

MEASURING THE COSTS OF AN UNEMPLOYMENT COMPENSATION SYSTEM WITHOUT EXPERIENCE RATING

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Abstract

The Spanish unemployment compensation system (like many of the OECD countries) draws its funds from a payroll tax on employers and employees but does not establish different tax rates according to the individual employer's layoff history. Using an administrative dataset, the paper quantifies the importance of two problems associated with incomplete or partial "experience rating": the existence of cross-subsidization among sectors and the excessive number of temporary layoffs. We document a persistent pattern of inter-sectoral cross-subsidization across several years and the existence of a relevant amount of recalls in compensated unemployment.

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1. Introduction

The unemployment insurance (UI) system of the United States of America (USA) based on the “experience rating” principle differs markedly from the systems at work in the rest of the countries making up the Organisation for Economic Co-operation and Development (OECD) because the latter use uniform payroll taxes to finance unemployment benefits. This latter method of UI financing is frequently criticized due to two reasons. First, it generates a problem of moral hazard since it distorts the layoff decisions of firms: employers do not take into account the cost imposed on the system if workers are dismissed, become unemployed and receive benefits. This gives rise to too many layoffs, increasing UI contribution rates and unemployment. Second, it brings about a pattern of cross subsidization: these systems subsidize sectors and employers with high labour turnover and tax sectors and employers with low labour turnover. Therefore, it distorts the allocation of resources across industries and firms.

The UI system in the USA intends to avoid these inefficiencies by means of experience rating. Experience rating implies that the UI contribution rate is firm specific and depends on the extent to which former employees laid off by an employer claim unemployment benefits, i.e. firms pay higher or lower UI taxes based on their layoff history. The implementation of such a system would be a means not only to obtain adequate financing of the unemployment system but also to restrict the problems associated with moral hazard and cross subsidization, which might be affecting the functioning of the unemployment compensation system in the European countries.

Most empirical studies that examine the efficiency of the unemployment compensation system focus their attention on the potential influence of the level of benefits and the duration of entitlement on the supply side, in particular on two key aspects: the disincentive effect on the job search of recipients and the negative effect on the probability of finding a job. In general, these studies have the job search theory as their theoretical starting point, since it stresses the supply of labour: individual economic incentives play an important role in workers’ search behaviour and in their

search for a new job¹. Works that try to analyze the influence of the unemployment compensation system on the demand for labour (on the incentives and the behaviour of employers) are scarce, though. In this vein, for instance, the implicit contract theory attempts at modelling temporary layoffs concentrated on the worker-firm relationship as an implicit contract and focused on the potentially collusive behaviour of workers and firms when faced with uncertain fluctuating product demand. Therefore, implicit contract theory stresses that firms' economic incentives are of crucial importance for the use of temporary layoffs in combination with unemployment benefits and for the timing of recalls².

As far as we know, no previous paper has examined the potential costs associated with the lack of experience rating in the unemployment compensation system of any European country. Therefore, the main contribution of the article lies in that it is the first which tries to document and quantify for a European country (Spain) two key drawbacks present in the UI systems lacking experience rating: the excess of temporary layoffs and the existence and persistence of cross-subsidization across sectors. We carry out this analysis drawing on an administrative data source which allows the follow up of individuals and the generation of aggregate data on wages, contributions and unemployment benefits. The results might give some hints on the benefits that may accrue to the design and financing of the unemployment compensation system had it included elements of experience rating.

The structure of the paper runs as follows. Section 2 describes some institutional features of the Spanish labour market and unemployment compensation system in order to focus attention on the potential incentives implied for the joint employment and unemployment decisions of workers and firms. Section 3 presents the data. Section 4 quantifies the cross subsidization across industries, while section 5 provides the results on temporary layoffs. Finally, some concluding remarks are offered in section 6.

¹ See, inter alia, Katz (1986), Mortensen (1990), Jensen and Westergaard-Nielsen (1990), Katz and Meyer (1990), Card and Levine (2000), Jansson (2002), Røed and Nordberg (2003), Mavromaras and Orme (2004), Lalive et al. (2006), and Van Ours and Vodopivec (2006). For the specific case of Spain, see García-Mainar and Toharia (2000), Bover et al. (2002) and Jenkins and García-Serrano (2004).

² See Feldstein (1976), Topel (1983), Burdett and Wright (1989), Albrecht and Vroman (1999), Anderson and Meyer (2000), and Fath and Fuest (2005a, 2005b).

2. Institutional aspects

The Spanish unemployment compensation system (like many other OECD countries) comprises two schemes: unemployment insurance (UI) and unemployment assistance (UA).

UI is paid to employees (excluding civil servants, domestic workers and those without past work experience) who did not quit their job voluntarily, who can and want to work and who have paid a minimum number of contributions. Length of UI entitlement depends on the number of months contributions are made. Contributions for at least 12 months over the last 72 months are required for eligibility. The duration of entitlement is equal to twice the modulus of the number of contribution months divided by six (i.e. four, six, eight, etc.), up to a maximum of 24. The amount of UI paid is equal to a fraction of the average of the 'regulatory base' in the last six months prior to unemployment, where the 'regulatory base' is the gross wage used to calculate UI contributions. UI payments decline with the duration of the spell: that fraction equals 70 per cent during months 1–6 of UI receipt and 50 per cent thereafter. Payments are subject to minimum and maximum amounts that vary with the number of children the unemployed person has.

UA is means tested and is available (depending on their characteristics) for those who exhaust the UI and those who are not eligible because they have not accumulated the minimum contribution period. The UA benefit is flat rate, varying its level and duration with the number of family dependents and the age of recipient.

An important feature of the system is that uniform payroll taxes are used to finance it, although it contains a slight element of experience rating: employers and employees both pay UI contributions but they differ across types of contract³. However, this system does not try to internalise the costs of layoffs at the firm level and has been used as a labour market policy in order to try and reduce temporary employment and foster permanent work.

³ In the case of an open-ended contract, the contribution rate is 7.05 per cent (employees: 1.55 per cent; employers: 5.5 per cent). For fixed-term contracts (even if the employer is a temporary help agency), employees pay 1.6 per cent and employers pay 6.7 per cent for full-time work (7.7 per cent for part-time work).

As regards hirings and firings⁴, it is worth noting that, before the passing of the Workers' Statute in 1980, temporary contracts were basically limited to sectors with seasonal employment needs. The 1984 reform liberalised temporary employment with the intent of lowering the high unemployment rate (above 20 per cent). However, the reform only increased employment flexibility at the margin by exclusively altering the dismissal costs of temporary contracts and leaving the regulation of permanent contracts unchanged. Temporary employment expanded very rapidly, in part fuelled by the relative advantages of these costs. The proportion of wage and salary workers holding fixed-term contracts increased from around 10 per cent before the 1984 reform to 33 per cent by 1992, with large differences by groups of workers and employers (see Figure 1). Since then, the share of temporary employment has remained fairly stable in spite of diverse labour market reforms aimed at reducing non-standard types of employment and promoting the use of permanent contracts⁵. Only the destruction of temporary jobs during the ongoing recession has brought about a large drop of that share (it declined from 31 per cent at the end of 2007 to 25 per cent two years later, remaining around this latter figure since then).

(FIGURE 1)

In short, there are various types of temporary contract that firms may use: casual contracts (for sudden increases in the demand for goods and services); per-task or service contracts (for specific activities of limited duration not related to the 'usual' activity of the firm); training contracts (aimed at low-skilled workers under the age of 25); work experience (practice) contracts (designed for people who have recently graduated from university and post-compulsory secondary education); and interim contracts (to substitute for workers having the right to return to the same job with the same employer). Moreover, there are at least three types of open-ended contract:

⁴ For a description of the institutional changes in the area of hirings and firings during the 1980s and 1990s in Spain, see Toharia and Malo (2000).

⁵ The 1994 reform tried to limit the use of temporary contracts by linking them only to non-permanent tasks, while the 1997 reform launched a new open-ended contract characterized by lower dismissal costs. In addition, firms have had to pay eight days' wages per year of seniority as severance payment at the end of fixed-term contracts (except interim and training contracts) since 2001. Finally, the reform passed in 2006 (with financial incentives to encourage the transformation of temporary contracts into permanent ones) was partially successful in reducing temporary employment, but the larger drop in the share was a consequence of the destruction of temporary jobs during the ongoing recession (it declined from 31 per cent at the end of 2007 to 25 per cent two years later, remaining around this latter figure since then).

ordinary permanent contracts (with severance pay of 45 days' wages per year of seniority with a maximum of 42 months' wages in the case of unfair disciplinary dismissal); permanent employment promotion contracts (created in 1997 and characterised by lower dismissal costs: severance pay of 33 days' wages per year of seniority with a maximum of 24 months' wages); and permanent per-task contracts (workers under these contracts enjoy strong links with their previous employer when they are out of work, since they have the right to be requested first by their previous employer on their availability to re-enter their payroll when being laid-off, retain seniority and receive payments subsidised by the government through the UI system for the time not worked).

Finally, employers are not obliged to offer an employee a permanent contract after a period of temporary work⁶. This makes the conversion rates from temporary to permanent contracts very low (Toharia and Malo, 2000; Güell and Petrongolo, 2007). One likely explanation would be that short-term employment periods result from firms trying to avoid the risk of higher firing costs that would follow the eventual firing of a permanent employee (so it is tempting for employers to use temporary layoffs to maintain a fraction of the workforce without a permanent job). It should also be taken into account that the use of fixed-term contracts (and recalls) could be a reflection of the structure of production, characterised by many small employers (workplaces with less than 50 employees account for 98 per cent of all firms and nearly half of all wage and salary workers) and rather large tourist and construction sectors.

3. Data

This paper uses a database from the 'Continuous Work History Sample' (or *Muestra Continua de Vidas Laborales*, henceforth referred to as the MCVL) across the period 2004-2012. The individuals contained in the sample represent a 4% of the population who have had any sort of relationship with the Social Security in a given year (individuals are selected annually by means of a simple random sampling system). Thus, the population of reference from which the sample is extracted comprises both

⁶ This was the case until 2006. The reform passed in that year established that all temporary workers who had had two or more contracts with the same employer and a length of service of at least 24 months within a period of 30 months in the same position would become permanent workers. This principle was reversed in 2010.

workers who are registered with the Social Security as working as well as recipients of contributory and non-contributory pensions and unemployment benefits in the year concerned.

The MCVL is made up of several files containing diverse information. The files on personal details (coming from Social Security records and the Continuous Municipal Register) provide information on personal characteristics (gender, age, province of residence, citizenship and place of birth, etc.). The files on Social Security contributors contain details for each spell of employment on workplace and job attributes (employer size, location, ownership status, industry affiliation, job category, types of contract and tenure -dates of start and end of employment spells-, etc.). Moreover, it also provides information on the unemployment benefits received by each worker in the event that they were separated from their jobs and eligible for them: the type of benefits received (UI or UA) and the number of days of benefit receipt. Finally, a separated 'tax module' provided by the Tax Administration National Agency (*Agencia Tributaria*, AEAT) gives annual data on tax earnings. These data allow one to distinguish among different types of income: wages and salaries; pensions; unemployment benefits; income from economic activities; and others. This module includes everyone receiving income subject to income tax, regardless of their obligation or otherwise to declare it for the purposes of income tax; even the details concern payments below the legal exemption rate, payments with no withholdings, or exempt income⁷.

One of the main advantages of the MCVL dataset is that the information contained in the personal, contribution and tax files may be matched thanks to the existence of a unique identification number for each person and employer. Nevertheless, this

⁷ There are also other files containing the monthly 'contribution base' (coming from the social security records), which is similar to the salary for most workers (although it does not include overtime and other payments such as dismissal compensations, which are included in the tax data). In principle, this information might be used as a proxy of individuals' wages (see Bonhomme and Hospido, 2012). However, we use the wages data contained in the tax module because, as it is well known, tax earnings data do not suffer from measurement errors common in self-reported wages and from top coding common in administrative data like social security records, which make them far more reliable. Another fact that reassures us in the use of tax data is that results are fully comparable to the ones obtained with other sources such as the Quarterly Labour Cost Survey (from the National Statistics Institute) in the case of wages and the labour statistics published by the Public Employment Service in the case of the amount of unemployment benefits (see Arranz and García-Serrano, 2011).

procedure is not easy⁸. Once all the information contained in those files is linked, it is possible to know the number of days spent in each state (employment and covered unemployment) within the year and to calculate daily amounts received from each types of income. In particular, we obtain daily wages by dividing the amount of wages and salaries by the number of days of work within the year for each worker. We also calculate daily level of benefits by dividing the amount of benefits by the number of days of unemployment benefits within the year for each recipient.

We use the MCVL in order to look at the existence and persistence of cross subsidization across sectors in section 4 and the volume of temporary layoffs in section 5. In section 4, we use the “complete” sample of the MCVL. In particular, thanks to the availability of information on wages and unemployment benefits, we can calculate the contributions paid by employers and employees and the benefits received by separated workers within the aggregates of sectors (we cannot perform this analysis at the firm level since the database is not representative of the population of firms). In this case, we carry out the decomposition of the sectoral ratio between unemployment benefits and contributions for two different years: one corresponding to an expansion period (2005) and another to a recession period (2012). In section 5, we use a subsample of the complete dataset. The selection is comprised of individuals whose employment spells ended at any time either in the year 2005 or in the year 2010. We follow the workers for about three years: from 2005 to the end of 2007 and from 2010 to the end of 2012. The longitudinal nature of the administrative dataset makes it possible to know the labour market status of job losers at any time and even to distinguish spells ending through recall from those ending through the finding of a new job.

4. Effects on efficiency: cross subsidies

Ideally, empirical studies trying to quantify cross subsidisation brought about by the way of financing and using of the unemployment compensation system should utilise some indicator to approximate the ratio between the amount of benefits paid to laid off workers by each employer and the amount of taxes that each employer has to pay. The degree in which this indicator were above or below one would be a measure of

⁸ Arranz and García-Serrano (2011) thoroughly describe this procedure and suggest some recommendations for the mining of the data and its use for the analysis of issues related to the labor market and income distribution.

the magnitude of the subsidy received from or paid to the system by the employer regarding the attendance of their separated workers.

In North-America, lack of firm-level data on benefits and contributions has led empirical studies to build (average) proxy variables by states and sectors (see, for instance, Jurajda, 2004). Some exceptions are Anderson and Meyer (1993) in the USA and Corak and Chen (2003) in Canada, who use firm data and carry out a disaggregate analysis at firm-level, although they also perform aggregate analyses by regions and sectors. We follow this strand of literature and use the same decomposition method as those authors to develop an understanding of the underlying causes of the Relative Benefit/Tax ratio (RBT) in each industry. In particular, equation (1) breaks the RBT into its constituent components:

$$RBT = \frac{\frac{B_i}{T_i}}{\frac{B}{T}} = \frac{\frac{n_i d_i b_i}{t_i w_i}}{\frac{n d b}{t w}} = \frac{n_i}{n} \frac{d_i}{d} \frac{b_i}{b} \frac{t}{t_i} \frac{w}{w_i} \quad (1)$$

B_i is the total amount of unemployment benefits received by separated workers in industry i ; T_i is the total amount of contributions paid by employers in industry i ; and B/T (which is equal to $\sum B_i / \sum T_i$) is the ratio between benefits and contributions for the country as a whole. The industry contributions are divided by the country-wide Benefit/Tax Ratio (B/T) because it allows a convenient normalization and because the unemployment compensation system account may not be exactly in balance over the period due to different reasons (it may differ from one due, for instance, to changes in unemployment or in benefits). The result represents the excess of benefits over taxes for each industry that would prevail if the overall program were in balance.

In equation (1), n_i represents the total number of benefit claimants in industry i ; d_i is the average duration (in days) of benefit recipient of these claims; b_i is the average daily benefit amount; w_i is the total amount of wages paid in industry i ; and t_i is the average tax rate. Therefore, $n_i d_i b_i$ represents the total amount of benefits paid in a given industry, while $t_i w_i$ is the total premium paid by the employers and employees in that industry. Variables without subscripts represent the corresponding country-wide totals.

As such an RBT greater than one can be attributed to: (a) an excessive number of claimants; (b) a longer unemployment benefit duration; (c) a higher unemployment

benefit amount; and (d) a lower contribution. Since there is no experience rating in the Spanish system, t/t_i equals one. This implies that the value of the last term is governed by the relative earnings in the industry (w/w_i). Industries paying relatively lower wages will make relatively lower contributions, resulting in this term being greater than one and implying the industry is subsidized. Likewise industries paying higher than average wages will make relatively more contributions and the last term in equation (1) will be less than one, implying a tendency for the industry to subsidize.

For each industry and for the country overall, we calculate the average incidence, duration, benefits and contributions using the MCVL data. The ratio of industry to country then gives us the sources of the RBT ratio. Each ratio can be thought of as representing the value for an average firm in the industry, standardized by the value for an average firm in the country overall. We restrict our analyses to a subsample of salary earners and recipients of unemployment benefits registered with the General System of Social Security, aged between 18 and 65, who are not employed in the agricultural sector. Thus, self-employed individuals have been excluded from the sample. We define an observation window for one expansion year 2005 and recession year 2012. This leaves us with a sample of 523,707 salary earners in 2005 (70,152 recipients) and 488,857 in 2012 (116,753 recipients).⁹

Table 1 reports the results of the decomposition of the RBT ratio by industry for 2005 and 2012. The numbers in columns (1) to (4) correspond to the four component ratios given in equation (1), their product being the RBT in column (6). Column (1) reports the sectoral distribution of the pool of unemployment benefits claimants (ratio n_i/n), which represents a proxy of the layoff rate in each industry. Column (2) reflects the duration of the receipt of benefits in each industry relative to the average (ratio d_i/d). Column (3) shows the level of benefits relative to the average (ratio b_i/b). And column (4) reports the relation between the total amount of contributions and the ones corresponding to each industry (ratio tw/t_iw_i). Regarding the latter, for the sake of interpretation, column (5) offers its inverse ($1/(tw/t_iw_i)=t_iw_i/tw$), which can be interpreted as the sectoral distribution of the total amount of contributions. The comparison between columns (1) and (5) allows one to examine whether industries

⁹ It represents a weighted sample of 13,092,675 salary earners in 2005 (1,753,800 recipients) and 12,221,425 in 2012 (2,918,825 recipients).

contribute to the system to the same or different degree in relation to their share of the pool of unemployment benefits claimants. Recall that a number less than 1 indicates that the component is responsible for decreasing the RBT, while a number greater than 1 indicates that the component is responsible for increasing the RBT.

(TABLE 1)

First, we focus attention on the RBT ratio. It is worth noting that “Hotels and restaurants” (2.414) and “Construction” (1.606) are the sectors which were subsidized to a largest degree in the expansion year 2005, followed by “Financial intermediation” (1.307), “Real estate, renting and business services” (1.306) and “Other personal services and households” (1.219). The rest of sectors are subsidizers. We highlight the cases of “Extraction and energy” (0.271) and “Transport” (0.464). “Manufacturing”, “Public administration”, “Education” and “Health” are also relative subsidizers, showing ratios that range from 0.57 to 0.75.

This pattern remains in the recession year 2012, since the subsidized and subsidizer industries do not change in relation to 2005. Nevertheless, the magnitude of the RBT ratios alters substantially, increasing the sectoral dispersion. On the one hand, “Construction”, “Financial intermediation” and “Real estate, renting and business services” exhibit higher RBT ratios in 2012 than in 2005. At the same time, the corresponding ratios for “Hotels and restaurants” and “Other personal services and households” decline. On the other hand, the size of the RBT ratio remains stable in the two major subsidizers and in “Education”, but the ratio of “Manufacturing” shows a dramatic increase and the corresponding to “Public administration” and “Health” a large drop. Finally, it is worth mentioning the case of “Trade”, since it is the only industry which, being a subsidizer though, exhibits a RBT ratio very close to one.

We can go a step further and examine in detail the factors explaining (mechanically) the sectoral RBT ratios and their evolution over time. For instance, “Extraction and energy” presents a low RBT ratio (in 2005 and 2012) because its incidence of unemployment (its contribution to the pool of benefits claimants) is marginal and, although the amount of taxes it pays in relation to the total is also scarce, this amount exceeds its share of the volume of benefits recipients. And this happens in spite of the fact that the duration of the spells of covered unemployment and the level of

the benefits in this industry are higher than the sectoral average. Something similar occurs with “Transport”, although in this industry the duration of unemployment reciprocity is closer to the average.

The opposite case is “Construction”, which exhibits a high RBT ratio in 2005 stemming from a high incidence of unemployment (which means that its contribution to the pool of benefits claimants is relevant -its share is the second largest), a level of benefits above the sectoral average, and an amount of paid taxes which is scarce in relation to its share of benefits recipients, although the duration of unemployment in this industry is below the average. It is interesting to examine the reason behind the dramatic rise of its RBT ratio between 2005 and 2012 (from 1.606 to 2.426). This increase comes from the fact that, although the incidence in the receipt of unemployment benefits (column (1)) and the taxes paid to the system (column (5)) have declined substantially, the latter has dropped more than the former (69% vs. 62%). Another influential factor is the rise of the duration of the spells of unemployment, which has exceeded the sectoral average, so “Construction” has become the industry with the longest average duration.

“Financial intermediation” is somehow different than “Construction”. Taking the year 2005 as reference, the incidence of unemployment and the amount of taxes in relation to the total were low in this industry, although its level and duration of benefits were slightly above the average. However, its share of the entry of claimants into the system has increased substantially (it has been multiplied by five between 2005 and 2012) and, although the paid taxes have risen, they have not increased in the same proportion as the numbers of benefits claimants.

Finally, the behaviour of the underlying factors of the RBT ratio in “Hotels and restaurants” has hardly changed between 2005 and 2012: in both years its high value is explained by the share of recipients of unemployment benefits (which has even increased in that period) and the low amount of contributions in relation to the number of claimants this industry sends to the unemployment compensation system.

5. Effects on unemployment: temporary layoffs

The Spanish unemployment compensation system (like the rest of European countries) does not contain any trace of experience rating in the employers’ contributions as it happens in the USA. In principle, this lack of experience rating

would bring about an incentive effect on firms to adjust to the changes in the demand for goods and services through the use of implicit contracts (and, thus, temporary layoffs) with their employees. When product demand declines employers may separate from part of their workforce, and when it increases again they can rehire same workers previously laid off.

In the case of Spain, lack of experience rating and (seasonal) demand fluctuations may both provide strong incentives for implicit contracts. At the same time, the flexible availability of fixed-term contracts may be a reflection of these incentives since, when they end, no particular costs arise for the employer. In this context, unemployment benefit entitlements may bring about incentives for employers to offer fixed-term instead of permanent contracts, as the end of the contract gives the firm employment flexibility and leaves open the possibility of future rehiring. This would create a strong element of persistent subsidisation that reduces labour costs for unstable industries and firms and increases it for stable ones. The result might be an expansion of the former, which would be subsidised by taxes on the latter.

In what follows we try to document the importance of recalls in labour market transitions and in compensated unemployment in Spain and to shed some light on the interplay between the unemployment compensation system, the widespread use of fixed-term contracts and the layoff–rehire process, focusing our attention on the potential cross-subsidisation of sectors with respect to unemployment benefits. Our prior is that rehiring should be relatively more important in sectors that are subsidized in their use of the benefits system.

For this analysis, we select individuals aged 16–59 (to avoid complications associated with early retirement) whose employment spells finished (whatever the reason: the end of temporary contracts, layoffs, other involuntary reasons or the worker’s own decision). We also limit our sample to wage and salary individuals who work in the non-agriculture private economy (the individuals were registered with the General System of Social Security in their previous job¹⁰) and delete few observations with incorrect information on the date of start or end of employment spells.

¹⁰ Specific regimes like farming and self-employment have different rules for accessing benefits and peculiarities of their employment relationships.

Since each establishment owns an identification code in each province it operates, the database contains an anonymous identification number for the employer associated with every single spell of employment. This means that recalls are identified by whether or not each firm's identification numbers of two subsequent employment spells coincide. This allows one to know whether job losers who went directly to a job were immediately rehired by the same or a different employer and whether workers who had an intervening period of unemployment returned to the same employer or found a new job afterwards. Therefore rehiring is determined in an *ex post* sense – that is, job separations ending in recall – without information on *ex ante* temporary layoffs – that is, those that begin with a person expecting to be recalled. Finally, the availability of information on the contractual arrangement held by the individual in his/her previous job and the labour market status of the worker after the separation makes it possible to indirectly take into account diverse types of labour turnover.

Table 2 provides the basic information regarding the destination of job losers and the share of unemployment that temporary layoffs account for, distinguishing by contractual arrangements in the previous job. The proportion of workers who returned to their previous employer is by no means large. Overall, rehiring accounts for as much as one-third of all spells of employment ending in one year and followed by a spell of unemployment: 36.2 per cent from 2005 to the end of 2007 and 38.9 per cent from 2010 to the end of 2012. The share of recalls also differs across types of contract. In the 2005-2007, this share ranged from 75.9% for permanent per-task contracts to 37.7 per cent for all temporary contracts (more than one-quarter for casual and temporary per-task contracts and nearly two-thirds for other fixed-term contracts; figures not shown). In 2010-2012, that proportion varied from 75.2 per cent for permanent per-task contracts up to 41.7 per cent for all temporary contracts (35-37 per cent in casual and temporary per-task contracts and close to 66 per cent in other fixed-term contracts).

(TABLE 2)

However, this does not imply that these are the portions of unemployment which are accounted for by temporary layoffs. To calculate these shares, it is necessary to estimate the duration of spells and the fraction of total days of unemployment due to rehiring, finding of a new job or other reasons. Because spells of unemployment ending in a recall are generally shorter than spells ending in the finding of a new job (a

bit less than three months vs. more than six months), spells of recall jobs account for 17.8 per cent of total days of UI in 2005-2007 and 16.8 per cent in 2010-2012, while spells of benefits ending in a new job account for 56.9 per cent and 41.9 per cent of total days of UI, respectively. These outcomes are obviously driven by the spells of workers holding temporary contracts since they make up the majority of job losers. In the case of permanent per-task workers in both periods, recalls account for about three-quarters of their spells while they account for about two-thirds of their total days of unemployment. For open-ended contracts, these proportions are significantly lower, as could be expected.

Given the potential relevance of the sectoral and firm size distribution of employment, Table 3 provides the relative incidence of recalls and new job transitions and the duration of each destination by industry (panel A) and firm size (panel B) for benefits recipients. The relative incidence is calculated for each category by dividing the shares of workers making each type of transition (either to their previous employer or to a new job) between the corresponding shares of the overall distribution. Hence a figure greater (lower) than 1 indicates that a given industry or firm size is overrepresented (underrepresented) in a transition when compared to the total. However, it is necessary to take into account not only the incidence but also the duration until recalls take place.

(TABLE 3)

Medium and large companies (the ones with more than 50 employees) and ‘Education’, ‘Health’ and ‘Public administration’ are categories with an overrepresentation of recalls in the total in both periods. The same occurs with ‘Hotels and restaurants’ in 2005-2007 and ‘Trade’, ‘Financial intermediation’ and ‘Real estate, renting and business services’ in 2010-2012. At the same time, durations of recalls are inversely related to employer size and, while some of the previous industries (‘Health’ and ‘Education’) are among those with the shortest recall durations, others (‘Hotels and restaurants’, ‘Real estate, renting and business services’ and ‘Public administration’) display durations above the average. Moreover, the latter three sectors are also heavy users (in terms of volume) of recalls.

6. Conclusions

This piece of research has tried to document and quantify two key drawbacks present in the UI systems lacking experience rating (like those at work in the European countries): the excess of temporary layoffs and the existence and persistence of cross-subsidization across sectors. Therefore, using data for Spain, it has documented the importance of recalls in compensated unemployment and tried to shed some light on the interplay between the unemployment compensation system, the widespread use of fixed-term contracts and the layoff–rehire process, focusing its attention on the potential cross-subsidisation of firms and sectors with respect to unemployment benefits. Our results are as follows.

First, the combination of the extensive use of fixed-term contracts and the fact that the unemployment benefits system is not experience rated, which imply that firms face lower costs for layoffs (at least from the perspective of the financing of the system), seems to facilitate the succession of (short) spells of employment and unemployment benefits and make rehiring more likely. Recalls are very common, more than one-third of job losers who enter unemployment returning to their former employers. Likewise, the mean duration of the spells of unemployment ending in a recall tends to be shorter than the one corresponding to spells of unemployment ending in a new job. Moreover, certain employers (medium and large companies) and sectors ('Education', 'Health' and 'Public administration') are categories with an overrepresentation of recalls in the distribution of transitions from unemployment benefits (the same occurs with 'Hotels and restaurants' (in 2005-2007) and 'Trade', 'Financial intermediation' and 'Real estate, renting and business services' (in 2010-2012)).

Second, the degree of cross subsidisation seems to be large and persistent in the Spanish labour market and concentrates on certain industries with higher labour turnover and temporary employment and with more seasonal product fluctuations. "Hotels and restaurants" and "Construction" are the sectors which were most heavily subsidized in the expansion year 2005, while at the same time "Extraction and energy" and "Transport" stands as the most important relative subsidizers. This pattern remains in the recession year 2012, since the subsidized and subsidizer industries do not change in relation to 2005, although the magnitude of the RBT ratios alters, increasing the

sectoral dispersion. This is in line with previous empirical literature (Genosko et al., 1999; OECD, 2004), which stresses that an unemployment benefits system without experience rating subsidises firms or sectors with high labour turnover and tax firms or sectors with low turnover. It also agrees partially with the evidence available for the USA (O'Leary and Pofatak, 2008).

Overall, these results suggest that there is room for the reform of the way the system is financed, in combination with changes in other labour market institutions. One proposal (Blanchard and Tirole, 2008) would be to transform the uniform payroll taxes into a layoff (or separation) tax so that firms using the system more intensely are the ones paying higher contribution rates. This would make employers internalise the social costs associated with layoffs, reduce excessive job separations and eliminate (or at least reduce) cross-subsidisation across firms and industries. Alternatively, the UI system could be designed to reduce moral hazard problems induced by the possibility to rehire, for instance, by increasing the contribution rates of temporary contracts and decreasing the ones of open-ended contracts. This in turn would help foster the attractiveness of permanent employment to firms.

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Table 2. Distribution of spells and days of unemployment, by types of contract in previous job and spell outcome (UI spells starting in 2005 or in 2010). Spain: MCVL, 2005-2012.

	2005				Total	2010				Total
	<i>New job</i>	<i>Recall</i>	<i>Censored</i>	<i>Total</i>		<i>New job</i>	<i>Recall</i>	<i>Censored</i>	<i>Total</i>	
Open-ended										
%Spells	62.4	4.6	33.0	100	13.6	49.7	6.9	43.5	100	15.3
%Total days	58.9	3.6	37.5	100		41.6	4.4	53.9	100.0	
Mean duration (days)	305.8	251.1	407.6	323.8		264.6	201.3	438.9	315.8	
Permanent per-task										
%Spells	9.6	75.9	14.4	100	7.7	8.5	75.2	16.3	100	7.6
%Total days	16.6	67.7	18.3	100		13.0	66.4	23.1	100.0	
Mean duration (days)	141.4	73.0	125.3	81.9		115.3	66.1	142.9	74.9	
Temporary										
%Spells	47.1	37.7	15.2	100	78.7	34.8	41.7	23.5	100.0	77.1
%Total days	58.9	21.1	19.6	100		44.5	20.9	34.9	100.0	
Mean duration (days)	164.2	73.5	194.3	131.1		151.8	59.7	210.6	118.9	
Total										
%Spells	46.3	36.2	17.6	100	100	35.1	38.9	26.0	100.0	100
%Total days	56.9	17.8	25.3	100		41.9	16.8	41.3	100.0	
Mean duration (days)	192.7	77.0	283.5	157.4		182.2	65.9	314.1	154.2	
<i>Observations (weighted)</i>	830, 725	649, 750	315, 425	1,795, 900		1,243, 150	1,376, 825	921, 450	3,541, 425	
% groups	46.3	36.2	17.6	100		35.1	38.9	26.0	100	46.3

Note: Temporary contracts include temporary per-task contracts, casual contracts and other fixed-term contracts.

Table 3. Relative incidence and duration of exits from unemployment benefits to recall and new job, by industry and employer size (employment spells ending either in 2005 or in 2010). Spain: MCVL, 2005-2012.

Panel A: industry

	2005-2007					2010-2012				
	Relative incidence		Duration (days)			Relative incidence		Duration (days)		
	New job / Total	Recall / Total	New job	Recall	Total	New job / Total	Recall / Total	New job	Recall	Total
Extraction and energy	1.12	0.65	198	109	227	1.14	0.81	196	79	183
Manufacturing	1.06	0.88	209	75	183	1.16	0.49	380	93	329
Construction	1.25	0.67	155	94	147	1.28	0.49	209	109	216
Trade	1.24	0.52	228	130	217	0.88	1.15	157	76	130
Hotels and restaurants	0.85	1.19	186	92	147	1.12	0.93	190	59	162
Transport and communic.	1.08	0.97	217	69	167	1.18	0.68	184	86	185
Financial intermediation	1.22	0.72	169	89	156	0.96	1.11	163	48	128
Real estate, renting and business services	1.06	0.94	177	59	142	0.69	1.22	168	82	129
Public administration	0.68	1.32	209	110	155	0.80	1.39	169	71	119
Education	0.65	1.60	208	38	129	0.49	1.84	145	35	73
Health	0.45	1.97	170	38	80	1.01	1.08	165	55	132
Other services, personal services and housing	0.99	0.96	199	81	163	1.12	0.41	145	102	208
Total			193	77	157			182	66	154
<i>Sample</i>			29,475	22,099	61,958			37,942	40,605	106,657
<i>Observations (weighted)</i>			736,875	552,475	1,548,950			948,550	1,015,125	2,666,425

Panel B: employer size

	2005-2007					2010-2012				
	Relative incidence		Duration (days)			Relative incidence		Duration (days)		
	New job / Total	Recall / Total	New job	Recall	Total	New job / Total	Recall / Total	New job	Recall	Total
0	1.15	0.80	182	82	162	1.25	0.63	191	71	187
1-9 workers	1.18	0.65	210	120	195	1.14	0.76	187	96	181
10-19 workers	1.10	0.79	203	97	178	1.08	0.87	184	81	167
20-49 workers	1.02	0.96	185	75	153	1.00	0.99	171	69	149
50-249 workers	0.88	1.20	190	67	142	0.83	1.25	171	57	127
250+ workers	0.65	1.58	199	61	124	0.59	1.64	169	50	99
Total			193	77	157			182	66	154
<i>Sample</i>			29,475	22,099	61,958			37,942	40,605	106,657
<i>Observations (weighted)</i>			736,875	552,475	1,548,950			948,550	1,015,125	2,666,425

Figure 1. Share of temporary employment in the private sector by employer size (Spain, 1996-2012). Source: Encuesta de Coyuntura Laboral.

