companies showed a decline in the formal market and suffered lower wage losses in the long run (see Figures 3 and 4). Specifically, those who worked in companies with more than 1,000 employees faced a less pronounced reduction in the likelihood of returning to formal employment and experienced milder wage losses compared with workers at smaller firms. These results suggest that the human capital accumulated in large companies and possible professional networks can contribute to a more favorable reintegration into the labor market (Haltiwanger et al., 1999;

Hensvik and Nordström Skans, 2016).

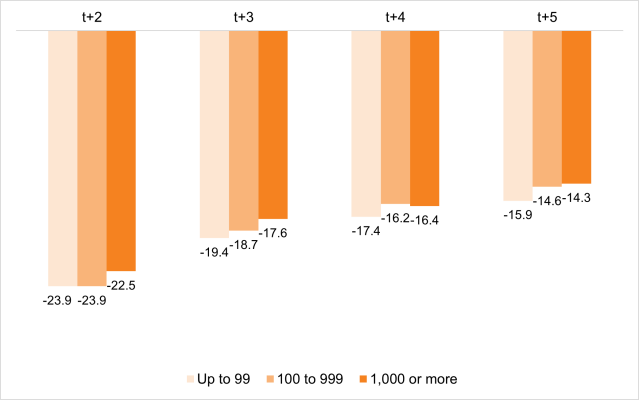

Figure 3. Effect on formal employment by firm size after a mass layoff event.

Note: The estimated coefficients and the respective p-values are presented in Table A3 of the Appendix.

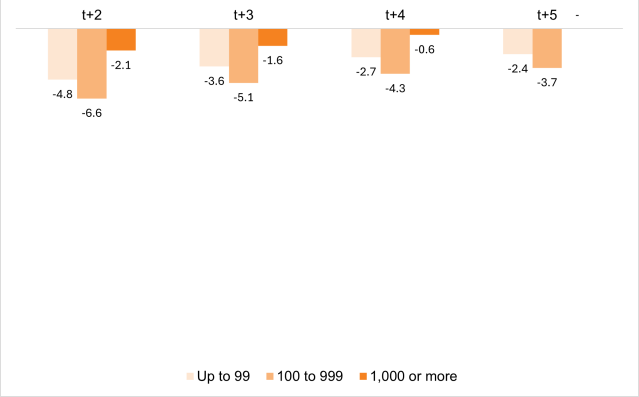

Figure 4. Effect on wages by firm size after a mass layoff event.

Note: The estimated coefficients and the respective p-values are presented in Table A4 of the Appendix.

The analysis also reveals that the sector of activity in which the worker was employed before the mass layoff event significantly influences his prospects for relocation and future wage losses. As illustrated in Figure 5, sectors such as Agriculture and Extractive Industry, Electricity, Water and Sewage, and Manufacturing Industry showed the greatest reductions in the probability of formal re-employment, with decreases of more than 17%. In contrast, sectors such as Construction and Financial, Insurance and Administrative Activities suffered relatively minor impacts. With regard to wage losses (Figure 6), workers in the Electricity, Water and Sewage, Manufacturing Industry, and Agriculture and Extractive sectors recorded the largest reductions in income, while those in sectors such as Information and Communication showed practically no losses. These results indicate that the structure of the sector influences not only the velocity of reintegration into the formal market, but also the level of income recovered, possibly reflecting differences in occupational mobility and the demand for specific skills (Caliendo et al., 2017).

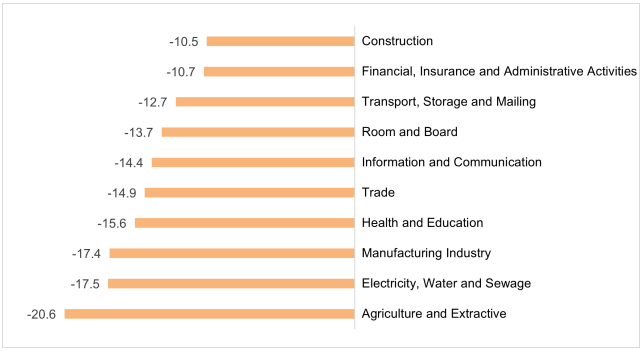

Figure 5. Effect on formal employment by sector of activity in the 5th year after a mass layoff event.

Note: The estimated coefficients and the respective p-values are presented in Table A5 of the Appendix.

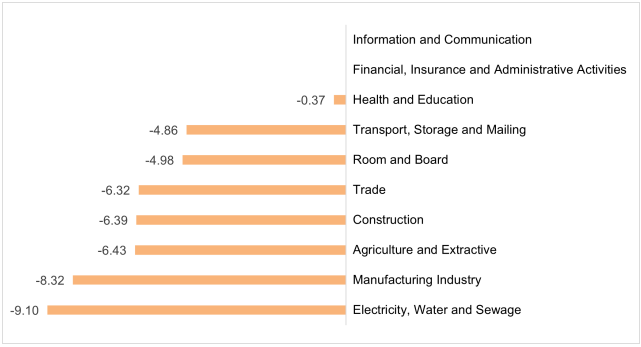

Figure 6. Effect on wages by sector of activity in the 5th year after a mass layoff event.

Note: The estimated coefficients and the respective p-values are presented in Table A6 of the Appendix.

Conclusion

The results of this study highlight the difficulties in the professional relocation of workers affected by mass layoffs in Brazil, showing how factors such as the economic sector and the size of the firm influence the capacity for recovery in the labor market. The workers of larger companies tend to have better reemployment rates and lower wage losses, which suggests that the accumulated experience and professional networks associated with these companies facilitate the transition to new opportunities. By contrast, workers in smaller companies face more prolonged challenges, with persistent negative impacts on their income and occupational stability. The sectoral analysis reveals that workers previously employed in the manufacturing and trade sectors were the most impacted by mass layoffs, facing significant drops in employability and prolonged wage losses. On the other hand, those who worked in sectors such as financial activities and information technology showed a faster recovery, which suggests that the characteristics of these sectors offer better opportunities for reintegration into the labor market. These results indicate that prospects for relocation vary significantly according to the sector of origin of the workers, reflecting differences in the demand for skills and the structure of the labor market. These findings highlight the

need for policies aimed at mitigating the impacts of mass layoffs, considering the difficulties of reintegration into the labor market and persistent wage losses. Retraining programs aligned with market demands can increase relocation opportunities, while initiatives that facilitate the transition to sectors with greater absorption capacity can reduce the time of unemployment. In addition, social protection measures targeting the most vulnerable workers can mitigate the immediate economic effects and contribute to a more stable long-term relocation. Finally, this study contributes to the debate on employability in Brazil by providing empirical evidence that can support the formulation of more effective strategies to face the challenges imposed by layoffs. The understanding of the heterogeneities in the impacts is fundamental for the development of policies that favor a rapid and effective reintegration into the formal labor market, creating conditions that expand opportunities for professional advancement and social mobility of the affected workers.

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Appendix

Table A1. Panel structure

Reference	t_{-3}	t_{-2}	t_{-1}	t_0	t_{+1}	t_{+2}	t_{+3}	t_{+4}	t_{+5}
2007	2004	2005	2006	2007	2008	2009	2010	2011	2012
2008	2005	2006	2007	2008	2009	2010	2011	2012	2013
2009	2006	2007	2008	2009	2010	2011	2012	2013	2014
2010	2007	2008	2009	2010	2011	2012	2013	2014	2015
2011	2008	2009	2010	2011	2012	2013	2014	2015	2016
2012	2009	2010	2011	2012	2013	2014	2015	2016	2017
2013	2010	2011	2012	2013	2014	2015	2016	2017	2018
2014	2011	2012	2013	2014	2015	2016	2017	2018	2019

Note: t_0 represents the year before the shock, while t_{+1} indicates the year of the shock. The intervening years correspond to the periods of analysis between the pre- and post-shock.

Table A2. Effect on jobs and wages in the formal sector in mass layoff events

Period	Employment	Salary in December (ln)
t_{-3}	0.000	-0.009***
	(0.000)	(0.002)
t_{-2}	0.000	-0.002
	(0.000)	(0.002)
t_{-1}	0.000	0.004***
	(0.000)	(0.001)
t_{+1}	-0.890***	-0.075***
	(0.001)	(0.009)
t_{+2}	-0.238***	-0.047***
	(0.004)	(0.003)
t_{+3}	-0.189***	-0.035***
	(0.003)	(0.003)
t_{+4}	-0.169***	-0.025***
	(0.003)	(0.003)
t_{+5}	-0.152***	-0.018***
	(0.003)	(0.004)
Constante	0.910***	1.459***
	(0.000)	(0.000)
Observations	43,120,368	38,498,360
R-square	0.424	0.862

Note: Robust standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A3. Effect on formal employment in mass layoff events, by firm size

Period	Up to 99	100 to 999	1,000 or more
t_{-3}	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)
t_{-2}	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
t_{-1}	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)
t_{+1}	-0.874***	-0.887***	-0.908***
	(0.001)	(0.001)	(0.003)
t_{+2}	-0.239***	-0.239***	-0.225***
	(0.002)	(0.004)	(0.014)
t_{+3}	-0.194***	-0.187***	-0.176***
	(0.002)	(0.003)	(0.012)
t_{+4}	-0.174***	-0.162***	-0.164***
	(0.002)	(0.003)	(0.010)
t_{+5}	-0.159***	-0.146***	-0.143***
	(0.002)	(0.003)	(0.010)
Constante	0.902***	0.910***	0.917***
	(0.000)	(0.000)	(0.000)
Observations	10,239,831	19,029,321	11,922,777
R-square	0.446	0.419	0.410

Note: Robust standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A4. Effect on wages in the formal sector in mass layoff events, by firm size

Period	Up to 99	100 to 999	1,000 or more
t_{-3}	-0.005***	-0.007**	-0.007
	(0.001)	(0.003)	(0.006)
t_{-2}	0.001	0.002	0.002
	(0.001)	(0.002)	(0.005)
t_{-1}	0.004***	0.005**	0.007*
	(0.001)	(0.002)	(0.004)
t_{+1}	-0.054***	-0.123***	-0.037*
	(0.007)	(0.022)	(0.021)
t_{+2}	-0.048***	-0.066***	-0.021*
	(0.002)	(0.004)	(0.012)
t_{+3}	-0.036***	-0.051***	-0.016
	(0.002)	(0.004)	(0.010)
t_{+4}	-0.027***	-0.043***	-0.006
	(0.002)	(0.004)	(0.012)
t_{+5}	-0.024***	-0.037***	0.005
	(0.002)	(0.004)	(0.012)
Constante	1.308***	1.448***	1.574***
	(0.000)	(0.000)	(0.000)
Observations	8,977,097	16,989,853	10,797,609
R-square	0.841	0.861	0.866

Note: Robust standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A5. Effect on formal employment in mass layoff events, by sector of activity

Period	Agriculture	Manufacturing Ind.	Electricity	Construction	Trade	Transport	Room and Board	Information	Finance	Health	Others
t_{-3}	0.000	0.000	0.001	0.001*	0.000*	-0.000*	0.000	-0.002	0.000	0.000	0.000
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)
t_{-2}	0.001	0.000*	-0.000	0.001*	0.000***	-0.000*	0.000	-0.001	0.000	0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)
t_{-1}	0.000	0.000	0.001*	0.000	0.000***	-0.000*	0.000	-0.001	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)
t_{+1}	-0.905***	-0.896***	-0.963***	-0.855***	-0.869***	-0.887***	-0.852***	-0.908***	-0.875***	-0.904***	-0.888***
	(0.007)	(0.002)	(0.005)	(0.003)	(0.002)	(0.003)	(0.002)	(0.005)	(0.005)	(0.001)	(0.008)
t_{+2}	-0.287***	-0.286***	-0.221***	-0.174***	-0.232***	-0.196***	-0.214***	-0.237***	-0.174***	-0.259***	-0.217***
	(0.015)	(0.005)	(0.039)	(0.015)	(0.004)	(0.008)	(0.006)	(0.029)	(0.011)	(0.010)	(0.029)
t_{+3}	-0.246***	-0.222***	-0.208***	-0.142***	-0.191***	-0.153***	-0.164***	-0.192***	-0.126***	-0.198***	-0.179***
	(0.016)	(0.004)	(0.037)	(0.012)	(0.003)	(0.008)	(0.006)	(0.021)	(0.010)	(0.008)	(0.026)
t_{+4}	-0.225***	-0.193***	-0.197***	-0.122***	-0.167***	-0.136***	-0.145***	-0.159***	-0.124***	-0.169***	-0.160***
	(0.016)	(0.003)	(0.035)	(0.012)	(0.003)	(0.008)	(0.006)	(0.020)	(0.008)	(0.008)	(0.024)
t_{+5}	-0.206***	-0.174***	-0.175***	-0.105***	-0.149***	-0.127***	-0.137***	-0.144***	-0.107***	-0.156***	-0.148***
	(0.017)	(0.003)	(0.031)	(0.012)	(0.003)	(0.008)	(0.006)	(0.021)	(0.008)	(0.008)	(0.022)
Constant	0.916***	0.910***	0.955***	0.887***	0.902***	0.913***	0.892***	0.910***	0.906***	0.923***	0.903***
	(0.001)	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.002)
Observations	1,076,706	18,380,565	1,564,308	995,013	6,664,230	3,876,156	1,224,900	882,936	4,453,020	1,395,036	846,720
R-square	0.436	0.417	0.416	0.495	0.419	0.402	0.429	0.422	0.444	0.391	0.466

Note: Robust standard errors in parentheses
*** $p < 0,01$, ** $p < 0,05$, * $p < 0,1$

Table A6. Effect on wages in the formal sector in mass layoff events, by sector of activity

Period	Agriculture	Manufacturing Ind.	Electricity	Construction	Trade	Transport	Room and Board	Information	Finance	Health	Others
t_{-3}	-0.001	-0.006**	-0.027	-0.009	-0.001	-0.028***	-0.012***	0.023	-0.002	0.007	-0.000
	(0.008)	(0.003)	(0.027)	(0.009)	(0.003)	(0.007)	(0.004)	(0.020)	(0.006)	(0.006)	(0.008)
t_{-2}	0.010	0.001	-0.074	-0.008	0.006**	-0.012**	-0.005	0.017*	0.004	0.005	0.014
	(0.009)	(0.003)	(0.050)	(0.007)	(0.003)	(0.005)	(0.004)	(0.010)	(0.005)	(0.006)	(0.013)
t_{-1}	0.007	0.005*	-0.002	-0.002	0.007***	-0.004	0.001	0.020*	0.007*	0.006	0.011***
	(0.007)	(0.003)	(0.008)	(0.006)	(0.002)	(0.004)	(0.005)	(0.012)	(0.004)	(0.005)	(0.004)
t_{+1}	-0.916***	-1.049***	-0.689***	-1.045***	-0.999***	-1.029***	-0.852***	-1.297***	-0.838***	-0.899***	-1.123***
	(0.022)	(0.015)	(0.123)	(0.024)	(0.010)	(0.014)	(0.013)	(0.104)	(0.021)	(0.017)	(0.028)
t_{+2}	-0.094***	-0.132***	-0.095***	-0.056***	-0.072***	-0.057***	-0.031***	-0.051	0.011	-0.022	-0.051***
	(0.013)	(0.006)	(0.030)	(0.012)	(0.005)	(0.008)	(0.008)	(0.056)	(0.010)	(0.014)	(0.019)
t_{+3}	-0.093***	-0.124***	-0.088**	-0.073***	-0.083***	-0.060***	-0.044***	-0.050	0.009	-0.010	-0.065***
	(0.013)	(0.006)	(0.036)	(0.014)	(0.005)	(0.008)	(0.008)	(0.053)	(0.008)	(0.013)	(0.022)
t_{+4}	-0.084***	-0.103***	-0.111***	-0.074***	-0.074***	-0.048***	-0.040***	-0.014	0.001	0.001	-0.047*
	(0.014)	(0.007)	(0.032)	(0.013)	(0.005)	(0.008)	(0.008)	(0.054)	(0.009)	(0.014)	(0.028)
t_{+5}	-0.064***	-0.083***	-0.091**	-0.064***	-0.063***	-0.049***	-0.050***	0.009	0.009	-0.004	-0.047**
	(0.016)	(0.008)	(0.037)	(0.014)	(0.005)	(0.008)	(0.010)	(0.059)	(0.011)	(0.014)	(0.022)
Constant	1.419***	1.466***	1.741***	1.267***	1.263***	1.275***	1.041***	1.907***	1.300***	1.222***	1.591***
	(0.001)	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)	(0.001)	(0.003)	(0.001)	(0.000)	(0.002)
Observations	1,027,876	17,510,001	1,522,455	930,787	6,325,531	3,706,474	1,155,137	839,722	4,224,637	1,338,288	797,697
R-square	0.802	0.734	0.803	0.654	0.718	0.688	0.630	0.720	0.781	0.692	0.765

Note: Robust standard errors in parentheses
*** $p < 0,01$, ** $p < 0,05$, * $p < 0,1$