The Apprenticeship Contract: An Evaluation*

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Abstract

The apprenticeship contract is an instrument to fight against youth unemployment which has undergone several reforms since the crisis in 2008. Despite its changes, the empirical evidence on its effects on the employability of young people is very limited. Therefore, the aim of this paper is to evaluate this type of contract. For this purpose, data from the Continuous Sample of Working Lives are examined and Propensity Score Matching is used as method of analysis. Results show that this type of contract does not contribute to the improvement of youth employability when compared to temporary contracts.

1. Introduction

Youth unemployment is one of the main concerns in Spain. The great recession triggered the increase in the unemployment rate for the entire population and, in the case of young people, it even exceeded 50%. However, we must bear in mind that the impact of the destruction of employment was not the same for all young people. Among them, those with low qualifications were to suffer the effects of this increase in unemployment to a greater extent. Within this framework, several labour reforms were introduced and different programmes were put into practice with the objective of fighting unemployment in general and youth unemployment in particular. The focus of this study is the apprenticeship contract and the evaluation of its possible effects on the labour insertion of the least qualified youth.

For several decades, the apprenticeship contract has been used as a tool to favour the participation of young people with a low educational level in the labour market. The formative component of this type of contract is viewed as a way for these young people to improve their human capital and, consequently, their employability. At the same time, the lower labour costs associated with this contract also make it appealing for companies, which are able to train their employees in the specific tasks linked to their activity. Overall, it has been used sparingly and has hardly been evaluated, so the extent to which it fulfills its objectives remains unknown. For this reason, in this paper, we are using data from the Continuous Sample of Working Lives to assess the effectiveness of the apprenticeship contract as regards young people's labour insertion. The paper opens with a brief review on the regulations in the Spanish labour market as well as its changes in recent years, followed by the evaluation itself. Likewise, empirical evidence on the results of these youth employment policies are also presented, both at a national and international level. The next section of the article discusses the data used as well as the technique implemented to analyse it, to then explain the results obtained.

2. The role of the apprenticeship contract in the Spanish labour market

Article 11 of the Workers' Statute regulates the two main types of training contracts in Spain: the training contract (Article 11.1) and the apprenticeship contract (Article 11.2). The main difference between them stems from the former being designed for young people with some kind of intermediate or higher vocational training diploma or bachelor's degree, whilst the latter is aimed at young people who have completed primary educational levels or lower. Besides this, the apprenticeship contract is intended to be a training tool with the aim of obtaining a certificate of professional qualification or a vocational training certificate. On the other hand, in the case of the training contract, this is seen as an opportunity for young people to gain some professional experience suitable for their level of studies.

Historically, this contract is a descendent of the apprenticeship contract, whose first regulation took place in 1911, when the Labour Law was in its early stages. However, the first references to training had already been made in the Law of July 24, 1873 (Gil Plana, 2014). According to Quesada Segura (2012) the apprenticeship contract was originally 'a contract for young people in order to achieve qualified professional training through the provision of a job and the completion of compulsory theoretical training'. This contract was not considered a working relationship itself and, therefore, the peculiarities of its normative system (lower salary, flexible distribution of the workday or participation in educational activities, amongst others) were justified by the exclusive nature and educational purpose of this contract.

Training as the exclusive objective of the contract was maintained throughout the regulation prior to the Constitution of 1978 until the Law 16/1976 of Labour Relations[1] was passed. Under this law, any doubts regarding its labour component were dispelled, since it established a remunerated nature for the provision of the apprentice's services and changed

its name to 'on–the–job training contract', so that it became training for a position and not for a profession or industry. The Workers' Statute introduced the training contract and, subsequently, was developed in accordance to regulations[2] until it was consolidated in Law 32/1984. According to Pedrajas Moreno (1994), all these rules constituted a turning point, since, by introducing strong Social Security contributions, the development of employment, together with the training of young people without professional qualifications, became the main goal of this contract.

As reported by Gil Plana (2014), the loss of importance and decline of the training aspect became apparent in Law 10/1994, which introduced urgent measures to encourage employment. This law questioned whether the training contract maintained its formative purpose, taking into account the prevalence of aspects that bear no connection with any formative intentionality, and which exclusively aim at a labour integration. Later, with Law 63/1997 of Urgent Measures for the Improvement of the Labour Market and the Promotion of Indefinite Recruitment, there was an 'apparent' return of the training activity, which recaptures the formative purpose of the contract without forgetting its labour insertion objective. This reorientation of the training objective is maintained by Laws 12/2001, 45/2002 and 43/2006, in which part of the Community policy on Employment (Gil Plana, 2014) is also captured.

To sum up, we can conclude that the legislative development of the training contract prior to the 2008 crisis indicates that the training component was the aspect that has lost most relevance while other components related to the reduction of labour costs for companies were included. In this period, the scarce use of the contract becomes clear as well as a recurring attempt at amending it in every labour reform signed (Gómez, 2013). As reported by Quesada Segura (2012), there has never been a major reform of the labour legislation that did not include the regulations of this contract among its changes. Furthermore, its essence has been distorted, so that at certain times its attractiveness has been based on the reduction of labour and Social Security costs so as to favour the labour insertion of groups with low levels of employability.

With the arrival of the crisis in 2008, the high rate of youth unemployment became one of the major problems for Spanish society. Under these circumstances, three labour reforms took place in the years 2010, 2011 and 2012 affecting, among other things, training contracts[3].

One of the most relevant changes is the implementation of more favourable economic conditions for the company when it came to putting this contract into practice. This is reflected in the significant increase in the incentives for recruitment in 2011 as a result of the bonuses received for transforming contracts from temporary into permanent ones and due to the decline of the remuneration for young people, whose salary, also in that year came to be prorated according to the actual time worked.

A second aspect worthy of notice would be the disappearance of certain legal restrictions that ensured the contracts were duly carried out but which could, to a certain degree, reduce their use. This is reflected in the emergence of temporary work agencies such as training and

labour intermediation centres, the possibility of extending and linking contracts and the elimination of the limit of contracts carried out by the training company.

Two different and opposing types of interpretations of the legal doctrine arose with these changes. On the one hand, authors such as Gil Plana (2014) defended the speed of the legislator when confronting changes, encouraging labour insertion due to a lack of training and addressing the issues that could be an obstacle for the use of this contract. Thus, the exceptionality of the situation would justify the changes, which would then be positive.

On the other hand, authors such as Gutiérrez Colominas (2015) considered that the changes introduced prioritized the business interest over the formative purpose, pointing towards a regulation in terms of labour insertion where the legislator would favour the labour dimension to the detriment of the development of the subject matter of this contract. Therefore, the changes would be justified mainly from a business perspective and may not be entirely positive for the interests of the young people.

In addition, there are two aspects of the utmost importance for the study of the training contract in Spain; these are related to the changes in age and duration restrictions that took place in the last reforms. Thus, we can distinguish four periods: before September 2010, between September 2010 and September 2011, between September 2011 and February 2012 and from February 2012 onwards.

Before September 2010, the applicable age limit was 21 and the legal duration of the contract ranged from six months to two years. In accordance with the 2010 reform, the age limit was raised to 25 and the previous duration was maintained. On August 31 2011, the age limit was increased to 30 years and the minimum duration was extended to one year. Finally, on February 12 2012, the duration was extended to three years, although it would only be applicable if approved by a collective agreement.

From the analysis of these four periods, it can be argued that the most relevant changes concerning the duration and age limit occur in the 2011 reform since it is then that both increased the most. One of the objectives was undoubtedly the expansion in the use of this type of contract. Table 1 shows the evolution of the number of training contracts between 2006 and 2018 according to the age of workers. The most visible effect of the reforms was the growth in the number of contracts, mainly from 2011, as the figure of 59,047 contracts in 2010 rose to 139,864 in 2013.

Furthermore, the table shows another significant set of data: the most dramatic rise in the number of contracts signed takes place amongst the age groups 20–24 and 25–29, which were modified in the last reforms. This means that the growth in the use of this contract is not due to its being more appealing to companies, but derives from the fact that, after raising the age limit to 30, the number of potentially eligible young people increased. By contrast, the age group which traditionally was the beneficiary of the contract (16–21) shows a less noticeable increase, suffering a decline up to 2012.

Table 1
TRAINING CONTRACTS BY AGE GROUPS

	16–19	20–24	25–29	>29	Total
2006	83,905	16,663	3,001	14,085	117,654
2007	77,394	13,593	2,778	15,642	109,407
2008	50,439	9,528	2,802	16,217	78,986
2009	30,081	9,101	3,575	18,770	61,527
2010	23,476	13,621	3,363	18,587	59,047
2011	20,442	24,944	3,646	10,990	60,022
2012	13,032	26,915	15,776	4,861	60,584
2013	14,934	45,623	35,630	9,914	106,101
2014	18,399	61,928	48,966	10,571	139,864
2015	24,084	78,245	59,338	13,256	174,923
2016	5,055	18,256	14,470	8,603	46,384
2017	6,018	18,602	14,518	9,179	48,317
2018	6,659	17,611	13,852	14,681	52,803

Source: SEPE.

From 2014 to 2016, the tendency is similar for all age groups. The substantial fall in 2016 (close to 75%) is quite remarkable; according to CES (2016, p. 289), the fall comes from the changes to the regulation of the formative aspects of the contract, which resulted in the increase in the difficulties to implement distance learning as well as creating problems to implement formative actions authorised by the public state employment service. Finally, in 2017–2018, there is a recovery in the number of contracts for the youngest group.

One of the most surprising aspects, taking into account the number of changes made to this contract, is that no evaluation of its effectiveness has been carried out, either in terms of the increase in training for the employees or in the improvement of their labour insertion, as the next section, a review of literature, proves. In addition to ex post evaluations, ex ante evaluations using non–behavioural techniques can help to obtain a previous estimation of the possible impacts of the reforms (Oliver and Spadaro, 2017).

3. Training contracts as an instrument to promote school to work transition

Training contracts are a tool used by most European countries to improve the labour insertion of young people. According to Picchio and Staffolani (2017), this type of recruitment implies a saving of costs in terms of contributions and results in lower salaries. Given the lack of incentives, this reduction of costs would encourage companies to invest in training even if the trained worker changed companies.

Training contracts can serve as a mechanism for selecting workers and as a means to reduce recruitment risks (Grassi, 2009). In the selection process of workers, these contracts can be used to attract those workers who have shown more motivation and a better disposition. Since there is an implicit pact between the employer and employee, which results in more flexible working conditions in return for further training and potential job opportunities in the future, only the youth, interested in improving their qualifications in exchange for better positions, would choose this type of contract. To reduce risks, the decision of establishing another contract on termination of the previous one would be made by the company with no extra cost; this leads to a reduction of the risk implied when hiring a young person and the potential severance pay, in contrast to what using a different contract would mean.

In relation to the aforementioned, it should be considered that training contracts can be appealing not only to companies, but also to young people who, thanks to their recruitment, can increase their human capital: the acquired experience in the contracting company, as well as the training received within and outside the workplace to obtain a vocational certificate or vocational training qualification, contributes to the acquisition of human capital, increasing their employability.

Empirical evidence of the effectiveness of training contracts to fulfil their objectives is not particularly extensive and most of the existing papers focus on the Italian case. As regards Spain, there seems to be only one study by Jansen and Troncoso–Ponce (2018). Using data from the Continuous Sample of Working Lives, these authors conclude that young people who start their careers with a training contract are able to achieve greater stability due to the absence of rotation that is common among temporary workers. They also conclude that the positive differences in favour of the formative contracts become greater three years after having started the contract. However, these differences disappear when the young person is not able to make the transition from one job to the next and experiences a period of unemployment.

In the Italian case, two different types of training contracts have been analysed. One of these contracts, called *"Contrato di Formazione e Lavoro"* and in force between 1984 and 2003, shared similar characteristics with the apprenticeship contract[4]. The study of the Italian case proves the effectiveness of this contract to increase the employment opportunities in companies (Tattara and Valentini 2009; Grassi 2009). In addition, through the analysis of the impact of the reduction of some economic benefits, it may be concluded that this type of contract is a good tool to access permanent contracts even if the labour costs related to employment security increase (Grassi 2009). Therefore, this would reinforce the idea of the suitability of using training contracts as mechanisms for the recruitment of workers.

The other contract studied in Italy is the *"contrato di apprendistato professionalizzante"*. This contract has been affected by one of the most important reforms in the Italian labour market in recent years and is more commonly known the *"Biagi" Law*[5]. Comi (2013) evaluates this contract and concludes that it is the best doorway to access the labour

market even when compared to other contracts such as fixed–term temporary contracts, collaboration contracts or those provided by temporary work agencies. This hypothesis is reinforced by the findings of Berton *et al.* (2011), but in this instance, the comparison is made between other temporary contracts, training contracts from the previous regulation and freelancers.

Furthermore, in their evaluation of the effect of the reform on the contract, both Picchio and Staffolani (2017) and Comi (2013) conclude that, after the changes, the *contrato di apprendistato professionalizzante* continues to be the best option for young people to access stable jobs. In addition to this, Comi (2013) argues that this contract is still the best strategy to avoid unemployment and, Cappellari *et al.* (2012) agree that, thanks to this contract, companies have also increased their productivity as well as their level of employment.

It seems safe to conclude then that training contracts have been a good policy to reduce youth unemployment, increase job stability and improve the careers of young workers in Italy. Even with reforms that have relaxed the conditions of its application or have increased its labour costs and social contributions, this type of contract has remained the best option to enter the labour market for the first time. However, there is still insufficient evidence in the case of Spain since there is only one study that evaluates the contract, which means that the results obtained, although positive, are not decisive.

This need to evaluate training contracts is not only particularly important in the Spanish case, but is also relevant for international institutions such as the Centre for Local Economic Development (CLEG). This centre conducts a meta–evaluation of the commonly–called *apprenticeship*, which is defined as 'all remunerated employment within a company, combined with training provided by the Government, the employer itself or trade union, and is aimed at early school leavers' (CLEG, 2015). Eleven evaluations consider post–programme employment outcomes. Three out five studies find positive effects and two mixed results. Four analysis conclude that apprenticeships reduce the chances of being unemployed. In general, evaluation provides evidence of mixed effects in terms of employment and wages. Impacts tend to be positive although they vary by type of participant (better in higher level apprenticeships than in lower level apprenticeships).

However, the meta–evaluation concludes that there are aspects in which the empirical evidence is not clear and that more solid results are needed to confirm the effect of certain variables that could affect young people's training. One of these variables would be the question of whether the duration of the formative stage affects the salaries or employment of participants once the contract is ended. In this sense, our objective in this paper is to provide evidence of the effectiveness of the training contract in Spain. Although the working paper by Jansen and Troncoso–Ponce (2018) examines this contract, their analysis is focused on job stability. Thus, this paper studies the impacts in several outcomes as well as job stability and, additionally, we explore the effects of the reform in 2011.

4. Data and method

This section presents the data used in the evaluation of the contract, as well as the technique implemented in the analysis.

4.1. Data and sample selection

The database used in this study is the Continuous Sample of Working Lives (CSWL). The CSWL has two characteristics that are essential for the obtaining of information in this paper. Firstly, in spite of being representative of the population of the reference year, it also offers the previous work history of the people selected for the sample, allowing for a collection of any prior work history. The second relevant feature of the CSWL is that it maintains a panel structure updated every year to include the existing information on the individuals who are included in the sample of the previous year, provided that they continue to maintain their relationship with Social Security. As a result, individuals are monitored from the termination of their contracts up to the date in which the data collection from the last edition of the CSWL took place (2015) making it easier to access information about their subsequent work history. As we explain in the following paragraphs, we select training contracts signed in 2011 from the CSWL in this year and we follow them in the subsequent annual editions of CSWL from 2012 to 2015.

A key issue for the evaluation of any program is the selection of treatment and control groups. In this case, the treatment group consists of the set of full–time[6] training and learning contracts signed in 2011, whilst the control group comprises temporary contracts for specific work and services or temporary contracts during peak production times. From the control group we have excluded individuals who have had training contracts in the past. The reference year for both groups is 2011, the year in which, as it has already been mentioned, the most important changes occur.

In relation to these changes, three important actions are taken with regard to selecting individuals from each group. Firstly, since the reform comes into force on August 31 2011, the sample is divided into two, a pre–reform group (which includes all contracts signed before the reform is introduced –from January to August, 2011) and a post–reform group (which includes all contracts signed after the introduction of the reform –from September to December, 2011). Secondly, the sample is limited to young people aged 16–25 since this was the applicable age limit during the first half of 2011. In this way, we can compare the results before and after the reform with no bias derived from the different target population in terms of age.

Lastly, as regards the control group, only those temporary contracts that lasted more than six months were selected to make both groups as homogeneous as possible. Since temporary contracts of very short duration are eliminated, the study analyses whether the training con-

tract, with its own peculiarities, contributes to a better job placement than a temporary contract of the same duration.

All of the foregoing leads to two comparisons: one treatment (training contracts) and control group (temporary contracts) prior to the August 2011 reform and another treatment and control group from a post–reform period. Due to the change that took place in August, the evaluation will evidence the effect of training recruitment on the employability of young people in both periods, as well as evaluating whether the reform in August 2011 led to any change in that respect. Table 2 shows the descriptive statistics for the different treatment and control groups included in the comparison.

A first reading of Table 2 analyses possible changes within each group over time to see whether the composition of the groups shifts with the reform. After the study of the composition of the group of training contracts before and after the reform, no significant changes were observed beyond a slight change in the distribution according to the area of activity of the contracting company and the distribution according to the duration or number of previous jobs.

Table 2
DESCRIPTIVE STATISTICS

	Training contract		Temporary contracts	
	Before reform	After reform	Before reform	After reform
Men	0.563	0.540	0.620	0.536
Women	0.437	0.460	0.380	0.464
Average age at the beginning of the contract	20.397	20.471	22.180	22.110
Born in Spain	0.862	0.855	0.773	0.806
Level of education:				
Primary level	0.777	0.788	0.625	0.523
Vocational secondary	0.126	0.120	0.222	0.243
Secondary	0.085	0.077	0.069	0.090
University	0.013	0.015	0.084	0.144
Activity of the firm:				
Agriculture	0.003	0.000	0.077	0.012
Manufacturing	0.059	0.079	0.147	0.140
Construction	0.055	0.058	0.115	0.106
Retail Trade	0.326	0.317	0.193	0.228
Hospitality	0.072	0.122	0.156	0.133
Health and education	0.370	0.291	0.091	0.157
Business services	0.115	0.133	0.219	0.223

(Continued)

	Training contract		Temporary contracts	
	Before reform	**After reform**	**Before reform**	**After reform**
Previous working time:				
Never worked	0.501	0.475	0.124	0.142
< 6 months	0.252	0.223	0.172	0.177
6 months –1 year	0.089	0.101	0.133	0.120
1–2 years	0.069	0.101	0.201	0.193
2–4 years	0.073	0.072	0.269	0.259
More than 4 years	0.017	0.029	0.102	0.110
Unemployment experience	0.155	0.187	0.423	0.396
Number of employment spells	2.563	3.414	6.644	6.455
Sample	711	278	1844	863

Source: Own elaboration from CSWL.

With regard to temporary contracts, some changes in the distribution according to the educational level (the proportion of young people with primary education is reduced, and the proportion of university students is significantly higher) and according to the area of activity (the proportion of young people working in agriculture is reduced whilst there is an increase in the areas of health and education) were observed. However, apart from these specific changes in the composition of temporary contracts, there are no particularly significant changes in comparison groups over time.

A second reading of Table 2 focuses on whether there are any differences between treatment and control groups. The first difference being the average age of the beginning of the contract, which is greater in the case of temporary contracts. This belated beginning of the contract is related to a greater work experience of those young people with temporary contracts. Thus, while the percentage of young people with previous experience is over 85% for this group, it is around 50% for those with a training contract.

This fact is also reflected in the distribution according to the number of previous jobs and the age of incorporation into the labour market. The distribution according to the number of previous jobs, apart from showing that young people with temporary contracts benefited from a greater number of working periods, also evidences the high turnover that this group faces, with a much higher number of employment spells.

The second difference resides in the educational level. Those who enter into a temporary contract have a higher level of education, since the proportion of young people with a vocational training diploma or a university degree is higher. It must be noted that, although the training contract should be offered exclusively to young people with just a primary education, more than 20% of the people who are offered such a contract have completed secondary or tertiary education.

Finally, the third and last difference between the groups is found in the distribution by sector of activity. While there are more training contracts in retail trade, health our education, data shows that temporary contracts are also predominant in sectors such as industry, construction and financial, insurance or business services.

To evaluate the impact of training contracts, different outcome variables will be used. First, calculations are made to ascertain whether the person has, at some point, worked once the training contract has finalized and whether they have entered into a permanent contract. Secondly, the time worked is calculated as a percentage of the potential work time at the end of the contract. The reason for relativizing the measurement of the time worked, instead of presenting it as an absolute measure (in days) is that, in this way, the possible different duration of contracts is taken into account; this means that the potential work time (from the end of the contract to the last time it is analyzed) might differ among individuals, allowing for an analysis of their different job prospects.

In order to calculate these three variables, the data has been taken from every annual edition of the CSWL from 2012 to 2015. Thus, it is possible to follow the individuals that form treatment and control groups, to know if they have succeeded in accessing another job or a permanent contract, the duration of their employment history and also a proxy for their wages.

Table 3
OUTCOME VARIABLES

	Training contract		Temporary contracts	
	Before reform	After reform	Before reform	After reform
Access to employment (%)	73.3	70.5	99.8	97.6
Access to permanent contract (%)	28.0	26.3	32.3	31.6
Working time (%)	34.7	35.2	73.4	73.1
Wage in 2012 (€/month)	608.0	564.7	1,191.3	1,237.3
Wage in 2013 (€/month)	729.5	650.9	1,129.7	1,137.5
Wage in 2014 (€/month)	831.5	818.5	1,147.3	1,169.4
Average duration of the contract (days)	426.2	492.5	351.6	357.1

Source: Own elaboration from CSWL.

Table 3 shows these outcome variables and the average duration of contracts for both comparison groups before and after the reform of 2011. Thus, possible differing results between groups are perceived before taking into account the differences in observable characteristics.

From the data, it is clear that control groups (both before and after the reform) perform better than treatment groups. As we have explained, we have considered several

outcomes: access to employment (if the individual has any other contract after finishing the one signed in 2011), access to permanent contract (if the individual has an open–ended contract after finishing the one signed in 2011), working time (working time after finishing the contract signed in 2011, as a proportion of the potential working time–time since the end of the contract signed in 2011 to the last moment observed) and wages[7] (average monthly wage).

In terms of access to employment, as well as the percentage of potential work time, young people who have entered into temporary contracts show better indicators than those who entered a training contract. Only in the case of accessing a permanent contract, no significant differences between the two groups were found.

Regarding wages, they are lower for training contracts than for temporary contracts during three years after the signing of the contract. However, differences reduce over the time because of the increase of wages for training contracts. On the contrary, wages for temporary contracts are quite stable for the three considered years.

The table also shows the effective duration of recruitment. Data shows that the duration of the training contracts is superior to that of temporary contracts, which proves that, in the case of the former, companies tend to maintain young people employed for as long as possible.

4.2. Method. Propensity score matching

The aim of this paper is to evaluate the effect training recruitment has on the labour insertion of young people. Hence, the selection bias derived from the different characteristics of treatment and control groups must be eliminated. For this purpose, the *propensity score matching* seems most appropriate. Matching methods are non–experimental methods commonly used in policy evaluation in which the conditions of an experimental analysis are replicated[8]. The aim is to restore the conditions of an experiment by selecting a comparison group that corresponds to the treatment group so that they are as similar as possible in terms of their observable characteristics. The basic assumption being the fact that the selection bias is eliminated if conditioned on the observable variables (Heckman *et al.,* 1998).

The matching method creates matches of units that have the same characteristics, both in the treatment and control groups. Thus, each observation of the treatment group is assigned an observation of the control group, with which it shares the same characteristics. The average effect of the treatment on the treated is estimated as the average of the differences between the results of the observations of the treatment group and the control group in the matches formed.

The pairing method may be difficult to carry out if it depends on numerous variables since it would imply finding a match for all the individuals in the control group among the

individuals in the treatment group with the same characteristics (gender, age, level of studies, work experience, periods of unemployment, etc.). To avoid a problem arising from dimensionality, Rosenbaum and Rubin (1983) suggested a conditioning on the propensity score. The main assumption is the conditional independence hypothesis which implies that, once the propensity score has been estimated, participation in the program is independent of the result in case of non–participation. This requires all variables that affect participation and all results in case of non–participation to be included in the propensity score estimation (Smith 2000).

Still, the conditional independence hypothesis cannot be verified. However, it is possible to argue the existence of a series of variables that allow control of the characteristics of the individuals that form the treatment group and the fact that the database used contains valuable information on issues that can influence both the probability of being part of the treatment group as well as labour insertion. In this regard, data related to the socio–economic characteristics and the previous work history of the individual is readily available. It is therefore possible to know if the person has worked at some point, their age upon their insertion into the labour market, the duration of their contract and the number of working periods, all relevant information that conditions the result. Once the matching has been applied, the bias derived from the different characteristics of the groups has been eliminated and, therefore, the effect of the treatment obtained is derived only from the training recruitment.

5. Results

In this section, the results obtained after the implementation of the propensity score matching are outlined. Although the estimation of the propensity score is an intermediate step, results are presented in Table 4. We observed that the most relevant variables are those related to education and to the activity of the firm. After the reform, the previous experience is also relevant[9].

Table 5 shows the results[10]. The first noticeable result is the fact that the average effect of the treatment is negative since, both in terms of access to employment and length of employment, young people under training contracts are less likely to access another job and have worked for a shorter period of time. Besides, these results show a high magnitude maintained both prior to and after the 2011 reform. Thus, being recruited on a training contract reduces the likelihood of accessing another job by 26 percentage points (29 points after the reform) as opposed to being recruited as a temporary worker.

As regards access to a permanent contract, the effect of the treatment is not significant, indicating therefore that the training contract shows neither advantages nor disadvantages over a temporary contract.

Table 4
ESTIMATION OF THE PROPENSITY SCORE

		Before reform			After reform		
		Coef.	Std. Err.		Coef.	Std. Err.	
Men (ref: women)		−0.250	0.133	*	−0.045	0.193	
Age		−0.243	0.045	***	−0.153	0.060	**
Born in Spain		0.723	0.176	***	0.368	0.243	
Level of education (ref. primary)	vocational secondary education	−0.702	0.168	***	−1.049	0.249	***
	secondary	0.087	0.219		−0.532	0.320	*
	university	−2.555	0.407	***	−2.832	0.566	***
Activity of the firm: Manufacturing	Agriculture	−2.016	0.754	***			
	Construction	0.439	0.288		−0.143	0.422	
	Retail trade	1.466	0.229	***	0.917	0.324	***
	Hospitality	0.438	0.272		0.965	0.371	***
	Health and Education	2.539	0.242	***	1.431	0.349	***
	Business services	0.513	0.247	**	0.559	0.356	
Working time Ref: never worked	< 6 months	1.418	1.421		−1.236	0.388	***
	6 months–1 year	0.571	1.420		−1.746	0.454	***
	1–2 years	−0.493	1.415		−2.497	0.488	***
	2–4 years	−0.496	1.415		−3.162	0.552	***
	more than 4 years	−1.092	1.449		−3.350	0.673	***
Unemployment experience		0.631	0.223	***	0.524	0.305	*
Number of employment spells		−0.001	0.009		0.013	0.011	
Age 1st employment	16 or less	0.275	0.347		0.306	0.493	
	17–18	0.137	0.273		0.339	0.389	
	19–20	0.106	0.267		0.415	0.377	

***: Significant at 1%. **: Significant at 5%. *: Significant at 10%.
There are included dummies for autonomous communities.
Source: Own elaboration from CSWL.

Table 5
RESULTS: ATT

| | All | | | | | Only primary education | | | | |
| | Before reform | | | After reform | | | Before reform | | | After reform | | |
	ATT	SE		ATT	SE		ATT	SE		ATT	SE	
Access to employment (%)	–0.259	(0.017)	***	–0.286	(0.028)	***	–0.286	(0.020)	***	–0.315	(0.032)	***
Access to permanent contract (%)	–0.004	(0.037)		0.053	(0.051)		–0.010	(0.042)		0.050	(0.055)	
Working time (%)	–0.278	(0.023)	***	–0.307	(0.034)	***	–0.261	(0.028)	***	–0.305	(0.040)	***
Wage in 2012 (€/month)	–408.6	(32.6)	***	–534.7	(39.5)	***	–400.9	(37.5)	***	–492.5	(47.5)	***
Wage in 2013 (€/month)	–217.9	(38.9)	***	–344.9	(52.6)	***	–194.7	(45.2)	***	–306.1	(62.2)	***
Wage in 2014 (€/month)	–148.5	(41.7)	***	–243.6	(58.8)	***	–150.0	847.2)	***	–187.9	(68.6)	***

Source: Own elaboration from CSWL.

In light of these results, it can be concluded that the apprenticeship contract does not contribute to the labour insertion of young people and that, in terms of access to another job or length of employment, it does not exhibit better outcomes in terms of future labour market prospects compared to temporary contracts.

Bearing in mind that this contract is aimed at young people with a low level of qualification, the estimates have been repeated excluding all those people with a level of studies corresponding to secondary or higher education. As shown, results barely change, which again leads to the conclusion that this type of contract has a negative effect on the employability of the low qualified youth.

In the case of wages, the effect is also negative although its magnitude reduces year by year. During the first year, wages in training contracts are 400 euros/monthly smaller, after two years, the effect is around 200 euros and, after three years is it around 150 euros. Regarding the effect after the reform, it is slightly higher.

With the August 2011 reform, the minimum duration of apprenticeship contracts was extended to one year. To take into account this change, we have formed another control group excluding those contracts with a duration lower than one year. For the treatment group, there are contracts whose duration is below one year and we have also excluded them[11]. As we can observe in Table 6, the results are similar to those presented before. Thus, the effect is negative in terms of access to employment, working time and wages. However, there is a different result since we obtain a positive outcome in terms of access to permanent contracts. Individuals with training contracts have a higher probability of accessing to a permanent contract although it is significant at 10%. Besides, we do not find the same result for individuals with primary education.

The estimation of the average effect of the treatment has been repeated according to subgroups. Thus, Table 7 presents results for men and for women and Table 8 shows results for

different age groups. In the first case, both men and women feel the negative effects of the training contract, showing less likelihood of accessing another job and lower wages. In the case of the permanent contract, men evidence a small positive effect after the reform of August 2011, although it is only significant at 10%. The comparison of the effects of the contract before and after the reform leads to conclude that the effect is greater for both men and women later on.

Table 6
RESULTS FOR CONTRACTS WITH A DURATION OVER ONE YEAR: ATT

	All					
	All			Only primary education		
	ATT	SE		ATT	SE	
Access to employment (%)	–0.290	0.034	***	–0.304	0.041	***
Access to permanent contract (%)	0.110	0.010	*	0.147	0.118	
Working time (%)	–0.465	0.053	***	–0.508	0.072	***
Wage in 2012 (€/month)	–626.9	82.9	***	–627.7	84.5	***
Wage in 2013 (€/month)	–511.3	101.3	***	–533.5	98.5	***
Wage in 2014 (€/month)	–304.3	106.0	***	–294.7	109.6	***

***: Significant at 1%. *: Significant at 10%.
Source: Own elaboration from CSWL.

Table 7
RESULTS: ATT BY GENDER

	Men						Women					
	Before reform			After reform			Before reform			After reform		
Access to employment (%)	–0.279	0.023	***	–0.323	0.039	***	–0.234	0.025	***	–0.252	0.039	***
Access to permanent contract (%)	–0.041	0.065		0.115	0.066	*	0.005	0.053		0.009	0.075	
Working time (%)	–0.282	0.041	***	–0.286	0.046	***	–0.256	0.034	***	–0.286	0.050	***
Wage in 2012 (€/month)	–516.7	70.5	***	–550.6	60.0	***	–367.3	42.3	***	–498.8	48.9	***
Wage in 2013 (€/month)	–278.5	81.3	***	–314.2	85.4	***	–146.3	51.3	***	–303.2	59.4	***
Wage in 2014 (€/month)	–216.9	88.2	***	–187.1	93.9	***	–114.1	55.6	***	–256.6	68.7	***

***: Significant at 1%. *: Significant at 10%.
Source: Own elaboration from CSWL.

With regard to the results by age groups, the previous conclusions are still valid even though the effect is greater for the younger age groups. Thus, during the initial part of 2011, the training contract reduces the likelihood to access another job by 28 percentage points for those under the age of 22, whilst for those young people aged 22–25, the effect is 15 percentage points. We obtain a small positive effect for this group of workers in terms of transition to a permanent contract. In short, the negative and significant effect for all the age subgroups regardless of gender is maintained, proving that it is more beneficial for young people to be recruited under a temporary contract rather than a training contract.

Table 8
RESULTS: ATT BY AGE GROUP

| | <22 | | | | | | >21–25 | | | | | |
	Before reform			After reform			Before reform			After reform		
Access to employment (%)	–0.278	0.020	***	–0.285	0.035	***	–0.155	0.035	***	–0.265	0.064	***
Access to permanent contract (%)	–0.029	0.050		0.050	0.063		0.124	0.057		0.141	0.083	*
Working time (%)	–0.230	0.032	***	–0.318	0.043	***	–0.238	0.039	***	–0.252	0.063	***
Wage in 2012 (€/month)	–406.7	40.6	***	–504.5	50.7	***	–415.8	44.1	***	–574.4	42.3	***
Wage in 2013 (€/month)	–223.6	49.0	***	–271.8	73.5	***	–172.3	59.1	***	–346.3	68.8	***
Wage in 2014 (€/month)	–153.5	51.2	***	–200.5	75.8	***	–85.6	61.2	**	–157.6	80.2	**

***: Significant at 1%. *: Significant at 10%.
Source: Own elaboration from CSWL.

Finally, we have divided our sample taking into account if the individuals have or not previous labour market experience. In general, the negative effects are greater for young workers without previous labour market experience. In both cases, these effects are smaller before the reform. We only find a positive effect in terms of access to permanent contracts for workers without previous labour market experience after reform. And, as in the preceding cases, it is significant only at 10%.

Table 9
**RESULTS FOR INDIVIDUALS WITHOUT PREVIOUS LABOUR MARKET
EXPERIENCE: ATT**

| | All | | | | | | Only primary education | | | | | |
| | Before reform | | | After reform | | | Before reform | | | After reform | | |
	ATT	SE		ATT	SE		ATT	SE		ATT	SE	
Access to employment (%)	–0.314	0.027	***	–0.326	0.049	***	–0.326	0.033	***	–0.388	0.051	***
Access to permanent contract (%)	–0.017	0.067		0.126	0.187	*	–0.062	0.080		0.056	0.097	
Working time (%)	–0.328	0.043	***	–0.357	0.068	***	–0.275	0.054	***	–0.330	0.083	***
Wage in 2012 (€/month)	–454.3	66.9	***	–588.4	95.7	***	–427.6	66.3	***	–485.1	81.3	***
Wage in 2013 (€/month)	–308.2	75.6	***	–463.3	119.4	***	–256.5	77.2	***	–355.2	115.1	***
Wage in 2014 (€/month)	–193.5	82.4	***	–387.3	118.5	***	–169.9	86.4	**	–218.7	104.3	***

***: Significant at 1%. *: Significant at 10%.
Source: Own elaboration from CSWL.

Table 10
RESULTS FOR INDIVIDUALS WITH PREVIOUS LABOUR MARKET
EXPERIENCE: ATT

	All						Only primary education					
	Before reform			After reform			Before reform			After reform		
	ATT	SE		ATT	SE		ATT	SE		ATT	SE	
Access to employment (%)	–0.204	0.022	***	–0.273	0.038	***	–0.239	0.026	***	–0.284	0.043	***
Access to permanent contract (%)	0.023	0.037		0.030	0.051		0.023	0.044		0.044	0.069	
Working time (%)	–0.275	0.025	***	–0.311	0.038	***	–0.353	0.048	***	–0.300	0.050	***
Wage in 2012 (€/month)	–405.0	28.7	***	–545.7	28.6	***	–400.4	33.2	***	–522.9	36.0	***
Wage in 2013 (€/month)	–187.6	36.45	***	–339.0	45.6	***	–177.0	43.5	***	–332.3	55.7	***
Wage in 2014 (€/month)	–126.2	38.9	***	–204.8	54.2	***	–126.8	44.9	***	–200.0	66.2	***

***: Significant at 1%.
Source: Own elaboration from CSWL.

6. Conclusions

This paper offers an evaluation of the apprenticeship contract in Spain, an instrument intended as a way to favour labour insertion of low qualified young people over the past several decades. Overall, it is considered of little use and, thus, it has undergone several reforms, both in terms of work–related training, as well as in terms of labour cost, duration or target group. More interestingly, there have been very few attempts at analysing its effectiveness.

On the basis of data provided by the Continuous Sample of Working Lives in its 2011 edition, we have evaluated the effectiveness of training contracts in terms of employment prospects. Results demonstrate that the training contract does not improve the possibilities for young people to enter a permanent contract and, in fact, diminishes both the chances to access employment and the time worked after its termination. These results remain constant before and after the 2011 reform. Moreover, they do not vary for men and women or for different age groups. In terms of wages, the effect is also negative although they reduce over time. In several estimations after the result, we obtain a positive effect in terms of accessing to a permanent contract but its significance is low.

In view of these results, the question to consider would be the reason for this negative effect. It might be argued that the training contract is seen as a 'cheap' contract rather than a contract whose purpose is to improve the qualification of young people with a low level of studies. That is to say, the apprenticeship contract is viewed by companies as a subsidized and flexible contract with no compensation. As Guamán Hernández (2014) points out, the laxity and ease to recruit young people through this type of contract undermines the vision

that companies have of it. Therefore, it is not perceived as a step forward towards the employability of young people, but as an instrument for labour insertion whose main attractiveness is the reduction of labour costs for companies.

On the other hand, the formative component of the contract must also be addressed. Unfortunately, there is no data on this aspect, but there are doubts regarding the fulfillment of training obligations. Romero Burillo (2014) attributes the gap in the data to the lack of control and follow–up of the training provided by companies, specifically those that provide distance training. According to this author, the supervision of the worker's training is another aspect of which has been neglected since there is no specific regulation despite it being fundamental to guarantee the quality and content of the training modules.

In conclusion, although the latest reforms have tended to facilitate the use of training contracts (e.g. increasing the age limit or allowing the linking of two contracts), they have given preference to a short–term vision over the goal of increasing the employability of young people. The evaluation carried out indicates that the training contract does not favour the insertion of young people in the labour market. Thus, it would be more advisable to continue evaluating the changes made and move towards a contract that actually proves to be a reliable instrument to improve the labour insertion opportunities of less qualified young people.

Table A.1
COVARIATE BALANCE TESTING BEFORE REFORM

		Mean				t–test	
		Treated	Control	% bias	% reduction bias	t–test	p>|t|
Gender (Men)	U	0.561	0.619	–11.9		–2.64	0.008
	M	0.561	0.494	13.6	–14.8	2.48	0.013
Age	U	20.397	22.171	–99.5		–22.69	0.000
	M	20.397	20.574	–9.9	90.0	–1.75	0.081
Born in Spain	U	0.863	0.773	23.3		4.96	0.000
	M	0.863	0.873	–2.6	88.7	–0.55	0.581
Vocational secondary education	U	0.126	0.220	–25.1		–5.31	0.000
	M	0.126	0.152	–7.0	72.1	–1.41	0.160
Secondary education	U	0.085	0.069	6		1.35	0.177
	M	0.085	0.059	9.7	–62.0	1.85	0.065
University	U	0.013	0.084	–33.4		–6.46	0.000
	M	0.013	0.017	–1.8	94.7	–0.57	0.567
Agriculture	U	0.003	0.070	–36.3		–6.81	0.000
	M	0.003	0.005	–1.1	96.8	–0.62	0.535
Construction	U	0.055	0.119	–22.6		–4.68	0.000
	M	0.055	0.061	–2.0	91.2	–0.44	0.661
Retail trade	U	0.331	0.201	29.8		6.83	0.000
	M	0.331	0.326	1.3	95.6	0.23	0.821
Hospitality	U	0.070	0.156	–27.4		–5.67	0.000
	M	0.070	0.068	0.6	97.9	0.13	0.894
Health and education	U	0.368	0.094	68.5		16.94	0.000
	M	0.368	0.384	–4.0	94.1	–0.62	0.538
Business services	U	0.114	0.210	–26.4		–5.56	0.000
	M	0.114	0.098	4.3	83.7	0.95	0.343
< 6 months (working time)	U	0.257	0.172	20.8		4.76	0.000
	M	0.257	0.267	–2.4	88.7	–0.41	0.685
6 months–1 year (working time)	U	0.088	0.130	–13.6		–2.91	0.004
	M	0.088	0.098	–3.5	74.6	–0.69	0.493
1–2 years (working time)	U	0.067	0.202	–40.3		–8.19	0.000
	M	0.067	0.066	0.3	99.3	0.07	0.945
2–4 years (working time)	U	0.073	0.270	–54.2		–10.9	0.000
	M	0.073	0.067	1.7	96.9	0.45	0.656
> 4 years ((working time)	U	0.018	0.107	–37.7		–7.33	0.000
	M	0.018	0.016	0.6	98.4	0.2	0.841

(*Continued*)

		Mean				t–test	
		Treated	Control	% bias	% reduction bias	t–test	p>|t|
Unemployment experience	U	0.156	0.433	–63.7		–13.26	0.000
	M	0.156	0.150	1.5	97.6	0.34	0.731
Number of employment spells	U	2.574	6.828	–49.7		–9.93	0.000
	M	2.574	2.464	1.3	97.4	0.35	0.730
Age 1st employment: 16 or less	U	0.063	0.104	–14.9		–3.14	0.002
	M	0.063	0.052	3.7	74.9	0.82	0.415
Age 1st employment: 17–18	U	0.235	0.392	–34.4		–7.38	0.000
	M	0.235	0.231	1.0	97.2	0.19	0.847
Age 1st employment: 19–20	U	0.159	0.278	–29		–6.17	0.000
	M	0.159	0.184	–6.2	78.8	–1.24	0.216

Sample	Ps R2	LR chi2	p>chi2	Mean-Bias	MedBias	B	R	%Var
Unmatched	0.373	1071.100	0.000	25.1	18.8	174.6*	0.92	100
Matched	0.018	34.770	0.620	3.8	2.2	32.1*	0.98	0

U: Unmatched; M: matched.

Table A2
COVARIATE BALANCE TESTING AFTER REFORM

		Mean				t–test	
		Treated	Control	% bias	% reduction bias	t–test	p>|t|
Gender (Men)	U	0.542	0.532	2.1		0.3	0.767
	M	0.540	0.570	–5.9	–185.5	–0.7	0.487
Age	U	20.476	22.094	–86.6		–12.74	0.000
	M	20.485	20.623	–7.3	91.5	–0.8	0.422
Born in Spain	U	0.853	0.805	13		1.8	0.072
	M	0.853	0.848	1.3	89.8	0.16	0.870
Vocational secondary education	U	0.121	0.244	–32.2		–4.31	0.000
	M	0.121	0.116	1.5	95.5	0.2	0.841
Secondary education	U	0.077	0.090	–4.8		–0.67	0.505
	M	0.077	0.070	2.7	43.4	0.33	0.739
University	U	0.015	0.140	–48.1		–5.83	0.000
	M	0.015	0.019	–1.7	96.4	–0.4	0.688
Construction	U	0.059	0.107	–17.5		–2.34	0.019
	M	0.059	0.055	1.5	91.4	0.21	0.836

(*Continued*)

		Mean				t–test	
		Treated	Control	% bias	% reduction bias	t–test	p>|t|
Retail trade	U	0.315	0.240	16.8		2.45	0.015
	M	0.316	0.355	–8.8	47.8	–0.97	0.333
Hospitality	U	0.117	0.132	–4.5		–0.63	0.530
	M	0.114	0.093	6.4	–42.5	0.8	0.422
Health and education	U	0.293	0.166	30.5		4.56	0.000
	M	0.294	0.292	0.6	98.2	0.06	0.953
Business services	U	0.136	0.211	–19.9		–2.73	0.007
	M	0.136	0.128	2.2	88.8	0.29	0.772
< 6 months (working time)	U	0.223	0.180	10.8		1.57	0.118
	M	0.224	0.205	4.7	56.2	0.54	0.592
6 months-1 year (working time)	U	0.103	0.118	–4.9		–0.69	0.489
	M	0.103	0.107	–1.3	74.6	–0.15	0.882
1-2 years (working time)	U	0.099	0.197	–27.8		–3.71	0.000
	M	0.099	0.103	–1	96.4	–0.13	0.893
2-4 years (working time)	U	0.073	0.269	–53.8		–6.89	0.000
	M	0.074	0.074	0	100	0	0.998
> 4 years ((working time)	U	0.029	0.112	–32.6		–4.12	0.000
	M	0.029	0.030	–0.2	99.5	–0.03	0.976
Unemployment experience	U	0.190	0.405	–48.2		–6.52	0.000
	M	0.191	0.195	–1	98	–0.13	0.900
Number of employment spells	U	3.418	6.694	–37.1		–4.89	0.000
	M	3.430	3.586	–1.8	95.3	–0.23	0.815
Age 1st employment: 16 or less	U	0.066	0.089	–8.6		–1.18	0.238
	M	0.066	0.052	5.3	38.2	0.7	0.485
Age 1st employment: 17–18	U	0.234	0.376	–31		–4.28	0.000
	M	0.235	0.229	1.4	95.6	0.17	0.864
Age 1st employment: 19–20	U	0.179	0.273	–22.4		–3.09	0.002
	M	0.180	0.184	–0.9	96	–0.11	0.909

Sample	Ps R2	LR chi2	p>chi2	Mean-Bias	MedBias	B	R	%Var
Unmatched	0.287	347.85	0.000	22.4	16.8	146.6	0.8	100
Matched	0.011	8.38	1.000	2.7	1.5	24.9	1.1	50

U: Unmatched; M: matched.

Notes

1.   The consolidation of the initial configuration of the apprenticeship contract takes place in the Labour Code of 1926, it is maintained in the Contracts Act of 1931, and it is hardly modified in the Contracts Act of 31 of 1944 (Gil Plana, 2014).

2.   This development takes place through the Royal Decrees 1361/1981, 1445/1982 and 1992/1984.

3.   However, for further information on the contract and its latest changes, see Gutiérrez Colominas (2015). For a detailed study of its formative dimension and the changes made in this regard, Moreno Gené (2012) and Poquet Catalá (2013) are also proposed.

4.   It was aimed at young people between 15 and 29 years old and its use was subjected to the training under the supervision of the Italian Regional Commission for Employment; it brought with it a series of benefits in terms of savings on contributions for the Social Security and redundancy costs. The maximum duration of this contract was 2 years.

5.   The most significant changes introduced by this law with regard to training contracts were the increase in the age limit from 22 to 29 and the elimination of the obligation to certify training capacities. The Biagi law came into force under Berlusconi's administration in 2003, introducing a dozen contracts, mostly temporary. In addition, it regulated job sharing and incorporated the integration contract and the secondary employment for socially excluded people. One of the measures that met the most social rejection was the contract known as "co–co–co", which included restrictions on workers' labour rights (Schindler, 2009).

6.   Part–time contracts are excluded. According to art. 12.2 of the Statute: "The part–time contract may be concluded for an indefinite or for a fixed period (...), except in the case of the training contract". Therefore, there is no point in including part–time contracts in the comparison group as they cannot be included in the treatment group.

7.   The CSWL provides information about the contributory bases that we use as a proxy for wages.

8.   For a review of the major evaluations on active labour market policies in Spain, see Malo and Cueto (2015). The regular use of the propensity score matching in this type of study can be concluded.

9.   Table A.1 y A.2 in the annex displays several measures of the extent of balancing of the variables between two groups. We can observe the reduction in the bias because of the matching. The following overall measures of covariate imbalance are displayed: Pseudo R2 from probit estimation of the conditional treatment probability (propensity score) on all the variables before and after matching, and the corresponding P–values of the likelihood–ratio test of the joint insignificance of all the regressors; the mean and median bias as summary indicators of the distribution of the bias; Rubins' B (the absolute standardized difference of the means of the linear index of the propensity score in the treated and (matched) non–treated group); Rubin's R (ratio of treated to matched non–treated variances of the propensity score index).

10. The matching method for calculating the estimates has been kernel with replacement. However, to verify the robustness and in order to perform a sensitivity analysis of results, the estimates have been repeated with the nearest neighbour method and one by one without replacement. The results do not show substantial changes.

11. One third of the contracts in the treatment group after the reform had a duration lower than one year. In 2012, 40% of training contract signed in that year also had this duration. We have to take into account that the contract must be signed for a duration of one year (minimum), but the effective duration can be different.

References

Berton, F., Francesco D. and Pacelli, L. (2011), "Are Temporary Jobs a Port of Entry into Permanent Employment?", *International Journal of Manpower,* 32 (8): 879-99. doi: 10.1108/01437721111181651.

Cappellari, L., Dell'Aringa, C. and Leonardi, M. (2012), "Temporary Employment, Job Flows and Productivity: A Tale of Two Reforms", *The Economic Journal,* 122(562): F188-215. doi:10.1111/j.1468–0297.2012.02535.x.

CES (2016), *Memoria sobre la situación socioeconómica y laboral. España 2015*, Consejo Económico y Social, Madrid.

CLEG (2015), "Evidence Review, 8. Apprenticeships".

Comi, S. (2013), "The Role of Apprenticeship in the Youth Labour Market: Evidence from a Decade of Reforms in Italy", en *The Effectiveness and Cost Benefits of Apprenticeships: Results of the Quantitative Analysis*, European Commission.

Gil Plana, J. (2014), "Cualificación profesional e inserción laboral de los jóvenes a través del contrato para la formación y el aprendizaje", *Revista del Ministerio de Empleo y Seguridad Social,* 113: 129-82.

Gómez, M. J. (2013), "Aspectos novedosos del contrato para la formación y el aprendizaje tras las últimas reformas", *Temas Laborales: Revista Andaluza de Trabajo y Bienestar Social*, 113: 119-155.

Grassi, E. (2009), "The Effect of EPL on the Conversion Rate of Temporary Contracts into Permanent Contracts: Evidence from Italy", *Giornale Degli Economisti e Annali Di Economia,* 68(2): 211-31.

Guamán Hernández, A. (2014), "La precariedad laboral como vía de inserción típica de los jóvenes en el mercado de trabajo: análisis de la evolución de las formas de contratación juvenil", en *Retos del derecho del trabajo frente al desempleo juvenil. XXXII Jornadas Universitarias Andaluzas de Derecho Del Trabajo*, edited by J. L. M. Pérez, 881-87. Sevilla: Consejo Andaluz de Relaciones Laborales.

Gutiérrez Colominas, D. (2015), "El tratamiento de la actividad formativa en el contrato para la formación y el aprendizaje, el contrato a tiempo parcial con vinculación formativa y el contrato de primer empleo joven. ¿Nuevas alternativas para la formación y el empleo?", *Documentación Laboral,* 105: 37-58.

Heckman, J. J., Ichimura, H. and Todd, P. (1998), "Matching as an Econometric Evaluation Estimator", *Review of Economic Studies,* 65(2): 261-94. doi:10.1111/1467–937X.00044.

Jansen, M. and Troncoso–Ponce, D. (2018), "El impacto de los contratos para la formación y el aprendizaje en la inserción laboral de los jóvenes", FEDEA. New Skills at Work. JP Morgan.

Malo, M. Á. and Cueto, B. (2015), "El impacto de las políticas activas de mercado de trabajo en España", *Documentación Social,* 178: 105-20.

Moreno Gené, J. (2012), "El contrato para la formación y el aprendizaje: un nuevo intento de fomento del empleo juvenil mediante la cualificación profesional de los jóvenes en régimen de alternancia", *Temas Laborales. Revista Andaluza de Trabajo y Bienestar Social,* 116: 35-88.

Oliver, X. and Spadaro, A. (2017), "Active Welfare State Policies and Labour Supply in Spain", *Hacienda Pública Española/Review of Public Economics*, 223: 9-41.

Pedrajas Moreno, A. (1994), "El contrato de aprendizaje," *Relaciones Laborales: Revista Crítica de Teoría y Práctica,* 1: 282-307.

Picchio, M. and Staffolani, S. (2017), "Does Apprenticeship Improve Job Opportunities? A Regression Discontinuity Approach", *Empirical Economics,* 1-38. doi:10.1007/s00181-017-1350-2.

Poquet Catalá, R. (2013), "La actividad formativa en el contrato para la formación y el aprendizaje tras las últimas reformas", *Relaciones Laborales: Revista Crítica de Teoría y Práctica,* 6: 71-86.

Quesada Segura, R. (2012), "Derechos de formación profesional y contratos formativos", *Temas Laborales. Revista Andaluza de Trabajo y Bienestar Social,* 115: 165-91.

Romero Burillo, A. M. (2014), "La actividad formativa en el contrato para la formación y el aprendizaje: ¿Una verdadera apuesta por la formación o una nueva medida para el fomento de la inserción laboral de los jóvenes?", en *Retos del derecho del trabajo frente al desempleo juvenil. XXXII Jornadas Universitarias Andaluzas de Derecho Del Trabajo*, 809-25. Sevilla: Consejo Andaluz de Relaciones Laborales.

Rosenbaum, P. R. and Rubin, D. B. (1983), "The Central Role of the Propensity Score in Observational Studies for Causal Effects", *Biometrika,* 70(1): 41-55. doi:10.1093/biomet/70.1.41.

Schindler, M. (2009), "The Italian Labor Market: Recent Trends, Institutions and Reform Options", *IMF Working Papers*. doi:10.5089/9781451871951.001.

Smith, J. (2000), "A Critical Survey of Empirical Methods for Evaluating Active Labor Market Policies", *Swiss Journal of Economics and Statistics,* 136(22): 1-22.

Tattara, G. and Valentini, M. (2009), "Can Employment Subsidies and Greater Labour Market Flexibility Increase Job Opportunities for Youth? Revisiting the Italian On–the–Job Training Programme", *Zeitschrift Für ArbeitsmarktForschung*, 42(3): 197-212.

Resumen

El contrato de formación es un instrumento de lucha contra el desempleo juvenil que ha tenido varias reformas desde la crisis que comenzó en 2008. A pesar de estos cambios, la evidencia empírica sobre su impacto, en términos de empleabilidad de los jóvenes, es muy limitada. Por tanto, el objetivo con el que se plantea este artículo es evaluar este tipo de contrato, utilizando para ello los datos de la Muestra Continua de Vidas Laborales y, como método, el propensity score matching. Los resultados apuntan que esta forma de contratación no contribuye a mejorar las probabilidades de empleo de los jóvenes si se compara con los contratos temporales.

Palabras clave: contrato de aprendizaje, empleabilidad, empleo juvenil, evaluación.

Clasificación JEL: J24