

Temporary jobs, permanent consequences

Samuel Bentolila
CEMFI

Ivan Lagrosa
CEMFI

October 25, 2024

What we do

Study the **long-term consequences of contractual duality** for workers who enter the labor market for the first time

- ① In dual labor markets, workers can start their career on an open-ended (permanent) or a fixed-term (temporary) job
 - Does the **entry contract** have any persistent effect on labor market attainment over time?
- ② Irrespective of their own contract type, workers can be first employed in firms with a large or a small share of fixed-term workers
 - Does the **composition of the workforce** at entry firms affect lifetime outcomes?

Why do we care

Labor market entry conditions might have long-run consequences on labor market attainment

- ➊ Persistent negative effects on earnings and occupational attainment for those who enter the labor market during economic downturns (Oreopoulos, Von Wachter & Heisz. 2012; Schwandt & Von Wachter, 2019; Bentolila et al., 2021; Acabbi et al., 2022)
- ➋ Initial matches with larger firms – or, more generally, with high-growth firms – have positive and substantial effects on long-term outcomes (Arellano-Bover, 2020; Gregory, 2020).

What we find 1/2

Key finding

- Most **frequent entry is through fixed-term contracts**, comprising two-thirds of entrants (excluding apprentices and contractors)
- **Entry fixed-term** workers (EFTs) start with lower earnings, but eventually overcome **entry open-ended** workers (EOEs)

More time of work or higher wages?

- EFTs start with less weeks of work and end up with **more working weeks** over the year. They have a slightly lower wage initially, eventually getting a slightly higher wage

What we find 2/2

More time of work: how do they do it?

Job shopping at the beginning of career associated with steeper wage growth and more *stable* matches

- ① The higher amount of working time is at the **extensive margin**: EFTs eventually have a larger probability of being employed
- ② This larger probability of being employed is driven by a higher degree of **employment stability** (lower separation probability)

Relevant literature

① Long-run consequences of entry conditions in the labor market

- Business cycle: Oreopoulos, Von Wachter & Heisz. 2012; Schwandt & Von Wachter, 2019; Bentolila et al., 2021; Acabbi et al, 2022
- Firm size: Arellano-Bover, 2020; Gregory, 2020

② Impact of fixed-term jobs on worker careers

- Wage penalty associated with fixed-term jobs (Boeri, 2011; Leonardi & Pica, 2013; Daruich, Di Addario & Saggio, 2023)
- Stepping stones to open-ended employment or dead ends? (Booth, Francesconi & Frank, 2002)
- Conversion rates within firms (Güell & Petrongolo, 2007; Filomena & Picchio, 2022)

Overview

① Working sample

② Empirical evidence

③ Interpretation

④ Next steps

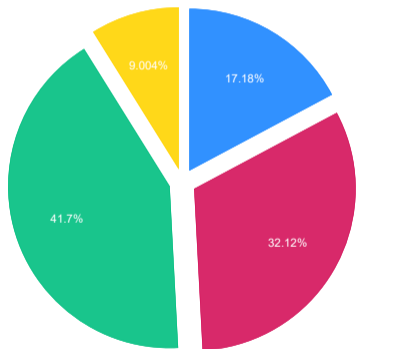
Working sample construction

- Restrict the sample to **young workers between age 16 and 29**, entering the labor market for the first time from 2005 onward
- Remove workers who start as **apprentices** or **contractors** – Study apprentices separately
- Require the first employment spell to last at least 26 working days over the first three months, and the worker to be **employed during the entry year** – employment years are those with at least four full-time equivalent working weeks
- Do not consider workers who register a non-employment gap strictly longer than 2 years
- Consider only workers who can be potentially observed for **10 years**. This restricts the working sample to workers entering the labor market from 2005 to 2010 and avoids the Covid pandemic

Working sample characteristics

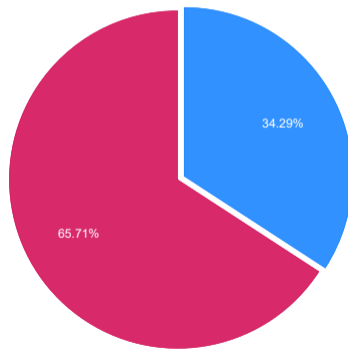
Figure: Share of workers by entry working status

(a) Entire sample



■ Permanent ■ Temporary ■ Apprentice ■ Contractor

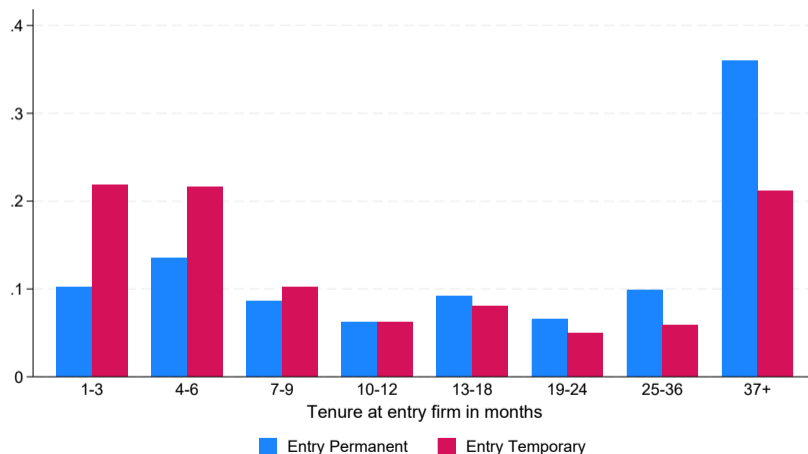
(b) Working sample



■ Permanent ■ Temporary

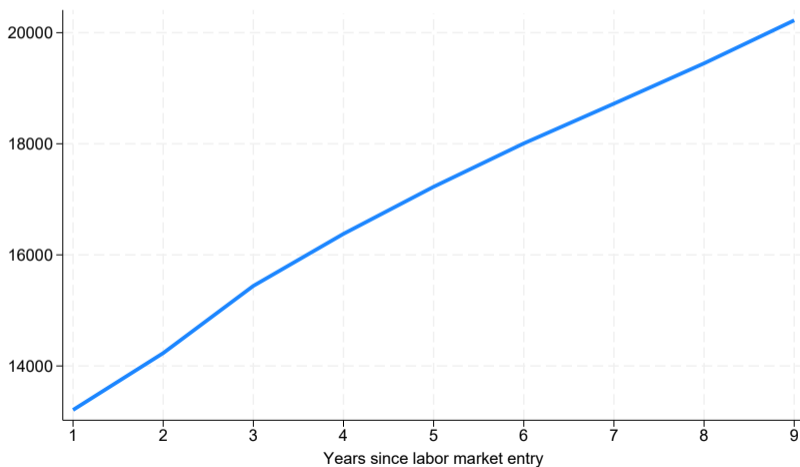
Working sample characteristics

Figure: Tenure at entry firm by entry contract over time



Working sample characteristics

Figure: Average yearly earnings (€2005) by time spent in the labor market



Overview

- ① Working sample
- ② Empirical evidence
- ③ Interpretation
- ④ Next steps

Entry contract and earnings dynamics: selection

Selection into contract types and earnings dynamics could be driven by the same set of worker and firm characteristics – potentially unobservable

In the literature

- Castellanos, Redondo, Stuhler (2023): IV approach using the aggregate open-ended hiring in the month of contract conversion in worker's region of residence
- Search and matching models where contract choice is endogenous: trade-off between filling rate and flexible dismissal rate (Berton & Garibaldi, 2012) or production opportunities of different expected duration (Cahuc, Charlot & Malherbet, 2016)

Our first approach (More to come)

- Workers at first job are blank pages: selection is not driven by previous experience and latent productivity is hard to infer for both the worker and the firm
- Leverage on large set of information to take into account the role of entry characteristics

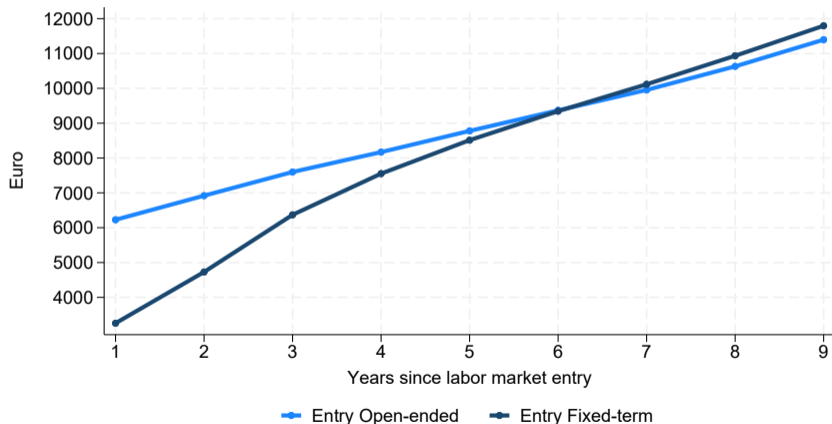
Entry contract and earnings dynamics: our approach

$$Y_{it} = \sum_t \gamma_t^{EFT} EFT_{it_0} + \sum_t \gamma_t^{EOE} EOE_{it_0} + \phi X_{it_0} + \beta H_{ijt_0} + \varepsilon_{it}$$

- Y_{it} denotes yearly total earnings. The first period is the one after entry
- EFT_{it_0} and EOE_{it_0} are dummies denoting whether the worker entered the labor market with a fixed-term or a open-ended contract, respectively
- X_{it_0} is the set of worker's characteristics fixed at the entry time t_0 : gender, age, calendar month and year, education, qualification, region of work and birth, indicator denoting whether the region of work is different from the region of birth
- H_{ijt_0} is a set of characteristics of the entry firm j , at the entry time t_0 : age, average wage, sector, size

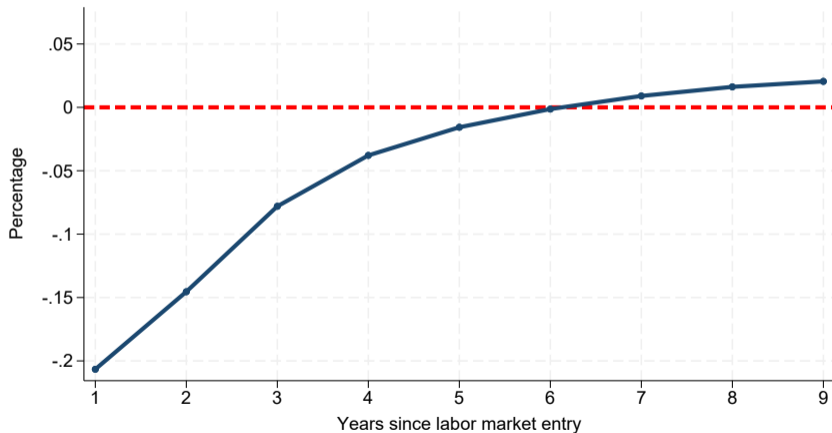
Entry contract and earnings dynamics: key finding

Figure: Average yearly earnings - Entry contract type component



Entry contract and earnings dynamics: key finding

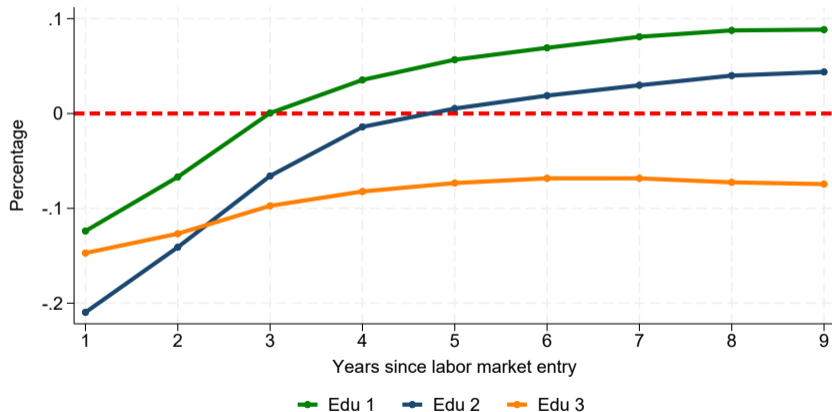
Figure: Average yearly earnings - EFTs vs EOEes



Note: entry fixed-term employment coefficient is divided by the time-specific average of the entry open-ended group

Entry contract and earnings dynamics: key finding

Figure: Average yearly earnings by educational level - EFTs vs EOE



Note: entry fixed-term employment coefficient is divided by the time-specific average of the entry open-ended group. Edu 1 refers to Primary school, Edu 2 to High school, Edu 3 to University

More time of work or higher wages?

We decompose yearly earnings between working time and wage per unit of time. We then evaluate differences across EFTs and EOEes by taking into account entry characteristics of the worker and of the corresponding entry firm

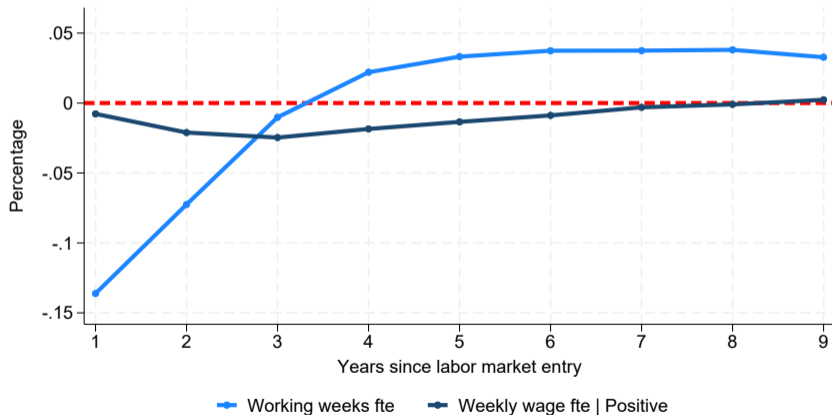
$$Y_{it} = W_{it} * K_{it}$$

$$\{w_{it}, K_{it}\} = \alpha + \sum_t \gamma_t EFT_{it_0} + \phi X_{it_0} + \beta H_{ij_{t_0}} + \varepsilon_{it}$$

- w_{it} is the full-time equivalent weekly log-wage: yearly earnings per *settimane utili*
- K_{it} are the full-time equivalent working weeks: they are zero during periods of non-employment

More time of work or higher wages?

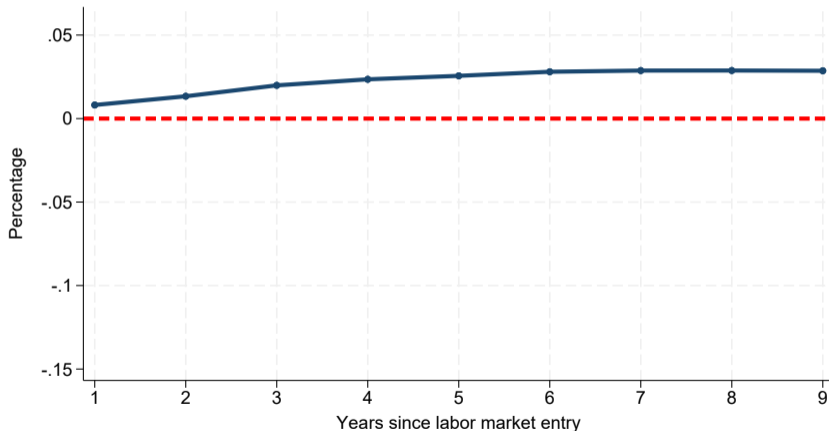
Figure: Decomposition of yearly earnings - EFTs vs EOE



Note: entry fixed-term employment coefficient for working weeks is divided by the time-specific average of the entry open-ended group

More time of work: extensive margin

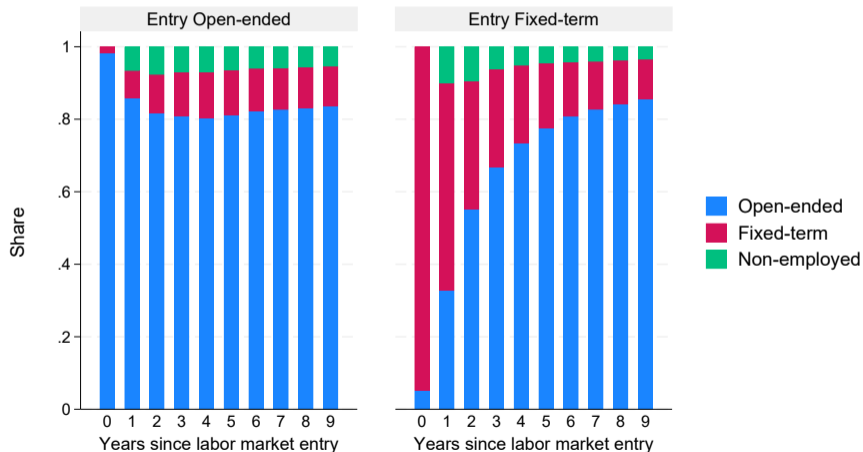
Figure: Incidence of full-time employment - EFTs vs EOE



Note: entry fixed-term employment coefficient is divided by the time-specific average of the entry open-ended group

More time of work: extensive margin

Figure: Share of workers by labor status (Raw data)



More time of work: extensive margin

Taking into account entry characteristics of the worker and of the corresponding entry firm, the probability of being employed is eventually larger for ETs

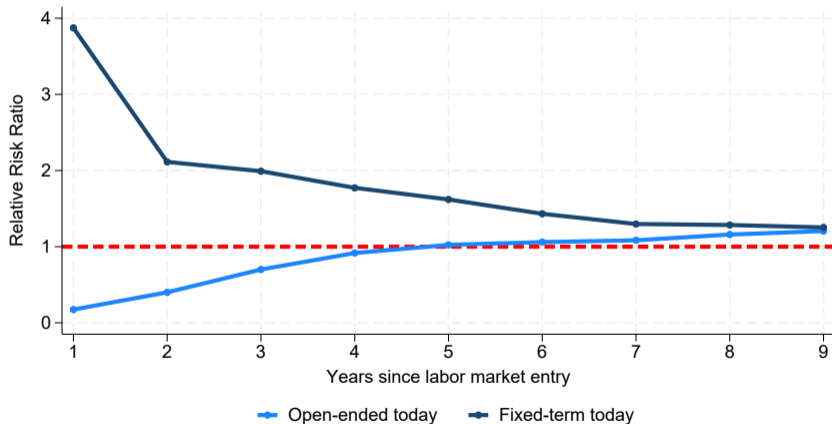
$$P(S_{it}=s \mid EFT_{it_0}, X_{it_0}, H_{ijt_0}) = F(\gamma_t(s)EFT_{it_0}, \phi(s)X_{it_0}, \beta(s)H_{ijt_0})$$

$$s = \text{labor status} \in \{P, T\}$$

- The baseline scenario is being non-employed
- The F function: output of the Multinomial logistic regression model
- $\gamma(\cdot)$: role of the entry status in terms of the difference between the log-probability of being at time t on an open-ended – or fixed-term – contract and the log-probability of being non-employed

More time of work: extensive margin

Figure: Probability of being employed by current contract type vs being non-employed - EFTs vs EOE



Note: coefficients of the entry fixed-term group dummy. The comparison is entry open-ended workers

More time of work: employment stability

Taking into account entry characteristics of the worker and of the corresponding entry firm, the job separation probability goes from being higher to being lower for EFTs relative to EOE

$$P(TR_{it}=\tau \mid EFT_{it_0}, X_{it_0}, H_{ijt_0}) = F(\gamma_t(tr)EFT_{it_0}, \phi(tr)X_{it_0}, \beta(tr)H_{ijt_0})$$

$$\tau = \text{transitions} \in \{EE, EN\}$$

- EE denotes employer-to-employer transitions; EN employment to non-employment transitions
- The baseline scenario is remaining employed in the same firm
- The F function: output of the Multinomial logistic regression model
- $\gamma(\cdot)$: role of the entry status in terms of the difference between the log-probability of making a transition to another employer – or non-employment – and the log-probability of remaining employed in the same firm

More time of work: employment stability

Figure: Probability of making a transition vs remaining in same firm - EFTs vs EOE



Note: coefficients of the entry temporary group dummy. The comparison is entry permanent workers

Overview

- ① Working sample
- ② Empirical evidence
- ③ Interpretation**
- ④ Next steps

Review of key facts

- EFTs start with lower yearly earnings but their **growth rate is steeper** and eventually they get higher yearly earnings compared to EOE
- As opposed to simple convergence (Faccini, 2014), we find that **EFTs overcome EOE**
- Higher yearly earnings are almost entirely driven by **more time of work**
- The higher amount of working time is at the extensive margin and due to **employment stability**

Yes ...

- Persistent 7% loss in earnings from starting with a fixed-term contract for low-skilled workers (García-Pérez, Marinescu & Vall Castello, 2018)
- Open-ended workers have more bargaining power, which drives larger wages and potentially better future outcomes (Bentolila & Dolado, 1994)
- Fixed-term contracts penalize workers in the long run, due to a less continuous employment path and lower wage growth (Garcia-Louzao, Hospido & Ruggieri, 2023)
- Lower training for fixed-term workers could lead to potentially worse future labor market attainment (Smith, 2007; Berton & Garibaldi, 2012; Cabrales, Dolado & Mora, 2017; Bratti, Conti & Sulis, 2021)

... but

- High degree of **uncertainty about the productivity** of workers at their first labor market experience
- Combined with **frictions that prevent the quick destruction** of *bad* open-ended matches, this could cause open-ended contracts to become a risky *trap*
- Fixed-term jobs can be **quickly dismissed at low cost** if the match appears to be of a low quality. On the contrary, for open-ended contracts there is some *inertia* on both the firm and the worker's side: firing costs (severance payments) and preference for stability, respectively
- Postponing the destruction of *bad* matches is not free of **consequences** from the worker's viewpoint: weak job search abilities and a relatively small basket of *experience variety*

The *open-ended trap* (1/2)

Through this lens, the different labor market performance between EFTs and EOEes over time could be mostly explained by the existence of *bad open-ended matches that have not been quickly destroyed*

- 1 *Converted workers within the entry firm* always do better: the screening prevents the formation of *bad open-ended matches*

The *open-ended trap* (1/2)

Figure: Decomposition of yearly earnings for converted workers in entry firm - EFTs vs EOE



Note: entry fixed-term employment coefficient for working weeks is divided by the time-specific average of the entry open-ended group

The *open-ended trap* (2/2)

Through this lens, the different labor market performance between EFTs and EOEes over time could be mostly explained by the existence of *bad open-ended matches that have not been quickly destroyed*

- ① *Converted workers within the entry* firm always do better: the screening prevents the formation of *bad* open-ended matches
- ② *Low educated* EOEes are worse off over time: outside options are potentially worse for them. This drives a smaller quitting probability and a lower destruction rate of *bad* open-ended matches

Overview

- ① Working sample
- ② Empirical evidence
- ③ Interpretation
- ④ Next steps

Next steps

- ① Exploit the heterogeneity in the share of open-ended hiring across space (province) and time (calendar year) to [instrument the entry contract type](#)
- ② Propose a [search and matching model](#) with uncertainty about productivity, contract duality and contract-specific frictions

IV approach (Preliminary)

- OLS estimates of differences in earnings and working time might be biased because of unobserved determinants that are plausibly correlated with the entry contract type
 - The differences in wage growth between fixed-term and open-ended contracts primarily reflect heterogeneity between workers rather than differences in returns between contract types (Castellanos, Redondo, Stuhler, 2023)
- If anything, this unobserved correlation would likely be positive and would then strengthen our results
 - On average in the entire population, those who are more likely to get and keep an open-ended contract are those with a larger unobserved productivity component (Lagrosa, 2023)
 - Those who switch into an open-ended contract as opposed to another fixed-term contract experienced higher wage growth even before they entered their new contract (Castellanos, Redondo, Stuhler, 2023)

IV approach (Preliminary)

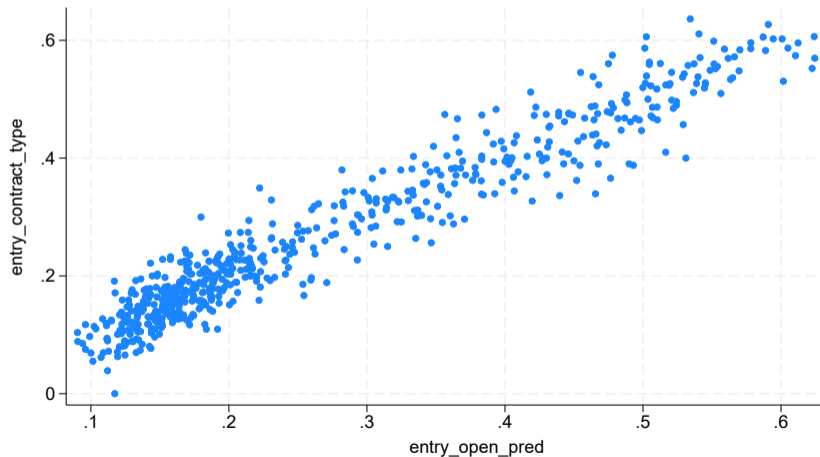
- We plan to instrument the entry contract type by exploiting variations in the share of hiring by contract types over geographic locations (provinces) and over time (years). To compute the shares, we consider the entire working population and not only young workers entering the labor market
- The instrument for the entry contract dummy corresponds the predicted probability of entering with that specific contract (Wooldridge, 2002). We instrument the entry open-ended dummy
- We predict the probability of entering with an open-ended job by using the share of open-ended hiring (OEH) in the corresponding location during the corresponding year, controlling for the location of birth, gender and predicted entry year in the labor market
- We assign to each entry worker the OEH share specific to the one observed during the corresponding predicted entry year in the labor market – which is based on the education of the worker – and to the corresponding location of birth – which is not affected by geographic working choices

IV approach (Preliminary)

- We are now in the process of computing, from external data sources, the expected entry age in the labor market, based on education, to obtain the expected entry year. This requires data on actual school timing, which might vary at the geographical level
- However, as a preliminary exercise to evaluate the power of the instrument, we predict the entry contract type by using the actual average entry age that we observe in our sample, by education, to compute the expected entry year. This value is endogenous and for this reason it will be replaced by the expected entry year based on average years of schooling, as mentioned above
- The next figure reports the actual and the predicted shares of workers who enter the labor market on an open-ended contract

IV approach (Preliminary)

Figure: Actual and predicted shares of OEH by province and actual entry year



Temporary jobs, permanent consequences

Samuel Bentolila

Ivan Lagrosa

e-mail: ivan.lagrosa@cemfi.edu.es

Personal website: ivanlagrosa.com