JOB CREATION, JOB DESTRUCTION AND THE DYNAMICS OF SPANISH FIRMS

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This paper concentrates on the measurement and analysis of the job creation and job destruction processes that take place in the Spanish economy. In our study, we use data from the Spanish Social Security Census. Our results reveal striking differences with those obtained by other authors that use different samples of Spanish firms. Furthermore, our results are more consistent with the international evidence. We also obtain additional evidence for Spain which was not available with the data sets used in previous studies. In particular, we obtain evidence concerning the analysis by economic sector, size of establishment and entry-exit behavior.

Keywords: Job flows, firm's turnover, firm's behavior.

(JEL J21, J63, L60)

1. Introduction

Even though, on aggregate, Spanish unemployment rate remains high, at the individual firm level establishments exhibit different volumes of job creation and destruction. These movements cannot be accounted for by aggregate variables. This paper concentrates on the measurement and analysis of the job creation and job destruction processes for the Spanish economy.

The studies of Leonard (1987), Dunne, Roberts and Samuelson (1989), Davis and Haltiwanger (1990, 1992, 1995), and Davis, Haltiwanger and Schuh (1996) have presented a deeper understanding of this phenomenon for the U.S. economy. Similar studies have been done by Baldwin and Gorecki (1992) in Canada, by Blancflower and Burgess (1996) in Great Britain, by Contini and Revelli (1990) in Italy, by Boeri and Cramer (1990, 1992) in Germany, by Salvanes (1995) in Norway and by Abowd, Corbel and Kramarz (1995) in France. Baldwin, Dunne and Haltiwanger (1998) have also compared the processes of job creation and job destruction between Canada and the U.S.

The studies cited above present some interesting results. For example, in the U.S. and most other countries where the studies were conducted, gross job creation and destruction substantially exceed the corresponding net changes in employment, a phenomenon which varies with firms' characteristics such as plant size. Also, in most of these studies, job destruction is much more cyclically sensitive than job creation.

The papers of Dolado and Gómez (1995), García-Serrano and Malo (1998) and Ruano (1997) have tried to analyze these issues for the Spanish economy. Dolado and Gómez estimated the gross job creation and destruction flows for the Spanish private manufacturing sector using a sample that contains annual data on an average of 1,169 firms for the period 1983-92. The analysis of García-Serrano and Malo is based on a quarterly sample of 737 firms from 1993 to 1994. Ruano uses an annual sample of industrial firms that, on average, has 1922 firms for the period 1990-95. These studies try to provide evidence on the extent of labor turnover and the relative importance of its components measuring both flows of positions and flows of workers through the positions.

Nevertheless, these papers present several limitations linked to the data samples used to develop their empirical analysis. First of all, the three studies are based on samples of firms that are not representative of the whole population of firms in the economy. In the case of Dolado and Gómez, the database from which their sample is obtained did not follow any statistical criteria to represent the Spanish population of firms. In fact, larger firms are oversampled, with an average size of 247 employees. In the case of García-Serrano and Malo, they restricted their sample of firms to those having 500 or more workers, being the average size firm on the sample 1,324 workers. In Ruano, large firms are over represented as well. The sample's average number of firms

with less than or equal to 200 workers is 1,283, while the average number of firms with more than 200 workers is 639. As a consequence, neither Dolado and Gómez or García-Serrano and Malo were able to carry out analysis regarding size of establishments; and Ruano can only do it partially (firms smaller than 200 workers versus firms bigger or equal to 200 workers)[1].

In addition, neither Dolado and Gómez or García-Serrano and Malo are able to account for the job creation and job destruction that result from the entry and exit behavior of firms in the economy; even though Ruano tries to do it with her sample. As shown by Davis and Haltiwanger (1990) and Davis, Haltiwanger and Schuh (1996), among others, this is an important part of the job reallocation process. Finally, none of the works mentioned above are able to study the behavior of firms belonging to different sectors of the economy. For example, in Dolado and Gómez, and Ruano, the analysis is aimed at the manufacturing (industrial) sector, ignoring construction and services. In the case of García-Serrano and Malo, the small size of the sample prevents from any analysis at the sector level.

All the above suggest that the results of those analyses for the Spanish economy as a whole, and particularly for the manufacturing sector, may drive to misleading conclusions about the behavior of "all" Spanish firms. This is a relevant question since any sensible employment policy should be based on a good understanding of firms' behavior.

Here, we use quarterly firm-level data from the Spanish Social Security Census (*Fichero de Cuentas de la Seguridad Social*), from the first quarter of 1993 to the first quarter of 1995. These data set records of every change occurring in the number of workers at the firm level. Our data set contains the whole population of establishments that belongs to the private sector and have more than five workers, excluding the agricultural sector. We are aware that the short data period do not allow us to study any cyclical behavior of the economy. Moreover, we do not have information on the type of contract that workers have,

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[1] Ruano explains that the distinction between large firms (with more than 200 workers) and "small" firms (with less than or equal to 200 workers) is needed given the fact that small firms are under represented in her sample. She claims that both subsamples are then representative. That is the reason why Ruano does not report aggregate job flows for her whole sample In addition, Ruano reports data by type of contract (temporary vs. permanent) These two reasons make our comparisons with her results more difficult. This should be kept in mind when interpreting our references to Ruano's results throughout the paper

which prevent us from studying the different evolution of workers with permanent or temporary contracts. But again, the main purpose of this paper is to emphasize the risk of extrapolating results from samples built with dubious statistical criteria.

Our results reveal striking differences with those obtained for Spain. For example, in our case the average annual gross job flow is 31.1 percent for the whole economy and 25 percent for the manufacturing sector, which differs with the 7.1 percent obtained by Dolado and Gómez for their sample of manufacturing firms. The average quarterly gross job flow is 2.8 percent for 1994 in García-Serrano and Malo, while in our case is 16.1 percent for the whole economy, 11.6 percent for the manufacturing sector, and 5.4 percent for firms of 500 or more employees (4.2 percent if we concentrate only in the incumbents behavior), those analyzed in their paper. Ruano reports, for workers under permanent contracts, average annual gross job flows of 15.7 and 9.7 percent in manufacturing for companies of 200 or less workers and for companies of more than 200 workers, respectively. She also reports, for workers under temporary contracts, average annual gross job flows of 49.1 and 40.5 percent in manufacturing for companies of 200 or less workers and for companies of more than 200 workers, respectively.

Moreover, we are able to obtain new additional results. As in studies made for other countries, gross job creation and destruction substantially exceed the corresponding net changes in employment, a phenomenon that varies with characteristics such as economic sector or plant size. In that sense, the average annual gross job flows are 25, 63.1 and 28.6 percent for manufacturing, construction and service sectors respectively. It also ranges from 52.7 percent in establishments between 6 and 19 workers, to 14.5 percent in establishments with more than 500 workers.

In addition, we are able to differentiate job wins and loses of establishments from two different sources: expansion and contraction of incumbents, and entry and exit of firms. Surprisingly enough, entrants and exiting firms account for almost the same fraction of job creation and destruction than incumbents.

The rest of the paper is organized as follows. Section 2 includes the definitions, a description of the data and some measurement issues. Section 3 discusses the results. Finally, we summarize our findings in section 4.

2. Definitions, data and measurament issues

We start this section defining our measures of gross and net job flows[2]. Let x_{it} be the number of employees of any establishment i at time t. Therefore:

· $x_{it-1} = 0$ and $x_{it} > 0$ for an establishment that started between $t-1$ and t.

· $x_{it-1} > 0$ and $x_{it} = 0$ for an establishment that has been closed down within the same time period.

For any aggregate (e.g. the whole economy, a sector, an industry, a region or a group of plants belonging to the same size cell in the base year) of establishments E, the gross and net job flows are given by:

$$GROSS_t(E) = \frac{\sum_{i \in E} |x_{it} - x_{it-1}|}{\sum_{i \in E} x_{it-1}} \qquad [1]$$

$$NET_t(E) = \frac{\sum_{i \in E}(x_{it} - x_{it-1})}{\sum_{i \in E} x_{it-1}} \qquad [2]$$

In order to gain more information about the separate behavior of incumbents and entrants, the above measures can be decomposed in terms of the following rates:

i) $POSI$ (expansion rate) measures the pace of gross job creation across incumbents only:

$$POSI_t(E) = \frac{\sum_{i \in E^+}(x_{it} - x_{it-1})}{\sum_{i \in E} x_{it-1}} \qquad [3]$$

where $E^+ = \{x_t \in E \text{ s.t. } x_{t-1}, x_t > 0 \text{ and } x_t > x_{t-1}\}$.

ii) $NEGI$ (contraction rate) measures gross job destruction due to the decline of pre-existing units:

$$NEGI_t(E) = \frac{\sum_{i \in E^-} |x_{it} - x_{it-1}|}{\sum_{i \in E} x_{it-1}} \qquad [4]$$

where $E^- = \{x_t \in E \text{ s.t. } x_{t-1}, x_t > 0 \text{ and } x_{t-1} > x_t\}$.

Hence, $POSI_t$ and $NEGI_t$ record only changes in the size of firms with some positive employment at both $t-1$ and t.

[2] Here, we use the definitions on Boeri and Cramer (1990 and 1992).

iii) *POSE* measures gross job creation associated with the entry of new firms:

$$POSE_t(E) = \frac{\sum_{i \in E^e} x_{it}}{\sum_{i \in E} x_{it-1}} \qquad [5]$$

where $E^e = \{x_t \in E \text{ s.t. } x_{t-1} = 0 \text{ and } x_t > 0\}$.

iv) *NEGE* measures gross job destruction associated with the exit (closure) of firms:

$$NEGE_t(E) = \frac{\sum_{i \in E^d} x_{it-1}}{\sum_{i \in E} x_{it-1}} \qquad [6]$$

where $E^d = \{x_t \in E \text{ s.t. } x_{t-1} > 0 \text{ and } x_t = 0\}$.

Finally, POS_t is defined as the sum of gross job gains associated with expansions of the remaining units and the entry of new establishments. Similarly, NEG_t is defined as the total gross job losses induced by shrinking units and exit processes. Therefore, for any set of establishments E:

$$GROSS_t \equiv POS_t + NEG_t \equiv \qquad [7]$$
$$(POSI_t + POSE_t) + (NEGI_t + NEGE_t)$$

$$NET_t \equiv POS_t - NEG_t \equiv \qquad [8]$$
$$(POSI_t + POSE_t) - (NEGI_t + NEGE_t)$$

In addition, we define two alternative measures in order to differentiate the net job changes associated with expansions and contractions of remaining units, $NETI_t$, and the net job changes induced by establishments entering and exiting the census, $NETE_t$. They are defined as follows:

$$NETI_t = POSI_t - NEGI_t \qquad [9]$$

$$NETE_t = POSE_t - NEGE_t \qquad [10]$$

Our measures of job reallocation are similar to those proposed by Davis and Haltiwanger (1990), except for the fact that we divide establishment-level changes by total employment whereas Davis and Haltiwanger use the average of employment between $t - 1$ and t.

The measures of gross job reallocations such as the ones we present here should be interpreted as labor demand concepts. The focus on establishment-level outcomes makes possible, inter alia, to assess what

lies behind aggregate employment fluctuations, and to analyze in some detail the nature of shifts occurred in the structure of employment opportunities.

The data used for this analysis are from the *Fichero de Cuentas de la Seguridad Social (FCSS)* of Spain for the period covering from the first quarter of 1993 to the first quarter of 1995. These data are collected via the Social Security System that compels employers to report every change occurred in the number of workers. There are legal sanctions for misreporting, which ensures that the FCSS is permanently updated. The census covers all dependent employment in plants[3] of more than five workers in the private sector, excluding the agricultural sector. The census covers all Spanish territory except Ceuta and Melilla.

Several issues have to be explained regarding the data. Individual plants belonging to the same company are identified as independent units if they are located in different provinces[4]. This means, in the case of companies owning only one plant in each province, that firm mergers or acquisitions which simply change the name of the firm owning that plant will not be imputed as plant entry and exit[5]. However, it must be noticed that the number of people affiliated to the Social Security System does not correspond with the number of workers, since each worker is counted as many times as the number of labor activities she undertakes.

Plant openings and closures are identified by comparing the number of employees of each individual plant at different points in time. The information contained in the census includes. an identification number for the plant, which allows to track its behavior; the region and industry[6] it belongs to; and the number of workers corresponding to

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[3]We will use the terms plant and firm interchangeably

[4]In some cases, the census reconstructs the dispersion of working places in a province.

[5]The reference unit in the data base is the *social security account* (cuenta de cotización) which is also the basic unit of the FCSS. This unit consists of the collective of workers of a same firm, whose laboral activity is performed within the same province These collective of workers is associated to the employer inscription number in the Social Security System. Even though, conceptually, there is no identity between establishment or job center and social security account, in practice both concepts do coincide most of the time

[6]There are 38 industries and 17 regions in which each plant could be included according to its productive activity and the place where the plant is located respectively For information regarding industry and regional plant behavior see Galdón-Sánchez (1995).

each firm. However, we were not provided with information regarding the kind of contract workers have in each case.

The use of this data base entails several advantages. The first one is that, given that we have the population of establishments with more than 5 workers, we have a "representative" amount of firms not only for the whole economy, but also by economic sector and by size of establishment[7] (see Table 1).

In Table 1, we summarize the basic characteristics by firms and employees of our data base. We also report quarterly data by employees for the whole economy. This allows comparisons regarding how representative our data set is. By firms, the data reported are the total number of firms in each census, their mean size, and their distribution by size and economic sector. By employees, the data reported are the total number of employees in each census and their distribution by size and economic sector. For the whole economy, we report quarterly data on total employment and its distribution by economic sectors from the Spanish Labor Force Survey (*Encuesta de Poblacion Activa*, EPA). As it can be seen, the distribution of employment by sector in the total economy and in our census are comparable. This makes our sample representative.

We are going to exploit all this information analyzing the behavior of all those aggregates (total economy, economic sectors, and size groups). Moreover, since we are able to account for the entry and exit flows of firms in the economy, our study can control for the job creation and job destruction resulting from such behavior. However, there is a bias that must be borne in mind when analyzing the results reported in our study.

According to the definitions that appear at the beginning of this section, entrants are establishments which having no dependent employees at $t - 1$, have some at t. Similarly, the exiting units are establishments which had some registered workers at $t - 1$, but no dependent employees at t. Given that the only way to control for this fact is to verify if the establishments are in the census or not, and knowing that only those establishments with 6 or more employees would appear

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[7]We divided our data in three sectors. Each sector corresponds to the following 2-digits CNAE classification numbers (in parenthesis)· manufacturing (10 to 49), construction (50) and services (61 to 95) Regarding size, we grouped establishments in accordance with their number of employees· small firms(6-19), medium-size firms(20-99), large firms (100-499) and largest firms ($\geq$ 500).

TABLE 1
Census vs. Economy

	I·93	II·93	III·93	IV·93	I:94	II:94	III:94	IV 94	I 95
By firms in the census									
Total number of firms	235,705	234,218	219,095	224,322	218,523	220,165	220,541	220,426	218,531
Mean size of firms*	24.50	26.10	27.16	26.47	26.56	26.59	26.87	26.78	26.75
Distribution by sector(%)									
Manufacturing	26.42	28.18	31.31	28.13	28.10	27.63	27.10	27.59	27.64
Construction	15.25	15.04	16.65	14.84	14.54	14.70	14.58	15.19	14.98
Services	58.33	56.78	52.04	57.03	57.36	57.67	57.79	57.22	57.38
Distribution by size(%)									
6-10	76.99	74.82	74.30	74.61	74.48	74.27	74.30	73.99	74.05
20-99	20.05	21.91	22.30	22.02	22.13	22.33	22.25	21.56	22.51
100-499	2.59	2.87	2.93	2.97	2.98	3.00	3.03	4.05	3.03
500	0.37	0.40	0.47	0.40	0.41	0.40	0.42	0.40	0.41
By employes in the census									
Total number of employees	5,794,634	6,115,748	5,951,911	5,930,218	5,805,897	5,855,687	5,928,001	5,903,704	5,846,780
Distribution by sector(%)									
Manufacturing	31.56	32.91	36.50	32.52	32.21	31.88	31.16	31.90	31.75
Construction	11.24	10.70	11.75	10.38	10.20	10.27	10.43	10.75	10.66
Services	57.20	56.39	51.75	57.10	57.59	57.85	58.41	57.35	57.59
Distribution by size(%)									
6-19	30.21	28.27	27.08	27.81	27.65	27.53	27.24	27.26	27.35
20-99	30.41	31.16	30.33	30.98	31.05	31.30	30.99	31.49	31.47
100-499	20.65	21.61	21.25	22.18	22.22	22.21	22.35	22.54	22.34
500	19.00	18.96	21.34	19.03	19.18	18.96	19.42	18.71	18.84
Whole economy**									
Total number of employees	10,661.51	10,655.08	10,609.35	10,541.75	10,426.28	10,564.04	10,667.74	10,658.64	10,719.94
Distribution by sector(%)									
Manufacturing	24.23	23.99	23.68	23.57	23.65	23.35	23.17	23.34	22.93
Construction	10.54	10.32	10.17	9.87	9.62	10.06	10.11	10.23	10.44
Services	65.23	65.69	66.15	66.56	66.73	66.59	66.72	66.43	66.63

*Size in number of employees
** Agricultural sector not included Data in thousand employees from the Spanish Labor Force Survey (Encuesta de Población Activa)

on it, no matter how many employees they had before; some over-statements regarding actual plant turnovers can take place. Assuming there is no misreporting due to all the legal implications stated above, plants with 6 to 19 employees are the most likely candidates to show this behavior since they are closer to the minimum of 6 employees required to appear in the census. That is, an establishment having 6 workers in period $t-1$ will disappear from the census in t if it fires a worker. This, of course, doesn't mean that the establishment has closed. The establishments that disappear at least once from the census in the period of study accounted on average for about 5 percent of the total number of reporting plants[8]. This 5 percent of reporting plants represents, on average, 3.5 percent of the total employment covered by our census. Between the 70 and the 75 percent of that 5 percent of reporting plants belong, on average for the period considered, to the bigger risk group, i.e. firms of size between 6 and 19 workers[9].

3. Results

In this section we summarize the results obtained in our analysis First, we review the basic facts found in our study for the Spanish economy. Second, we analyze the variations that suffer our results across economic sectors. Finally, we present the different results found by size of establishment.

3.1 Basic facts

Table 2 reports the pattern of quarterly and annual job flows for the Spanish economy[10]. The first striking result is the difference between

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[8] "To disappear at least once" from the census means that a company appears in the census with more than five employees at t, disappears at t+n, and shows up again with more than five employees at t+n+p Bias of this sort are rather common in the literature. See, for example, Boeri and Cramer (1990 and 1992); Dunne, Roberts and Samuelson (1989), Abowd, Corbel and Kramarz (1995); Davis, Haltiwanger and Schuh (1996) and many others

[9] This bias also appears when we do our size analysis For example, an establishment that had 500 workers in period $t-1$ and that, therefore, was registered as a firm in the fourth of our groups (500 or more workers) will disappear of that group and go to the third (between 100 and 499 workers) in t if it fires a worker Therefore, when doing the size analysis. we should talk about "entry to" and "exit from" our groups of reference, but we have to be cautious extracting conclusions about the fate of the firm.

[10] Notice that Spanish economy here means the sum of manufacturing, construction and services sectors. Agriculture and the public sector are not included in this analysis.

the NET and GROSS reallocation rates, which clearly shows that much information about labor market dynamics is lost when only net changes are considered.

TABLE 2
Aggregate Job Flows

	POSI	NEGI	POSE	NEGE	POS	NEG	NETI	NETE	NET	GROS
Quaterly										
II·93	3.94	4 15	3 21	3.59	6 70	7.74	-0.66	-0.38	-1.04	14.44
III:93	8.36	4 11	7 24	14 26	15 60	18 37	4.25	-7.02	-2 77	33 97
VI·93	5 10	1069	16 85	11 45	21 95	22 14	-5.59	5 40	-0 19	44 09
I.94	3 16	4 63	3.21	3.98	6.37	8.61	-1 47	-0 77	-2.24	14.98
II·94	4 10	3 80	3.59	3.03	7.69	6 83	0 30	0.56	0 86	14.52
III:94	5.29	3 86	3 27	3 48	8 56	7.34	1.43	-0 21	1 22	15 90
IV:94	4 79	5 51	4.38	4.07	9.17	9 58	-0 72	0.31	-0.41	18 75
I·95	3 64	4.42	3 57	3 76	7 21	8 18	-0.78	-0 19	-0 97	15.39
Average	4.74	5.15	5 66	5.95	10.41	11.10	-0 41	-0 29	0.69	21 51
Annual										
1993	5.12	8.28	7.37	10.27	12 49	18 55	-3 16	-2.90	-6.06	31 04
1994	6 65	6 76	9.29	8.47	15.94	15.23	-0 11	0 82	0.71	31.17

During the period considered, between 6.8 and 22 1 percent of jobs were destroyed every quarter, while job creation was between 6.7 and 21.9 percent. The evolution of net changes reflects that the period under study corresponds to the end of a period of recession. It is interesting to point out that, even in the midst of a recession, the job creation rate of the Spanish economy was never below 6 7 percent. However, the net employment variation was never over -2.7 percent, which corresponds to the third quarter of 1993.

A very important issue is the analysis between entrant/exiting firms and incumbent firms. While the magnitude of entrants and exiting firms could reflect the degree of dynamism of the economy, most of the employment growth is attributed to medium and large incumbent firms. Surprisingly enough, entrants and exiting firms account for almost the same fraction of job creation and destruction than incumbents. The net behavior of incumbents accounts on average for -0.4 percent while the net behavior of entering and exiting firms does it for -0.3 percent.

The annual data also reflects the large magnitude of gross flows. Whereas gross flows were around 31 percent, net flows were between 0.7 and -6 percent. The discrepancy between annual and quarterly job flow rates reflects the lower persistence of plant level employment measured

over three months periods. Most of the quarterly changes are reversed afterwards. Moreover, we already mentioned that a lot of these quarterly figures reflect the fact that some establishments went from 6 or more workers to less than 6 during the period of our study, disappearing from the census but not necessarily resuming their activity.

The abnormally large flows for the third and fourth quarters of 1993 can be partly explained by the sharpening of the recession in the Spanish economy during 1993. It is also noticeable that these job gross flows appear very stable in the remaining quarters covered by our data set[11]. Another aspect that should be carefully considered is that part of the observed behavior captures the fact that Spanish firms were using temporary contracts as a way to partially overcome the rigidities of the Spanish labor market.

In order to evaluate the importance of this effect, all the quarterly census were filtered for firms that were entering and exiting during our period of study. We also took away the census corresponding with the third quarter of 1993 since, being an outlier, it obviously introduces sharp discrepancies in the analysis. More precisely, these discrepancies showed up in the calculation of those quarterly ratios in which this census is involved, i.e. the third and fourth quarterly ratios of 1993. The result of this experiment shows that the participation of incumbents in gross job flows is, on average, 5.8 percent while entrant and exiting firms only account for 4.1 percent. The fact that entrant and exiting firms account for almost the same fraction of job creation and destruction than incumbents remains even when the data are filtered. However, the filtered data show that incumbents have higher gross job flows, something that can also be seen in the unfiltered data if we concentrate on the values of the ratios in which the census of the third quarter on 1993 is not involved (i.e. "all" but the third and fourth quarterly ratios of 1993).

Our results clearly show that the studies of Dolado and Gómez (1995), García Serrano and Malo (1998), and Ruano (1997) underestimated the selection bias problem in their samples. Moreover, a brief international comparison shows that our results keep more resemblance with the international evidence. Our 25 percent result of average annual gross job flows for the manufacturing sector is closer to the 19.4 for

[11] Please notice that this "perverse" effect that over certain measures has the third quarter of 1993 census is consistent across sizes and sectors, even though not always with the same intensity.

the U.S.A., the 20.5 for Canada or the 29.3 for Australia, as reported by Davis, Haltiwanger and Schuh (1996) or Bertola and Rogerson (1997). Obviously, if we had a longer series we could be more accurate, smoothing the cyclical fluctuations. However, if we take a look at the larger firms, (see Table 4b), we see that the average annual gross job flows due to the incumbents behavior (the only ones really analyzed in Dolado and Gómez) is 8.2 percent, closer to the 7 1 percent reported by Dolado and Gómez for large manufacturing firms, and the 9.7 percent reported by Ruano for firms larger than 200 employees (for workers under permanent contracts). Similar considerations could be made for the quarterly results of García Serrano and Malo.

3.2 Variation across economic cectors and size of establishments

This section gathers the annual and averaged quarterly results for three economic sectors of the economy: manufacturing, construction and services; and four size groups depending on the firms' number of employees: small firms (6-19), medium-size firms (20-99), large firms (100-499) and largest firms (≥ 500)[12].

TABLE 3
Job Flows by Sector

	POSI	NEGI	POSE	NEGE	POS	NEG	NETI	NETE	NET	GROS
Manufacturing										
Quaterly										
Average	3 95	4.61	3.09	3 63	7.04	8 24	-0 66	-0.54	-1 20	15 28
Annual										
1993	3 72	8 89	4.64	8.51	8.36	17.40	-5 17	-3 87	-9.04	25 76
1994	5 77	5 88	5 88	6.78	11 65	12.66	-0 11	-0 90	-1 01	24.31
Construction										
Quaterly										
Average	9 10	9 15	10 48	11.22	19 58	20.37	-0.05	-0 74	-0.79	39 95
Annual										
1993	8 67	13.48	15.27	22.87	23.94	36 35	-4 81	-7.60	-12.41	60 29
1994	14 03	10 79	21 91	19 27	35.94	30 06	3 24	2.64	5.88	66.00
Services										
Quaterly										
Average	4.40	4.68	6.40	6.29	10 80	10 97	-0.28	0 11	-0 17	21.77
Annual										
1993	5 24	6 88	7.44	8.83	12 69	15.71	-1.63	-1 39	-3.02	28.40
1994	5 84	6 54	8 96	7 51	14 80	14.05	-0 70	1.45	0.75	28.85

[12] We do not attempt here to do an exhaustive analysis of establishments size, we just want to show that establishments of different size behave in a different way.

In Table 3, we present the job flows statistics at the sector level associated with expansion and contraction of existing establishments, and with the entering and exiting of firms. In Table 4, we summarize the job flows statistics grouping establishments by size.

TABLE 4
Job Flows by Size of Establishment

	POSI	NEGI	POSE	NEGE	POS	NEG	NETI	NETE	NET	GROS
Small firms										
Quaterly Average	6 99	4 45	12.16	13.04	19.15	17.49	2 54	-0 88	1.16	36 64
Annual										
1993	7 39	6 79	14.81	22.17	22.20	28 96	0 60	-7 36	-6.76	51.16
1994	9.75	5.69	15.59	19.26	29.34	24.95	4.06	0.33	4 39	54.29
Medium-size firms										
Quaterly Average	5.41	6.56	4 79	4 96	10.20	11.52	-1 15	-0.17	-1.32	14.12
Annual										
1993	6.07	10.14	5.76	7.46	11.83	17.60	-4.07	-1.70	-5 77	29 43
1994	7.71	8.09	7.59	6.67	15.30	14.76	-0.38	0.92	0 54	30 06
Large firms										
Quaterly Average	3 58	5.61	3 00	2.96	6.58	8 57	-2 03	0.04	-1 99	15 15
Annual										
1993	4 19	8 73	3.66	4 07	7 85	12 80	-5.54	-0.41	-4.95	20 65
1994	4 96	7 09	3.81	3.46	8.77	10 55	-2 13	0 35	-1 78	19.32
Largest firms										
Quaterly Average	1.81	3 35	0 99	0 87	2.80	4 22	-1 54	0.12	-1.42	7.02
Annual										
1993	1 33	6 95	3 21	4.29	4.54	11.24	-5.62	-1.08	-6.70	15.78
1994	2 41	5.75	3 49	1 62	5.90	7 37	-3 34	1.87	-1 47	13 23

At the sector level, the results reproduce again the fact that gross job creation and destruction substantially exceed the corresponding net changes in employment. The magnitude of gross job reallocation is surprisingly high in the three sectors, being specially remarkable in the construction sector, where it involves an average of 39.9 percent of total jobs. The results are even stronger when annual values are considered. Annual gross flows are particularly large in the construction sector, with more than 60 percent in the two years considered. Given the seasonal and strongly cyclical nature of the activities in this sector,

the fact that its gross flow is larger than the gross flows in the other two (around 25 percent in manufacturing and 28 percent in services) was to be expected.

Although the gross job reallocation flows are obviously important for all firms' sizes, their average values and their ranges of variation decrease with size. Small firms experienced larger gains and losses associated with the entry and exiting of firms than those experienced with the expansion and contraction of establishments. Both gross job flows associated with incumbents behavior and those associated with the entry and exit behavior of firms also decrease with firm size.

4. Conclusions

This paper measures and analyzes the job creation and job destruction processes for the Spanish economy. While the samples used in previous studies give just a partial view of those processes, our data set, providing the whole population of firms with more than 5 workers, allows us to shed a complete description of the phenomena. This fact also allowed us to revise some of the conclusions obtained in previous studies. First of all, our results show that the behavior of Spanish firms is closer to the behavior showed for other Western economies. In this sense, the extrapolation of the result obtained from the analysis of large firms to the whole economy is misleading, underestimating the size of job flows.

We also offer evidence of the importance of the entry and exit processes, something totally ignored by previous studies. Moreover, not only size, but also a sectorial analysis is important if we want to understand the behavior of the whole economy. We performed such analysis and our results support the idea of large differences across sectors.

An obvious limitation of this analysis is the lack of availability of a longer time series for the data. This limitation prevents us from studying the cyclical behavior of these flows and from attempting a long run analysis. It also makes difficult to follow the reaction of firms to concrete policies adopted by different governments. But, in spite of this limitation, the importance of these results for the evaluation of policies is clear: with such large behavioral firms differences across sectors, sizes, industries or regions[13] the effect of general employment policies should be carefully considered.

[13] For a deeper analysis of industries or regions see Galdón-Sánchez (1995).

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Resumen

Este artículo estudia los procesos de creación y destrucción de empleo de la economía española usando datos del Fichero de Cuentas de la Seguridad Social (FCSS). Nuestros resultados revelan importantes diferencias con los resultados obtenidos por otros autores que utilizan distintas muestras de empresas españolas. Además, nuestros resultados son más consistentes con la evidencia internacional. También obtenemos evidencia adicional para España que no estaba disponible en estos estudios. En particular, resultados concernientes al análisis por sector económico, tamaño de los establecimientos, y comportamiento de entrada y salida de los mismos.

Palabras clave: Creación y destrucción de empleo, comportamiento de las empresas españolas