The Effect of Accidents on Labor Market Outcomes: Evidence from Chile (Online Appendix)

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A Additional Tables

Table A1: Distribution of Accidents by Diagnosis

Diagnosis	Percent
Injuries to the head	20.63
Injuries to the knee and lower leg	16.9
Injuries to the wrist, hand and fingers	15.19
Injuries involving multiple body regions	7.96
Injuries to the abdomen, lower back, lumbar spine, pelvis and external genitals	6.16
Injuries to the elbow and forearm	5.97
Injuries to the ankle and foot	4.67
Injuries to the thorax	4.59
Injuries to the shoulder and upper arm	4.54
Injury of unspecified body region	3.98
Burns and corrosion of external body surface, specified by site	2.53
Injuries to the hip and thigh	2.46
Toxic effects of substances chiefly nonmedicinal substances as the source	1.66
Injuries to the neck	1.11
Poisoning by, adverse effect of, and underdosing of, drugs medicaments and biological substances	0.56
Effects of foreign body entering through natural orifice	0.56
Other and unspecified effects from external causes	0.44
Certain early complications from trauma	0.09

Table A2: Distribution of Accidents by Cause

Cause of accident	Percent
Accidental exposure to other/unspecified factors	27.22
Slipping, tripping, stumbling and falls	20.5
Exposure to inanimate mechanical forces	14.36
Event of undetermined intent	11.36
Assault	7.69
Other land transport accidents	3.89
Car occupant injured in transport accident	2.19
Pedal cycle rider injured in transport accident	1.92
Pedestrian injured in transport accident	1.75
Overexertion, travel and privation	1.74
Exposure to animate mechanical forces	1.25
Contact with heat and hot substances	0.86
Exposure to smoke, fire and flames	0.75
Motorcycle rider injured in transport accident	0.7
Accidental poisoning by and exposure to noxious substances	0.64
Other and unspecified transport accidents	0.64
Contact with venomous animals and plants	0.59
Exposure to electric current, radiation and extreme ambient air temperature and pressure	0.43
Bus occupant injured in transport accident	0.39
Occupant of pick-up truck or van injured in transport accident	0.34
Occupant of heavy transport vehicle injured in transport accident	0.28
Sequelae of external causes of morbidity and mortality	0.25
Exposure to forces of nature	0.12
Water transport accidents	0.08
Occupant of three-wheeled motor vehicle injured in transport accident	0.04
Legal intervention, war operations	0.03
Accidental non-transport drowning and submersion	0.02

Table A3: Distribution of Accidents by Diagnosis and Age

Diagnosis	Percent	
	22–49	≥ 50
Injuries to the head	20.62	20.65
Injuries to the knee and lower leg	17.06	15.47
Injuries to the wrist, hand and fingers	15.31	14.04
Injuries involving multiple body regions	7.91	8.37
Injuries to the abdomen, lower back, lumbar spine, pelvis and external genitals	6.21	5.66
Injuries to the elbow and forearm	5.96	6.06
Injuries to the ankle and foot	4.55	5.74
Injuries to the thorax	4.51	5.34
Injuries to the shoulder and upper arm	4.51	4.86
Injury of unspecified body region	3.96	4.23
Burns and corrosion of external body surface, specified by site	2.53	2.47
Injuries to the hip and thigh	2.36	3.35
Toxic effects of substances chiefly nonmedicinal substances as the source	1.66	1.67
Injuries to the neck	1.16	0.72
Poisoning by, adverse effect of, and underdosing of, drugs medicaments and biological substances	0.62	0
Effects of foreign body entering through natural orifice	0.54	0.8
Other and unspecified effects from external causes	0.44	0.48
Certain early complications from trauma	0.09	0.08

Table A4: Distribution of Accidents by Cause and Age

Cause of accident	Percent	
	22–49	≥ 50
Accidental exposure to other/unspecified factors	27.48	24.78
Slipping, tripping, stumbling and falls	20.03	24.86
Exposure to inanimate mechanical forces	14.25	15.38
Event of undetermined intent	11.41	10.92
Assault	8.09	3.98
Other land transport accidents	3.84	4.38
Car occupant injured in transport accident	2.25	1.59
Pedal cycle rider injured in transport accident	1.83	2.71
Pedestrian injured in transport accident	1.71	2.07
Overexertion, travel and privation	1.77	1.43
Exposure to animate mechanical forces	1.25	1.27
Contact with heat and hot substances	0.82	1.27
Exposure to smoke, fire and flames	0.76	0.64
Motorcycle rider injured in transport accident	0.74	0.32
Accidental poisoning by and exposure to noxious substances	0.65	0.48
Other and unspecified transport accidents	0.64	0.72
Contact with venomous animals and plants	0.59	0.56
Exposure to electric current, radiation and extreme ambient air temperature and pressure	0.45	0.24
Bus occupant injured in transport accident	0.38	0.48
Occupant of pick-up truck or van injured in transport accident	0.33	0.48
Occupant of heavy transport vehicle injured in transport accident	0.22	0.8
Sequelae of external causes of morbidity and mortality	0.25	0.24
Exposure to forces of nature	0.1	0.24
Water transport accidents	0.09	0
Occupant of three-wheeled motor vehicle injured in transport accident	0.03	0.08
Legal intervention, war operations	0.03	0.08
Accidental non-transport drowning and submersion	0.02	0

Table A5: Distribution of Accidents by Diagnosis and Education

Diagnosis	Percent	
	High school or lower	Post-secondary
Injuries to the head	21.38	14.25
Injuries to the knee and lower leg	15.24	29.05
Injuries to the wrist, hand and fingers	15.25	13.87
Injuries involving multiple body regions	8.13	7.17
Injuries to the abdomen, lower back, lumbar spine, pelvis and external genitals	6.52	3.45
Injuries to the elbow and forearm	5.99	5.77
Injuries to the ankle and foot	4.62	5.03
Injuries to the thorax	4.76	3.82
Injuries to the shoulder and upper arm	4.45	5.68
Injury of unspecified body region	4.04	3.07
Burns and corrosion of external body surface, specified by site	2.52	2.33
Injuries to the hip and thigh	2.59	1.77
Toxic effects of substances chiefly nonmedicinal substances as the source	1.73	1.3
Injuries to the neck	1.08	1.77
Poisoning by, adverse effect of, and underdosing of, drugs medicaments and biological substances	0.55	0.84
Effects of foreign body entering through natural orifice	0.61	0.28
Other and unspecified effects from external causes	0.45	0.47
Certain early complications from trauma	0.09	0.09

Table A6: Distribution of Accidents by Cause and Education

Cause of accident	Percent	
	High school or lower	Post-secondary
Accidental exposure to other/unspecified factors	26.15	35.92
Slipping, tripping, stumbling and falls	20.72	19.76
Exposure to inanimate mechanical forces	14.91	9.14
Event of undetermined intent	11.55	9.33
Assault	8.14	5.17
Other land transport accidents	3.86	3.42
Car occupant injured in transport accident	2.06	1.94
Pedal cycle rider injured in transport accident	2.07	0.74
Pedestrian injured in transport accident	1.78	1.57
Overexertion, travel and privation	1.37	4.62
Exposure to animate mechanical forces	1.31	1.02
Contact with heat and hot substances	0.91	0.37
Exposure to smoke, fire and flames	0.75	0.65
Motorcycle rider injured in transport accident	0.57	2.22
Accidental poisoning by and exposure to noxious substances	0.68	0.37
Other and unspecified transport accidents	0.64	0.74
Contact with venomous animals and plants	0.59	0.46
Exposure to electric current, radiation and extreme ambient air temperature and pressure	0.44	0.55
Bus occupant injured in transport accident	0.36	0.55
Occupant of pick-up truck or van injured in transport accident	0.34	0.28
Occupant of heavy transport vehicle injured in transport accident	0.28	0.28
Sequelae of external causes of morbidity and mortality	0.21	0.55
Exposure to forces of nature	0.13	0.09
Water transport accidents	0.07	0.18
Occupant of three-wheeled motor vehicle injured in transport accident	0.04	0.09
Legal intervention, war operations	0.04	0
Accidental non-transport drowning and submersion	0.02	0

Table A7: Distribution of Accidents by Diagnosis and Industry

Diagnosis	Percent	
	Primary/ secondary	Tertiary
Injuries to the head	19.88	19.69
Injuries to the knee and lower leg	16.39	20.26
Injuries to the wrist, hand and fingers	15.3	15.7
Injuries involving multiple body regions	8.5	7.15
Injuries to the abdomen, lower back, lumbar spine, pelvis and external genitals	6.22	5.58
Injuries to the elbow and forearm	5.98	6.09
Injuries to the ankle and foot	5.11	4.69
Injuries to the thorax	4.94	3.35
Injuries to the shoulder and upper arm	4.34	5.14
Injury of unspecified body region	4.07	3.7
Burns and corrosion of external body surface, specified by site	2.49	2.62
Injuries to the hip and thigh	2.31	2.23
Toxic effects of substances chiefly nonmedicinal substances as the source	1.74	1.31
Injuries to the neck	1.18	0.7
Poisoning by, adverse effect of, and underdosing of, drugs medicaments and biological substances	0.46	0.83
Effects of foreign body entering through natural orifice	0.56	0.48
Other and unspecified effects from external causes	0.46	0.38
Certain early complications from trauma	0.06	0.1

Table A8: Distribution of Accidents by Cause and Industry

Cause of accident	Percent	
	Primary/ secondary	Tertiary
Accidental exposure to other/unspecified factors	27.22	28.59
Slipping, tripping, stumbling and falls	20.82	20.12
Exposure to inanimate mechanical forces	15.13	13.2
Event of undetermined intent	11.65	11.81
Assault	6.77	6.28
Other land transport accidents	3.62	4.28
Car occupant injured in transport accident	2.21	2.22
Pedal cycle rider injured in transport accident	2.01	1.59
Pedestrian injured in transport accident	1.46	1.94
Overexertion, travel and privation	1.79	2.35
Exposure to animate mechanical forces	1.21	1.27
Contact with heat and hot substances	0.96	0.76
Exposure to smoke, fire and flames	0.77	0.6
Motorcycle rider injured in transport accident	0.5	1.24
Accidental poisoning by and exposure to noxious substances	0.6	0.63
Other and unspecified transport accidents	0.57	0.79
Contact with venomous animals and plants	0.62	0.48
Exposure to electric current, radiation and extreme ambient air temperature and pressure	0.41	0.38
Bus occupant injured in transport accident	0.45	0.29
Occupant of pick-up truck or van injured in transport accident	0.41	0.29
Occupant of heavy transport vehicle injured in transport accident	0.33	0.29
Sequelae of external causes of morbidity and mortality	0.2	0.41
Exposure to forces of nature	0.13	0.06
Water transport accidents	0.11	0.06
Occupant of three-wheeled motor vehicle injured in transport accident	0.01	0.03
Legal intervention, war operations	0.04	0
Accidental non-transport drowning and submersion	0	0.03

Table A9: Estimated Coefficients from the Restricted Fully Dynamic Model

	Pre-accident			Post-accident	
	Employment	Earnings		Employment	Earnings
	(1)	(2)		(3)	(4)
$\hat{\gamma}_{-35}$	–0.0094***	–0.4697	$\hat{\gamma}_{0}$	–0.0176***	–54.6654***
$\hat{\gamma}_{-34}$	–0.0064*	2.5937	$\hat{\gamma}_{1}$	–0.0977***	–17.9790***
$\hat{\gamma}_{-33}$	–0.0120***	–1.0949	$\hat{\gamma}_{2}$	–0.0792***	–18.4233***
$\hat{\gamma}_{-32}$	–0.0161***	–1.0343	$\hat{\gamma}_{3}$	–0.0765***	–40.3457***
$\hat{\gamma}_{-31}$	–0.0149***	–1.1523	$\hat{\gamma}_{4}$	–0.0739***	–50.6722***
$\hat{\gamma}_{-30}$	–0.0103**	1.3580	$\hat{\gamma}_{5}$	–0.0735***	–56.9870***
$\hat{\gamma}_{-29}$	–0.0131***	–4.6957	$\hat{\gamma}_{6}$	–0.0762***	–64.7961***
$\hat{\gamma}_{-28}$	–0.0128***	–5.8920	$\hat{\gamma}_{7}$	–0.0761***	–69.6157***
$\hat{\gamma}_{-27}$	–0.0083*	2.3655	$\hat{\gamma}_{8}$	–0.0842***	–73.0587***
$\hat{\gamma}_{-26}$	–0.0092*	–1.4371	$\hat{\gamma}_{9}$	–0.0861***	–73.9474***
$\hat{\gamma}_{-25}$	–0.0052	–3.2809	$\hat{\gamma}_{10}$	–0.0886***	–80.5935***
$\hat{\gamma}_{-24}$	–0.0099**	–0.9040	$\hat{\gamma}_{11}$	–0.0915***	–83.7285***
$\hat{\gamma}_{-23}$	–0.0095*	–1.1549	$\hat{\gamma}_{12}$	–0.0973***	–86.4042***
$\hat{\gamma}_{-22}$	–0.0048	2.7596	$\hat{\gamma}_{13}$	–0.0969***	–86.6056***
$\hat{\gamma}_{-21}$	–0.0049	3.7374	$\hat{\gamma}_{14}$	–0.0949***	–87.1368***
$\hat{\gamma}_{-20}$	–0.0033	1.3899	$\hat{\gamma}_{15}$	–0.1012***	–87.5283***
$\hat{\gamma}_{-19}$	–0.0007	3.9305	$\hat{\gamma}_{16}$	–0.1043***	–89.2848***
$\hat{\gamma}_{-18}$	–0.0025	1.7089	$\hat{\gamma}_{17}$	–0.1004***	–86.4469***
$\hat{\gamma}_{-17}$	–0.0008	2.3191	$\hat{\gamma}_{18}$	–0.1103***	–93.0949***
$\hat{\gamma}_{-16}$	–0.0018	0.3962	$\hat{\gamma}_{19}$	–0.1103***	–94.4273***
$\hat{\gamma}_{-15}$	–0.0003	3.9207	$\hat{\gamma}_{20}$	–0.1172***	–101.7773***
$\hat{\gamma}_{-14}$	0.0033	5.4721	$\hat{\gamma}_{21}$	–0.1178***	–101.4046***
$\hat{\gamma}_{-13}$	0.0051	8.9011*	$\hat{\gamma}_{22}$	–0.1187***	–100.6710***
$\hat{\gamma}_{-12}$	–0.0003	3.7676	$\hat{\gamma}_{23}$	–0.1191***	–100.8795***
$\hat{\gamma}_{-11}$	–0.0030	1.4642	$\hat{\gamma}_{24}$	–0.1224***	–102.1989***
$\hat{\gamma}_{-10}$	–0.0001	3.8965	$\hat{\gamma}_{25}$	–0.1250***	–110.5523***
$\hat{\gamma}_{-9}$	–0.0078*	0.1504	$\hat{\gamma}_{26}$	–0.1281***	–112.1745***
$\hat{\gamma}_{-8}$	–0.0037	–3.0247	$\hat{\gamma}_{27}$	–0.1331***	–115.6246***
$\hat{\gamma}_{-7}$	–0.0042	1.1005	$\hat{\gamma}_{28}$	–0.1326***	–113.2623***
$\hat{\gamma}_{-6}$	–0.0052	–1.7821	$\hat{\gamma}_{29}$	–0.1355***	–117.6869***
$\hat{\gamma}_{-5}$	–0.0071*	–3.7816	$\hat{\gamma}_{30}$	–0.1434***	–125.2181***
$\hat{\gamma}_{-4}$	–0.0063*	–2.2875	$\hat{\gamma}_{31}$	–0.1445***	–122.4944***
$\hat{\gamma}_{-3}$	–0.0025	1.9239	$\hat{\gamma}_{32}$	–0.1471***	–129.3604***
$\hat{\gamma}_{-2}$	–0.0023	–0.1065	$\hat{\gamma}_{33}$	–0.1522***	–134.0353***
			$\hat{\gamma}_{34}$	–0.1538***	–136.0534***
			$\hat{\gamma}_{35}$	–0.1556***	–139.5027***
			$\hat{\gamma}_{36}$	–0.1596***	–142.2681***

Notes: The dependent variables are an indicator of monthly employment and monthly earnings in U.S. dollars. $\hat{\gamma}_k$ is the dynamic treatment effect k months before/after the accident. All regressions include individual and year-month fixed effects. Observations = 940,605; individuals = 12,885. Standard errors clustered at the individual level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A10: Estimated Coefficients from the Semi-dynamic Model

	Employment	Earnings
	(1)	(2)
$\hat{\gamma}_0$	–0.0164***	–55.3749***
$\hat{\gamma}_1$	–0.0967***	–18.6550***
$\hat{\gamma}_2$	–0.0784***	–19.0686***
$\hat{\gamma}_3$	–0.0758***	–40.9642***
$\hat{\gamma}_4$	–0.0735***	–51.2708***
$\hat{\gamma}_5$	–0.0732***	–57.5697***
$\hat{\gamma}_6$	–0.0761***	–65.3711***
$\hat{\gamma}_7$	–0.0762***	–70.1883***
$\hat{\gamma}_8$	–0.0845***	–73.6331***
$\hat{\gamma}_9$	–0.0867***	–74.5288***
$\hat{\gamma}_{10}$	–0.0893***	–81.1852***
$\hat{\gamma}_{11}$	–0.0925***	–84.3345***
$\hat{\gamma}_{12}$	–0.0986***	–87.0285***
$\hat{\gamma}_{13}$	–0.0984***	–87.2531***
$\hat{\gamma}_{14}$	–0.0966***	–87.8110***
$\hat{\gamma}_{15}$	–0.1032***	–88.2333***
$\hat{\gamma}_{16}$	–0.1065***	–90.0222***
$\hat{\gamma}_{17}$	–0.1029***	–87.2162***
$\hat{\gamma}_{18}$	–0.1130***	–93.8968***
$\hat{\gamma}_{19}$	–0.1133***	–95.2599***
$\hat{\gamma}_{20}$	–0.1204***	–102.6383***
$\hat{\gamma}_{21}$	–0.1213***	–102.2930***
$\hat{\gamma}_{22}$	–0.1224***	–101.5856***
$\hat{\gamma}_{23}$	–0.1230***	–101.8187***
$\hat{\gamma}_{24}$	–0.1266***	–103.1622***
$\hat{\gamma}_{25}$	–0.1294***	–111.5406***
$\hat{\gamma}_{26}$	–0.1327***	–113.1876***
$\hat{\gamma}_{27}$	–0.1380***	–116.6628***
$\hat{\gamma}_{28}$	–0.1377***	–114.3260***
$\hat{\gamma}_{29}$	–0.1409***	–118.7761***
$\hat{\gamma}_{30}$	–0.1490***	–126.3330***
$\hat{\gamma}_{31}$	–0.1503***	–123.6352****
$\hat{\gamma}_{32}$	–0.1532***	–130.5270***
$\hat{\gamma}_{33}$	–0.1586***	–135.2276***
$\hat{\gamma}_{34}$	–0.1604***	–137.2713***
$\hat{\gamma}_{35}$	–0.1624***	–140.7461***
$\hat{\gamma}_{36}$	–0.1667***	–143.5367***
Observations	940,605	940,605
Individuals	12,885	12,885

Notes: The dependent variables are an indicator of monthly employment and monthly earnings in U.S. dollars. $\hat{\gamma}_k$ is the dynamic treatment effect k months after the accident. All regressions include individual and year-month fixed effects. Standard errors clustered at the individual level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B Safety Net in Chile

This appendix discusses the main elements of the safety net for workers in Chile. First, we describe the benefits included in the UIS, which covers unemployment of dependent workers. Then, we describe disability subsidies, which protect workers from earning losses generated by a temporary labor disability. We conclude by estimating the effect of an accident on a broader predicted income measure that includes some of the safety net benefits described in this appendix.

B.1 UIS Benefits

The UIS is composed of individual saving accounts and a solidarity fund. To receive payments from the individual saving accounts, unemployed workers must register a minimum of 12 months of contributions (continuous or discontinuous) from the date of the last withdrawal (or from the affiliation date) in the case of indefinite contracts, and a minimum of 6 months of contributions in the case of fixed-term contracts. Individuals can make between 1 and 13 monthly withdrawals from their individual accounts, as long as they have enough funds. Monthly benefits are determined by the average monthly earnings for the last 12 months (6 months) for workers with an indefinite-term (fixed-term) contract as shown in Table B1.

The UIS solidarity fund is for workers with an insufficient balance in their individual accounts. Access to the solidarity fund requires a minimum of 12 months of contributions into the solidarity fund during the last 24 months before the request.[1] Importantly, benefits are always financed first with the individual account and then supplemented with the solidarity fund. Individuals can make up to 5 (indefinite-term contracts) or 3 (fixed-term contracts) monthly withdrawals from the solidarity fund. The benefits from the solidarity fund are based on the average monthly earnings for the last three months before the request as shown in Table B1.[2]

[1]The last three contributions must be continuous and with the same employer. Individuals must have made a maximum of 10 withdrawals from the solidarity fund during the last 5 years.

[2]Individuals can make two additional withdrawals in periods where the national unemployment rate exceeds the average rate of the last four years by one percentage point.

Table B1: UIS Benefits by Month of Unemployment Spell

	First	Second	Third	Fourth	Fifth	Sixth+
Withdrawal from individual account						
Any type of contract	70%	55%	45%	40%	35%	30%
Withdrawal from solidarity fund						
Indefinite contract	70%	55%	45%	40%	35%	0
Maximum (in US$)	1,078	847	693	616	539	
Minimum (in US$)	323	254	208	185	162	
Fixed-term contract	50%	40%	35%	0	0	0
Maximum (in US$)	770	616	239			
Minimum (in US$)	231	185	162			

B.2 Disability Subsidies

Work and professional accidents are ruled by Law 16.744, which is built on two main pillars. The first pillar covers workers who suffer an accident or illness that results in a permanent disability. The second pillar aims at building a safety net for workers who suffer a temporal illness or accident that keeps them off work for a limited period of time, but who are able to resume working afterwards.

The first pillar includes a disability pension for workers whose earnings generating capacity is undermined as a consequence of a work accident or a professional illness. Workers who experience a reduction in their earning generating capacity equal to or greater than 40%, but less than 70%, are considered partially disabled, whereas those who experience a reduction of 70% or more are considered fully disabled. A special medical committee is the entity in charge of estimating the earning losses suffered by injured workers. The monthly disability benefit is paid until the age of retirement and reaches 35% of base earnings, determined by law, for partially disabled workers, and 70% of base earnings for fully disabled workers.

The second pillar is composed of a labor incapability subsidy (LIS). The LIS includes a subsidy for workers that certify an authorized medical leave as a consequence of a temporary labor disability. A medical leave is considered legally valid if it is recognized by the employer and is authorized by a special medical committee. This type of subsidies is classified into two categories: those related to a common illness and those related to a work accident or professional illness.

A common illness is defined as one that has no relation to the profession or work executed, but which prevents workers from maintaining their regular duties. This subsidy consists of compensation equivalent to 100% of the average monthly earnings received during the last three months before the medical leave period. The benefits are extended during the entire medical leave period, which must be approved by a special medical committee. Work accidents are defined as all injuries suffered by workers while performing their job or commuting to and from the workplace, and professional illnesses are those directly or indirectly related to work duties. In the case of the latter type of accident, benefits are the same as those granted for common illnesses, but are extended for a maximum period of 52 weeks, which can be prolonged to 104 weeks.

B.3 Effect of Accidents on Income

We conclude this appendix by estimating the impact of accidents on an outcome that includes some of the elements of the Chilean safety net. We need to impute benefits because we do not observe actual benefits in our data. First, we explain how we construct this additional outcome. Employers must make legal contributions to the UIS, even for workers with medical leave. Hence, in our dataset, we cannot identify workers who are on medical leave, and thus, who are receiving disability subsidies.[3] Therefore, we focus the analysis on UIS benefits. Unemployment benefits are registered in a separate module of the UIS dataset, to which we do not have access. However, as described above, the use of the funds accumulated in the UIS follows well-defined rules. This fact allows us to impute, with a reasonable degree of accuracy, the benefits received by unemployed individuals in our sample, and thus, to build a broader measure of income as an additional outcome.

In Chile, approximately, 15% of workers are employed under a fixed-term contract. Furthermore, our sample includes workers with strong labor market attachment, and thus, who are likely to be ruled by an indefinite employment relationship. Hence, we assume that all individuals in our sample receive unemployment benefits according to the scheme described above for indefinite-term contracts. In addition, we assume that individuals only use resources from their individual accounts because we do not observe the balance of individual UIS accounts, and thus, we cannot identify those who meet the requirements of access to the solidarity fund. Using the latter criteria, we calculate the potential unemployment benefits for the unemployed workers in our sample (defined by zero earnings). We then add these benefits to the observed earnings, generating a broader income measure, which we refer to

[3]We observe the earnings of workers with a medical leave just as we do for the rest of the employed workers.

simply as income. Mean predicted pre-accident income is US$604, which is about 6% higher than mean pre-accident earnings. It should be noted, however, that this income measure underestimates total income because it does not include potential disability subsidies.

Table B2 presents the dynamic effects of an accident on monthly income which, as explained above, includes imputed unemployment benefits. On average, income declines by US$90, which is equivalent to a 15% drop relative to the pre-accident mean. Hence, the effect on income is only slightly smaller than the effect on earnings (16%). This difference is mostly explained by the buffering role played by unemployment benefits, especially during the months following the accident. Concretely, we observe in Table B2 that monthly income declines by 8% in the first year after the accident, by 16% during the second year, and by 21% during the third year. The analogous effects for the case of earnings are 11%, 17%, and 22%, respectively (see Table 3 in the main text). Due to the limitation of unemployment benefits for 13 months, the estimates are nearly identical in later years. Overall, this analysis suggests that a social safety net may be a relevant factor to buffer the fall in income of workers that lose their jobs as a consequence of an accident, especially during the period immediately following the accident.

Table B2: Estimated Treatment Effects of Accidents on Monthly Income

	Dynamic model
Avg. post-accident	–90.4061***
	(9.1742)
6 months: $\hat{\gamma}_6$	–56.4482***
	(5.0552)
12 months: $\hat{\gamma}_{12}$	–79.5182***
	(7.1305)
24 months: $\hat{\gamma}_{24}$	–107.7319***
	(12.2000)
36 months: $\hat{\gamma}_{36}$	–147.4150***
	(18.2124)
First year (avg.): $\bar{\hat{\gamma}}^1$	–49.6090***
	(4.6235)
Second year (avg.): $\bar{\hat{\gamma}}^2$	–95.1702***
	(9.5459)
Third year (avg.): $\bar{\hat{\gamma}}^3$	–129.4068***
	(15.0135)
Individual fixed effects	Yes
Year-month fixed effects	Yes
Observations	940,605
Individuals	12,885
Mean (pre-accident)	603.89

Notes: The dependent variable is monthly income in U.S. dollars. The dynamic average post-accident effect is the sample average of the dynamic treatment effects for the full 36 months after the accident: $\bar{\hat{\gamma}} = \frac{1}{37}\sum_{k=0}^{36}\hat{\gamma}_k$, where $\hat{\gamma}_k$ is the estimated effect k months after the accident, see regression (1) in the main text. Coefficients $\hat{\gamma}_6$, $\hat{\gamma}_{12}$, $\hat{\gamma}_{24}$, and $\hat{\gamma}_{36}$ are the dynamic treatment effects 6, 12, 24, and 36 months after the accident. The average first year effect is the sample average of the dynamic treatment effects estimated for the first year after the accident: $\bar{\hat{\gamma}}^1 = \frac{1}{13}\sum_{k=0}^{12}\hat{\gamma}_k$. Analogously, the average second year effect is $\bar{\hat{\gamma}}^2 = \frac{1}{12}\sum_{k=13}^{24}\hat{\gamma}_k$, and the average third year effect is $\bar{\hat{\gamma}}^3 = \frac{1}{12}\sum_{k=25}^{36}\hat{\gamma}_k$. Standard errors clustered at the individual level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

C Control Group Without Accidents

Our preferred empirical strategy uses the variation from the timing of hospitalizations to estimate the causal effect of accidents on labor market outcomes (employment and earnings), as in Dobkin et al. (2018). As we discuss in the main text, it is not clear that never-hospitalized individuals are a suitable control group because they may differ from individuals with accidents along several unobserved dimensions. However, to facilitate a comparison of our findings with those existing in the literature, in this appendix, we provide an additional analysis that considers a "traditional" approach with a control group that includes individuals who did not have an accident during the study period. We use inverse propensity score weighting (IPSW) to account for observed differences between the treatment and control groups, but we cannot control for time-varying unobserved differences between these groups, as previously discussed.

First, we assess the balance between the treatment and control groups before re-weighting by the IPSW. Imbens (2015) stresses the importance of the design stage and, in particular, of the overlap in the support of the covariates included to build the propensity score. Following this insight, we check the overlap in the support of the covariates between the treatment group and the control group using normalized differences.[4] Column (3) in Table C1 shows the normalized differences for selected covariates. They are all well below the rule-of-thumb value of 0.25 suggested by Imbens and Wooldridge (2009). Therefore, the overlap between the treatment group and the control group is satisfactory; individuals with and without accidents do not appear to be very different in observables characteristics, even before weighting.[5]

[4]The use of normalized differences to check the overlap is preferred over the use of t-statistics, because the former is independent of the sample size. The normalized difference for the covariate Z_k is defined as $\left(\bar{Z}_k^T - \bar{Z}_k^C\right) / \left[0.5\left(S^2_{Z_k^T} + S^2_{Z_k^C}\right)\right]^{1/2}$, where $\bar{Z}_k^T$ and $\bar{Z}_k^C$ are the sample mean of Z_k in the treatment group and the control group, respectively, and $S^2_{Z_k^T}$ and $S^2_{Z_k^C}$ are the corresponding sample variances.

[5]To make the estimation that follows more manageable, we draw a 10% random sample of individuals without an accident to serve as the potential control group.

Table C1: Unweighted and Weighted Means and Standard Deviations and Normalized Differences of Propensity Score Covariates

	Unweighted		Normalized	IPSW-weighted	
	Treat.	Control	difference	Treat.	Control
	(1)	(2)	(3)	(4)	(5)
Age at health shock	38.15	39.20	−0.136	38.10	38.10
	(7.649)	(7.915)		(7.640)	(7.641)
Less than high school ed.	0.595	0.543	0.106	0.595	0.595
	(0.491)	(0.498)		(0.491)	(0.491)
High school degree	0.316	0.322	−0.0144	0.316	0.316
	(0.465)	(0.467)		(0.465)	(0.465)
Post-secondary education	0.0891	0.135	−0.146	0.0891	0.0891
	(0.285)	(0.342)		(0.285)	(0.285)
Agriculture, fishing	0.115	0.0878	0.0914	0.116	0.116
	(0.320)	(0.283)		(0.321)	(0.321)
Mining	0.0131	0.0126	0.00399	0.0127	0.0127
	(0.114)	(0.112)		(0.112)	(0.112)
Manufacturing	0.0891	0.0882	0.00344	0.0870	0.0870
	(0.285)	(0.284)		(0.282)	(0.282)
Construction, transportation	0.330	0.307	0.0477	0.336	0.336
	(0.470)	(0.461)		(0.473)	(0.472)
Wholesale, retail, restaurant	0.0921	0.117	−0.0801	0.0872	0.0872
	(0.289)	(0.321)		(0.282)	(0.282)
Finance, real estate	0.0993	0.119	−0.0636	0.0991	0.0991
	(0.299)	(0.324)		(0.299)	(0.299)
Education, health	0.0529	0.0679	−0.0629	0.0505	0.0505
	(0.224)	(0.252)		(0.219)	(0.219)
Missing industry	0.208	0.200	0.0199	0.211	0.211
	(0.406)	(0.400)		(0.408)	(0.408)
Observations	12,833	52,843		12,080	30,119

To estimate the propensity score of an accident, we use a logit regression that includes the set of covariates shown in Table C1 and the year and month of the (placebo) accident.[6] We trim the sample based on the estimated propensity score to improve the balance between the treatment and control groups. Specifically, we exclude treated individuals whose propensity score is below the minimum or above the maximum propensity score in the control group and vice versa. As the last row in Table C1 shows, we exclude about 800 individuals from the treatment group and 21,000 individuals from the control group. Finally, we use the estimated propensity score to calculate the IPSW as follows:

$$\hat{w}_i^{ATET} = T_i + (1 - T_i)\frac{\hat{p}(Z_i)}{1 - \hat{p}(Z_i)}, \tag{1}$$

where $\hat{p}(Z_i)$ is the estimated propensity score conditional on covariates Z_i and $T_i = \{0, 1\}$ is the treatment indicator for having any health shock.

We then estimate the equivalent of regression (**??**), but include a control group, on a sample that is re-weighted by the IPSW. Specifically, we estimate the following regression:

$$Y_{it} = \alpha_i + \beta_t + \sum_{k=-36}^{36} \gamma_k \mathbf{1}\{K_{it} = k\} + \sum_{k=-36}^{36} \delta_k Acc_i \mathbf{1}\{K_{it} = k\} + u_{it}, \tag{2}$$

where Acc_i is an indicator that equals one if individual i had an accident during the study period and the other variables are defined as in the main text. Hence, we are interested in the coefficients $\delta_k, k = -36, \ldots, 36$ where we normalize δ_{-1} to zero. The coefficients δ_0 to δ_{36} measure the estimated effect of accidents on the outcomes (employment and earnings), and we use δ_{-36} to δ_{-2} to assess the parallel trends assumption. That is, we test whether the latter coefficients are statistically significant.

Figure C1 plots the estimated coefficients with their 95% confidence intervals.[7] We find a significant decline in employment and earnings following an accident. For both outcomes, the largest drop is observed immediately after the accident and persists during the entire period of analysis. The average decline in employment is about 5 percentage points (6%), whereas earnings fall, on average, by US$40 (7%). These effects are substantially smaller than in Figure 1 in the main text. Specifically, our main results show that employment drops continuously after an accident and the decline reaches 15% after about 2.5 years, and earnings fall by up to US$150 (25%). Therefore, the type of control group used has important implications for the estimated effects of accidents.

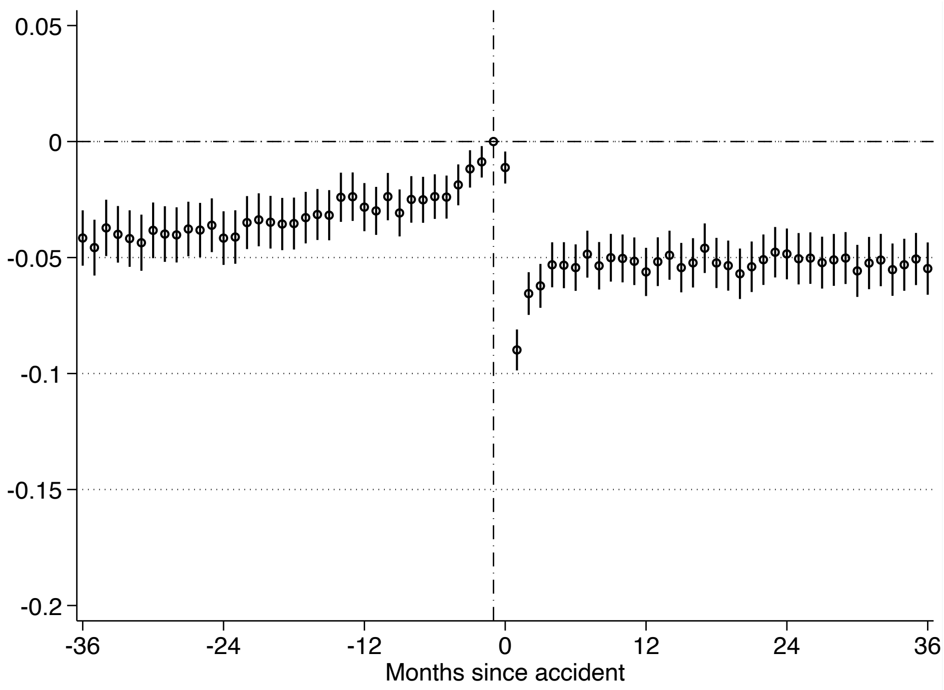
[6] We only observe a limited number of variables, which is typical for administrative data.

[7] We use the same scale as in Figure 1 to facilitate a comparison.

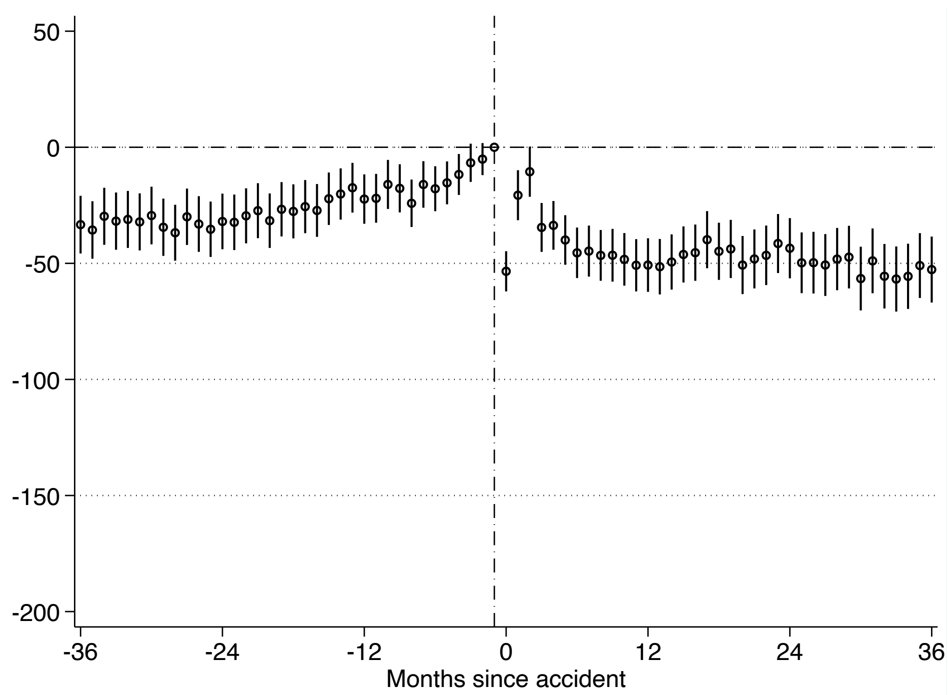
Turning to the effect leads (coefficients δ_{-36} to δ_{-2}) in Figure C1, we find that almost all of them are negative and statistically significantly different from zero. That is, the parallel trends assumption is clearly violated in this case. Even after re-weighting the control group by the IPSW and trimming the sample, the treatment and control groups appear to be different along some unobserved dimension, which makes it impossible to interpret these findings as causal effects of accidents. Due to the nature of our data, we can only control for a small set of observed characteristics, and it is possible that the (conditional) parallel trends assumption would be met if we had a richer set of covariates. We chose not to include pre-accident employment outcomes in the propensity score because of the concern that this could bias our estimates through regression to the mean (Daw and Hatfield, 2018). Given the weakness of the research design involving a control group without an accident, we strongly prefer our main findings. This implies that the negative labor market effects of accidents on Chilean men are substantially more severe than what the results in Figure C1 show.

Figure C1: Estimated Treatment Effects Using a No-Accident Control Group

(a) Employment



(b) Monthly Earnings (in U.S. dollars)



Note: The graphs plot estimated dynamic treatment effects $\hat{\delta}_k$ from regression (2) along with their 95% confidence intervals.

References

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