The Effect of Unemployment Insurance Benefits on (Self-)Employment: Two Sides of the Same Coin?

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Online Appendix

A Appendix: Institutional Details

A.1 Social Security System in Spain

The Spanish social security system is divided into four different contribution schemes. Ordinary employed individuals are registered within the *general scheme*, but there are also special schemes for sea workers, coal mining workers, and self-employed individuals (*autonomous scheme*). The social security system has increased in complexity over the years, and currently, each of these schemes consists of several sub-schemes (e.g., artists, domestic workers, seasonal workers).

The social security legislation established specific regulations of these schemes for some groups, such as civil servants, armed forces, or education and health workers. Some reforms in the last decade have aimed at simplifying this intricate system (Spanish Social Security, 2018). For instance, in 2008, self-employed individuals of the former *special scheme for agriculture* were integrated into the *autonomous scheme*. Furthermore, the former *special scheme for agriculture* and the *special scheme for domestic employees* were integrated into the *general scheme* as of January 2012.

A.2 Unemployment Insurance (UI)

UI Benefit Levels and Recipients. Table A.1 summarizes the computation of the legal maximum and minimum benefit amounts. These limits depend on the family responsibilities (number of dependent children or descendants) and the value of the Public Income Index – *Indicador Público de Renta de Efectos Múltiples* (IPREM) – in a given year. In the period 2010-2016, the IPREM index remained unchanged at EUR 532.51 per month.

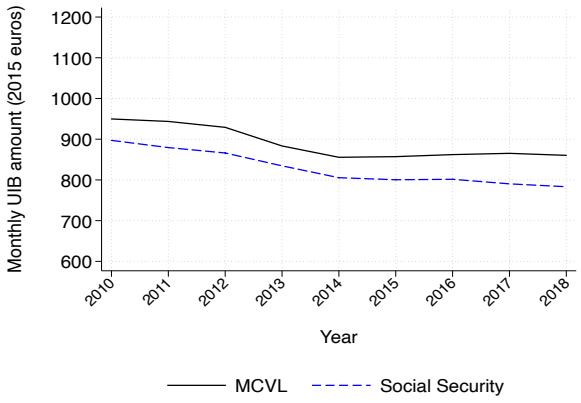
Figure A.1 illustrates the evolution of (a) yearly average Unemployment Insurance (UI) benefit levels and the yearly average number of (b) UI and (c) Unemployment Assistance (UA) beneficiaries. The solid line corresponds to our dataset, where the numbers of beneficiaries have been re-scaled using the official proportions provided in Dirección General de Ordenación de la Seguridad Social (2019). The dashed line has been obtained from the official statistics

Table A.1: Minimum and Maximum UI Benefit Amount (valid 2010-2016)

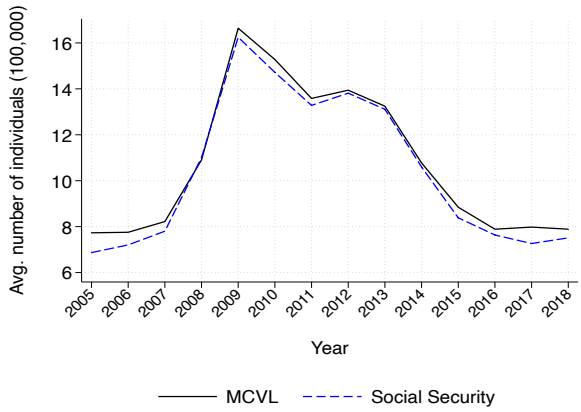
Dependent Children	Minimum	Maximum
0	80% IPREM + 1/6 · (monthly benefit) [€497.01]	175% IPREM [€1,087.21]
1	107% IPREM + 1/6 · (monthly benefit) [€664.75]	200% IPREM [€1,242.52]
≥ 2	107% IPREM + 1/6 · (monthly benefit) [€664.75]	225% IPREM [€1,397.84]

Notes: This table summarizes the computation of the legal maximum and minimum benefit amounts, depending on the family responsibilities (number of dependent children or descendants) and the value of the IPREM index in a given year.
Source: Authors' own illustration based on the SEPE (2019).

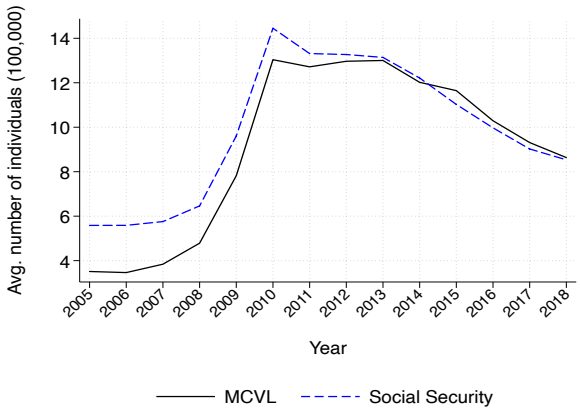
Figure A.1: Evolution of UI Benefit Levels and Number of Beneficiaries



(a) UI Benefit Levels



(b) UI Beneficiaries



(c) UA Beneficiaries

Notes: The figures illustrate the evolution of (a) yearly average UI benefit levels and the yearly average number of (b) UI and (c) UA beneficiaries. The solid line corresponds to our dataset, where the number of beneficiaries have been re-scaled using the official proportions provided in Dirección General de Ordenación de la Seguridad Social (2019). The dashed line has been obtained from the official statistics published by the Ministry of Labor. Moreover, our sample is restricted to individuals who are 18 years of age or older.
Source: Authors' calculations based on MCVL 2005-2018 data and official statistics by Spain's Ministry of Labor (2019).

published by the Ministry of Labor. All statistics based on the Continuous Working Life Sample – *Muestra Continua de Vidas Laborales* (MCVL) – move closely parallel to official statistics. Subfigure (a) points out that, during the period considered in our analysis, UI benefit levels were kept nominally constant in Spain.

Option Right. The contribution period used to calculate the Potential Benefit Duration (PBD) excludes contributions already used for previous UI spells. However, one can still claim the remaining entitlements. Suppose an individual's employment spell lasted for at least 360 days and, thus, he or she qualifies for UI benefits. In that case, the individual can choose between the non-exhausted benefits from the last UI spell and the new entitlement collected from the most recent employment spell (*option right*). Obviously, not only the

PBD may differ, but the amount of old and new benefits may differ as well because they are calculated from different pre-unemployment salaries. The non-selected entitlement will be lost. However, if the employment spell that followed the previous UI spell lasted for less than 360 days, the newly gathered entitlement is not lost. Instead, the worker can claim it as soon as the accumulated short-term employment spells reach the 360-day threshold (Alba-Ramirez, Arranz, and Muñoz-Bullón, 2007).

It is important to note that individuals who claim benefits after July 14, 2012 (when the new Replacement Rate (RR) was valid) could still receive UI benefits with the RR from the old system if they used the *option right*. We drop every potential *option right* case to avoid biased estimates from these cases. We also exclude individuals who exhaust the remaining entitlement from an old UI spell because they could not obtain any new entitlement, i.e., those who did not work for at least 360 days before being laid off. These individuals would be different from those who become less frequently unemployed and have not yet exhausted their entitlements. The latter is the group we are interested in, which is why we exclude the former.

Part-Time Employment. In the case of part-time employment, a worker's eligibility can only be determined with respect to the contribution periods of those jobs from which he or she has already been dismissed. As the UI benefit amount, which results from applying the RR to the regulatory base, must be weighted by the corresponding part-time coefficient, a half-day job collects only 50% of the benefits a full-day job would have generated. Additionally, part-time workers are not eligible for UI benefits if they work no more than 48 hours per month (Kyyrä, Arranz, and García-Serrano, 2019). From July 2018 onward, the relevant contribution period for the part-time employed corresponds to the time when the worker had an active affiliation, regardless of how many days one has worked in a given week and the number of hours worked. The regulatory base corresponds to the average of the individual's contribution basis in both the lost and ongoing part-time contracts (SEPE, 2019).

Penalties. UI and UA recipients are subject to penalties, i.e., (partial) benefit loss if they commit an offense against provisions regulating unemployment protection. The level of a penalty depends on an offense's severity. There are minor, serious, and severe offenses. The more often an offense is committed, the stricter the penalty. For severe offenses, benefits are canceled, and unduly collected benefits must be returned (SEPE, 2019).

A.3 Unemployment Assistance (UA)

UA eligibility requires one of the following circumstances: (1) UI benefits are exhausted, and the individual has family dependents; (2) the individual received UI benefits for at least 360 days and is at least 45 years old; (3) the individual is ineligible for UI benefits because he or she contributed less than 360 days; (4) the individual is a returned emigrant; (5) the individual was released from prison; (6) the individual's disability spell ended because he or she was declared to be able to work; (7) the individual is at least 55 years old. The UA benefit amount is independent of the pre-displacement salary.[1] Instead, a flat benefit amount equal to 80% of the IPREM is paid to UA recipients. The duration of entitlement to UA benefits can reach a maximum of 30 months, depending on the individual's age and family responsibilities (SEPE, 2019).

A.4 Self-Employment and Social Security in Spain

The concept of self-employment (own-account work) is a broad category that includes different types of workers: self-employed workers, self-employed professionals and freelancers, self-employed entrepreneurs, economically-dependent self-employed workers (TRADE), agrarian self-employed workers, and some special cases. Self-employed individuals pay their social security contributions to the *Special Regime of Self-Employed Workers* (*RETA*). RETA includes self-employed workers older than 18 who are not bound by a work contract, but also cases such as unpaid family members, book writers, TRADE workers, managers, and CEOs (Spanish Social Security, 2018).

The contributions paid by the self-employed depend on the chosen level of social protection. The self-employed worker determines the contribution rate as well as the desired contribution basis within existing legal bounds determined each year. Suppose the worker chooses insurance against the risk of "cease of activity" (analogous to UI benefits in the *General Scheme*). In this case, 2.2% of his or her income is added to the minimum contribution basis. Additional insurance against "professional contingencies" (protection in case of inability to work due to work-related reasons, e.g., accidents) requires another 1.3% to 6.8%. The minimum and maximum basis between which a self-employed person can choose depends on personal and occupational characteristics, e.g., age, marital status, contribution history, gender, and disability (Spanish Social Security, 2018).

As of 2019, the Spanish government uniformed the RETA scheme, obliging all self-employed to pay for contingencies. De facto, the level of protection for the self-employed was equalized to that of employees. It is noteworthy that, before this reform, only 19.7% of the self-employed had opted to be covered for work accidents and occupational diseases (Eurofound, 2017).

[1] Our Excel file "*Benefits Calculator.xlsx*" provides a helpful tool to check the specific UI and UA benefit limits applicable each year.

In the MCVL data, we can observe all self-employed individuals, as they have to contribute at least a minimum amount to the social security system. However, we can only approximately infer the income of self-employed workers by assuming that those making more profits have chosen to contribute more to the social security system. In the future, the reform of 2019 may allow researchers to better approximate self-employment income.

A.5 Budgetary Adjustments and Public Sector Workers

Spain endured the economic and social consequences of the financial crisis of 2008 in a double-dip recession. During the early period of the crisis, the national government tried to stimulate the economy through several programs with the primary goal of stabilizing employment. In 2009, investments into infrastructure, unemployment training, and services, along with hiring incentives, alleviated the first effects of the crisis. This first phase was followed by severe austerity policies to reduce the public deficit to 3% by 2013 (Lusiani, 2014). From 2010 to 2012, the Spanish government focused on keeping public spending to a minimum. These cutbacks impacted multiple levels of public administration, resulting in a loss of about 103,000 public sector workers until 2013, representing 4.1% of public sector employees (Registro Central de Personal, 2017).

In the health administration, these budgetary adjustments were translated into wage and hiring freezes, which reportedly decreased the number of health professionals in public hospitals. The first ones to be laid off were, of course, temporary workers and substitutes. In 2012 the public job offers were frozen such that the replacement rate of workers was limited to only 10%, and the restrictions were even harder for temporary contracts. Between 2010 and 2013, the number of health workers in the public sector decreased by 21,011 individuals, i.e., 4.5% relative to 2010 (Bandrés and González, 2013). In the education sector, the same model of replacement and salary freezes was applied. Similarly, the number of employed educators decreased for all education levels by almost 20,000 workers (2.6%) from 2012 to 2013 (Pérez García, Uriel Jiménez, Cucarella Tormo, Hernández Lahiguera, and Soler Guillén, 2016).

When we include public sector workers in our Regression Discontinuity Design (RDD) sample, our McCrary and non-parametric density test results indicate discontinuities in UI entries around the cutoff date. These discontinuities are caused by the dismissal of suspiciously many public sector workers in the months right after the reform was implemented. The discontinuities disappear when we exclude public sector workers, thus fulfilling our identification assumptions.

A.6 Reforms

We provide an overview of the main Spanish labor market reforms in recent years and the strategies we use to address each of them in our empirical analysis.

A.6.1 Unemployment Insurance System Reforms

In general, our UI entry date accounts for these reforms.[2] Some reforms affected the whole labor force similarly and thus did not violate our identification assumption. In addition, we restrict our analysis sample to full-time workers younger than 52, which avoids bias from the remaining reforms.

- **Introduction of the IPREM**, July 2004. The IPREM substitutes the minimum wage (*SMI*) as a reference for unemployment benefits and other social aids.
- **Active Insertion Income**, November 2006. State subsidy for workers with special economic needs and difficulties finding a job (e.g., individuals older than 45). Any person younger than 65 who fulfills the legal requirements may be eligible for this subsidy (SEPE, 2019).
- **Labor Market Reform I**, September 2010. A new classification of fair dismissal conditions, and in some cases, reduction of severance payments from 45 to 20 days per year of employment.
- **PREPARA**, February 2011. New extraordinary subsidy as an incentive to provide long-term part-time contracts to unemployed individuals younger than 30, as long as they commit to training programs.
- **Labor Market Reform II**, July 2012.
  - RR reduction from 60% to 50% after 180 days of UI benefit receipt.
  - UA benefits extension until retirement for workers older than 55 (implying that those older than 52 with a PBD of 30 months of UA could already benefit from this reform).
- **Budgetary Stability**, December 2013. End of the public contributions to the severance payments of dismissed workers in the case of objective reasons in solvent firms.

[2] In our analysis sample, we include individuals transitioning to UI from January 1, 2011, to December 31, 2013.

A.6.2 Self-Employment Reforms

Again, our UI entry date restrictions account for most of the following reforms. Potential inconsistencies from reforms targeting younger individuals are considered in Appendix E.4 and can be ruled out.

- **Self-Employed Workers Statute**, October 2007.
  - Extension of social protection for temporary sick leave to the self-employed.
  - Definition of the role of economically dependent self-employed workers (TRADE).
- **Cease-of-Activity Benefits (CAB)**, August 2010. Introduction of CAB as a voluntary contingency linked to work accidents and professional illness contingencies. CAB amounts are based on the principle of contribution benefits.
- **Incentives to Entrepreneurship and Job Creation**, March 2013.
  - Capitalization of UI benefits for young employed workers: payment of 100% of the UI benefits to men younger than 30 and women younger than 35 who want to become self-employed.
  - Reactivation of outstanding UI benefit payments after being self-employed with better conditions for workers under 30.
- **Strategy of Entrepreneurship and Youth Employment**, August 2013.
  - Flat and reduced rate of social security contributions for young self-employed workers (men under 30 and women under 35).
  - Improves financing for young self-employed workers.
- **Promotion of Self-Employment**, October 2015. Generalization of many advantages of young self-employed workers to all individuals.
- **Further Reforms**, December 2018.
  - All voluntary contingencies become compulsory (CAB and professional contingencies).
  - CAB duration is extended to 24 months.

B Appendix: Data and Variables

B.1 MCVL Dataset

Spain's Continuous Working Life Sample – *Muestra Continua de Vidas Laborales* (MCVL) – allows us to extract linked employer-employee panel data. Since 2004, the MCVL has been released yearly by Spain's Dirección General de Ordenación de la Seguridad Social (DGOSS). It contains social security data of a four percent non-stratified random sample of the population registered with the Spanish social security. Any individual working, receiving unemployment benefits, or a pension could be in this sample.[3]

The MCVL consists of two versions. The version *Sin Datos Fiscales (SDF)* includes social security data without income tax records. Each edition provides data on contribution bases from which gross wages or salaries can be inferred for most individuals. However, these labor earnings are capped. In the version *Con Datos Fiscales (CDF)*, income tax records are added, providing information on uncensored earnings. The data files contained in each edition can be merged via the person ID, which is maintained across MCVL editions. Each MCVL edition comprises the complete labor market histories of each individual in the sample from 1953 until the respective year of the MCVL wave. Earnings data are only available from 1980 onward. Every wave adds additional individuals (e.g., those who just entered the labor force for the first time), while other workers drop out of social security records. Hence, combining the editions is useful to optimize the sample's representativeness throughout the study period.

The MCVL provides not only monthly data on labor income and (un-)employment spells but also information on individual characteristics (e.g., gender, age, education, nationality, occupation), spell duration, and employers' characteristics (e.g., firm size, sector). We created an overview document that lists all variables contained in each MCVL wave (2005-2018): "***MCVL Variables.pdf***".

To be able to work with the MCVL data, one has to apply for data access.[4] For more information on the Spanish social security data and its availability, we refer to the Dirección General de Ordenación de la Seguridad Social.

B.2 Other Data

Throughout our (descriptive) analysis, we use different macroeconomic indicators. We use the local unemployment rate at the province level as a control variable in our RDD regressions. Similarly, we use annual (quarterly) unemployment and self-employment rates to replicate official statistics in Appendix C. Our indicators are drawn from the *Selected indicators*

[3] In this study, we do not consider pension data and only partially use taxable income data.

[4] `http://www.seg-social.es/Estadisticas/EST211/1459`

for Spain of the OECD (2018)[5] and the INE (2018)[6]. Official statistics on the number of beneficiaries and benefit levels have been extracted from Spain's Ministry of Labor (2019)[7].

B.3 Data Construction

Due to space limitations, this section provides a brief overview of our extensive data work. As our data and variable documentation can be helpful for other researchers who intend to work with the MCVL data, we refer to more detailed documentation files that allow replication of our work.

B.3.1 From Raw to Master Data

Our *master dataset* aims to include as many variables and information as possible (e.g., it keeps parallel and overlapping spells from side jobs) to be used as starting point for other research projects. We created an overview of all the variables in our *master dataset*: "***MCVL Variables.xlsx***". Our code partially builds upon the replication files provided by Lafuente (2020), Agrawal and Foremny (2019), and De La Roca and Puga (2017). In our data documentation, we cite them for reference when we follow the corresponding author's approach or indicate how our concept differs. We refer to the first part of our data documentation, "***Documentation I - From Raw to Master Data***", for a detailed description of how to clean the raw data from the Spanish social security authorities and construct our *master dataset*.

B.3.2 From Master Data to Results

Our *analysis dataset* is restricted to the needs of this research project. We only keep an individual's main spells and eliminate parallel and overlapping spells from side jobs using the procedures by Erhardt and Künster (2014). The second part of our data documentation, "***Documentation II - From Master Data to Results***", describes how to create our *analysis dataset* based on the *master dataset* and replicates our results.

B.4 Variables Overview

The following paragraphs give an overview of the variables used in our analysis. For details on all the variables in the MCVL dataset and their transformation, we refer to our data documentation files, particularly "***MCVL Variables.xlsx***".

[5]Organization of Economic Co-operation and Development (OECD) data for Spain can be retrieved from: `https://data.oecd.org/spain.htm`

[6]INE data for Spain can be retrieved from: `https://www.ine.es/dyngs/INEbase/en/listaoperaciones.html`

[7]Unemployment benefits statistics from Spain's Ministry of Labor (2019) can be retrieved from: `www.mites.gob.es/estadisticas/PRD/prd19_abr/prd_04_19.xls`

B.4.1 Outcome Variables

- **Extensive margin measures**: This is a set of binary outcome variables that take the value one if individual i becomes self-employed, employed, or either one of them within a certain amount of days. The variable takes the value zero if the individual remains unemployed or exits into an alternative state within this period. We choose intervals of 90, 180, 360, and 720 days.
- **Non-employment duration measures:**
  - ***Non-employment duration***: Non-employment duration in months, including UI spells, subsequent UA spells, and spells without benefit receipt. Right censored after five years.[8]
  - ***Medium-term unemployment***: Indicates whether the individual spends more than one year in non-employment (1) or less than one year (0).
  - ***Long-term unemployment***: Indicates whether the individual spends more than two years in non-employment (1) or less than two years (0).
- **(Self-)employment quality measures**:
  - ***(Self-)employment spell duration***: Post-unemployment exit spell duration in months. Right censored after four years.[9]
  - ***ln(real monthly average contribution basis)***: Natural logarithm of the individual's post-unemployment real monthly average contribution basis from social security records in 2015 euros. For employment spells, this variable corresponds to censored real earnings. Unfortunately, we have no information on self-employment income, but we use the contribution basis as its best available proxy.[10]
  - ***Contribution basis above median dummy***: Indicates whether the individual's post-unemployment real monthly average contribution basis is above (1) or below (0) the median.
  - ***Permanent contract dummy***: Individual with a permanent contract (1),

[8] As we observe individuals' spells until the end of 2018, those who switch into an UI spell by the end of 2013 can be observed until a maximum of five years. We guarantee that pre- and post-reform period spells potentially have the same duration maximum by artificially right-censoring non-employment duration.

[9] Individuals in our sample who switched into a UI spell on December 31, 2013, and who transitioned into a (self-)employment spell within 360 days can be observed for a maximum of four years. We guarantee that pre- and post-reform period (self-)employment spells potentially have the same duration maximum by artificially right-censoring them after four years.

[10] Self-employed individuals must choose a contribution basis within existing legal bounds which are legally determined each year. The minimum and maximum basis between which a self-employed person can choose depends on personal and occupational characteristics. Starting from the legal minimum contribution basis, they have to pay a higher percentage of their income as social security contributions if they choose a higher protection level.

individual with a temporary contract (0). Permanent contracts may be interpreted as a sign of higher quality. Naturally, this information is not available for self-employment spells.

- ***Full-time contract dummy***: Individual with a full-time contract (1), individual with a part-time contract (0). Full-time contracts may be interpreted as a sign of higher quality. Naturally, this information is not available for self-employment spells.
- ***Same or better occupation dummy***: Individual with the same or better occupation after unemployment exit (1), individual with a worse occupational outcome (0). Occupations are ranked by their skill level, i.e., the higher an occupation's skill level, the higher the rank in terms of quality. This information is not available for self-employment spells.
- ***Sector of activity indicators***: Sector 1: Agriculture, extraction, primary manufacturing; Sector 2: manufacturing and utilities; Sector 3: construction; Sector 4: trade; Sector 5: transport and storage; Sector 6: accommodation and food services; Sector 7: information and communication (I&C), finance, insurance, real estate, and scientific services; Sector 8: education, health, social, auxiliary, and other services.

B.4.2 Predetermined Covariates

All control variables are measured at the individual's UI spell entry.

- Socioeconomic characteristics
  - ***Female dummy***: Female (1), male (0).
  - ***Age***: Individual's age in years. We also add age squared.
  - ***Education level***: Lower education, medium education, and higher education.[11]
  - ***Presence of children dummy***: Presence of children in the household (1), no presence of children in the household (0).
  - ***Immigrant dummy***: Immigrant (1), no immigrant (0). We define an immigrant as a person born in a country other than Spain. Alternatively, we use a person's nationality.[12]

[11] Lower education includes individuals without studies, with primary education, a secondary school diploma (ESO), and basic professional training. Medium education includes Bachillerato, intermediate professional training, and other intermediate diplomas. Higher education includes university graduates, non-university higher studies diplomas, doctorates, masters, and other post-graduate studies (Dirección General de Ordenación de la Seguridad Social, 2019).

[12] Although immigrants are included in our sample, we do not control for immigrant status in our regressions. However, our results are robust to explicitly controlling for immigrant status (defined by country of birth and nationality) and excluding immigrants from the sample.

- Pre-displacement job characteristics:
  - ***Employment experience***: Aggregated duration of an individual's employment spells in months.
  - ***Self-employment experience dummy***: Individual with self-employment experience (1), individual without self-employment experience (0).
  - ***ln(real monthly average contribution basis)***: Natural logarithm of the individual's real monthly average contribution basis from social security records in 2015 euros. This variable is equivalent to the ln(real monthly average contribution basis) from above, but we only consider previously employed workers in this context. Workers who were self-employed before they switched into an unemployment spell are excluded from our sample. Consequently, the variable will correspond to earnings concerning our predetermined covariates.
  - ***ln(real monthly average earnings)***: Natural logarithm of the individual's real monthly average gross earnings from tax records in 2015 euros. As opposed to the contribution basis, this earnings measure is uncensored. However, for about 10% of our observations, the pre-UI spell earnings information is missing, considerably reducing the sample size. Therefore, we primarily focus on results using the contribution basis instead.
  - ***Skill level***: indicates the individual's occupational skill level, i.e., high-skilled, medium-skilled, or low-skilled occupation.[13]
  - ***Permanent contract dummy***: As specified above.
  - ***Sector of activity indicators***: As specified above.
- Unemployment characteristics:
  - ***Local quarterly unemployment rate***: Quarterly unemployment rate at the province level.[14]
  - ***Potential benefit duration (PBD)***: Individuals' potential UI benefit duration in months.

[13]This variable is based on the occupational codes described in Dirección General de Ordenación de la Seguridad Social (2019). We follow the same classification as in Rebollo-Sanz and Rodríguez-Planas (2020). High-skilled occupations include engineers, college graduates, senior managers, technical engineers, graduate assistants, and administrative and technical managers. Medium-skilled occupations include non-graduate assistants, administrative officers, administrative assistants, subordinates, and auxiliary workers. Low-skilled occupations include first- and second-class officers, third-class officers and technicians, and laborers. Note that information on occupational codes is not provided for individuals in the special social security scheme of self-employed workers (Dirección General de Ordenación de la Seguridad Social, 2019).

[14]This variable is based on information extracted from official statistics published by INE (2018). Since labor demand is very cyclical in Spain, we also tested how our results react to the inclusion of the local quarterly unemployment rate measured at the individual's UI exit date instead. Results remain robust.

C Appendix: Descriptive Analysis

This section illustrates how the main labor market states evolved in the period 2005-2018 in Spain. We confirm our accuracy in constructing the dataset by showing that we can match key labor market facts documented by official bodies such as the OECD or the Spanish National Statistics Institution (*Instituto Nacional de Estadística (INE)*). For the construction of the quarterly dataset, which we use to obtain the relevant descriptive statistics, we limit our sample to individuals of working age, i.e., 18 years or older, included in the social security files from 2005 to 2018.

Table C.1: Individual Characteristics

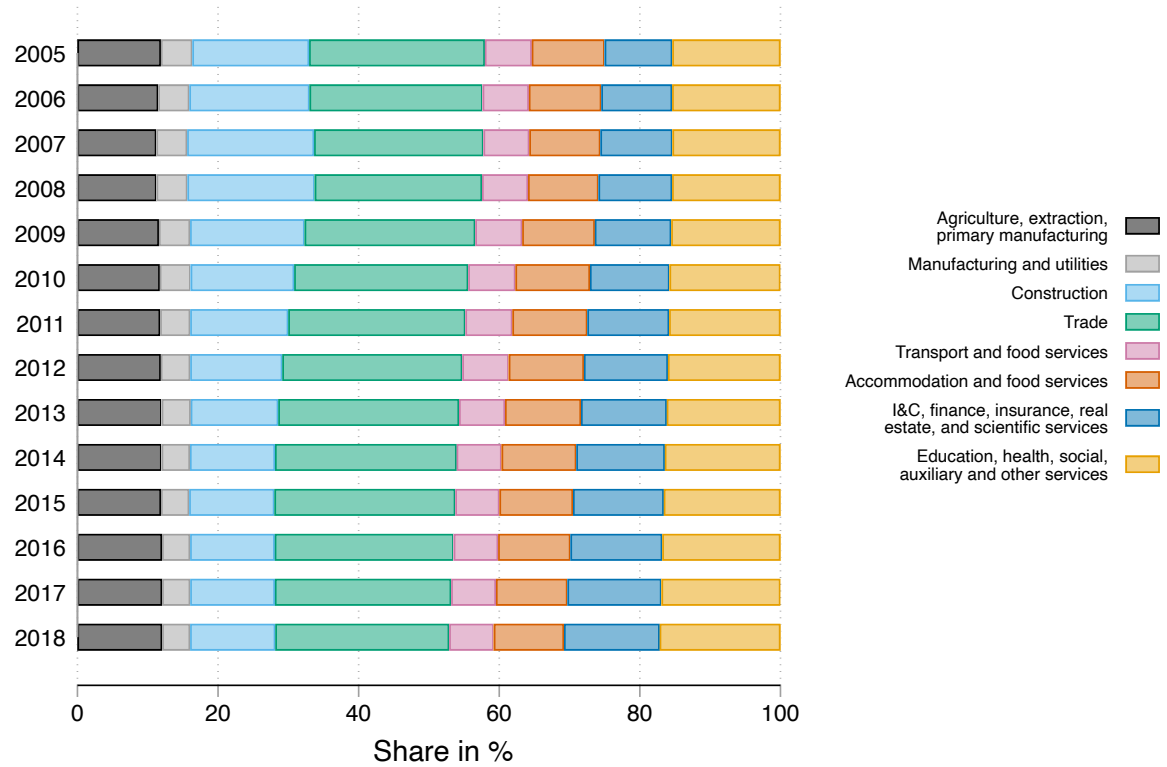
	Self-Employment		Employment		Total Sample	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Female	0.389	(0.487)	0.494	(0.500)	0.485	(0.500)
Age (years)	38.097	(10.248)	36.784	(10.743)	37.189	(11.270)
Lower education	0.553	(0.497)	0.562	(0.496)	0.601	(0.490)
Medium education	0.261	(0.439)	0.250	(0.433)	0.239	(0.427)
Higher education	0.186	(0.389)	0.188	(0.390)	0.160	(0.366)
Presence of children	0.504	(0.500)	0.487	(0.500)	0.484	(0.500)
Immigrant	0.185	(0.388)	0.204	(0.403)	0.214	(0.410)
Employment experience (months)	86.246	(85.225)	161.386	(118.242)	132.550	(116.394)
Self-employment experience indicator	1.000	(0.000)	0.142	(0.349)	0.228	(0.419)
Real monthly contribution basis (in 2015 euros)	955.810	(321.404)	1561.557	(988.817)	1470.203	(934.406)
ln(real monthly average contribution basis)	6.839	(0.189)	7.182	(0.629)	7.132	(0.596)
Low-skilled occupation			0.505	(0.500)	0.670	(0.470)
Medium-skilled occupation			0.319	(0.466)	0.217	(0.412)
High-skilled occupation			0.176	(0.381)	0.113	(0.317)
Permanent contract			0.573	(0.495)	0.342	(0.474)
Agriculture, extraction, primary manufacturing	0.090	(0.286)	0.066	(0.249)	0.047	(0.211)
Manufacturing and utilities	0.033	(0.178)	0.078	(0.269)	0.049	(0.217)
Construction	0.137	(0.344)	0.080	(0.271)	0.059	(0.235)
Trade	0.239	(0.427)	0.152	(0.359)	0.110	(0.313)
Transport and storage	0.053	(0.224)	0.043	(0.203)	0.030	(0.170)
Accommodation and food services	0.122	(0.327)	0.088	(0.283)	0.062	(0.241)
I&C, finance, insurance, real estate, and scientific services	0.141	(0.348)	0.099	(0.299)	0.070	(0.256)
Education, health, social, auxiliary and other services	0.177	(0.382)	0.328	(0.469)	0.210	(0.407)
N spells	404,192		9,333,487		15,941,941	
N individuals					1,149,324	

Notes: This table presents mean values and standard deviations for individual characteristics. We distinguish between self-employed individuals and employed individuals. The *Total Sample* column additionally includes cease-of-activity/UI/UA benefit recipients, and unregistered/inactive individuals. The information refers to our sample for the years between 2005 and 2018, restricted to individuals who are 18 years of age or older. Statistics are weighted by individuals' spell duration relative to the total sample period (5112 days). Note that information on occupational codes is not provided for individuals in the social security scheme of self-employed workers. Therefore, we do not have data on skill levels for the self-employed (Dirección General de Ordenación de la Seguridad Social, 2019). *N spells* refers to the unweighted number of (self-)employment spells observed in the total sample period. *N individuals* refers to the unweighted number of individuals in the total sample period, regardless of their spell type.
Source: Authors' calculations based on the 2005-2018 MCVL data.

Table C.1 compares the main characteristics of employed versus self-employed individuals. We observe a gender gap for self-employed individuals: while the female share is almost 50% for employed individuals, it is only 39% for the self-employed. The average age of the self-employed (38 years) is slightly higher than for the employed individuals (37 years). Moreover, the share of immigrants among the self-employed (19%) is slightly smaller than among employees (20%). The distribution of education levels is very similar across both labor market states. In contrast, self-employed individuals' average employment experience and real monthly contribution basis are considerably smaller.

Additionally, Figure C.1 illustrates the annual sectoral composition of self-employment in Spain over the same period. Our findings indicate that self-employment is particularly important in the construction sector. The share of founders in that sector increased until 2008 when the Great Recession set in. From 2009 onwards, the construction sector's importance decreased in favor of other sectors, i.e., trade (retail and tourism), education, health, social, auxiliary, information, communication, insurance, and scientific services.[15]

Figure C.1: Sectoral Distribution of the Self-Employed

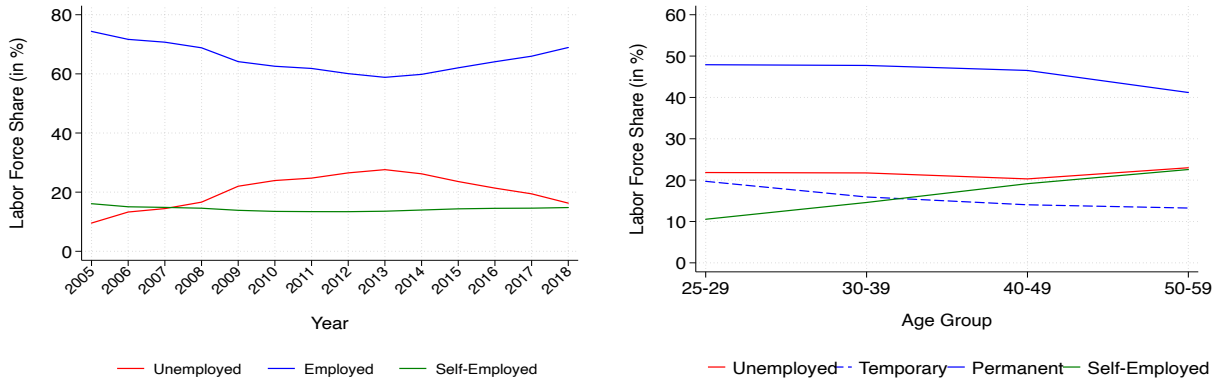


Notes: This figure illustrates the composition of self-employment in Spain, with respect to the sector variable in each year. The sample is restricted to individuals who are 25 to 52 years old.
Source: Authors' calculations based on MCVL 2005-2018 data.

[15] According to the classification of the Bank of Spain (García and Román, 2019), the construction sector decreased in favor of transport, tourism and retail, but also professional, scientific, administrative, and auxiliary services.

Labor Force. In Figure C.2a, we plot the composition of the Spanish labor force over time. The largest share of the labor force consists of employed workers. In 2005, this share corresponded to 78% of the labor force. It decreased over time, especially after the Great Recession, to its lowest point of approximately 60% in 2013. The share of unemployed individuals almost entirely absorbed this massive decline, whereas the share of self-employed individuals remained roughly constant at 18%. When analyzing the age distribution of the labor force, Figure C.2b reveals that self-employment is more relevant for older individuals (age groups over 40) than for younger individuals.

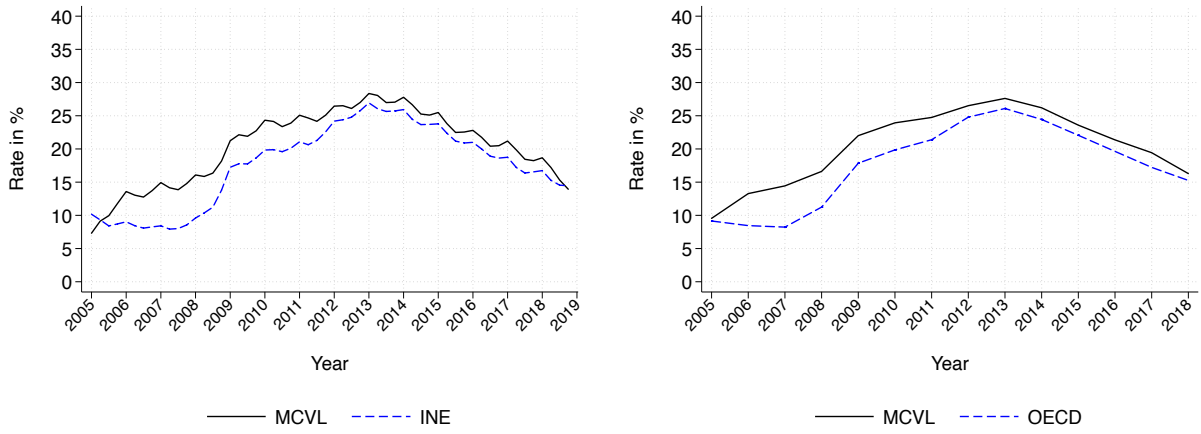
Figure C.2: The Spanish Labor Force



(a) Composition **(b)** Age Distribution

Notes: Figure (a) illustrates the composition of the Spanish labor force between 2005 and 2018. It shows the percentage of individuals of working age (18 years of age or older) distinguishing Unemployment, Employment and Self-Employment. Figure (b) illustrates the distribution of workers across the different employment states, including Unemployment, Temporary Employment, Permanent Employment and Self-Employment, with respect to their age group, as a percentage of the Spanish labor force.
Source: Authors' calculations based on MCVL 2005-2018 data.

Figure C.3: Unemployment Rate



(a) Quarterly **(b)** Yearly

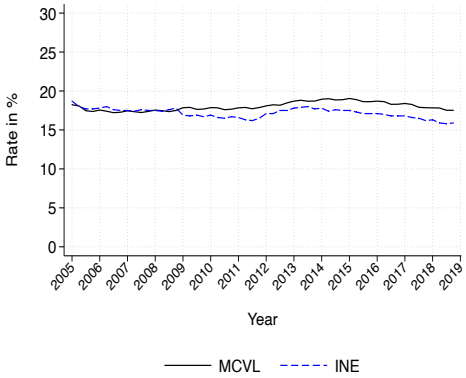
Notes: Figure (a) illustrates the evolution of the unemployment rates in Spain from 2005 to 2018 on a quarterly basis. Figure (b) illustrates the evolution of the same rates on a yearly basis. Note that our definition of unemployment includes individuals who receive either UI or UA benefits, as well as individuals who do not receive any benefits at all, and those who are tagged as receiving cease-of-activity benefits.
Source: Authors' calculations based on MCVL 2005-2018 data and official INE (2018) and OECD (2018) statistics.

Evolution of the Spanish Labor Market. Figure C.3 illustrates Spain's annual and quarterly unemployment rates based on MCVL, INE, and OECD data. It is important to note that the OECD defines the working-age population as individuals between 15 and 64, while the INE focuses on individuals older than 16. In contrast, we restrict our sample to individuals aged 18 or older. Despite these differences, the computed unemployment rate using MCVL data is very similar to the quarterly unemployment rate reported by INE and the annual unemployment rate reported by the OECD.

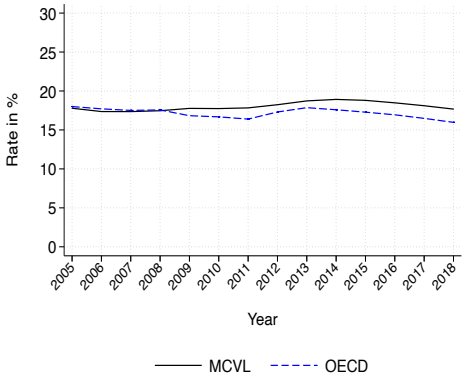
Concerning the self-employment rate, measured in terms of total employment, Figure C.4 confirms that our data-cleaning process was successful. MCVL data enables us to match (a) quarterly statistics from INE and (b) annual statistics from OECD data. Specifically, it shows that self-employment has been slowly rising until reaching its peak in 2014 at nearly 20%.

The same holds for our calculated employment rates. Part-time employment rates, in subfigures (c)-(d), and temporary employment rates, in subfigures (e)-(f), match official statistics quite well. While the part-time rate has continuously increased from 10% in 2005 to 15% in 2018, the temporary employment rate reflects a U-shaped evolution, indicating that temporary contracts were not renewed during the Great Recession. In contrast, when the recovery started (in Spain at the end of 2013), temporary employment recovered first and surpassed pre-crisis levels in 2017.

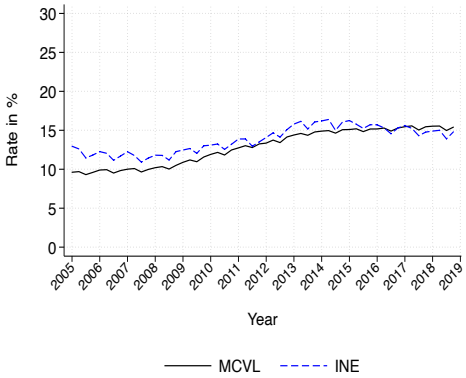
Figure C.4: (Self-)Employment Rates



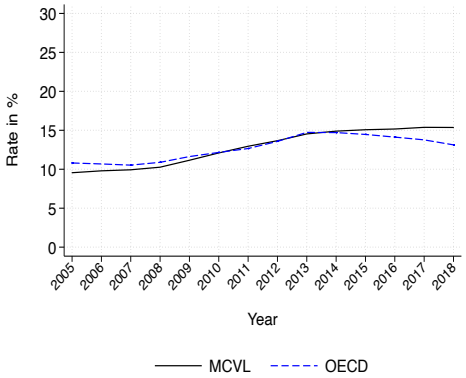
(a) Quarterly Self-Employment Rate



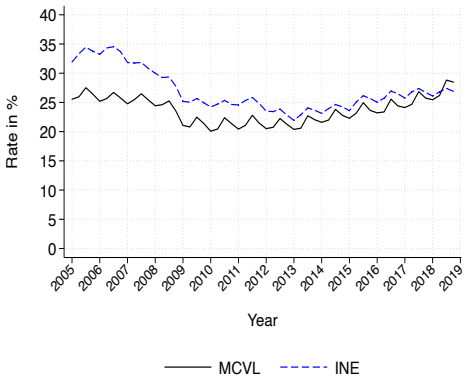
(b) Annual Self-Employment Rate



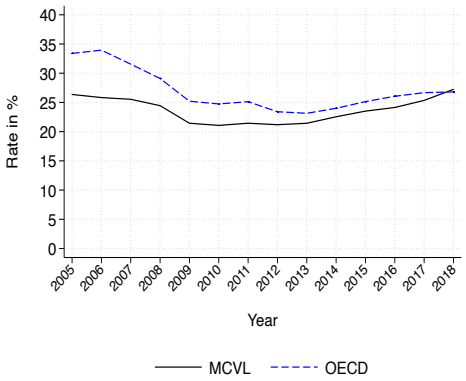
(c) Quarterly Part-Time Empl. Rate



(d) Annual Part-Time Employment Rate



(e) Quarterly Temporary Empl. Rate



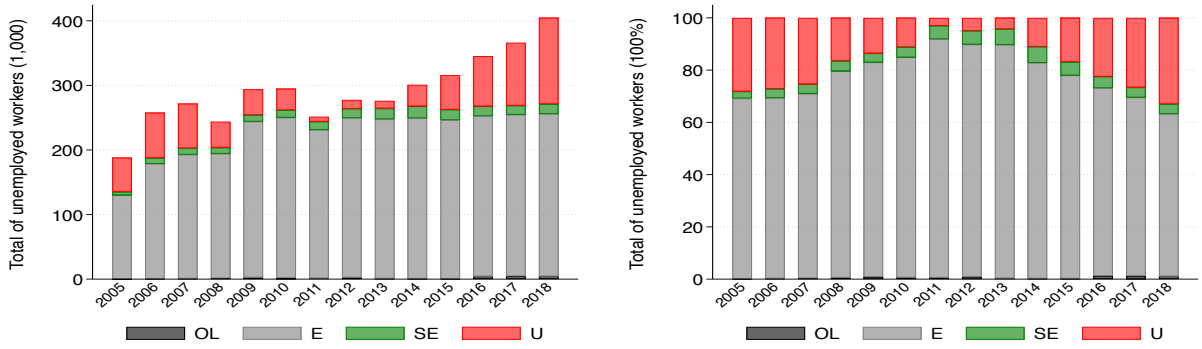
(f) Annual Temporary Employment Rate

Notes: The left-hand figures illustrates the evolution of the self-employment, part-time employment, and temporary employment rates in Spain from 2005 to 2018 on a quarterly basis. The right-hand figures illustrates the evolution of the same rates on a yearly basis.
Source: Authors' calculations based on MCVL 2005-2018 data and official INE (2018) and OECD (2018) statistics.

Labor Market Flows. Subfigures (a) and (b) in Figure C.5 depict Spain's yearly outflows from unemployment. They illustrate that the share of individuals who transition from unemployment to (self-)employment remains relatively stable during the years surrounding the 2012 labor market reform. Even though the share of individuals who transition to self-employment is relatively larger around the reform than at the beginning of the sample period, the outflows from unemployment are clearly dominated by employment. After 2013 unemployed individuals increasingly remain unemployed, while outflows into employment are decreasing in relative terms.

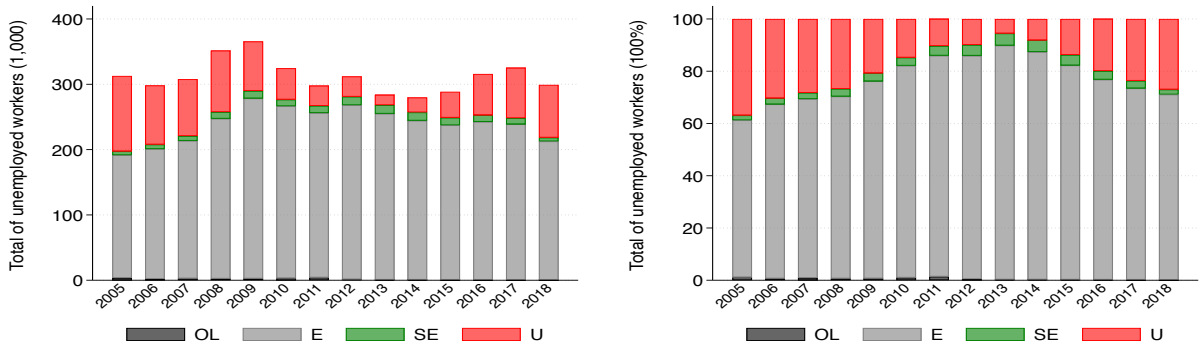
Subfigures (c) and (d) in Figure C.5 show a similar pattern regarding the inflows into unemployment. The relative destruction of employment increases until 2013 when the economic recovery changes the trend. After that, the inflow into unemployment from employment starts to decline.

Figure C.5: Composition of Unemployment Outflows and Inflows



(a) Yearly Outflows from Unemployment

(b) Yearly Outflows from Unemployment (in %)



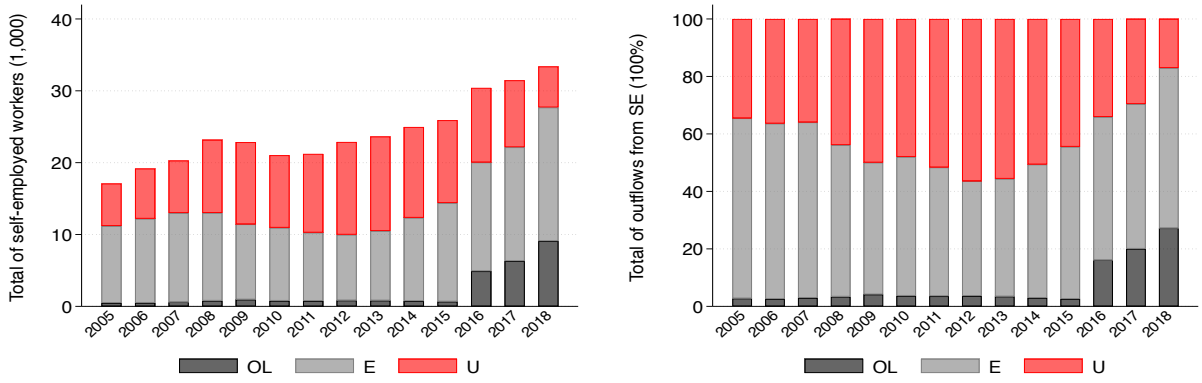
(c) Yearly Inflows into Unemployment

(d) Yearly Inflows into Unemployment (in %)

Notes: These figures illustrate the yearly composition of UI or UA Unemployment (U) outflows and inflows in Spain, in both absolute and relative terms. The sample is restricted to individuals of working age (18 or older). We consider flows to/from the following labor market states: Out of Labor Force (OL), Employment (E), and Self-Employment (SE), along with the corresponding stock of those who remain in Unemployment (U).

Source: Authors' calculations based on MCVL 2005-2018 data.

Figure C.6: Composition of Outflows from Self-Employment Excl. Stocks

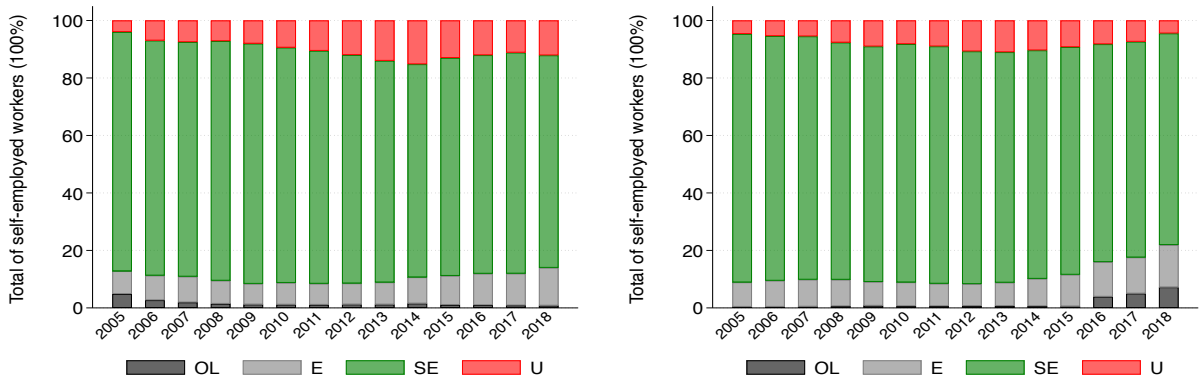


(a) Yearly Outflows from SE (excl. stocks) **(b)** Yearly Outflows from SE (in %, excl. stocks)

Notes: These figures illustrate the yearly outflows from Self-Employment (SE) in Spain, in both absolute (left) and relative (right) terms. The sample is restricted to individuals of working age (18 or older). We distinguish outflows from Self-Employment (SE) to the following labor market states: Out of Labor Force (OL), Employment (E), and UI or UA Unemployment (U). This is the flip side of the coin: the inflows are shown in the main text in Figure 2.
Source: Authors' calculations based on MCVL 2005-2018 data.

Figure C.6 shows the yearly outflows from self-employment, excluding the self-employment stock dimension. In general, outflows from self-employment target either employment or unemployment. Unsurprisingly, outflows towards unemployment are primarily dominant during the crisis period. Inactivity becomes more prevalent by the end of the sample period, indicating that many individuals have exhausted their benefit entitlement.

Figure C.7: Composition of Self-Employment Inflows and Outflows Incl. Stocks



(a) Yearly Inflows into SE (in %, incl. stocks) **(b)** Yearly Outflows from SE (in %, incl. stocks)

Notes: These figures illustrate the yearly composition of Self-Employment (SE) in Spain providing the share of each component in percentage of the total stock. The sample is restricted to individuals of working age (18 or older). We distinguish flows to/from the following labor market states: Out of Labor Force (OL), Employment (E), UI or UA Unemployment (U), and the corresponding stock of those who remain in SE. See Figure 2 for the composition of inflows into SE excluding stocks.
Source: Authors' calculations based on MCVL 2005-2018 data.

Figure C.7 shows the yearly inflows and outflows, including the self-employment stock dimension. Subfigure (a) confirms that new inflows into self-employment are mainly composed of individuals who were previously unemployed or employed. In particular, the share of new inflows to self-employment out of unemployment increases until around 2013, when economic recovery set in. Subfigure (b) indicates that around 80% of the self-employed remain self-employed the following year (less during the crisis period).

Subfigures (a) and (b) in Figure C.8 show that self-employment is less important for the inflows into employment and appears not to change much over time. As indicated by subfigures (c) and (d), the outflows from employment to self-employment are similarly small and relatively constant over time.

Figure C.8: Composition of Inflows into Employment

(a) Yearly Inflows into Employment

(b) Yearly Inflows into Employment (in %)

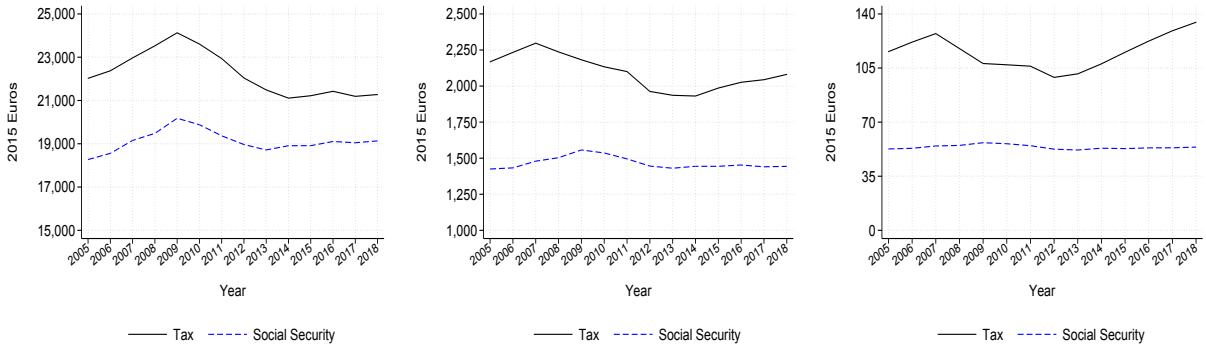
(c) Yearly Outflows from Employment

(d) Yearly Outflows from Employment (in %)

Notes: These figures illustrate the yearly composition of Employment (E) outflows and inflows in Spain, in both absolute and relative terms. The sample is restricted to individuals of working age (18 or older). We consider flows to/from the following labor market states: Out of Labor Force (OL), Self-Employment (SE), and UI or UA Unemployment (U), along with the corresponding stock of those who remain in Employment (E).

Source: Authors' calculations based on MCVL 2005-2018 data.

Figure C.9: Evolution of Average Annual, Monthly, and Daily Real Earnings

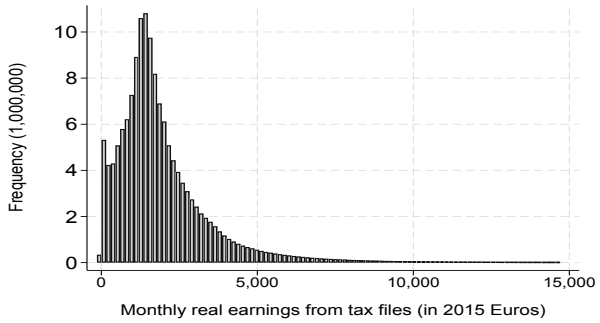


(a) Annual Earnings **(b)** Monthly Earnings **(c)** Daily Earnings

Notes: These figures illustrate the evolution of average (a) annual, (b) monthly and (c) daily real earnings in Spain, according to the social security records and the tax files. The sample is restricted to individuals who are 18 or older.
Source: Authors' calculations based on MCVL 2005-2018 data.

Earnings. Figure C.9 compares the evolution of average annual, monthly, and daily real earnings from tax and social security data. Earnings from both sources move parallel to one another: annual average earnings increased until 2009 but declined during the crisis period. They have only started to recover since 2014 but are still below pre-crisis levels at around 21,000 euros. Monthly and daily average earnings evolve similarly but with a less pronounced pattern in the social security data. The evolution of earnings follows the previously described patterns of the unemployment rate. In this context, Bonhomme and Hospido (2017) document that earnings inequality (between 2004 and 2010) also appears to have evolved in line with the evolution of unemployment rates using similar social security data. Figure C.10 shows that the distribution of average monthly earnings is skewed to the left, with a large dispersion across top incomes. Thus, most citizens in Spain earn an income that is below the mean.

Figure C.10: Distribution of Monthly Earnings (Tax Data)

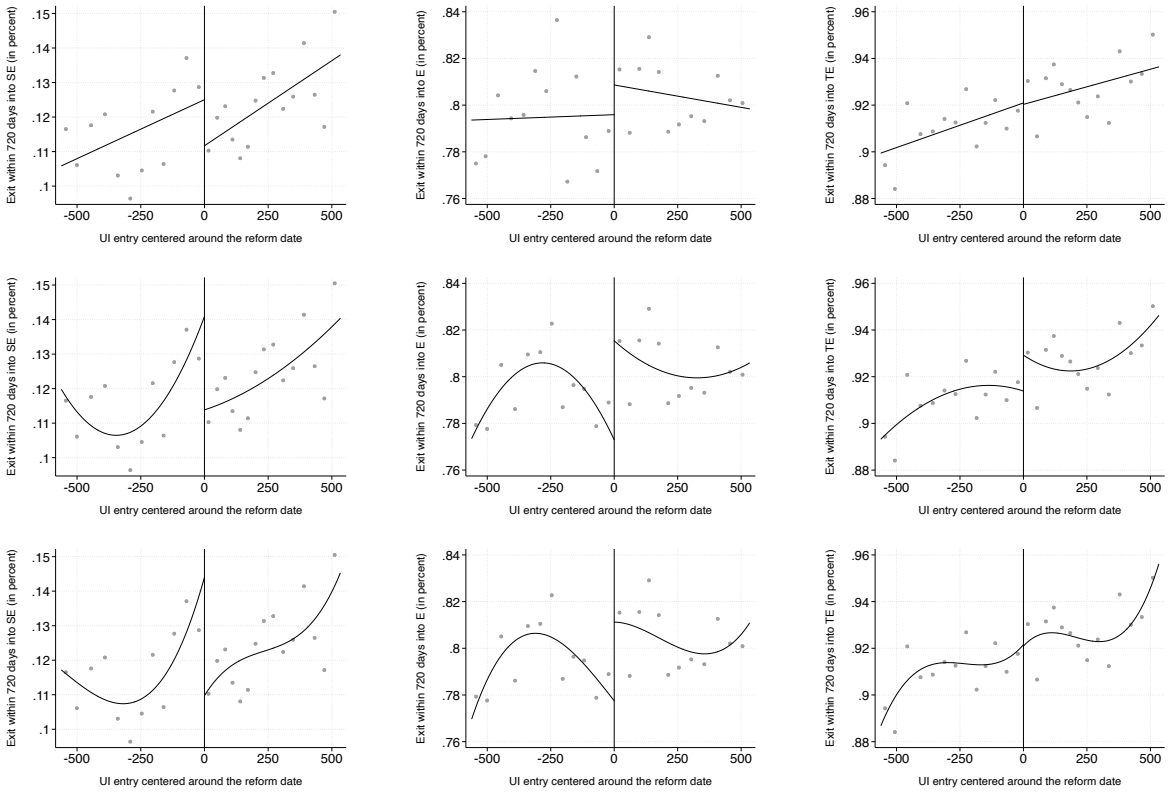


Notes: This figure illustrates the distribution of monthly real earnings in Spain with a mean value of EUR 1,981.81 and a median of EUR 1,564.67, according to the tax files. The sample is restricted to individuals who are 18 or older.
Source: Authors' calculations based on MCVL 2005-2018 data.

D Appendix: Extensive Margin Results

Figure D.1: Reform Effects on the Extensive Margin from the Entire Support of the Running Variable

(a) Self-Employment **(b)** Employment **(c)** Self-Employment or Employment



Notes: These figures illustrate the reform effect on the probability of exiting unemployment into self-employment, employment, or either one of them within the first 720 days after UI entry from the entire support of the running variable. We apply the IMSE-optimal number of quantile-spaced bins using a linear (first row), quadratic (second row), and cubic (third row) polynomial. Our sample includes individuals who are 25-52 years old, entitled to more than 180 days of UI benefits, and who entered their UI benefit spell between January 1, 2011 and December 31, 2013, after having been laid off from a full-time employment spell in a private sector firm (see Section IV.A for a description of detailed sample restrictions). Figure 3 shows the main effects using only a cubic polynomial.

Source: Authors' calculations based on MCVL 2005-2018 data.

Table D.1: Summary Statistics of Outcome Variables

Outcome Variable	Mean	Pre Mean	Post Mean	Difference
Extensive Margin Outcome Variables				
SE within the first 90 days	0.055	0.055	0.056	0.000
	(0.229)	(0.229)	(0.229)	(0.002)
SE within the first 180 days	0.078	0.077	0.079	0.002
	(0.269)	(0.267)	(0.270)	(0.003)
SE within the first 360 days	0.099	0.096	0.103	0.007**
	(0.299)	(0.295)	(0.304)	(0.003)
SE within the first 720 days	0.119	0.116	0.124	0.008**
	(0.324)	(0.320)	(0.330)	(0.003)
E within the first 90 days	0.279	0.294	0.263	-0.030***
	(0.449)	(0.455)	(0.441)	(0.005)
E within the first 180 days	0.443	0.458	0.427	-0.032***
	(0.497)	(0.498)	(0.495)	(0.005)
E within the first 360 days	0.629	0.628	0.630	0.002
	(0.483)	(0.483)	(0.483)	(0.005)
E within the first 720 days	0.799	0.795	0.804	0.009**
	(0.401)	(0.404)	(0.397)	(0.004)
SE or E within the first 90 days	0.335	0.349	0.319	-0.030***
	(0.472)	(0.477)	(0.466)	(0.005)
SE or E within the first 180 days	0.521	0.536	0.506	-0.030***
	(0.500)	(0.499)	(0.500)	(0.005)
SE or E within the first 360 days	0.728	0.724	0.733	0.008*
	(0.445)	(0.447)	(0.443)	(0.005)
SE or E within the first 720 days	0.919	0.910	0.928	0.018***
	(0.274)	(0.286)	(0.259)	(0.003)
Non-Employment Duration Measures				
Non-employment duration (months)	9.586	9.808	9.336	-0.472***
	(11.516)	(12.264)	(10.606)	(0.124)
Non-employment duration > 1 year	0.272	0.276	0.267	-0.008*
	(0.445)	(0.447)	(0.443)	(0.005)
Non-employment duration > 2 years	0.081	0.090	0.072	-0.018***
	(0.274)	(0.286)	(0.259)	(0.003)
N	34,556	18,306	16,250	34,556
Quality Measures of the Unemployment Exit Spell				
Real monthly average contribution basis	1,354.330	1,354.798	1,353.803	-0.995
	(756.748)	(775.117)	(735.560)	(8.175)
ln(real monthly average contribution basis)	7.011	6.979	7.046	0.066***
	(0.932)	(1.056)	(0.769)	(0.010)
Contribution basis above median	0.500	0.507	0.492	-0.015***
	(0.500)	(0.500)	(0.500)	(0.005)
Spell duration (months)	13.382	12.882	13.945	1.063***
	(17.165)	(16.932)	(17.407)	(0.185)
Spell duration 0-12 months	0.679	0.691	0.664	-0.027***
	(0.467)	(0.462)	(0.472)	(0.005)
Spell duration 13-24 months	0.102	0.098	0.105	0.007**
	(0.302)	(0.298)	(0.307)	(0.003)
Spell duration 25-36 months	0.046	0.046	0.047	0.001
	(0.210)	(0.209)	(0.211)	(0.002)
Spell duration > 36 months	0.173	0.164	0.183	0.019***
	(0.379)	(0.371)	(0.387)	(0.004)
Permanent contract	0.414	0.403	0.428	0.025***
	(0.493)	(0.490)	(0.495)	(0.005)
Full-time contract	0.798	0.801	0.796	-0.005
	(0.401)	(0.399)	(0.403)	(0.004)
Same occupation category or better	0.599	0.610	0.587	-0.022***
	(0.490)	(0.488)	(0.492)	(0.005)
N	34,394	18,208	16,186	34,394

Notes: This table shows the general sample mean, pre-reform period mean, post-reform period mean and the difference between post- and pre-reform period mean of our outcome variables using our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions). The extensive margin outcome variables are binary and indicate whether the person transitioned into a (self-)employment spell within the first 90, 180, 360 or 720 after UI entry, respectively. When measuring unemployment exit spell quality, our sample contains slightly fewer observations than the RDD estimation sample, since some of the post-unemployment contribution basis information was missing. All variables are measured during the first (self-)employment spell after non-employment. If the individual is still unemployed (or artificially right censored), the variables take a value of zero.

Source: Authors' calculations based on MCVL 2005-2018 data.

Table D.2: Summary Statistics of Covariates

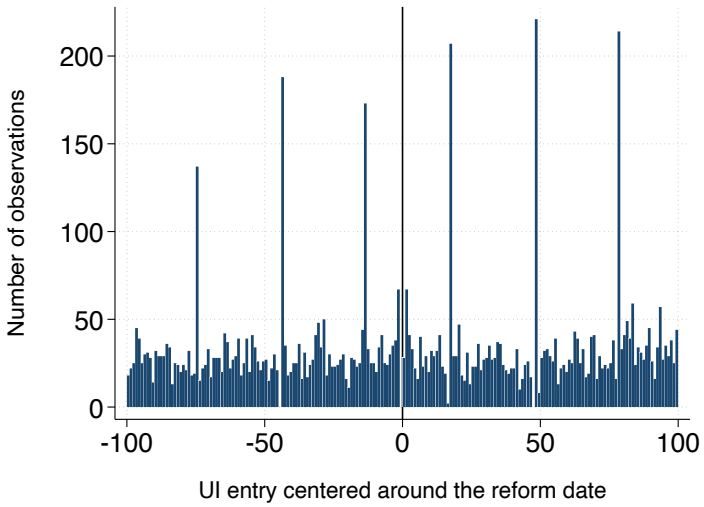
Covariate	Mean	Pre Mean	Post Mean	Difference
Female	0.365	0.353	0.379	0.026***
	(0.481)	(0.478)	(0.485)	(0.005)
Age (years)	36.903	36.732	37.096	0.365***
	(7.162)	(7.162)	(7.158)	(0.077)
Lower education	0.580	0.596	0.562	-0.034***
	(0.494)	(0.491)	(0.496)	(0.005)
Medium education	0.279	0.278	0.280	0.002
	(0.448)	(0.448)	(0.449)	(0.005)
Higher education	0.141	0.126	0.158	0.032***
	(0.348)	(0.332)	(0.365)	(0.004)
Presence of children	0.527	0.532	0.521	-0.011**
	(0.499)	(0.499)	(0.500)	(0.005)
Immigrant	0.200	0.204	0.195	-0.010**
	(0.400)	(0.403)	(0.396)	(0.004)
Employment experience (months)	140.909	138.045	144.136	6.091***
	(82.358)	(82.884)	(81.643)	(0.887)
Self-employment experience indicator	0.155	0.158	0.152	-0.005
	(0.362)	(0.365)	(0.359)	(0.004)
Real monthly average contribution basis	1,626.415	1,630.204	1,622.148	-8.056
	(639.854)	(640.897)	(638.670)	(6.896)
ln(real monthly contribution basis)	7.335	7.339	7.330	-0.009**
	(0.334)	(0.328)	(0.340)	(0.004)
Low-skilled occupation	0.565	0.581	0.547	-0.034***
	(0.496)	(0.493)	(0.498)	(0.005)
Medium-skilled occupation	0.316	0.306	0.327	0.021***
	(0.465)	(0.461)	(0.469)	(0.005)
High-skilled occupation	0.119	0.113	0.126	0.013***
	(0.324)	(0.316)	(0.332)	(0.003)
Permanent contract	0.694	0.686	0.703	0.018***
	(0.461)	(0.464)	(0.457)	(0.005)
Agriculture, extraction, primary manufacturing	0.061	0.063	0.059	-0.004
	(0.240)	(0.243)	(0.236)	(0.003)
Manufacturing and utilities	0.110	0.115	0.105	-0.010***
	(0.313)	(0.319)	(0.306)	(0.003)
Construction	0.181	0.205	0.154	-0.051***
	(0.385)	(0.403)	(0.361)	(0.004)
Trade	0.205	0.199	0.213	0.014***
	(0.404)	(0.399)	(0.409)	(0.004)
Transport and storage	0.056	0.054	0.058	0.004*
	(0.230)	(0.227)	(0.235)	(0.002)
Accommodation and food services	0.114	0.107	0.123	0.016***
	(0.318)	(0.309)	(0.328)	(0.003)
I&C, finance, insurance, real estate, and scientific services	0.104	0.098	0.110	0.011***
	(0.305)	(0.298)	(0.312)	(0.003)
Education, health, social, auxiliary and other services	0.168	0.159	0.178	0.019***
	(0.374)	(0.366)	(0.382)	(0.004)
PBD (months)	18.853	18.837	18.872	0.035
	(6.107)	(6.059)	(6.161)	(0.066)
Local unemployment rate	23.644	22.232	25.218	2.986***
	(6.369)	(6.016)	(6.383)	(0.068)
N	34,556	18,306	16,250	34,556

Notes: This table shows the total mean, pre-reform period mean, post-reform period mean and the difference between post- and pre-reform period mean of our covariates using our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions).
Source: Authors' calculations based on MCVL 2005-2018 data.

D.1 Continuity of the Running Variable

In the following, we test the assumption that individuals cannot *precisely* manipulate their UI entry date. Figure D.2 shows the histogram of our running variable. It plots the number of UI entrants at each date, centered around the reform cutoff. In line with the findings of Fernandez-Navia (2021), our descriptive evidence shows that most UI entrants systematically occur at the beginning of each month due to administrative reasons. Nonetheless, there is no suspicious peak or drop close to the cutoff. Thus, we find no visual evidence for *precise* manipulation.[16]

Figure D.2: Histogram of the Running Variable



Notes: This figure plots the number of UI entrants at each date (centered around the cutoff) using our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions). As there are many more entrants at the beginning of each month, it shows that UI entry is systematic. Nonetheless, we cannot detect any visual evidence of *precise* manipulation. The histogram is constructed using the `rddensity` routine in Stata (Cattaneo, Jansson, and Ma, 2018).

Source: Authors' calculations based on MCVL 2005-2018 data.

Next, we test the validity of our identification assumption empirically. As suggested by Cattaneo et al. (2018), a non-parametric local polynomial approach should be used to estimate the density of the running variable below and above the cutoff, respectively. According to Cattaneo, Idrobo, and Titiunik (2020), it has better power properties than other manipulation tests and does not require pre-binned data. Figure D.3a plots the resulting density of the running variable and its robust bias-corrected 95% confidence intervals.[17] The confidence intervals overlap on both sides of the cutoff, indicating the continuity of the running variable around the cutoff. We estimate a t-statistic of 0.2354 with a p-value of 0.8139, confirming the visual impression. Additionally, we run a more typical density test

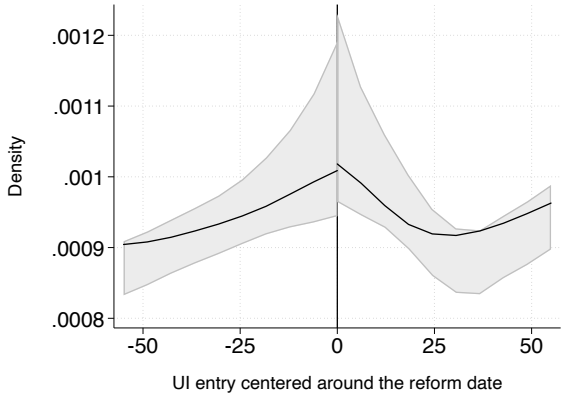
[16] Complementary to our findings of visual continuity around the cutoff, Rebollo-Sanz and Rodríguez-Planas (2020) show that trends of monthly inflows into the UI system were similar during 2011 and 2012.

[17] We use the `rddensity` routine in Stata to run the RD manipulation test (Cattaneo et al., 2018).

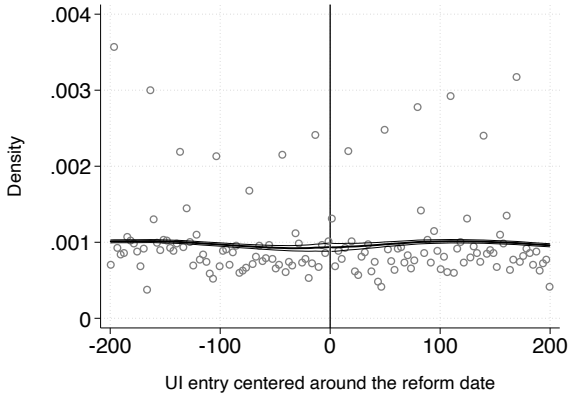
based on McCrary (2008) to verify continuity around the cutoff.[18] We plot the estimated density in Figure D.3b using a bin size of three (results remain robust if different bin sizes are used). According to the estimated test statistic of -0.0055 with a standard error of 0.0418, the null hypothesis of continuity around the cutoff cannot be rejected. Again, this speaks in favor of our identification assumption.

Figure D.3: Density of the Running Variable

(a) RD Manipulation Test



(b) McCrary Test



Notes: Figure (a) depicts the density of the running variable and its robust bias-corrected 95% confidence intervals using non-parametric local polynomial density estimation as suggested by Cattaneo et al. (2018). We estimate a t-statistic of 0.2354 with a p-value of 0.8139. Figure (b) plots the density of the running variable based on the approach suggested by McCrary (2008). Using a bin size of three and the default bandwidth calculation (bandwidth = 170) we estimate a log difference in height of -0.0055 (0.0418) with standard errors in parentheses. According to both tests, the null hypothesis of a continuous running variable cannot be rejected, which is evidence in favor of our identification assumption. We use our RDD estimation sample (see Section IV.A for details).
Source: Authors' calculations based on MCVL 2005-2018 data.

[18] We use the `DCdensity` routine in Stata to run the McCrary test.

D.2 Balancing Tests

Table D.3: Balancing Table

Outcome Variable	RD Estimate	% Change	s.e.	p-value	Polynomial	Covs.	Bandwidth	N Left	N Right
(A) Socio-Economic Characteristics									
Female	0.026	7.2	0.031	0.515	2	0	205.939	7,107	7,294
	0.025	7.1	0.024	0.330	2	1	236.293	7,881	8,095
	0.004	1.1	0.038	0.979	3	0	189.587	6,375	6,641
	-0.000	-0.1	0.030	0.871	3	1	195.980	6,406	6,633
Age (years)	-0.261	-0.7	0.408	0.546	2	0	267.057	9,182	9,178
	-0.084	-0.2	0.266	0.668	2	1	232.037	7,789	7,973
	0.185	0.5	0.573	0.622	3	0	194.540	6,526	6,762
	0.328	0.9	0.342	0.228	3	1	170.094	5,641	5,956
Lower education	-0.008	-1.4	0.033	0.758	2	0	235.857	8,065	8,283
	-0.017	-2.8	0.025	0.379	2	1	231.158	7,760	7,944
	-0.003	-0.4	0.046	0.997	3	0	196.504	6,904	6,827
	-0.017	-2.8	0.035	0.642	3	1	218.173	7,254	7,483
Medium education	0.026	9.3	0.030	0.265	2	0	203.182	7,027	7,173
	0.032	11.4	0.028	0.167	2	1	187.006	6,181	6,415
	0.035	12.6	0.038	0.310	3	0	231.434	7,965	8,142
	0.037	13.2	0.029	0.144	3	1	297.294	9,917	9,742
Higher education	-0.022	-17.4	0.023	0.237	2	0	183.796	6,175	6,479
	-0.019	-15.2	0.018	0.205	2	1	144.022	4,614	4,952
	-0.034	-27.0	0.029	0.193	3	0	199.560	6,958	6,885
	-0.024	-19.0	0.020	0.197	3	1	199.236	6,795	6,710
Presence of children	-0.001	-0.1	0.027	0.900	2	0	237.634	8,121	8,336
	0.011	2.1	0.027	0.583	2	1	205.966	6,941	7,111
	0.009	1.7	0.033	0.729	3	0	276.656	9,459	9,416
	0.015	2.7	0.032	0.660	3	1	238.378	7,928	8,143
Immigrant	-0.033	-16.2	0.020	0.048	2	0	209.516	7,219	7,428
	-0.038	-18.6	0.017	0.017	2	1	189.884	6,230	6,471
	-0.008	-4.0	0.025	0.917	3	0	188.085	6,363	6,622
	-0.040	-19.5	0.018	0.027	3	1	256.679	8,461	8,628

Notes: The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico, Cattaneo, and Titiunik (2014) and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. Relative (%) changes are calculated based on the pre-reform average values illustrated in Appendix Table D.2. We use our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions).
Source: Authors' calculations based on MCVL 2005-2018 data.

Table D.4: Balancing Table (cont'd)

Outcome Variable	RD Estimate	% Change	s.e.	p-value	Polynomial	Covs.	Bandwidth	N Left	N Right
(B) Pre-Displacement Job Characteristics									
Employment experience (months)	-2.228	-1.6	4.555	0.864	2	0	224.565	7,598	7,842
	-0.759	-0.5	2.698	0.812	2	1	195.518	6,406	6,633
	-0.171	-0.1	5.999	0.935	3	0	228.652	7,907	7,939
	-0.506	-0.4	2.794	0.870	3	1	286.796	9,480	9,431
Self-employment experience indicator	-0.014	-9.0	0.027	0.445	2	0	165.066	5,671	5,731
	-0.020	-12.7	0.025	0.272	2	1	150.343	4,813	5,107
	-0.022	-13.8	0.031	0.393	3	0	228.571	7,907	7,939
	-0.028	-17.5	0.028	0.217	3	1	206.312	6,974	7,140
ln(real monthly average contribution basis)	-0.006	-0.1	0.037	0.980	2	0	217.998	7,414	7,641
	-0.006	-0.1	0.037	0.980	2	1	217.998	7,414	7,641
	0.006	0.1	0.044	0.869	3	0	211.429	7,269	7,472
	0.006	0.1	0.044	0.869	3	1	211.429	7,269	7,472
Low-skilled occupation	0.012	2.0	0.031	0.583	2	0	217.231	7,414	7,641
	0.032	5.4	0.023	0.102	2	1	169.803	5,613	5,657
	0.056	9.7	0.041	0.111	3	0	163.900	5,402	5,691
	0.052	8.9	0.026	0.032	3	1	172.326	5,688	6,008
Medium-skilled occupation	0.011	3.6	0.034	0.879	2	0	178.749	5,999	6,332
	0.002	0.6	0.032	0.925	2	1	178.188	5,863	6,168
	-0.003	-0.9	0.040	0.853	3	0	187.772	6,326	6,585
	-0.004	-1.3	0.037	0.871	3	1	194.729	6,376	6,588
High-skilled occupation	-0.037	-32.4	0.024	0.096	2	0	165.847	5,671	5,731
	-0.029	-25.5	0.023	0.159	2	1	198.120	6,766	6,690
	-0.042	-37.4	0.027	0.086	3	0	208.124	7,200	7,384
	-0.034	-30.5	0.025	0.134	3	1	243.520	8,116	8,283
Permanent contract	-0.008	-1.2	0.032	0.982	2	0	188.573	6,363	6,622
	0.001	0.1	0.026	0.831	2	1	195.726	6,406	6,633
	-0.008	-1.1	0.037	0.725	3	0	202.771	7,012	7,136
	0.004	0.6	0.029	0.968	3	1	198.108	6,766	6,690
Agriculture, extraction, primary manufacturing	0.007	11.5	0.013	0.452	2	0	238.161	8,142	8,348
	0.005	8.0	0.013	0.614	2	1	216.733	7,221	7,433
	0.010	15.6	0.015	0.490	3	0	265.938	9,129	9,144
	0.006	9.3	0.014	0.685	3	1	293.514	9,843	9,665
Manufacturing and utilities	-0.024	-21.3	0.024	0.268	2	0	188.019	6,363	6,622
	-0.027	-23.7	0.023	0.170	2	1	179.491	5,895	6,204
	-0.024	-20.5	0.025	0.288	3	0	278.952	9,533	9,469
	-0.030	-25.7	0.025	0.224	3	1	245.662	8,163	8,340
Construction	0.009	4.5	0.032	0.730	2	0	208.029	7,200	7,384
	0.012	6.1	0.029	0.688	2	1	196.495	6,743	6,652
	0.006	3.1	0.037	0.943	3	0	228.630	7,907	7,939
	0.008	4.1	0.031	0.848	3	1	271.838	9,037	9,076
Trade	-0.004	-2.1	0.026	0.886	2	0	211.344	7,269	7,472
	-0.009	-4.4	0.026	0.749	2	1	240.841	8,001	8,200
	0.004	2.1	0.029	0.787	3	0	217.249	7,414	7,641
	0.006	3.2	0.030	0.706	3	1	199.353	6,795	6,710
Transport and storage	0.016	30.2	0.015	0.229	2	0	224.220	7,598	7,842
	0.017	31.1	0.015	0.228	2	1	224.870	7,408	7,649
	-0.001	-1.9	0.020	0.746	3	0	211.195	7,269	7,472
	-0.001	-2.6	0.021	0.789	3	1	201.336	6,836	6,928
Accommodation and food services	-0.008	-7.3	0.022	0.928	2	0	156.132	5,122	5,428
	-0.016	-15.2	0.021	0.586	2	1	163.506	5,276	5,547
	-0.013	-12.6	0.022	0.789	3	0	238.593	8,142	8,348
	-0.025	-23.5	0.021	0.380	3	1	267.562	8,928	8,957
I&C, finance, real estate, and scientific services	0.009	9.1	0.016	0.655	2	0	196.012	6,904	6,827
	0.020	20.6	0.016	0.203	2	1	186.868	6,143	6,389
	0.009	9.5	0.020	0.613	3	0	197.280	6,905	6,842
	0.019	19.7	0.017	0.302	3	1	270.134	9,004	9,056
Education, health, social, and other services	0.015	9.6	0.023	0.562	2	0	225.911	7,642	7,864
	0.014	9.1	0.020	0.447	2	1	211.359	7,095	7,284
	0.010	6.3	0.028	0.778	3	0	240.991	8,221	8,406
	0.015	9.2	0.022	0.555	3	1	284.142	9,431	9,386
(C) Unemployment Characteristics									
PBD (months)	-0.050	-0.3	0.377	0.962	2	0	192.001	6,462	6,707
	-0.008	-0.0	0.324	0.966	2	1	219.773	7,271	7,512
	-0.069	-0.4	0.437	0.752	3	0	247.408	8,457	8,595
	-0.022	-0.1	0.360	0.879	3	1	278.429	9,257	9,246
Local unemployment rate	0.093	0.4	0.550	0.760	2	0	244.114	8,142	8,324
	0.110	0.5	0.464	0.675	2	1	232.006	7,789	7,973
	-0.356	-1.6	0.695	0.499	3	0	202.505	6,846	6,955
	-0.259	-1.2	0.583	0.491	3	1	205.703	6,941	7,111

Notes: The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014) and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. Relative (%) changes are calculated based on the pre-reform average values illustrated in Appendix Table D.2. We use our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions).

Source: Authors' calculations based on MCVL 2005-2018 data.

E Appendix: Robustness Checks

E.1 Placebo Tests

Table E.1: Placebo Test – Individuals Whose RR Did Not Drop after the Reform

Outcome Variable	RD Estimate	% Change	s.e.	p-value	Polynomial	Covs.	Bandwidth	N Left	N Right
(A) Self-Employment									
(A1) SE within 360 days	-0.007	-9.7	0.051	0.783	1	0	191.938	555	531
	0.002	3.1	0.049	0.946	1	1	199.568	614	544
	-0.040	-51.7	0.068	0.406	2	0	207.825	650	598
	-0.034	-44.0	0.068	0.466	2	1	206.262	638	590
	-0.032	-42.0	0.069	0.504	3	0	337.960	1,194	983
	-0.035	-45.6	0.070	0.481	3	1	324.776	1,134	931
(A2) SE within 720 days	-0.005	-5.3	0.065	0.898	1	0	183.342	522	506
	0.001	0.9	0.062	0.954	1	1	185.475	526	507
	-0.018	-18.8	0.080	0.696	2	0	217.026	682	620
	-0.012	-12.6	0.076	0.767	2	1	224.746	699	634
	-0.019	-19.6	0.082	0.703	3	0	336.003	1,193	981
	-0.016	-16.9	0.081	0.755	3	1	337.322	1,176	976
(B) Employment									
(B1) E within 360 days	0.007	1.1	0.072	0.918	1	0	151.264	414	425
	0.018	2.9	0.073	0.926	1	1	150.498	405	420
	0.000	0.1	0.077	0.840	2	0	250.224	820	721
	0.012	1.9	0.078	0.957	2	1	252.044	815	721
	-0.014	-2.2	0.089	0.794	3	0	322.368	1,148	931
	-0.007	-1.1	0.090	0.831	3	1	326.052	1,137	938
(B2) E within 720 days	-0.034	-4.3	0.064	0.528	1	0	215.871	675	615
	-0.036	-4.5	0.067	0.526	1	1	213.217	656	605
	-0.044	-5.5	0.074	0.526	2	0	301.376	1,048	885
	-0.041	-5.2	0.086	0.632	2	1	250.869	808	714
	-0.042	-5.3	0.104	0.660	3	0	252.804	828	728
	-0.068	-8.6	0.113	0.485	3	1	241.710	768	698
(C) Self-Employment or Employment									
(C1) SE or E within 360 days	-0.004	-0.5	0.081	0.762	1	0	171.648	486	482
	0.012	1.7	0.082	0.945	1	1	170.228	481	479
	-0.029	-4.1	0.096	0.575	2	0	238.287	768	696
	-0.007	-1.0	0.096	0.738	2	1	245.605	785	705
	-0.054	-7.6	0.108	0.484	3	0	327.511	1,155	948
	-0.042	-5.9	0.111	0.546	3	1	325.771	1,135	934
(C2) SE or E within 720 days	-0.042	-4.7	0.045	0.347	1	0	177.787	506	491
	-0.034	-3.9	0.044	0.357	1	1	193.912	558	535
	-0.074	-8.3	0.055	0.120	2	0	187.043	543	518
	-0.094	-10.5	0.058	0.059	2	1	163.310	450	444
	-0.102	-11.4	0.065	0.071	3	0	208.753	652	599
	-0.122	-13.7	0.069	0.050	3	1	196.552	605	540

Notes: We run this placebo test using workers unaffected by the RR drop because they either hit the ceiling or the floor of UI benefits. We cannot conduct this test for exit state outcomes measured within the first 90 or 180 days of the unemployment spell because we have too few observations for this specific group of people. The outcome variables are binary and indicate whether the person transitioned into a (self-)employment spell within the first 360 or 720 days after UI entry, respectively. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014) and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level.
Source: Authors' calculations based on MCVL 2005-2018 data.

Table E.2: Placebo Test for Self-Employment – Notional Reform Date (July 15, 2010)

Outcome Variable	RD Estimate	% Change	s.e.	p-value	Polynomial	Covs.	Bandwidth	N Left	N Right
(A) Self-Employment									
(A1) SE within 90 days	0.004	12.8	0.012	0.706	1	0	111.556	3,652	4,012
	0.008	26.5	0.012	0.398	1	1	108.214	3,438	3,585
	0.008	27.4	0.012	0.427	2	0	206.240	8,040	7,509
	0.013	42.9	0.012	0.254	2	1	200.976	7,461	6,820
	-0.003	-10.5	0.015	0.630	3	0	208.728	8,159	7,576
	0.009	29.6	0.014	0.730	3	1	244.898	9,505	8,338
(A2) SE within 180 days	-0.003	-7.6	0.014	0.986	1	0	137.014	4,645	4,802
	-0.002	-3.9	0.013	0.880	1	1	153.667	5,133	5,220
	-0.000	-0.5	0.015	0.897	2	0	211.759	8,315	7,650
	0.002	5.1	0.016	0.772	2	1	212.337	8,026	7,396
	0.003	7.6	0.016	0.778	3	0	310.228	13,578	10,390
	0.005	12.2	0.017	0.686	3	1	312.453	13,073	10,016
(A3) SE within 360 days	-0.002	-2.8	0.016	0.849	1	0	132.362	4,357	4,685
	0.003	5.5	0.015	0.589	1	1	135.163	4,278	4,586
	0.003	4.6	0.020	0.880	2	0	184.915	6,816	6,680
	0.009	16.8	0.019	0.512	2	1	175.594	6,159	6,119
	0.006	10.9	0.020	0.756	3	0	275.561	11,622	9,537
	0.014	24.5	0.020	0.455	3	1	250.195	9,779	8,447
(A4) SE within 720 days	0.001	0.8	0.015	0.732	1	0	144.129	4,922	5,191
	0.004	5.4	0.014	0.568	1	1	155.175	5,204	5,300
	0.003	4.2	0.019	0.879	2	0	189.569	7,030	6,833
	0.009	13.0	0.018	0.532	2	1	181.103	6,415	6,326
	0.008	10.5	0.019	0.622	3	0	308.248	13,493	10,345
	0.013	18.0	0.020	0.487	3	1	262.527	10,533	8,802
(B) Employment									
(B1) E within 90 days	-0.007	-2.2	0.028	0.912	1	0	118.451	3,833	4,241
	-0.015	-4.9	0.024	0.565	1	1	127.383	3,966	4,357
	-0.005	-1.7	0.029	0.793	2	0	215.006	8,488	7,750
	-0.009	-3.1	0.025	0.733	2	1	231.184	8,982	7,957
	-0.057	-19.0	0.040	0.092	3	0	168.810	6,174	5,882
	-0.064	-21.4	0.037	0.044	3	1	166.218	5,868	5,606
(B2) E within 180 days	-0.030	-6.7	0.026	0.309	1	0	193.723	7,190	6,941
	-0.023	-5.0	0.022	0.315	1	1	255.771	10,020	8,556
	0.004	0.8	0.041	0.832	2	0	141.746	4,827	5,098
	-0.002	-0.5	0.039	0.903	2	1	147.901	4,853	5,058
	0.012	2.6	0.043	0.593	3	0	210.578	8,255	7,624
	0.002	0.5	0.041	0.748	3	1	223.317	8,447	7,673
(B3) E within 360 days	0.001	0.1	0.028	0.954	1	0	119.594	3,859	4,275
	-0.011	-1.7	0.029	0.597	1	1	122.714	3,812	4,190
	0.004	0.7	0.033	0.673	2	0	154.242	5,383	5,477
	-0.013	-1.9	0.033	0.883	2	1	177.177	6,219	6,187
	0.011	1.6	0.037	0.557	3	0	205.328	8,008	7,481
	-0.004	-0.7	0.037	0.854	3	1	228.812	8,832	7,775
(B4) E within 720 days	0.000	0.0	0.023	0.738	1	0	136.755	4,624	4,787
	-0.002	-0.3	0.020	0.640	1	1	141.807	4,635	4,899
	-0.005	-0.7	0.028	0.914	2	0	194.123	7,223	6,971
	-0.009	-1.1	0.025	0.652	2	1	198.246	7,430	6,803
	-0.016	-1.9	0.028	0.483	3	0	294.417	12,784	9,978
	-0.017	-2.0	0.025	0.400	3	1	296.950	12,325	9,652
(C) Self-Employment or Employment									
(C1) SE or E within 90 days	-0.003	-1.0	0.027	0.985	1	0	111.601	3,652	4,012
	-0.006	-2.0	0.024	0.742	1	1	113.133	3,558	3,906
	0.004	1.1	0.027	0.705	2	0	211.664	8,315	7,650
	0.000	0.1	0.024	0.746	2	1	206.172	7,707	7,223
	-0.099	-30.0	0.037	0.003	3	0	142.282	4,860	5,143
	-0.103	-31.0	0.033	0.001	3	1	139.320	4,557	4,841
(C2) SE or E within 180 days	-0.019	-3.9	0.028	0.640	1	0	135.885	4,461	4,773
	-0.030	-6.1	0.024	0.242	1	1	173.303	6,092	6,053
	0.000	0.1	0.036	0.900	2	0	145.573	4,977	5,213
	-0.002	-0.4	0.034	0.905	2	1	149.132	4,958	5,129
	0.007	1.4	0.038	0.681	3	0	214.049	8,418	7,723
	0.002	0.4	0.035	0.775	3	1	223.147	8,447	7,673
(C3) SE or E within 360 days	-0.005	-0.7	0.024	0.813	1	0	138.287	4,706	4,822
	-0.010	-1.4	0.024	0.645	1	1	139.385	4,557	4,841
	0.003	0.4	0.029	0.692	2	0	173.059	6,344	6,293
	-0.012	-1.7	0.027	0.777	2	1	208.698	7,823	7,286
	0.010	1.4	0.035	0.585	3	0	207.968	8,054	7,536
	0.008	1.1	0.034	0.680	3	1	213.144	8,055	7,408
(C4) SE or E within 720 days	0.005	0.5	0.011	0.575	1	0	232.995	9,416	8,288
	0.006	0.6	0.010	0.608	1	1	223.240	8,447	7,673
	-0.002	-0.2	0.016	0.911	2	0	200.377	7,781	7,087
	0.000	0.0	0.014	0.893	2	1	212.667	8,026	7,396
	-0.002	-0.3	0.017	0.988	3	0	259.391	10,916	8,963
	0.002	0.3	0.016	0.743	3	1	249.905	9,705	8,429

Notes: This placebo test uses a notional cutoff date (July 15, 2010) to test whether the estimated reform effects are driven by seasonality. The outcome variables are binary and indicate whether the person transitioned into a self-employment spell within the first 90, 180, 360 or 720 days after UI entry, respectively, respectively. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014) and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level.

Source: Authors' calculations based on MCVL 2005-2018 data.

E.2 Sensitivity to Bandwidth Choice

Table E.3: Alternative Bandwidths

Outcome Variable	RD Estimate	% Change	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
(A) Self-Employment								
(A1) SE within 90 days	-0.019	-34.9	0.017	0.135	0	180	6,033	6,369
	-0.018	-32.7	0.016	0.195	1	180	5,895	6,204
	-0.021	-37.9	0.016	0.204	0	210	7,219	7,428
	-0.020	-36.7	0.015	0.265	1	210	7,048	7,241
	-0.019	-34.8	0.015	0.143	0	240	8,192	8,375
	-0.019	-34.8	0.015	0.176	1	240	7,974	8,170
	-0.018	-33.4	0.015	0.143	0	270	9,229	9,250
	-0.018	-33.3	0.014	0.151	1	270	8,972	9,028
(A2) SE within 180 days	-0.028	-36.6	0.019	0.014	0	180	6,033	6,369
	-0.026	-33.5	0.018	0.023	1	180	5,895	6,204
	-0.028	-36.6	0.019	0.050	0	210	7,219	7,428
	-0.026	-34.2	0.018	0.068	1	210	7,048	7,241
	-0.026	-33.6	0.018	0.053	0	240	8,192	8,375
	-0.025	-32.1	0.017	0.067	1	240	7,974	8,170
	-0.025	-32.6	0.018	0.071	0	270	9,229	9,250
	-0.024	-31.1	0.016	0.076	1	270	8,972	9,028
(A3) SE within 360 days	-0.040	-41.8	0.024	0.006	0	180	6,033	6,369
	-0.035	-36.0	0.023	0.017	1	180	5,895	6,204
	-0.038	-39.2	0.023	0.019	0	210	7,219	7,428
	-0.033	-34.5	0.022	0.041	1	210	7,048	7,241
	-0.033	-34.1	0.022	0.021	0	240	8,192	8,375
	-0.029	-30.6	0.021	0.042	1	240	7,974	8,170
	-0.029	-30.7	0.021	0.031	0	270	9,229	9,250
	-0.026	-27.4	0.021	0.050	1	270	8,972	9,028
(A4) SE within 720 days	-0.036	-31.2	0.025	0.005	0	180	6,033	6,369
	-0.030	-25.6	0.025	0.017	1	180	5,895	6,204
	-0.032	-28.0	0.024	0.020	0	210	7,219	7,428
	-0.027	-23.4	0.023	0.052	1	210	7,048	7,241
	-0.027	-23.8	0.022	0.029	0	240	8,192	8,375
	-0.024	-20.5	0.022	0.068	1	240	7,974	8,170
	-0.024	-20.8	0.021	0.045	0	270	9,229	9,250
	-0.020	-17.7	0.021	0.082	1	270	8,972	9,028
(B) Employment								
(B1) E within 90 days	0.086	29.4	0.048	0.062	0	180	6,033	6,369
	0.088	29.9	0.045	0.044	1	180	5,895	6,204
	0.077	26.3	0.044	0.027	0	210	7,219	7,428
	0.079	27.1	0.043	0.022	1	210	7,048	7,241
	0.060	20.4	0.041	0.011	0	240	8,192	8,375
	0.064	21.9	0.040	0.010	1	240	7,974	8,170
	0.047	16.1	0.038	0.011	0	270	9,229	9,250
	0.053	17.9	0.038	0.011	1	270	8,972	9,028
(B2) E within 180 days	0.061	13.3	0.048	0.081	0	180	6,033	6,369
	0.066	14.3	0.047	0.070	1	180	5,895	6,204
	0.050	10.9	0.043	0.058	0	210	7,219	7,428
	0.055	12.1	0.043	0.051	1	210	7,048	7,241
	0.034	7.4	0.040	0.040	0	240	8,192	8,375
	0.041	9.0	0.040	0.035	1	240	7,974	8,170
	0.024	5.2	0.037	0.058	0	270	9,229	9,250
	0.032	7.1	0.037	0.049	1	270	8,972	9,028
(B3) E within 360 days	0.045	7.1	0.045	0.281	0	180	6,033	6,369
	0.044	7.0	0.046	0.366	1	180	5,895	6,204
	0.044	7.0	0.042	0.248	0	210	7,219	7,428
	0.044	7.0	0.043	0.313	1	210	7,048	7,241
	0.037	5.9	0.039	0.171	0	240	8,192	8,375
	0.038	6.1	0.040	0.220	1	240	7,974	8,170
	0.031	5.0	0.037	0.158	0	270	9,229	9,250
	0.034	5.4	0.038	0.194	1	270	8,972	9,028
(B4) E within 720 days	0.033	4.1	0.031	0.095	0	180	6,033	6,369
	0.027	3.4	0.030	0.128	1	180	5,895	6,204
	0.031	3.9	0.029	0.125	0	210	7,219	7,428
	0.026	3.3	0.027	0.174	1	210	7,048	7,241
	0.025	3.2	0.026	0.098	0	240	8,192	8,375
	0.022	2.7	0.025	0.153	1	240	7,974	8,170
	0.019	2.4	0.025	0.096	0	270	9,229	9,250
	0.018	2.2	0.023	0.149	1	270	8,972	9,028

Notes: The outcome variables are binary and indicate whether the person transitioned into a (self-)employment spell within the first 90, 180, 360 or 720 days after UI entry, respectively. The local polynomial estimation results are calculated using alternative bandwidths, a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. Percentage changes are calculated based on the pre-reform average exit probabilities illustrated in Table D.1. We use our RDD estimation sample (Section IV.A describes the detailed sample restrictions).
Source: Authors' calculations based on MCVL 2005-2018 data.

Table E.4: Alternative Bandwidths (Cont'd)

Outcome Variable	RD Estimate	% Change	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
(C) Self-Employment or Employment								
(C1) SE or E within 90 days	0.067	19.2	0.047	0.175	0	180	6,033	6,369
	0.070	20.0	0.045	0.117	1	180	5,895	6,204
	0.056	16.1	0.045	0.089	0	210	7,219	7,428
	0.059	16.9	0.043	0.065	1	210	7,048	7,241
	0.041	11.7	0.043	0.056	0	240	8,192	8,375
	0.045	12.9	0.042	0.046	1	240	7,974	8,170
	0.029	8.2	0.041	0.063	0	270	9,229	9,250
	0.034	9.8	0.040	0.053	1	270	8,972	9,028
(C2) SE or E within 180 days	0.033	6.1	0.050	0.453	0	180	6,033	6,369
	0.040	7.4	0.050	0.379	1	180	5,895	6,204
	0.022	4.0	0.046	0.322	0	210	7,219	7,428
	0.029	5.4	0.047	0.268	1	210	7,048	7,241
	0.008	1.5	0.043	0.275	0	240	8,192	8,375
	0.016	3.0	0.044	0.232	1	240	7,974	8,170
	-0.001	-0.2	0.041	0.335	0	270	9,229	9,250
	0.008	1.6	0.042	0.285	1	270	8,972	9,028
(C3) SE or E within 360 days	0.005	0.7	0.044	0.698	0	180	6,033	6,369
	0.009	1.3	0.045	0.751	1	180	5,895	6,204
	0.006	0.9	0.041	0.885	0	210	7,219	7,428
	0.011	1.5	0.042	0.952	1	210	7,048	7,241
	0.004	0.6	0.039	0.955	0	240	8,192	8,375
	0.009	1.3	0.041	0.894	1	240	7,974	8,170
	0.002	0.3	0.038	0.878	0	270	9,229	9,250
	0.008	1.1	0.039	0.825	1	270	8,972	9,028
(C4) SE or E within 720 days	-0.003	-0.4	0.018	0.317	0	180	6,033	6,369
	-0.002	-0.2	0.017	0.416	1	180	5,895	6,204
	-0.001	-0.1	0.017	0.516	0	210	7,219	7,428
	-0.001	-0.1	0.016	0.602	1	210	7,048	7,241
	-0.002	-0.3	0.016	0.758	0	240	8,192	8,375
	-0.002	-0.2	0.015	0.786	1	240	7,974	8,170
	-0.005	-0.5	0.016	0.929	0	270	9,229	9,250
	-0.003	-0.3	0.014	0.880	1	270	8,972	9,028

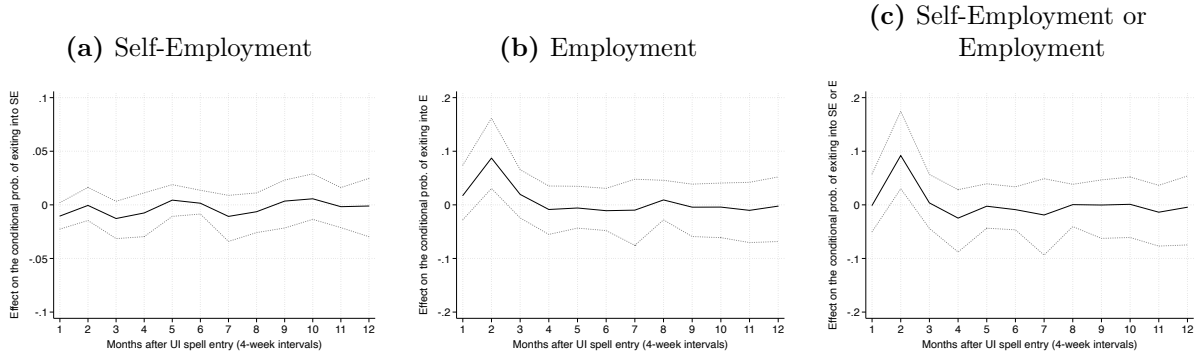
Notes: The outcome variables are binary and indicate whether the person transitioned into a (self-)employment spell within the first 90, 180, 360 or 720 days after UI entry, respectively. The local polynomial estimation results are calculated using alternative bandwidths, a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. Percentage changes are calculated based on the pre-reform average exit probabilities illustrated in Table D.1. We use our RDD estimation sample (Section IV.A describes the detailed sample restrictions).
Source: Authors' calculations based on MCVL 2005-2018 data.

E.3 Reform Effect on the Conditional Probability of Exiting into (Self-)Employment

In our empirical analysis, the outcome is the probability that the unemployment spell ends by a given time with an exit either to self-employment or employment. We refer to these cumulative exit probabilities as the *job-finding rate* and *startup rate*. In a strict sense, these terms could be somewhat misleading because, in labor economics, the job-finding rate is used as a synonym for the job-finding hazard, i.e., the conditional probability of finding a job at a given point in the unemployment spell, and analogous for the startup hazard. The cumulative probability of exiting into destination d (either self-employment or employment) by a given time depends on both the job-finding hazard and the startup hazard through the survivor function. It follows that if, for example, the UI reform increased the job-finding hazard without affecting the startup hazard, it also changed the cumulative probability of exiting into self-employment. Thus, our estimated reform effect on the cumulative probability of exiting into self-employment cannot tell us whether the startup hazard actually changed or not. In the following, we justify that the conclusions from our analysis are valid and that our terminology is useful.

Figure E.1 depicts our re-estimated extensive margin reform effects using the conditional exit probabilities as outcome variables, i.e., startup hazard and job-finding hazard. The outcome variables are binary and indicate whether the person transitioned into a (self-)employment spell in month m, measured in four-week intervals after UI entry. In other words, the outcome is set missing if the person is no longer unemployed and has already switched to (self-)employment. As a result, the sample size changes in every estimated regression. Part (a) shows that the reform effect on the startup hazard tends to be negative (particularly

Figure E.1: Reform Effect on the Conditional Exit Probabilities



Notes: The outcome variables are binary and indicate whether the person transitioned into a (self-)employment spell in month m, measured in four-week intervals after unemployment entry. The solid line corresponds to the local polynomial point estimates, calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014) and a triangular kernel. Dotted lines correspond to robust bias-corrected 95% confidence intervals. We use our RDD estimation sample (Section IV.A describes the detailed sample restrictions).
Source: Authors' calculations based on MCVL 2005-2018 data.

three and seven months after UI entry) but insignificant. In contrast, part (b) illustrates that the reform significantly increases the job-finding hazard two months after UI entry. While the negative effect on the startup rate appears to be more persistent, the positive effect on the job-finding rate is only transitory, which coincides with our main results when using cumulative exit probabilities as outcome measures. Moreover, the magnitude of the estimated reform effects two and three months after UI entry aligns with our short-term results using cumulative exit probabilities (compare Table 3, panels A1 and B1).

Our visual evidence suggests the following. Firstly, direction, magnitude, and the timing of reform effects in the short term are surprisingly similar when considering conditional exit probabilities. Thus, tracking and differentiating the exact point during the UI spell when the startup and job-finding hazards are affected seems negligible, as they coincide. In the long term, there is suggestive evidence for a negative reform effect on the startup hazard (seven months after UI entry) but no detectable effect on the job-finding hazard. As a result, our significantly estimated negative effect on the long-term startup rate can be driven solely by the reform effect on the startup hazard. This finding gives us confidence that the estimated reform effect on the cumulative exit probability of destination d mainly mirrors the effect on the destination hazard rather than the (indirect) effect on the competing hazard through the survivor function. Given that our estimated effects on the cumulative exit probabilities mirror the effects on startup and job-finding hazards, it would be redundant to show results for both outcome measures.

Secondly, using conditional exit probabilities as outcome variables involves adverse side effects when it comes to power and comparability. The job-finding hazard is defined by the probability that an individual finds a new job in the interval $[m-1, m)$ given that he or she is still unemployed at time $m-1$ (the length of the ongoing unemployment spell). Conditioning on the unemployment status in $m-1$ implies that observations after the transition into (self-)employment ($t > m$) are dropped, as opposed to the cumulative exit probability, which indicates outcomes in $t > m$ as one. As a result, the sample size erodes in the conditional exit probability case. The longer unemployment spells are tracked over time, the stronger the erosion, leading to potential power issues and less comparable results than in the setup with cumulative exit probabilities as outcome variables.

Altogether, we are convinced that the conclusions from our analysis with cumulative exit probabilities are just as valid as in a setting with startup and job-finding hazards as outcomes. Given the benefits of a larger and more consistent sample, as well as our finding that the estimated effects on conditional exit probabilities coincide with those on cumulative probabilities, we decided to focus on the latter in our main analysis and refer to them as corresponding to *startup* and *job-finding rates*.

E.4 Ruling Out Inconsistencies from the Self-Employment Reforms in 2013

In principle, it is possible that the reforms adopted in 2013, aimed at promoting self-employment among young workers, could affect our results. These reforms incentivize self-employment by improving the financing of young self-employed workers, namely women younger than 35 and men younger than 30. Details about the reforms may be inferred from Appendix A.6.2. Since these reforms come with clear age criteria, we can infer individual eligibility from our data. For the following analysis, we create a self-employment reform eligibility indicator (SE reform), taking a value of one if the eligibility criteria are fulfilled (either female and younger than 35 or male and younger than 30) and zero otherwise.

Where could potential inconsistencies in our results come from? Consider a very simplistic expression of the true relationship between the self-employment exit indicator, Y_i, and treatment indicators of the UI benefit cut (UI reform) and the self-employment reforms (SE reform) on the right-hand side, as illustrated in equation E.1.

$$Y_i = \alpha + \beta \cdot \mathbf{1}(t_i \geq 0) + \gamma \cdot \mathbf{1}(age_i < limit) + \epsilon_i = \alpha + \beta \cdot \text{UI reform} + \gamma \cdot \text{SE reform} + \epsilon_i \quad \text{(E.1)}$$

If this were the true relationship, omitting the SE reform dummy from the equation would lead to omitted variable bias, which could lead to inconsistent point estimates, depending on the direction and magnitude of the correlation between SE and UI reform indicators. This potential inconsistency is illustrated in equation E.2. The estimated UI reform coefficient $\hat{\beta}$ converges in probability towards the true effect, β, if the covariance between UI reform and SE reform indicator is equal to zero. Fortunately, we can compute this covariance directly from our data. We find a covariance that is very close to zero. For instance, 0.0039 if we restrict our RDD sample to a bandwidth of 200 days.[19] Consequently, we have reason to believe in a consistently estimated UI reform effect.

$$plim\ \hat{\beta} = \beta + \gamma \cdot \frac{Cov(\text{UI reform}, \text{SE reform})}{Var(\text{UI reform})} \quad \text{(E.2)}$$

Nonetheless, we would like to consider any potential inconsistencies from the slightly positive covariance when we use MSE-optimal bandwidths. Suppose that the true UI reform effect is indeed negative ($\beta < 0$) and the SE reforms have a positive effect on the startup rate ($\gamma > 0$). Then, a positive covariance between UI reform and SE reform would lead to a less negatively estimated effect on the startup rate ($\hat{\beta}$) than absent the self-employment reforms. Consequently, our estimated negative effect is positively biased and may correspond to a lower bound estimate in absolute terms, which is very close to the true effect. Even if the

[19] This bandwidth is plausible since it is close to the MSE-optimal bandwidths selected in our local polynomial regressions in Section V.A. Covariances for other bandwidths are similar.

SE reform effect were huge, the inconsistency of the estimated UI reform effect would be tiny.[20] Thus, our estimated UI reform effects on self-employment can be considered very conservative.

In addition, we empirically test whether the SE reforms affect our outcome variables of interest in combination with the UI benefit reform by adding an interaction between UI reform and SE reform to our estimation equation 1. Since the `rdrobust` routine in Stata, which we use to estimate our local point estimates in Section V, does not provide the estimated covariates' coefficients, we manually estimate the local estimation equation. We still use the `rdrobust` routine to select the MSE-optimal bandwidth. Based on that, we calculate triangular kernel weights. Standard errors are clustered at the UI entry date level but not bias-corrected. Consequently, we cannot directly compare our estimates to our main results in Section V regarding statistical significance. Our results for the quadratic and cubic specifications can be inferred from Table E.5. All specifications contain the covariates explained in Section IV.A. Additionally, we add the interaction term and the SE reform indicator in columns 2, 4, 6, and 8. Overall, point estimates stay robust to the inclusion of the additional variables. The coefficient of the interaction term is always very close to zero and insignificant. Hence, our results speak in favor of consistently estimated UI reform effects, i.e., the SE reforms do not interfere with our results.

[20] Example: We can compute β using our estimated medium-term UI reform effect of -3.5 p.p. in the quadratic setting from Section V.A and the UI variance of 0.2491, which we computed from our data. We use a plausible bandwidth setting of 200 days, for which the covariance between UI reform and SE reform corresponds to 0.0039. If we assume that the SE reforms increase the startup rate by 50 p.p. (i.e., $\gamma = 0.5$), which would be a tremendously huge effect, this will increase $\hat{\beta}$ by approximately 0.79 p.p. ($= 0.5 \cdot (0.0039/0.2491) = 0.0079$). Consequently, our estimated $\hat{\beta}$ of -3.5 p.p. corresponds to a lower bound estimate of the true effect ($\beta = -4.29$ p.p.) in this extreme setting with a huge SE reform effect.

Table E.5: Reform Interaction Effect on Self-Employment

	SE within 90 days		**SE within 180 days**		**SE within 360 days**		**SE within 720 days**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Quadratic Polynomial:								
UI reform	-0.019	-0.018	-0.026*	-0.025	-0.035*	-0.033	-0.036*	-0.037*
	(0.011)	(0.012)	(0.015)	(0.016)	(0.020)	(0.020)	(0.021)	(0.021)
SE reform		0.004		0.005		0.014		-0.005
		(0.011)		(0.015)		(0.018)		(0.021)
UI reform · SE reform		-0.003		-0.005		-0.008		0.006
		(0.009)		(0.011)		(0.014)		(0.016)
Bandwidth	258.446	258.446	203.382	203.382	178.441	178.441	160.466	160.466
N total	17,352	17,352	13,853	13,853	12,031	12,031	10,606	10,606
Cubic Polynomial:								
UI reform	-0.020	-0.019	-0.032*	-0.031*	-0.043**	-0.041*	-0.047**	-0.048**
	(0.014)	(0.015)	(0.018)	(0.018)	(0.022)	(0.022)	(0.024)	(0.024)
SE reform		0.004		0.005		0.013		-0.002
		(0.012)		(0.014)		(0.015)		(0.018)
UI reform · SE reform		-0.003		-0.005		-0.008		0.004
		(0.009)		(0.011)		(0.012)		(0.014)
Bandwidth	248.170	248.170	210.394	210.394	239.330	239.330	203.262	203.262
N total	16,681	16,681	14,312	14,312	16,144	16,144	13,853	13,853

Notes: The outcome variables are binary and indicate whether the person transitioned into a self-employment spell within the first 90, 180, 360 or 720 days after UI entry, respectively. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic or cubic polynomial, and a triangular kernel. We show the total effective number of observations. Standard errors are clustered at the UI entry date level but not bias corrected. We use our RDD estimation sample (Section IV.A describes the detailed sample restrictions). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Source: Authors' calculations based on MCVL 2005-2018 data.

E.5 Competing Risks Regression

In this section, we briefly discuss the results of an alternative approach to the estimation of the impact of unemployment benefit levels on the job-finding and startup rates. We consider that the response of unemployed individuals to the cut in UI benefits can be expressed as *failure* events. In this context, *failure* corresponds to the events of exiting from unemployment into self-employment or employment. The counterfactual outcome would be to stay unemployed. We also look at the *failure* of exiting into the union of self-employment and employment (general employment) vs. remaining unemployed.

Fine and Gray (1999) propose a framework to analyze such models. They take different *failure* events into account by modeling their respective cumulative incidence function (CIF) under a proportional hazard rate assumption. The Fine-Gray subdistribution hazard model can be defined as:

$$\lambda_k(t; \boldsymbol{X}) = \lambda_{k0}(t) \exp(\boldsymbol{X}^T \beta_k) \tag{E.3}$$

where $\lambda_k(t; \boldsymbol{X})$ denotes the subdistribution hazard function, $\lambda_{k0}(t)$ the baseline subdistribution hazard function for the kth event type, and $\boldsymbol{X}$ a set of covariates (Austin, Latouche, and Fine, 2020). The subdistribution hazard model allows us to estimate the effect of being treated on the CIF for each *failure* event, while controlling for other time-invariant covariates measured at the time of displacement. In our context $\boldsymbol{X}$ includes the same set of predetermined covariates as in our RDD specification. Beyersmann and Schumacher (2008) introduce time-dependent categorical and discrete covariates to the Fine-Gray model. We follow their approach to include variables which indicate whether individuals leave unemployment in a given month after the start of the UI spell in order to control for duration dependence.

Table E.6 summarize the results of the maximum-likelihood RDD hazard ratios and estimates of the competing risks regression models according to the Fine and Gray (1999) model. Based on our estimated coefficients, we have computed the relative effects on the job-finding and startup rates (fourth column). In line with the RDD results from our baseline specification in Section V.A, we observe consistently negative effects on the startup rate which are relatively stronger than the positive effects on the job-finding rate, regardless of the considered time horizon. Considered in more detail, our estimates for both self-employment (panel A) and employment (panel B) are robust to the inclusion of predetermined covariates and duration dependence controls. The effects' sizes seem to be stable over different time horizons, i.e., heterogeneity over time vanishes in the competing risks framework. Lastly, the effects on the probability of exiting into the union of self-employment and employment (panel C) are rather insignificant and close to zero. Again, the negative effects on self-employment and the positive effects on employment cancel out each other if the union of both (general employment) is considered. Our estimated CIFs are also graphically expressed in Figure E.2 using the quadratic setting. Altogether, we find that the results pattern from our baseline RDD specification is still observed in more complex competing risks regression models.

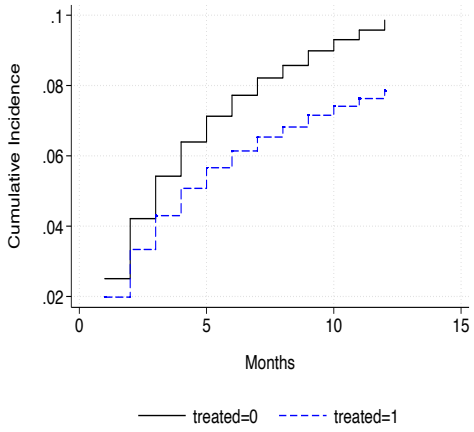
Table E.6: Competing Risks Regression Results for (Self-)Employment

Event of Interest	Hazard Ratio	Estimate	Rate	s.e.	p-value	Polynomial	Covs.	Dur. Dep.
(A) Self-Employment								
(A1) SE within 90 days	0.716	-0.334	-28.4%	0.141	0.018	2	1	0
	0.722	-0.326	-27.8%	0.134	0.015	2	1	1
	0.622	-0.474	-37.8%	0.203	0.019	3	1	0
	0.612	-0.491	-38.8%	0.189	0.010	3	1	1
(A2) SE within 180 days	0.757	-0.278	-24.3%	0.118	0.019	2	1	0
	0.750	-0.288	-25.0%	0.116	0.013	2	1	1
	0.669	-0.402	-33.1%	0.167	0.016	3	1	0
	0.671	-0.398	-32.9%	0.160	0.013	3	1	1
(A3) SE within 360 days	0.788	-0.238	-21.2%	0.105	0.024	2	1	0
	0.764	-0.269	-23.6%	0.104	0.009	2	1	1
	0.725	-0.322	-27.5%	0.146	0.027	3	1	0
	0.705	-0.350	-29.5%	0.143	0.014	3	1	1
(A4) SE within 720 days	0.864	-0.147	-13.6%	0.092	0.112	2	1	0
	0.867	-0.143	-13.3%	0.093	0.122	2	1	1
	0.789	-0.237	-21.1%	0.127	0.062	3	1	0
	0.785	-0.242	-21.5%	0.127	0.057	3	1	1
(B) Employment								
(B1) E within 90 days	0.934	-0.068	-6.6%	0.060	0.251	2	1	0
	0.948	-0.053	-5.2%	0.050	0.291	2	1	1
	1.021	0.021	2.1%	0.081	0.795	3	1	0
	1.011	0.011	1.1%	0.067	0.874	3	1	1
(B2) E within 180 days	0.990	-0.010	-1.0%	0.048	0.834	2	1	0
	0.975	-0.026	-2.5%	0.042	0.540	2	1	1
	0.954	-0.047	-4.6%	0.067	0.485	3	1	0
	0.988	-0.012	-1.2%	0.057	0.830	3	1	1
(B3) E within 360 days	1.106	0.100	10.6%	0.040	0.013	2	1	0
	1.042	0.041	4.2%	0.038	0.283	2	1	1
	1.090	0.087	9.0%	0.056	0.120	3	1	0
	1.056	0.055	5.6%	0.052	0.297	3	1	1
(B4) E within 720 days	1.083	0.080	8.3%	0.035	0.024	2	1	0
	1.055	0.054	5.5%	0.038	0.156	2	1	1
	1.063	0.061	6.3%	0.049	0.211	3	1	0
	1.058	0.056	5.8%	0.052	0.282	3	1	1
(C) Self-Employment or Employment								
(C1) SE or E within 90 days	0.888	-0.119	-11.2%	0.054	0.027	2	1	0
	0.900	-0.105	-10.0%	0.041	0.010	2	1	1
	0.942	-0.060	-5.8%	0.073	0.416	3	1	0
	0.926	-0.077	-7.4%	0.055	0.161	3	1	1
(C2) SE or E within 180 days	0.938	-0.064	-6.2%	0.044	0.144	2	1	0
	0.925	-0.078	-7.5%	0.029	0.007	2	1	1
	0.894	-0.112	-10.6%	0.061	0.065	3	1	0
	0.912	-0.092	-8.8%	0.039	0.019	3	1	1
(C3) SE or E within 360 days	1.042	0.041	4.2%	0.037	0.269	2	1	0
	0.982	-0.018	-1.8%	0.023	0.437	2	1	1
	1.011	0.011	1.1%	0.051	0.825	3	1	0
	0.977	-0.023	-2.3%	0.031	0.457	3	1	1
(C4) SE or E within 720 days	1.048	0.047	4.8%	0.032	0.147	2	1	0
	1.010	0.009	1.0%	0.024	0.694	2	1	1
	0.998	-0.002	-0.2%	0.044	0.963	3	1	0
	0.984	-0.016	-1.6%	0.032	0.614	3	1	1

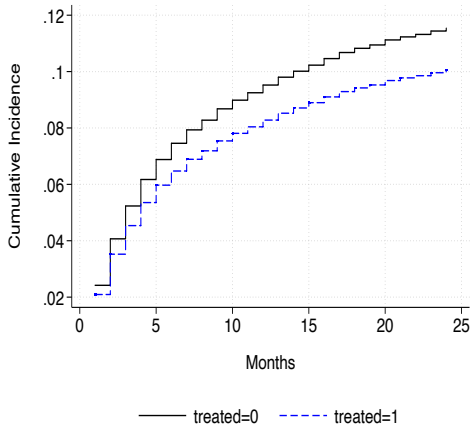
Notes: This table presents the maximum-likelihood RDD estimates of the competing risks regression models according to the method of Fine and Gray (1999). The failure event of primary interest is exiting into (A) self-employment, (B) employment, or into (C) the union of self-employment and employment within 90, 180, 360 or 720 days. The competing failure event is exiting into (A) re-employment, (B) self-employment, or (C) staying unemployed in the same window. We provide results for different specifications of the RDD polynomial. The last column indicates whether we control for duration dependence. The *Rate* column is computed from the value of the estimate: $\text{Rate} = (\exp(\hat{\beta}_{\text{RDD}}) - 1) \times 100$. We use the `stcrreg` routine in Stata to estimate the competing risks regression models. $N = 33,632$ with controls and with or without duration dependence. Standard errors are clustered at the individual level.
Source: Authors' calculations based on MCVL 2005-2018 data.

Figure E.2: Cumulative Incidence Functions – Quadratic

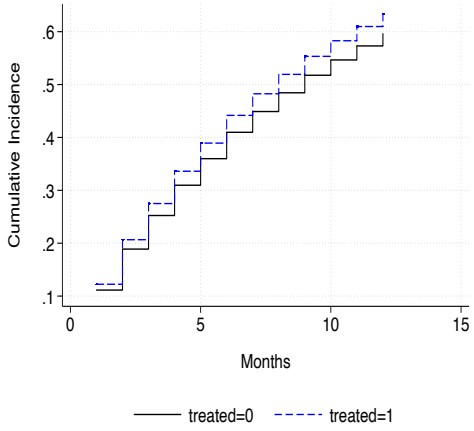
(a) SE within 360 days



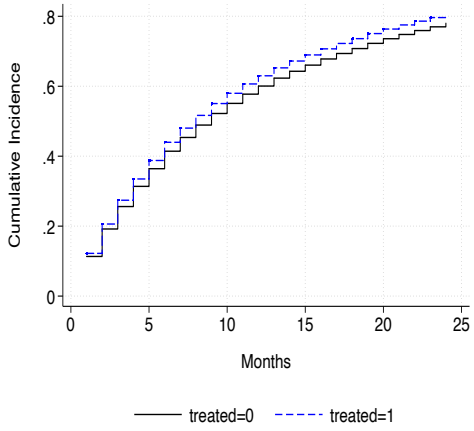
(b) SE within 720 days



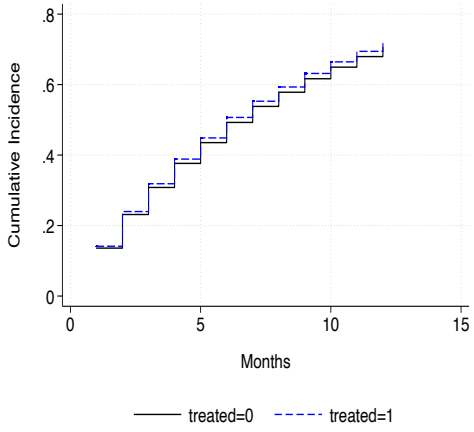
(c) E within 360 days



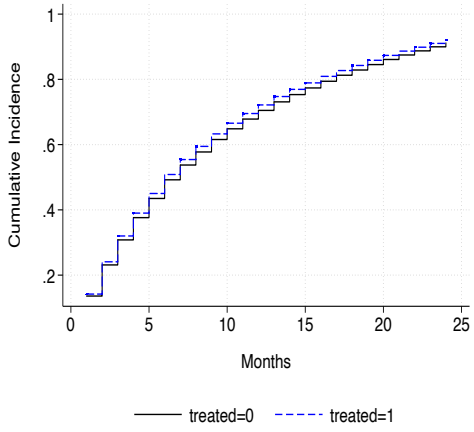
(d) E within 720 days



(e) SE or E within 360 days



(f) SE or E within 720 days



Notes: These figures illustrate the estimated cumulative incidence functions for self-employment, employment, and the union of both exit states. In other words, the probability that individuals become self-employed, employed, or either of them in each month of the respective 360- or 720-day window. The corresponding competing risks models have been estimated using the complete set of covariates, excluding duration dependence, and a quadratic specification of the RDD polynomial. The `stcurve` routine in Stata has been used to generate the graphs.

Source: Authors' calculations based on MCVL 2005-2018 data.

F Appendix: Supplementary RDD Analysis

F.1 Subgroup Analysis of Extensive Margin Effects

Table F.1: Subgroup Analysis – (Self-)Employment within 360 Days (Cont'd)

Subgroup	Outcome Variable	RD Estimate	% Change	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
1st earnings tertile	*Self-Employment*	-0.064	-61.2	0.039	0.059	0	161.675	1,438	1,795
		-0.056	-54.2	0.039	0.089	1	169.141	1,588	1,835
	Employment	-0.016	-3.0	0.062	0.684	0	215.299	2,062	2,369
		-0.014	-2.6	0.059	0.688	1	218.968	2,073	2,393
	Self-Employment	-0.066	-10.3	0.058	0.173	0	201.586	1,951	2,253
	or Employment	-0.062	-9.7	0.055	0.172	1	201.219	1,951	2,252
2n earnings tertile	*Self-Employment*	-0.021	-25.0	0.027	0.437	0	266.248	2,835	2,688
		-0.021	-24.2	0.027	0.443	1	256.570	2,701	2,592
	Employment	0.024	4.0	0.063	0.685	0	207.641	2,203	2,137
		0.034	5.6	0.062	0.550	1	203.531	2,149	2,080
	Self-Employment	0.008	1.2	0.061	0.828	0	205.718	2,179	2,118
	or Employment	0.014	2.1	0.060	0.766	1	217.812	2,277	2,219
3rd earnings tertile	*Self-Employment*	-0.051	-49.6	0.035	0.087	0	185.446	1,993	1,895
		-0.052	-50.2	0.033	0.069	1	182.229	1,958	1,870
	Employment	0.100	13.9	0.057	0.045	0	173.470	1,858	1,763
		0.103	14.3	0.055	0.033	1	182.846	1,958	1,870
	Self-Employment	0.037	4.4	0.047	0.345	0	211.886	2,295	2,198
	or Employment	0.039	4.7	0.042	0.315	1	251.009	2,639	2,607
Children	*Self-Employment*	-0.055	-54.4	0.027	0.024	0	180.219	3,234	3,341
		-0.050	-49.4	0.026	0.030	1	192.093	3,439	3,482
	Employment	0.044	7.0	0.053	0.543	0	258.087	4,753	4,626
		0.046	7.4	0.050	0.512	1	270.376	4,910	4,808
	Self-Employment	0.003	0.3	0.052	0.928	0	224.716	4,047	4,066
	or Employment	0.005	0.7	0.052	0.997	1	209.677	3,853	3,849
No children	*Self-Employment*	-0.024	-26.9	0.032	0.335	0	180.433	2,835	3,067
		-0.016	-18.2	0.032	0.497	1	189.942	2,834	3,024
	Employment	0.042	6.6	0.047	0.300	0	149.355	2,250	2,503
		0.040	6.4	0.047	0.312	1	145.361	2,091	2,338
	Self-Employment	0.009	1.3	0.042	0.867	0	166.392	2,649	2,746
	or Employment	0.016	2.3	0.045	0.731	1	167.135	2,537	2,633
Agriculture, extraction, primary manufacturing	*Self-Employment*	-0.013	-17.2	0.080	0.931	0	240.292	522	476
		-0.015	-19.8	0.080	0.922	1	247.889	530	472
	Employment	0.089	13.4	0.115	0.422	0	251.658	545	494
		0.022	3.3	0.114	0.821	1	239.784	511	460
	Self-Employment	0.072	9.7	0.114	0.472	0	261.362	577	521
	or Employment	0.007	1.0	0.116	0.869	1	238.352	508	460
Manufacturing and utilities	*Self-Employment*	-0.061	-95.6	0.038	0.057	0	151.110	628	568
		-0.078	-121.0	0.034	0.010	1	138.730	555	506
	Employment	0.147	20.3	0.099	0.074	0	152.527	633	571
		0.163	22.6	0.091	0.039	1	143.175	584	538
	Self-Employment	0.083	10.5	0.074	0.159	0	163.240	691	628
	or Employment	0.091	11.6	0.071	0.127	1	159.877	659	602
Construction	*Self-Employment*	-0.005	-5.9	0.048	0.946	0	243.644	1,674	1,430
		-0.006	-7.3	0.044	0.943	1	239.958	1,608	1,385
	Employment	0.093	14.9	0.059	0.060	0	173.872	1,154	1,062
		0.070	11.2	0.057	0.149	1	199.338	1,340	1,144
	Self-Employment	0.069	9.7	0.079	0.271	0	197.394	1,351	1,165
	or Employment	0.042	6.0	0.075	0.458	1	222.947	1,469	1,284
Trade	*Self-Employment*	-0.074	-63.6	0.048	0.094	0	183.699	1,243	1,317
		-0.079	-67.8	0.049	0.081	1	181.275	1,219	1,291
	Employment	0.016	2.7	0.060	0.908	0	251.756	1,679	1,780
		0.025	4.4	0.060	0.764	1	259.844	1,712	1,788
	Self-Employment	-0.103	-15.0	0.065	0.064	0	161.902	1,057	1,146
	or Employment	-0.103	-15.0	0.064	0.058	1	151.684	984	1,068
Transport	*Self-Employment*	-0.017	-16.5	0.081	0.923	0	193.916	407	383
		-0.017	-16.9	0.081	0.948	1	175.707	382	342
	Employment	0.043	6.7	0.134	0.702	0	217.143	445	447
		0.020	3.2	0.115	0.860	1	251.013	497	513
	Self-Employment	0.023	3.1	0.146	0.740	0	192.858	407	380
	or Employment	-0.006	-0.8	0.134	0.929	1	195.750	403	375
Accommodation and food services	*Self-Employment*	0.056	79.2	0.048	0.279	0	166.306	479	738
		0.065	91.5	0.055	0.273	1	167.937	448	692
	Employment	-0.112	-17.2	0.090	0.117	0	210.287	652	929
		-0.095	-14.6	0.104	0.238	1	210.645	606	867
	Self-Employment	-0.054	-7.5	0.096	0.437	0	206.380	637	916
	or Employment	-0.025	-3.4	0.100	0.698	1	209.450	605	864
I&C, finance, real estate, and scientific services	*Self-Employment*	-0.069	-51.0	0.066	0.327	0	251.450	853	912
		-0.048	-35.7	0.067	0.514	1	247.083	828	893
	Employment	0.112	19.3	0.094	0.150	0	191.748	653	666
		0.065	11.1	0.088	0.351	1	203.693	712	725
	Self-Employment	0.032	4.4	0.088	0.613	0	183.412	624	649
	or Employment	0.010	1.4	0.089	0.808	1	187.579	629	650
Education, health, social, and other services	*Self-Employment*	-0.083	-79.7	0.047	0.056	0	162.039	848	975
		-0.064	-62.2	0.042	0.101	1	168.709	872	973
	Employment	0.072	11.4	0.077	0.373	0	195.569	1,037	1,204
		0.075	12.0	0.076	0.347	1	195.230	1,003	1,176
	Self-Employment	0.006	0.8	0.068	0.898	0	204.489	1,144	1,280
	or Employment	0.031	4.2	0.063	0.745	1	227.987	1,213	1,361

Notes: The outcome variable is binary and indicates whether the person transitioned into (self-)employment within the first 360 days of unemployment. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. We use our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) and split it by subgroup. Percentage changes are calculated based on the pre-reform average exit probabilities of the respective subgroup.
Source: Authors' calculations based on MCVL 2005-2018 data.

Table F.2: Subgroup Analysis – (Self-)Employment within 180 Days

Subgroup	Outcome Variable	RD Estimate	% Change	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
Women	*Self-Employment*	-0.036	-58.3	0.021	0.055	0	166.037	1,830	2,135
		-0.036	-58.7	0.022	0.058	1	161.132	1,634	2,036
	Employment	0.010	2.3	0.059	0.687	0	150.316	1,588	1,963
		0.014	3.3	0.060	0.650	1	148.522	1,521	1,887
	Self-Employment or Employment	-0.037	-7.5	0.060	0.679	0	167.998	1,838	2,143
		-0.035	-7.1	0.061	0.695	1	173.202	1,817	2,257
Men	*Self-Employment*	-0.025	-29.1	0.022	0.290	0	244.509	5,622	5,385
		-0.027	-31.3	0.020	0.222	1	248.622	5,582	5,324
	Employment	0.105	22.1	0.043	0.005	0	168.059	3,866	3,654
		0.112	23.5	0.043	0.004	1	164.448	3,618	3,498
	Self-Employment or Employment	0.073	13.0	0.048	0.069	0	183.858	4,202	4,045
		0.080	14.3	0.050	0.058	1	175.095	3,929	3,809
Below median age	*Self-Employment*	-0.039	-51.1	0.023	0.070	0	178.608	2,908	3,029
		-0.035	-46.3	0.023	0.103	1	186.445	2,970	3,058
	Employment	0.087	20.2	0.055	0.058	0	157.605	2,496	2,619
		0.099	23.1	0.054	0.031	1	154.771	2,383	2,511
	Self-Employment or Employment	0.022	4.4	0.052	0.512	0	200.788	3,396	3,294
		0.047	9.4	0.053	0.235	1	181.995	2,890	2,998
Above median age	*Self-Employment*	-0.014	-17.8	0.023	0.588	0	261.680	4,592	4,737
		-0.016	-20.9	0.022	0.470	1	268.832	4,564	4,712
	Employment	0.061	12.6	0.047	0.133	0	157.573	2,655	2,841
		0.055	11.4	0.045	0.152	1	161.986	2,657	2,871
	Self-Employment or Employment	0.038	6.7	0.055	0.410	0	168.506	2,941	3,033
		0.033	5.8	0.054	0.440	1	173.924	2,957	3,157
Immigrant	*Self-Employment*	-0.049	-79.7	0.040	0.125	0	159.527	960	1,066
		-0.035	-55.8	0.032	0.200	1	165.538	917	973
	Employment	0.037	8.7	0.079	0.435	0	165.340	1,039	1,096
		0.027	6.5	0.081	0.539	1	179.827	978	1,071
	Self-Employment or Employment	-0.079	-16.4	0.062	0.212	0	286.434	1,906	1,803
		-0.056	-11.7	0.069	0.420	1	278.875	1,613	1,572
No immigrant	*Self-Employment*	-0.029	-35.1	0.016	0.078	0	255.920	7,020	7,157
		-0.025	-31.3	0.016	0.093	1	253.377	6,943	7,088
	Employment	0.074	15.7	0.044	0.054	0	164.600	4,434	4,612
		0.076	16.1	0.043	0.047	1	165.958	4,623	4,611
	Self-Employment or Employment	0.045	8.3	0.048	0.232	0	170.462	4,718	4,955
		0.049	9.0	0.048	0.204	1	173.880	4,766	4,991
Lower education	*Self-Employment*	-0.022	-32.0	0.023	0.316	0	214.478	4,234	4,358
		-0.023	-33.4	0.023	0.298	1	219.426	4,187	4,309
	Employment	0.046	10.2	0.048	0.214	0	179.710	3,470	3,703
		0.055	12.2	0.048	0.169	1	173.980	3,283	3,485
	Self-Employment or Employment	0.023	4.4	0.047	0.474	0	203.120	4,054	4,150
		0.035	6.7	0.048	0.341	1	182.336	3,446	3,636
Medium education	*Self-Employment*	-0.043	-50.5	0.029	0.126	0	263.079	2,581	2,470
		-0.035	-41.9	0.029	0.189	1	224.939	2,134	2,088
	Employment	0.087	18.5	0.050	0.043	0	169.186	1,660	1,565
		0.100	21.1	0.056	0.040	1	163.788	1,531	1,502
	Self-Employment or Employment	0.027	4.8	0.061	0.492	0	186.321	1,823	1,771
		0.056	10.1	0.064	0.251	1	168.699	1,619	1,533
Higher education	*Self-Employment*	-0.046	-46.9	0.030	0.065	0	151.955	677	763
		-0.055	-55.3	0.031	0.039	1	147.124	643	739
	Employment	0.101	21.8	0.086	0.156	0	156.359	701	782
		0.085	18.4	0.081	0.191	1	166.698	748	822
	Self-Employment or Employment	0.046	8.3	0.079	0.429	0	178.371	804	941
		0.020	3.5	0.068	0.748	1	255.139	1,119	1,303
1st contribution basis tertile	*Self-Employment*	-0.057	-72.7	0.029	0.047	0	213.379	2,247	2,581
		-0.056	-71.5	0.027	0.029	1	225.131	2,253	2,591
	Employment	0.066	17.2	0.057	0.159	0	168.817	1,746	1,962
		0.069	18.0	0.058	0.154	1	167.529	1,678	1,895
	Self-Employment or Employment	-0.003	-0.6	0.053	0.830	0	185.765	1,907	2,230
		0.011	2.4	0.053	0.633	1	173.878	1,722	2,039
2nd contribution basis tertile	*Self-Employment*	0.005	8.5	0.020	0.676	0	229.905	2,637	2,583
		0.002	2.6	0.021	0.814	1	238.385	2,636	2,608
	Employment	0.006	1.4	0.043	0.908	0	163.996	1,748	1,790
		0.017	4.1	0.038	0.715	1	208.097	2,322	2,273
	Self-Employment or Employment	0.017	3.5	0.051	0.698	0	180.917	1,963	2,017
		0.014	3.0	0.043	0.700	1	237.014	2,631	2,604
3rd contribution basis tertile	*Self-Employment*	-0.057	-63.1	0.028	0.019	0	156.741	1,917	1,859
		-0.050	-55.5	0.027	0.032	1	160.728	1,942	1,898
	Employment	0.144	25.5	0.068	0.014	0	149.199	1,820	1,768
		0.146	25.8	0.065	0.010	1	147.108	1,778	1,703
	Self-Employment or Employment	0.078	11.9	0.069	0.146	0	179.352	2,251	2,185
		0.086	13.2	0.066	0.107	1	172.688	2,139	2,072

Notes: The outcome variable is binary and indicates whether the person transitioned into (self-)employment within the first 180 days after UI entry. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. We use our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) and split it by subgroup. Percentage changes are calculated based on the pre-reform average exit probabilities of the respective subgroup.
Source: Authors' calculations based on MCVL 2005-2018 data.

Table F.3: Subgroup Analysis – (Self-)Employment within 720 Days

Subgroup	Outcome Variable	RD Estimate	% Change	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
Women	*Self-Employment*	-0.062	-66.3	0.031	0.027	0	153.489	1,615	1,991
		-0.055	-59.5	0.032	0.052	1	154.947	1,570	1,953
	Employment	0.026	3.3	0.035	0.356	0	159.660	1,680	2,062
		0.026	3.2	0.035	0.369	1	158.834	1,612	1,996
	Self-Employment or Employment	-0.023	-2.6	0.026	0.332	0	210.797	2,333	2,764
		-0.023	-2.6	0.025	0.301	1	199.422	2,172	2,512
Men	*Self-Employment*	-0.030	-23.7	0.028	0.195	0	173.736	3,969	3,866
		-0.026	-20.5	0.027	0.249	1	179.339	4,023	3,880
	Employment	0.042	5.3	0.035	0.166	0	166.636	3,842	3,614
		0.040	5.0	0.033	0.177	1	164.118	3,618	3,498
	Self-Employment or Employment	0.012	1.3	0.019	0.457	0	203.509	4,752	4,497
		0.011	1.2	0.018	0.478	1	194.914	4,348	4,113
Below median age	*Self-Employment*	-0.047	-41.7	0.032	0.109	0	158.287	2,516	2,637
		-0.041	-35.8	0.032	0.165	1	158.209	2,455	2,567
	Employment	0.054	6.8	0.041	0.144	0	146.910	2,310	2,491
		0.047	5.9	0.039	0.182	1	141.794	2,170	2,347
	Self-Employment or Employment	-0.001	-0.1	0.023	0.894	0	175.879	2,851	2,988
		-0.004	-0.4	0.024	0.961	1	177.021	2,819	2,928
Above median age	*Self-Employment*	-0.037	-31.5	0.030	0.140	0	167.277	2,932	3,025
		-0.025	-21.8	0.028	0.250	1	175.849	2,981	3,185
	Employment	0.023	2.9	0.034	0.383	0	184.670	3,199	3,380
		0.023	2.9	0.032	0.391	1	184.745	3,132	3,303
	Self-Employment or Employment	-0.004	-0.5	0.019	0.765	0	183.344	3,184	3,371
		0.002	0.2	0.017	0.975	1	197.112	3,472	3,487
Immigrant	*Self-Employment*	-0.120	-135.0	0.045	0.002	0	127.579	714	848
		-0.068	-75.9	0.041	0.052	1	141.082	738	848
	Employment	0.026	3.4	0.081	0.583	0	169.484	1,050	1,112
		-0.015	-2.0	0.079	0.923	1	181.784	993	1,082
	Self-Employment or Employment	-0.032	-3.7	0.058	0.603	0	226.837	1,436	1,488
		-0.035	-4.1	0.058	0.518	1	240.206	1,359	1,401
No immigrant	*Self-Employment*	-0.033	-26.6	0.024	0.116	0	179.619	4,926	5,159
		-0.030	-24.2	0.022	0.131	1	177.020	4,863	5,088
	Employment	0.035	4.3	0.026	0.131	0	170.711	4,718	4,955
		0.033	4.2	0.024	0.141	1	166.704	4,624	4,624
	Self-Employment or Employment	0.003	0.3	0.014	0.844	0	206.647	5,814	5,939
		0.005	0.5	0.013	0.832	1	214.616	5,963	6,110
Lower education	*Self-Employment*	-0.014	-13.2	0.031	0.549	0	185.042	3,595	3,798
		-0.010	-9.1	0.031	0.707	1	185.984	3,512	3,685
	Employment	0.036	4.5	0.037	0.268	0	167.539	3,276	3,377
		0.035	4.4	0.037	0.298	1	168.246	3,208	3,286
	Self-Employment or Employment	0.019	2.1	0.020	0.263	0	196.806	3,980	3,959
		0.021	2.3	0.018	0.212	1	203.321	3,955	4,027
Medium education	*Self-Employment*	-0.054	-44.2	0.042	0.127	0	191.320	1,858	1,807
		-0.036	-29.3	0.040	0.251	1	201.998	1,966	1,894
	Employment	0.039	4.9	0.046	0.344	0	227.668	2,260	2,152
		0.029	3.7	0.046	0.407	1	204.423	1,982	1,936
	Self-Employment or Employment	-0.005	-0.5	0.032	0.818	0	227.427	2,260	2,152
		-0.004	-0.4	0.028	0.761	1	270.684	2,558	2,468
Higher education	*Self-Employment*	-0.074	-50.5	0.049	0.081	0	163.864	741	826
		-0.057	-38.8	0.047	0.162	1	169.646	755	838
	Employment	0.023	3.0	0.055	0.609	0	157.196	702	787
		-0.004	-0.5	0.055	0.971	1	163.615	723	814
	Self-Employment or Employment	-0.047	-5.2	0.031	0.106	0	220.875	1,014	1,175
		-0.065	-7.1	0.037	0.059	1	170.312	759	891
1st contribution basis tertile	*Self-Employment*	-0.037	-33.1	0.039	0.299	0	192.612	1,965	2,288
		-0.027	-24.0	0.040	0.473	1	208.481	2,126	2,451
	Employment	0.047	6.1	0.047	0.250	0	206.131	2,183	2,511
		0.041	5.4	0.049	0.331	1	201.550	2,079	2,362
	Self-Employment or Employment	0.011	1.3	0.032	0.675	0	212.714	2,240	2,568
		0.009	1.0	0.027	0.870	1	251.871	2,524	2,869
2nd contribution basis tertile	*Self-Employment*	0.008	8.1	0.026	0.855	0	181.693	1,978	2,024
		0.007	6.4	0.026	0.827	1	178.281	1,898	1,948
	Employment	-0.022	-2.7	0.031	0.375	0	166.029	1,841	1,810
		-0.019	-2.4	0.031	0.366	1	151.796	1,566	1,619
	Self-Employment or Employment	-0.014	-1.6	0.021	0.353	0	170.273	1,867	1,938
		-0.010	-1.1	0.021	0.442	1	183.437	1,954	1,985
3rd contribution basis tertile	*Self-Employment*	-0.111	-84.2	0.034	0.000	0	132.798	1,569	1,543
		-0.096	-72.9	0.031	0.001	1	137.242	1,644	1,560
	Employment	0.137	16.8	0.042	0.000	0	121.060	1,415	1,414
		0.117	14.4	0.043	0.002	1	121.751	1,402	1,388
	Self-Employment or Employment	0.006	0.6	0.026	0.612	0	162.690	2,007	1,958
		0.003	0.3	0.025	0.705	1	157.765	1,904	1,837

Notes: The outcome variable is binary and indicates whether the person transitioned into (self-)employment within the first 720 days after UI entry. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. We use our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) and split it by subgroup. Percentage changes are calculated based on the pre-reform average exit probabilities of the respective subgroup.
Source: Authors' calculations based on MCVL 2005-2018 data.

F.2 Reform Effects on Non-Employment Duration

Table F.4: Reform Effects on Non-Employment Duration by Exit State

Subsample	Outcome Variable	RD Estimate	% Change	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
Self-employed women	Non-employment duration	1.875	20.3	2.496	0.372	0	253.110	298	334
	Medium-term unemployment	0.106	41.0	0.130	0.370	0	252.326	298	334
	Long-term unemployment	0.016	14.3	0.065	0.755	0	230.487	282	305
Re-employed women	Non-employment duration	0.445	4.4	1.196	0.830	0	191.339	1,787	2,238
		0.299	3.0	1.158	0.890	1	188.820	1,707	2,149
	Medium-term unemployment	0.058	18.9	0.049	0.161	0	182.433	1,708	2,147
		0.059	19.4	0.050	0.146	1	174.262	1,582	2,012
	Long-term unemployment	0.010	10.4	0.024	0.616	0	247.250	2,411	2,806
		0.006	6.4	0.022	0.699	1	224.234	2,053	2,494
Self-employed men	Non-employment duration	1.026	13.4	2.077	0.748	0	255.687	821	795
		1.078	14.0	2.084	0.681	1	256.645	809	788
	Medium-term unemployment	0.098	44.2	0.108	0.384	0	239.552	785	743
		0.097	43.6	0.105	0.367	1	266.638	858	819
	Long-term unemployment	0.023	36.4	0.040	0.501	0	197.386	688	589
		0.022	35.0	0.044	0.527	1	191.783	627	573
Re-employed men	Non-employment duration	-1.094	-13.0	0.783	0.103	0	265.292	5,158	4,899
		-1.026	-12.2	0.763	0.115	1	270.518	5,122	4,837
	Medium-term unemployment	-0.078	-31.5	0.045	0.048	0	171.079	3,292	3,266
		-0.080	-32.2	0.046	0.044	1	175.174	3,284	3,232
	Long-term unemployment	-0.009	-15.1	0.018	0.593	0	242.246	4,698	4,527
		-0.007	-10.8	0.017	0.737	1	238.372	4,511	4,361

Notes: This table presents our estimated non-employment duration, medium-term and long-term unemployment regression results by exit state. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic specification and a triangular kernel. Robust standard errors are clustered at the UI entry date level. We use our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) and split it by gender and (self-)employment outcomes, respectively. Unfortunately, we cannot add covariates in our local polynomial RDD regression for the female self-employed because we would run into a power issue. Percentage changes are calculated from pre-reform averages of the respective outcome variable.
Source: Authors' calculations based on MCVL 2005-2018 data.

F.3 Reform Effect on the Self-Employment Quality

Table F.5: Subgroup Differences in (Self-)Employment Quality

	Gender			Age Group			Immigrant Status		
Outcome Variable	**Men**	**Women**	**Difference**	**Above median**	**Below median**	**Difference**	**No immigrant**	**Immigrant**	**Difference**
(A) Self-Employment									
Non-employment duration (UI/UA/unregistered unemployment spells, right censored)	7.485 [9.725]	9.783 [11.998]	2.298*** (0.341)	8.021 [10.236]	8.353 [10.812]	0.331 (0.315)	7.887 [9.979]	9.579 [12.687]	1.692*** (0.414)
Self-employment spell duration	32.905 [18.178]	31.699 [17.984]	-1.206** (0.589)	32.943 [18.037]	32.108 [18.215]	-0.834 (0.542)	33.619 [17.952]	27.411 [18.080]	-6.208*** (0.709)
Real monthly average contribution basis	937.920 [326.847]	913.546 [202.792]	-24.374** (9.591)	963.311 [393.626]	895.535 [110.342]	-67.776*** (8.770)	937.834 [310.779]	895.846 [200.518]	-41.987*** (11.621)
Contribution basis above median	0.050 [0.218]	0.031 [0.173]	-0.019*** (0.007)	0.071 [0.256]	0.016 [0.126]	-0.054*** (0.006)	0.050 [0.218]	0.018 [0.133]	-0.032*** (0.008)
N	3,116	1,356	4,472	2,309	2,163	4,472	3,694	778	4,472
(B) Employment									
Non-employment duration (UI/UA/unregistered unemployment spells, right censored)	8.515 [9.574]	10.066 [10.813]	1.552*** (0.121)	8.833 [10.252]	9.357 [9.899]	0.524*** (0.117)	8.691 [9.577]	10.694 [11.744]	2.003*** (0.146)
Job duration	10.849 [15.336]	10.346 [14.696]	-0.504*** (0.182)	10.800 [15.370]	10.521 [14.825]	-0.279 (0.176)	11.095 [15.556]	8.935 [12.998]	-2.160*** (0.219)
Real monthly average contribution basis	1,523.425 [738.639]	1,291.295 [802.938]	-232.131*** (9.186)	1,490.125 [774.993]	1,382.749 [764.048]	-107.376*** (8.958)	1,473.697 [737.686]	1,290.209 [878.215]	-183.488*** (11.160)
Contribution basis above median	0.659 [0.474]	0.436 [0.496]	-0.222*** (0.006)	0.614 [0.487]	0.537 [0.499]	-0.076*** (0.006)	0.599 [0.490]	0.483 [0.500]	-0.116*** (0.007)
N	18,515	11,007	29,522	14,882	14,640	29,522	23,598	5,924	29,522

Notes: This table presents subgroup differences in our spell quality measures. We use our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) and split it by unemployment exit state, i.e., self-employment (panel A) and re-employment (panel B). The table shows subgroup-specific means, standard deviations (in square brackets), mean differences and the associated standard errors (in regular brackets).
Source: Authors' calculations based on MCVL 2005-2018 data.

Table F.6: Effect on Sectoral Distribution of Business Creation

Outcome Variable	**RD Estimate**	**s.e.**	**p-value**	**Covs.**	**Bandwidth**	**N Left**	**N Right**
Agriculture, extraction, primary manufacturing	-0.016	0.028	0.616	0	189.722	853	827
	-0.020	0.027	0.439	1	190.278	841	818
Manufacturing and utilities	-0.040	0.029	0.222	0	217.725	997	964
	-0.041	0.029	0.222	1	224.546	997	978
Construction	0.039	0.068	0.580	0	240.696	1,076	1,068
	0.030	0.054	0.615	1	234.726	1,041	1,039
Trade	0.089	0.076	0.139	0	162.994	719	705
	0.067	0.069	0.213	1	152.503	672	650
Transport and storage	-0.024	0.040	0.412	0	184.326	835	807
	-0.046	0.035	0.136	1	148.767	660	637
Accommodation and food services	0.021	0.056	0.736	0	192.125	867	834
	-0.004	0.052	0.798	1	199.161	936	841
I&C, finance, real estate, and scientific services	0.011	0.054	0.843	0	265.268	1,192	1,182
	0.038	0.045	0.460	1	223.539	997	972
Education, health, social, auxiliary and other services	-0.019	0.057	0.658	0	220.897	1,004	982
	0.008	0.045	0.773	1	263.347	1,159	1,164

Notes: In this table, we estimate the causal reform effect on the probability of starting a business in a particular sector. Outcome variables are dummies that indicate whether the individual's business activities take place in the respective sector (1) or not (0). The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. We restrict our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) to individuals who exit into self-employment.
Source: Authors' calculations based on MCVL 2005-2018 data.

Table F.7: Effect on (Self-)Employment Quality by Gender

Subgroup	Outcome Variable	RD Estimate	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
(A) Self-Employment Spell Quality								
	Duration in months	-2.522	5.541	0.631	0	233.927	282	312
	0-12 months	0.138	0.130	0.225	0	236.470	286	319
	13-24 months	-0.033	0.087	0.727	0	284.643	336	375
Women	25-36 months	-0.024	0.048	0.605	0	221.225	272	294
	> 36 months	-0.062	0.149	0.686	0	213.046	269	285
	ln(real monthly average contribution basis)	0.068	0.081	0.333	0	213.457	269	285
	Contribution basis above median	0.076	0.058	0.141	0	246.229	293	325
	Duration in months	-0.337	4.219	0.984	0	234.187	774	737
		-1.043	3.782	0.784	1	273.784	863	837
	0-12 months	0.065	0.092	0.424	0	239.441	785	743
		0.071	0.097	0.412	1	201.701	687	615
	13-24 months	-0.040	0.054	0.420	0	164.418	539	500
		-0.001	0.050	0.992	1	158.305	513	481
Men	25-36 months	-0.061	0.074	0.323	0	208.564	709	658
		-0.083	0.074	0.190	1	197.626	675	583
	> 36 months	0.046	0.127	0.606	0	199.211	696	594
		0.024	0.123	0.767	1	205.703	694	640
	ln(real monthly average contribution basis)	-0.002	0.026	0.835	0	205.951	707	647
		0.018	0.027	0.549	1	252.341	799	778
	Contribution basis above median	-0.024	0.039	0.477	0	210.579	711	661
		-0.006	0.036	0.779	1	251.412	797	778
(B) Employment Spell Quality								
	Duration in months	0.227	1.421	0.876	0	187.364	1,757	2,207
		0.525	1.553	0.799	1	177.228	1,605	2,041
	0-12 months	0.008	0.038	0.759	0	178.450	1,670	2,106
		0.001	0.041	0.892	1	174.852	1,582	2,012
	13-24 months	-0.006	0.021	0.653	0	210.718	2,016	2,447
		-0.006	0.021	0.658	1	211.516	1,962	2,388
	25-36 months	-0.040	0.022	0.033	0	143.158	1,309	1,668
		-0.028	0.022	0.118	1	164.913	1,464	1,829
	> 36 months	0.019	0.029	0.401	0	184.518	1,723	2,172
Women		0.028	0.031	0.289	1	176.056	1,597	2,031
	ln(real monthly contribution basis)	-0.040	0.071	0.596	0	196.999	1,918	2,277
		-0.017	0.055	0.660	1	255.112	2,384	2,795
	Contribution basis above median	-0.100	0.052	0.055	0	180.709	1,689	2,136
		-0.090	0.039	0.017	1	213.654	1,973	2,407
	Permanent contract	-0.031	0.060	0.725	0	177.937	1,661	2,101
		-0.023	0.053	0.746	1	198.904	1,861	2,225
	Full-time contract	0.005	0.057	0.737	0	171.568	1,622	2,042
		0.010	0.056	0.685	1	176.428	1,597	2,031
	Same or better occupation	-0.045	0.051	0.320	0	257.288	2,515	2,856
		-0.061	0.055	0.300	1	223.225	2,010	2,464
	Duration in months	0.105	1.156	0.928	0	233.039	4,544	4,393
		0.059	1.157	0.972	1	227.828	4,381	4,143
	0-12 months	0.047	0.036	0.128	0	168.819	3,239	3,110
		0.051	0.035	0.088	1	162.391	2,993	2,956
	13-24 months	-0.045	0.025	0.039	0	169.992	3,259	3,110
		-0.042	0.025	0.053	1	170.998	3,216	3,167
	25-36 months	-0.009	0.018	0.551	0	243.166	4,720	4,547
		-0.010	0.018	0.527	1	242.325	4,591	4,413
	> 36 months	0.016	0.025	0.444	0	227.633	4,479	4,250
Men		0.015	0.026	0.508	1	230.656	4,405	4,249
	ln(real monthly contribution basis)	0.020	0.049	0.505	0	176.678	3,372	3,334
		0.006	0.047	0.725	1	173.045	3,254	3,202
	Contribution basis above median	-0.039	0.034	0.337	0	183.908	3,521	3,446
		-0.048	0.031	0.173	1	173.021	3,254	3,202
	Permanent contract	-0.008	0.044	0.981	0	187.182	3,606	3,491
		-0.004	0.036	0.955	1	174.830	3,272	3,219
	Full-time contract	0.015	0.027	0.399	0	177.543	3,393	3,353
		-0.000	0.027	0.798	1	185.186	3,487	3,377
	Same or better occupation	-0.006	0.036	0.927	0	219.798	4,230	4,125
		-0.001	0.035	0.979	1	195.741	3,658	3,526

Notes: In this table, we estimate the causal reform effect on (self-)employment quality. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. We restrict our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) to individuals who exit into (self-)employment. It is important to note that relatively few women become self-employed in Spain. Since the reform amplifies this situation even more, we might not have enough power to estimate the effects on the female self-employed precisely. For the same reason, we cannot add covariates in our regressions for the female self-employed in panel A.
Source: Authors' calculations based on MCVL 2005-2018 data.

Table F.8: Effect on (Self-)Employment Quality by Gender (cont'd)

Subgroup	Outcome Variable	RD Estimate	s.e.	p-value	Covs.	Bandwidth	N Left	N Right
(C) Self-Employment or Employment Spell Quality								
	Spell duration in months	-1.559	1.488	0.217	0	166.446	1,819	2,130
		-1.087	1.551	0.388	1	161.740	1,625	2,032
	0-12 months	0.067	0.036	0.038	0	151.837	1,588	1,971
		0.056	0.038	0.100	1	149.966	1,517	1,899
	13-24 months	-0.015	0.021	0.443	0	248.669	2,759	3,174
		-0.018	0.021	0.365	1	252.674	2,692	3,131
Women	25-36 months	-0.029	0.020	0.079	0	151.415	1,588	1,971
		-0.022	0.021	0.182	1	171.572	1,794	2,234
	$>$ 36 months	-0.016	0.033	0.635	0	170.778	1,846	2,282
		-0.003	0.034	0.962	1	165.828	1,761	2,066
	ln(real monthly average contribution basis)	-0.128	0.091	0.110	0	192.989	2,054	2,522
		-0.112	0.094	0.163	1	177.233	1,839	2,299
	Contribution basis above median	-0.066	0.047	0.164	0	162.463	1,708	2,095
		-0.060	0.037	0.094	1	175.676	1,820	2,273
	Spell duration in months	-0.331	1.260	0.778	0	205.600	4,789	4,563
		-0.372	1.221	0.741	1	219.394	4,915	4,722
	0-12 months	0.079	0.036	0.014	0	148.831	3,266	3,226
		0.068	0.035	0.027	1	155.146	3,378	3,283
	13-24 months	-0.044	0.023	0.029	0	160.712	3,544	3,523
		-0.036	0.023	0.072	1	163.833	3,582	3,482
Men	25-36 months	-0.025	0.019	0.124	0	177.967	4,030	3,926
		-0.026	0.019	0.106	1	175.617	3,904	3,797
	$>$ 36 months	0.014	0.028	0.537	0	219.162	5,018	4,836
		0.011	0.029	0.622	1	212.975	4,822	4,594
	ln(real monthly average contribution basis)	0.077	0.072	0.201	0	167.764	3,831	3,628
		0.078	0.074	0.239	1	158.583	3,441	3,354
	Contribution basis above median	-0.013	0.039	0.935	0	164.638	3,667	3,574
		-0.010	0.032	0.969	1	150.162	3,255	3,182

Notes: In this table, we estimate the causal reform effect on (self-)employment quality. The local polynomial estimation results are calculated using the MSE-optimal bandwidth suggested by Calonico et al. (2014), a quadratic specification and a triangular kernel. We show the effective number of observations used to the left (N Left) and to the right (N Right) of the cutoff. Robust standard errors are clustered at the UI entry date level. We restrict our RDD estimation sample (see Section IV.A for a description of detailed sample restrictions) to individuals who exit into (self-)employment.
Source: Authors' calculations based on MCVL 2005-2018 data.

References

Agrawal, D. R. and D. Foremny (2019). Relocation of the Rich: Migration in Response to Top Tax Rate Changes from Spanish Reforms. *The Review of Economics and Statistics 101*(2), 214–232.

Alba-Ramirez, A., J. M. Arranz, and F. Muñoz-Bullón (2007). Exits from Unemployment: Recall or New Job. *Labour Economics 14*(5), 788–810.

Austin, P. C., A. Latouche, and J. P. Fine (2020). A Review of the Use of Time-Varying Covariates in the Fine-Gray Subdistribution Hazard Competing Risk Regression Model. *Statistics in Medicine 39*(2), 103–113.

Bandrés, E. and R. González (2013). La Reducción del Gasto Sanitario en España durante la Crisis. *Cuadernos de informacion económica 248*, 37–48.

Beyersmann, J. and M. Schumacher (2008). Time-Dependent Covariates in the Proportional Subdistribution Hazards Model for Competing Risks. *Biostatistics 9*(4), 765–776.

Bonhomme, S. and L. Hospido (2017). The Cycle of Earnings Inequality: Evidence from Spanish Social Security Data. *The Economic Journal 127*(603), 1244–1278.

Calonico, S., M. D. Cattaneo, and R. Titiunik (2014). Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs. *Econometrica 82*(6), 2295–2326.

Cattaneo, M. D., N. Idrobo, and R. Titiunik (2020). *A Practical Introduction to Regression Discontinuity Designs: Foundations*. Cambridge, United Kingdom: Cambridge University Press.

Cattaneo, M. D., M. Jansson, and X. Ma (2018). Manipulation Testing Based on Density Discontinuity. *Stata Journal 18*(1), 234–261.

De La Roca, J. and D. Puga (2017). Learning by Working in Big Cities. *The Review of Economic Studies 84*(1), 106–142.

Dirección General de Ordenación de la Seguridad Social (2019). MCVL. Muestra continua de vidas laborales. Guía del contenido. Retrieved from `http://www.seg-social.es/wps/portal/wss/internet/EstadisticasPresupuestosEstudios/Estadisticas/EST211/1429`. Last access: 13 June 2020.

Erhardt, K. and R. Künster (2014). Das Splitten von Episodendaten mit Stata – Prozeduren zum Splitten sehr umfangreicher und/oder tagesgenauer Episodendaten. *FDZ method report 07/2014*.

Eurofound (2017). Exploring Self-Employment in the European Union. Publications Office of the European Union, Luxembourg. Retrieved from `https://eurofound.link/ef1718`. Last access: 2 May 2024.

Fernandez-Navia, T. (2021). Unemployment Insurance and Geographical Mobility: Evidence from a Quasi-Natural Experiment. *SSRN Discussion Paper 3963169*.

Fine, J. P. and R. J. Gray (1999). A Proportional Hazards Model for the Subdistribution of a Competing Risk. *Journal of the American Statistical Association 94*(446), 496–509.

García, P. and C. Román (2019). Caracterización del Empleo no Asalariado en España desde una Perspectiva Europea. *Boletín Económico/Banco de España 02/2019*.

INE (2018). Indicators: (Self-)Employment and Unemployment Rates. Retrieved from `https://www.ine.es/uc/5Ad5ggubi1`. Last access: 21 June 2018.

Kyyrä, T., J. M. Arranz, and C. García-Serrano (2019). Does Subsidized Part-Time Employment Help Unemployed Workers To Find Full-time Employment? *Labour Economics 56*, 68–83.

Lafuente, C. (2020). Unemployment in Administrative Data Using Survey Data as a Benchmark. *SERIEs Journal of the Spanish Economic Association 11*(2), 115–153.

Lusiani, N. J. (2014). Rationalising the Right to Health: Is Spain's Austere Response to the Economic Crisis Impermissible under International Human Rights Law? In A. Nolan (Ed.), *Economic and Social Rights After the Global Financial Crisis*, pp. 202–233. Cambridge: Cambridge University Press.

McCrary, J. (2008). Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test. *Journal of Econometrics 142*(2), 698–714.

OECD (2018). Indicators: Unemployment Rate, Self-Employment Rate, Part-Time Employment Rate, Temporary Employment, and Inflation (CPI). Retrieved from `https://www.oecd.org/spain/`. Last access: 21 June 2018.

Pérez García, F., E. Uriel Jiménez, V. Cucarella Tormo, L. Hernández Lahiguera, and Á. Soler Guillén (2016). *Cuentas de la Educación en España, 2000-2013: Recursos, Gastos y Resultados*. Bilbao: Fundación BBVA.

Rebollo-Sanz, Y. F. and N. Rodríguez-Planas (2020). When the Going Gets Tough... Financial Incentives, Duration of Unemployment, and Job-Match Quality. *Journal of Human Resources 55*(1), 119–163.

Registro Central de Personal (2017). Boletín Estadístico del Personal al Servicio de las Administraciones Públicas. Retrieved from `http://www.mptfp.es/dam/es/portal/funcionpublica/funcion-publica/rcp/boletin/Boletines/bol_semestral_201801_completo.pdf.pdf`. Last access: 20 July 2022.

SEPE (2019). Information on Unemployment Benefits: Contributory Unemployment Benefits and Unemployment Allowance. Retrieved from `http://www.sepe.es/HomeSepe/Personas/distributiva-prestaciones.html`. Last access: 20 July 2022.

Spain's Ministry of Labor (2019). Unemployment Benefits Statistics. Retrieved from `www.mites.gob.es/estadisticas/PRD/prd19_abr/prd_04_19.xls`. Last access: 2 May 2024.

Spanish Social Security (2018). Information on Social Security Schemes. Retrieved from `http://www.seg-social.es/wps/portal/wss/internet/Trabajadores/CotizacionRecaudacionTrabajadores/10721`. Last access: 20 July 2022.