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JOB FLOWS IN CHILE

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Resumen

Este artículo está dedicado a la construcción y uso econométrico del primer panel laboral que permite estudiar las separaciones y apareamientos en el mercado laboral chileno. La principal característica del artículo es que es la primera vez que se muestran series consistentes y representativas de creación y destrucción para la economía Chilena. Se encuentra que al rededor de u tercio de los trabajadores es rotado en el mercado laboral chileno cada trimestres. El articulo muestra evidencia de fragilidad laboral diferencial a través de diferentes tamaños de empresas. Se muestra que la rotación de trabajadores es mucho más alta entre las empresas de menor tamaño. Se muestra que la separación de trabajadores de las empresas por causa de quiebra es mucho más probable entre empresas más pequeñas, pero que este efecto diferencial ocurre solamente con posterioridad a las crisis. Caracterizamos también la identidad geográfica y sectorial de los lugares de trabajo más frágiles y mostramos que ello ocurre en la construcción, el comercio y los servicios, lo que es consistente conque la mayor fragilidad y altos niveles de rotación se encuentre en los sectores urbanizados del país.

Palabras Clave:

Mercado laboral, trabajadores, rotación.

Abstract

This paper is devoted to the construction of the panel and econometric use of the first labor panel database to study workplace creation and destruction in Chile. For local interest, the main feature of the paper is that it is the first time that representative and consistent series of creation and destruction are made available for the Chilean economy. For general interest, the main feature of the paper is the estimation of the economic relevance of workplace fragility in different sizes of firms. Once we control for sector and date dummies as well as for the characteristics of workers it seems clear that small firms are much more likely to destroy jobs and less likely to create them. The steady state of jobs in smaller firms, it seems, is generated by the mechanics of firm creation in the economy: new firms have to start small. But, controlling for that, the jobs and workplaces in these firms are more fragile. We also take advantage on a question on job destruction of the survey to show that small firms are more likely to go bankrupt and we show how this differential effect significantly increased after the Asian Crisis. We characterize the geographic and sector identity of the most fragile workplaces. We find them to be in the construction, commerce and services sectors and hence mainly in highly urbanized regions of the country. This emphasizes the importance (maybe even beyond the Chilean experience) of looking at fragility in sector representative databases.

Keywords:

Job, workplace.

Job Flows in Chile*

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25th May 2007

Abstract

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1 Introduction

In this paper we document the effects on Chilean creation and destruction of firms of the Asian Crisis of 1998, from the viewpoint of job creation and destruction. I will do this by using a new database consisting of a moving panel of workers constructed from the National Employment Survey (NES) of the Chilean National Bureau of Statistics (Instituto Nacional de Estadsticas, INE). The most innovative aspect of this section lies in the construction and use of this new information drawn from the NES of Chile, which allows us to estimate job creation and job destruction for the very first time, since it is the very first panel-like database of this magnitude (in time and observations) for Chile.

In this data set the object we will analyze is "jobs" or "workplaces" rather than firms. One advantage is that jobs are defined subjectively by surveyed workers rather than legally by a government agency. This allows us to capture much smaller and potentially more fragile firms, as well as firm-like arrangements between economic agents. A serious limitation that this data set has for the purposes of this dissertation is that it has very few characteristics of these firms: only a very coarse measure of size and the economic sector. Still, we will attempt to further our understanding of economic churning and fragility in Chile by squeezing out as much information as we can from this database, as the following sections will show: this turns out to be quite a lot.

The paper is organized in the following way: Section 2 discusses the data, its origins, advantages and limitations. It also presents the basic stylized facts on Chilean job flows, more of which can be found in Appendix **??**. Section 3 presents our main results on the differential propensity of small firms to the destruction and creation of jobs, as well as bankruptcy (which is a surprising bonus that we get out of this database). Section 4 tries to characterize the workers that are involved in this workplace fragility and the sectors of the economy where it happens. We end with the conclusions in Section 5. Also Appendices **??** and **??** contain detailed descriptions of the data and extended results that correspond to this chapter.

2 Stylized Facts on Job Flows

The first attempt to construct a panel from the INE database can be found in (Bravo et al. 2005) (we will call by the acronym BFL). In that version of the paper the series of job creation and destruction are in quarterly frequency, while now we have been able to disentangle them into a monthly frequency. Hence, one of the main advantages of the INE-BFL panel is that we have 111 points in time (37 quarters from 1996.1 to 2005.1 times 3 months per quarter) from which we can derive 108 changes. Also, the time span includes the Asian Crisis, so we can infer some of the effects that this mayor macroeconomic event had on the most fragile events. As it turns out, from

the viewpoint of smaller firms we have an additional relevant macroeconomic event: the international liquidity squeeze that followed 9/11.

2.1 The Data Set

On average for a pair of consecutive quarters we have data entrances for 72,000 individuals interviewed from 19,000 households (in a country with a labor force of roughly 6.3 million).[1] The data is representative of the Chilean national job market and is properly weighted when calculations are made.[2]

Using this type of data has advantages and disadvantages in comparison to the traditional approach of using data from manufacturing surveys. The first advantage, of course, is representativeness. The broadest definition of manufacturing accounts for just over 17% of Chilean GDP, 6% of Chilean firms and around 13% of employment. This survey allows us to observe all sectors of the economy, not only manufacturing. A second mayor advantage is that the survey places the definition of "what is a firm" or "what is a job" in the hands of the surveyed household, while industrial surveys rely on legal definitions of what is a job, what is a firm and what is a plant. For example, in this survey, informal firms (even ilegal), micro firms and self employed workers are surveyed as job creators (although we will not count self employment as jobs). The main disadvantage of using this type of data is that there will be no financial information on the firms so we will have to use size as a proxy for financial constraints. Moreover, in this particular case we will only dispose of a very coarse measure of size. We will be able to separate the database into self employed jobs (that we will not count), jobs in firms with up to five workers (that we call micro), jobs in firms with five to ten workers (that we call small) and jobs in firms with more than ten workers (that we call medium to large). Modern definitions of what is called a micro firm are based on sales rather than workers, but it used to be frequent to call micro a firm with less than 10 workers. In this database we basically two types of micro firms and the rest. In all the results of this chapter we group the 0-5 workers category with the 5-10 workers category and call "smaller" firms those that have less than 10 workers.

The INE by law deletes the identities of the individuals of each household that is interviewed, but keeps the addresses. Each household is interviewed six times in a period of eighteen months. We follow (Blanchard & Diamond 1990) and recover

[1] The original database has interviewes to approximately 32,000 households per quarter and as data entrances for approximately 120,000 individuals. As Appendix **??** shows, the loss of data due to the splicing of two quarters and the extraction of the short panel is approximately 60%, but the resulting unemployment rate for Chile on the restricted data set is almost identical to the original and official number for the country. This is a good sign that the inevitable biases introduced by our methodology are not so significant as to distort our econometric results.

[2] A more extensive explanation of the construction of the database, its virtues and its defects, can be found in Bravo, Ferrada and Landerretche (2006) and are summarized in **??**.

a series of short panels using the NES by statistically matching individuals from participating households. The exercise allows us to construct a series of short panels that enables us to calculate job creation and destruction for different types of firms. Since the survey does not identify the firm where the worker is employed, we can only estimate minimum job destruction and creation. We will be able to count as a job created an observation that shows a worker that transits from unemployment, self-employment or absence from the labor force to employment; or that changes the economic sector of his firm. We will be able to observe as job destruction a worker that transits from a job to unemployment, self-employment or absence from the labor force; or that changes the economic sector of his firm. These two measures clearly underestimate job flows, since it is entirely possible, and in fact quite likely, that there is a significant segment of workers that change firms that will be identical from our point of view. On the other hand, they are the first measures of this type for the Chilean economy, and it is the best we can do for micro firms in this country.

2.2 The Stylized Facts

Panel (a) of Figure 1 shows the growth of the Chilean economy[3] and the unemployment rates for all quarters since 1996. Panel (b) shows raw minimum job creation and job destruction as estimated from the NES with our methodology.[4] What we have calculated, for each month is the number of jobs created and destroyed during the following quarter. So, for example, if in panel (b) reports for January 1997 a 26% job destruction rate, it means that 26% of dependant jobs existing in January had been destroyed in April.

As we can see in the first panel, there is a significant fall in the growth rate of the economy during 1998-99 as a result of the Asian Crisis that significantly deteriorated both the terms of trade and the interest rates faced by the country. The economy enters a recession during the year spanning from mid 1998 to mid 1999. However, the effect of this shock on job flows is slightly more lasting.[5] In the second panel we

[3]Chile has a monthly indicator of GDP called the Monthly Index of Economic Activity (IMACEC) that is constructed by the Statistics Department of the Central Bank. The table shows the cyclical component of the index that is calculated and reported as official by the bank. More information can be found in the Central Bank of Chile's website: http://www.bcentral.cl.

[4]We only include data up to and including all months of 2004 since the data for splicing the 2005 quarters is not available yet. The data for the first three months of 2005 was used to construct the flows for the months of the last quarter of 2004.

[5]The permanence of the increased unemployment rate drove some analysts to state that the Chilean economy had endured a "structural" change in the job market. The Asian Crisis and the Labor Reforms of 1999 were supposed to be the culprits. During 2005 (not included in the graph) there has been a significant fall in the unemployment rate, an significant growth of the labor force and a sustained rhythm of dependant job creation. As a result, the spin on a structural change of the Chilean job market has lowered in volume. Also note that this period was characterized by an increase in the flow of self employed and meso-formal workers transiting towards better quality

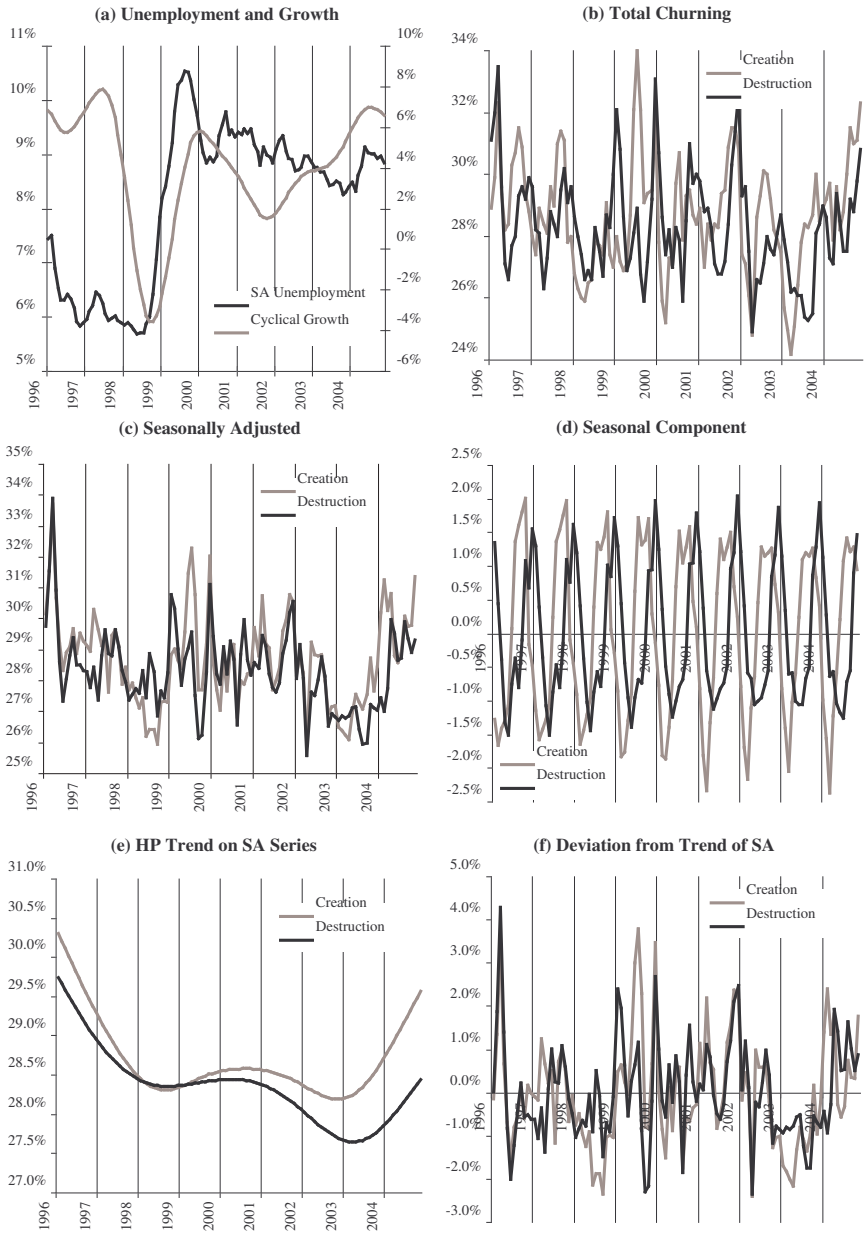

Figure 1: Economic Cycle and Job Flows in Chile

see that the events of 1998 and 1999 does not seem to have created a significant and permanent change in gross labor market flows as hypothesized by some. Unfortunately we only have data from 1996, but it seems that, if anything, job churning fell during the 1998-2003 period and seems to be back up. The Asian Crisis seems to have impacted especially on job creation rather than job destruction, a stylized fact that we can see (in a lower scale) during the post 9/11 months. During the disappointing 2002 and 2003 we see a sharp fall in churning that reverts as the economy recovers during 2004.

On average quarterly job creation and destruction for Chile seem to fluctuate around 28%. These are very high rates of job creation and destruction by any comparison, but still in a range that can be believed if compared to international evidence. For example Hall (2005) shows that on average since 2000, anything between 3%-7% of jobs in the US are separated every month depending on the database source, which would give quarterly separation rates of 9%-21%. (Anderson et al. 1994) show that 23% of jobs are separated each quarter and, more relevantly to our results, this rate goes up to 27% among firms with less than 20 employees (13% among firms with more than 2000 employees) and up to 36% for firms with an annual payrolls of less than US$4,000 per worker. Still, our data shows a Chilean job market that is very fluid on average, a result that is consitent with other recent studies.[6]

Panels (c) and (d) show the X12 seasonally adjusted series and seasonal components of creation and destruction for Chile. As we can see, there is significant seasonality. In particular, job creation increases during the second half of each year and is followed by an increase in job destruction that usually happens in the transition from one year to the other. Visually there seems to be an interesting symmetry in Panel (d): for creation, the relative height of the high creation season seems to have fallen through time while the depth of the low creation season seems to have increased in time. For destruction it seems to have gone in the exact opposite direction although the effect on the high destruction season is less clear. Finally Panels (e) and (f) show the Hodrick-Prescott trend ($\lambda = 14,400$) for creation and destruction and

and formal jobs. Hence, the paradoxical increase in the unemployment rate and the number of jobs churned.

[6]Ferrada and Reinecke (2005) use a dataset of formal and relatively large firms that are affiliated to the Chilean Security Asociation (workplace hazard insurance) to find that 26% of jobs are churned every year. This is much lower than we estimate, but, then again, their database is composed of very formal and relatively large firms. On the other hand, the newly established Chilean unemployment insurance system is already revealing that every year 800 to 950 thousand jobs are churned, which confirms that our methodology tends to underestimate job flows for Chile and that they are substantial. Each database has its biases, in this case they are due to the fact that only new employees have to be hired with unemployment insurance. In any case, the numbers seems extreemly large. The mainstream hypothesis being spined however, is that there statistics are largely due to an increasing number of firms that hire the same workers for repeated short periods with the objetctive of minimizing the costs involved in a long term labor market relationship and evading social security contributions. I am not aware of any evidence to support this hypothesis.

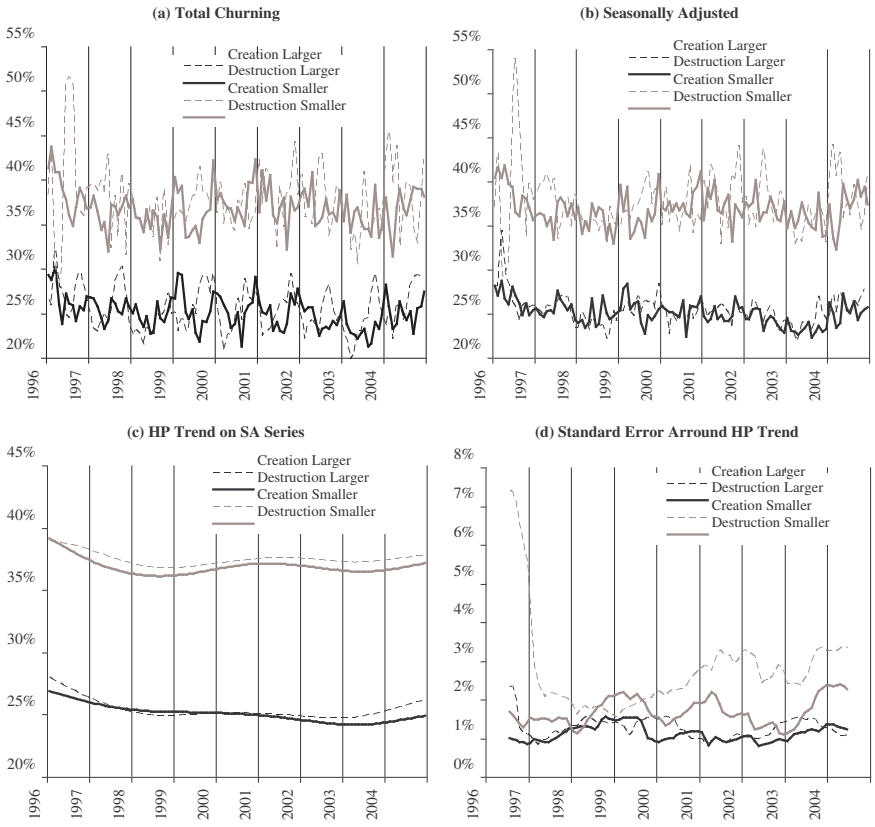

Figure 2: Job Churning in Chile by Size of Firms

the deviation from this trend. This seems to indicate that churning was depressed during the low growth years of the middle of the sample and seems to increase during the high growth periods (beginning and end of the sample). However, we cannot be very categorical about this stylized fact since we only observe one macroeconomic cycle in our data set.

Panels (a) and (b) of Figure 2 show the original series and the seasonally adjusted series for creation and destruction in Chile for smaller firms (less than 10 workers) and larger firms (more than 10 workers). There is clear difference in the level of job churning among different sizes of firms. Among medium to large firms, approximately 25% of the jobs are churned quarterly. Among small firms it goes up to 35% which is strikingly similar to the smallest size category in Anderson, Meyer, Pencavel and Roberts (1994). It is also striking how robust the difference between the two type firms is. The other interesting feature is that for smaller firms churning seems to be much more volatile and sensitive to the economic cycle. Panel (c) shows the Hodrick-Prescott trend ($\lambda = 14,400$) for the flow series of panel (b). Panel (d) shows

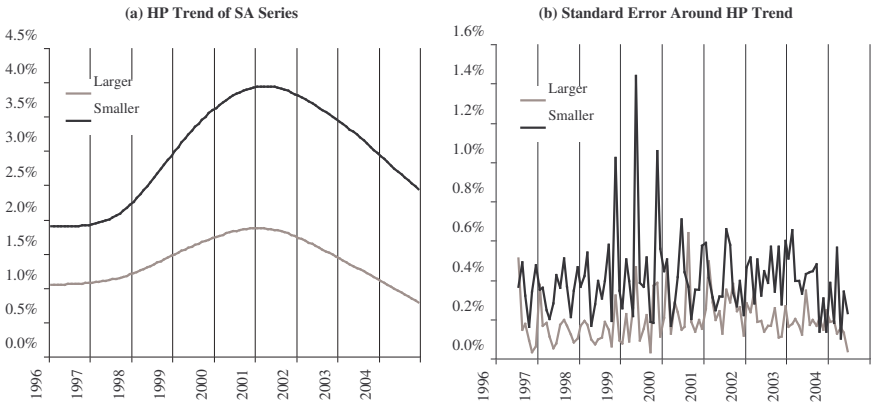

Figure 3: Destruction due to Bankruptcy in Chile

the standard deviation around the HP trend for a centered mobile year.[7] Both the creation and destruction of workplaces among smaller firms is more volatile than for larger firms. Also, among smaller firms creation is clearly the more volatile series. It is important to remember that we are showing stylized volatility and not "sensitivity" or "fragility". To estimate these more causal categories we need to do some econometrics. We do so in section 3.

We now exploit a useful question of the NES survey. The questionnaire asks unemployed people when was the last time they worked, and if why they lost their job. They are given four options: that the firms went broke, that it downsized, personal reasons and other. We do not use the first question to construct flows because of the very low answer rates (i.e. most people answer the year but not the month). We do exploit the second question, that has a higher answer rate, although much lower than the standard unemployment survey questions.[8] This will of course, lower the robustness and significance of the econometric results when compared to the other series we have constructed. Still, we find some very striking empirical regularities.

In Figure 3, once again we decompose a HP trend and a cycle around it that we summarize with a standard deviation for a centered twelve month window. The number reported in Panel (a) of the figure is the percentage of jobs that were destroyed due to bankruptcy. As we can see, before the Asian Crisis the proportion of job loss due to bankruptcy was roughly double among smaller firms than among larger firms. The Asian Crisis clearly makes them both increase but the increase is much more

[7]Call $\tilde{x}_t$ the HP trend and x_t the series submitted to the filter. To calculate the series of panel (d) first calculate $y_t = (x_t - \tilde{x}_t)^2$ and then take the square root of a moving anual average of y_t.

[8]The NES is answered, about half the time by the housewife or mother of a household. This may explain why this question is not answered so frequently. She might know if the members of the household are or not employed, but not necessarily why they lost or changed their last jobs.

dramatic among smaller firms. Before the crisis roughly 1.8% of jobs destroyed in smaller firms were due to bankruptcy, since job destruction at that point was roughly 36%, we can say that approximately 0.7% of smaller firms jobs were being destroyed by bankruptcy. At the peak post crisis effect in late 2001 bankruptcies were accounting for 4% of destruction among small firms which means that around 1.5% of smaller firm jobs were being destroyed by bankruptcies. Among larger firms these incidences were much smaller. Instead of going from 1.8% to 4%, bankruptcies increased from 1% to 1.7% and since destruction among these firms is around 25%, bankruptcy destruction among larger firms went from 0.3% to 0.5%. We acknowledge that our measure probably underestimates the levels of job destruction that can be associated to bankruptcy. However, we have no reason to think that the level difference of panel (a) or that the evolution of the two series could be distorted. Moreover, there are reasons to think that firm bankruptcy is even greater among micro firms when compared to medium to large firms, since, the average micro firm has less workers. In panel (b) awe show the standard error of the seasonally adjusted series around the HP trend. Destruction due to bankruptcy volatility seems to be robustly larger among smaller firms.

3 Workplace Fragility and Small Firms

In this section we attempt to identify the effect of being a small or micro firm on the probability for creating and destroying jobs. As we have already pointed out the advantage of the INE panel we have constructed is that it classifies as a job whatever surveyed individuals call a job. It can be a job in a completely informal (even illegal) enterprise, it may be a working relationship that has no legal or contractual expression, as long as it is considered a job by the surveyed individual (and he does not consider himself to be self employed) it will show up in our panel as a job that is either being created, destroyed or is surviving a certain period of time.

3.1 The Framework

Conceptually we are assuming a Schumpeterian economy much like the ones we can find in (Caballero & Hammour 1996) and subsequent papers by these two authors. These papers are constructed by modeling matches between labor and capital, rather than matches between ideas with capital, which is what most economists relate to models of entrepreneurship. The simplest Caballero and Hammour model has a new matching being feasible if there it is able to cover the returns to capital and labor.[9] Hence, it is efficient to create a job if

[9]For the purposes of this chapter we choose to sketch the simplest Caballero and Hammour model. Fully fledged models with complete discussions and specifications can be found in their papers.

$$y(\pi, \phi, k, \theta) \geq w_k + w_l \tag{1}$$

where y is the value added to be allocated between the to factors, and $\{w_k, w_l\}$ are the outside options available to capital and labor. Three determinants of the surplus that is being divided between the factors: the productivity of the entrepreneurial project into which the worker is being matched π, the size ϕ of the entrepreneurial project, k the proportion of investment that is covered by internal resources of the entrepreneur, and θ a vector of characteristics of the worker.

The central question of the Caballero and Hammour models is to study how the specificity of capital, labor market institutions and regulations affect the efficiency of Schumpterian creative destruction. This is not the central issue that we study in this dissertation. However, the mechanics of the model require a rigidity so that creative destruction is not instantaneous and the churning of resources becomes what the authors call "sclerotic" or slow. We need to believe that there is some level of sclerosis in the economy for creation, destruction and churning to be interesting objects that we regress against characteristics of either the firms or the workers. In the name of simplicity we assume that capital is completely "specific" to a particular matching, and, once committed, looses all of it's opportunity cost. Since labor is assumed to have no specific properties, the matching process generates rents of

$$s = y(\pi, \phi, k, \theta) - w_l \tag{2}$$

for a representative match. Assume that these rents are Nash bargained and that λ represents the relative negotiation power of capital. Then, the returns to capital and labor in match j are

$$\begin{aligned} w_k^j &= \lambda s \\ w_l^j &= w_l + (1-\lambda)s \end{aligned} \tag{3}$$

and matches only become jobs if

$$\lambda s \geq w_k \tag{4}$$

which, considering equation 2, implies

$$y(\pi, \phi, k, \theta) \geq \frac{w_k}{\lambda} + w_l \tag{5}$$

and we will be interested in the object

$$P(Creation) = P\left(y(\pi, \phi, k, \theta) - \frac{w_k}{\lambda} - w_l \geq 0\right) \tag{6}$$

The simplest way to understand the scrapping of matches in the Caballero and Hammour model is to consider the opportunity cost of labor that is already involved in an enterprise. In a job market that presents unemployed workers with a probability p of finding a job, the opportunity cost of labor is

$$pw_l^j + (1-p)w_l \tag{7}$$

where w_l^j is the wage in a matched enterprise while w_l is the outside option (unemployment benefits or home production). Hence, as long as the value added of a preexisting unit is smaller than 7, that firm will be scrapped. The main result of the model (which is not central to this paper) is that the participation of labor in quasi-rents elevates the value of w_l^j over the outside revenue of labor w_l for any representative firm, and hence, makes the scrapping threshold more demanding. For us it suffices to notice that equations 5 and 7 imply that a match will be scrapped if

$$y(\pi, \phi, k, \theta) \leq (1-\lambda)ps) + w_l \tag{8}$$

hence, we will be interest in the object

$$P(Destruction) = P\left(y(\pi, \phi, k, \theta) - (1-\lambda)ps - w_l \leq 0\right) \tag{9}$$

Finally we will also be interested in the particular case (of probability p) of individuals that are churned automatically by the system from one job to another. We will call this Schumpeterian churning.

3.2 The Probits

We have to remember that the origin of the data constraints the practical specification that we can give to the equation to be estimated. Since the origin of the data is the Chilean national employment survey we only have a rough measure of size ϕ, and a relatively complete measure of the characteristics of the worker θ. However, we do not have any direct information on π or k. Moreover, as we have pointed out in section 2, the survey has only three alternatives for the size of a firm: 0-5 workers,5-10 workers and more than 10 workers. Moreover, the middle category (5-10) has very few observations when compared to the other two. We choose to aggregate and create a broader category of firms with less than 10 workers, the parameter we estimate for this dummy will be the critical object in this subsection. Hence, for equation 6 we estimate

$$P(Creation)_{t,f,i} = F\left(\beta_0 Yr + \beta_1 Mth + \beta_2 \theta_{t,i} + \beta_3 DSc_{t,f} + \beta_4 DSz_{t,f}\right) \tag{10}$$

for firm f, individual i at time t. Our database has monthly data so have year dummies Yr that we hope will capture some of the macroeconomic fluctuations faced

by the Chilean economy, and month Mth dummies that we hope will capture some of the seasonality of the job market. We include a vector of nine sector dummies DSc and a dummy for small firms DSz. With vector θ we exploit the main characteristic of the database: the extensive characterization of the worker. Vector θ includes years of schooling, potential experience, potential experience squared, and a female dummy. Since we do not have a measure of actual experience, we have to choose between including a measure of potential experience (age minus schooling minus 5) or age, and live with the fact that the interpretation is ambiguous. Since we treat this variable as if it was experience we also include it's square to allow for a concavity in the returns to schooling.

Similarly for equation 9 we estimate

$$P(Destruction)_{t,f,i} = F\left(\beta_0 Yr + \beta_1 Mth + \beta_2 \theta_{t,i} + \beta_3 DSc_{t,f} + \beta_4 DSz_{t,f}\right) \qquad (11)$$

only in this case the size dummy and sector dummy correspond to the characteristics of the firm where the job was created while in equation 10 it corresponds to the firm where the job was destroyed. This is a relevant distinction since there is a substantial number of observations where workers are churned from one job to another, so they have firm characteristics both for the destroyed and created workplaces. Moreover, we estimate a specific regression for jobs schumpeterian churning that has the same functional form:

$$P(Churning)_{t,f,i} = \beta_0 Yr + \beta_1 Mth + \beta_2 \theta_{t,i} + \beta_3 DSc_{t,f} + \beta_4 DS_{t,f} \qquad (12)$$

Table 1 presents parameter $\hat{\beta}_4$ for regressions 10, 11 and 12. The complete output of the preferred regressions for the complete sample spanning all years can be found in Appendix **??**. To check for robustness the table also presents the estimated parameters for yearly sub samples. those regressions are identical to the ones for the complete sample only we drop the year dummy.

Table 1 shows an extraordinarily high and robust level of significance for our estimations (each parameter comes from the estimation of the model for a different sample). For the whole of our sample we can say that a job in a small firm has a 12.4% increased chance of being destroyed. From columns 2 and 3 we can see that there is a 3.7% lower chance of creating jobs in a small firm and a 2.1% lower chance that a job is destroyed without leaving the worker unemployed. Hence, Table 1 leaves us with three empirical regularities for the Chilean economy. First, workplaces at smaller firms are significantly and intrinsically more fragile, even when we control by economic sector. Second, smaller firms find it harder to create workplaces. Third, destruction of a workplace in smaller firms is more likely to create unemployment, so that not only are smaller firms more fragile, but also workers at small firms are fragile, and it is less likely that the job was destroyed because the worker churned into a more profitable position in the market.

Table 1: Parameter $\hat{\beta}_4$ from Destruction, creation and Schumpeterian Churning from Weighted Probits (complete sample and year sub samples)

Sample	Workplace Destruction	Workplace Creation	Schumpeterian Churning	Destruction by Bankruptcy
All years	12.36%	-3.67%	-2.12%	2.47%
	(0.18%)***	(0.01%)***	(0.12%)***	(0.02%)***
1996	12.81%	-3.70%	-3.14%	1.97%
	(0.56%)***	(0.05%)***	(0.39%)***	(2.14%)
1997	11.66%	-3.60%	-1.52%	2.07%
	(0.55%)***	(0.05%)***	(0.39%)***	(1.80%)
1998	11.64%	-3.49%	-2.34%	4.64%
	(0.55%)***	(0.05%)***	(0.38%)***	(1.84%)***
1999	11.53%	-3.55%	-2.49%	4.76%
	(0.57%)***	(0.05%)***	(0.39%)***	(2.30%)**
2000	12.67%	-3.42%	-1.90%	-0.08%
	(0.54%)***	(0.04%)***	(0.35%)***	(1.70%)
2001	11.93%	-3.63%	-2.00%	-1.06%
	(0.53%)***	(0.04%)***	(0.35%)***	(2.02%)
2002	13.10%	-3.51%	-1.61%	5.07%
	(0.52%)***	(0.04%)***	(0.35%)***	(1.74%)***
2003	13.17%	-3.78%	-1.85%	3.80%
	(0.52%)***	(0.05%)***	(0.34%)***	(1.92%)***
2004	12.73%	-4.31%	-2.39%	2.58%
	(0.55%)***	(0.05%)***	(0.37%)***	(1.69%)*

Note 1: table reports marginal effects of variables in a probit regression, with standard errors in parenthesis.
Note 2: * is 90% significance,** is 95% significance,
*** is 99% significance.
Note 3: Re-weighting is done by rescaling the observations of the database to preserve the number of observations so that standard errors are not underestimated by artificially increasing the size of the sample ("aweight" command in Stata).

If we glance at the results by year sub sample we find that $\hat{\beta}_4$ does seem to have increased after 2001, but does not seem to change after 1998. The parameter does seem to increase towards the second half of our sample. In any case, the highest level for the parameter is 13.1% in 2003 and the lowest is 11.5% in 1999. The $\hat{\beta}_4$ parameter for the creation regression (column 2) also seems to increase (in absolute magnitude) in the second half of the sample. The $\hat{\beta}_4$ parameter for the churning regression (column 3) does not seem to have a any clear trend. In any case it seems that these parameters are quite structural since they show so much robustness through time.

Table 1 could seem to indicate that employment in small and micro firms is in retreat during the period being analyzed. This is in fact not so, there is no trend at all and the importance of small and micro firms in our panel seems to constantly hover around 26% once we take into account sample weights and expansion factors. Since the regressions of Table 1 (and in fact all regressions in this chapter) are weighted, this cannot be the explanation.[10] The explanation for the apparent discrepancy is twofold: first the bases of columns 1 and 2 are completely different. The base of column 1 is total workplaces for workers that have survived into our panel, the base of column 2, on the other hand is total unemployed, self employed and inactive workers, which is a much larger number. In fact the proportion of workplaces to non placed workers in our database is 2 to 1. So, the parameters of column 2 should be doubled to be compared with column 1. In any case, this still seems to show that workplace creation is less likely among small and micro firms. This, in fact, is a wrong interpretation of the parameters, which are saying that given a workplace creation it is less likely that it occurs in a small or micro firm *controling for everything else*. It is possible, and in fact quite likely that the nature of business in some sectors (like commerce and services) requires the creation of small and micro firms. moreover, any (Jovanovic 1982) style mechanical model of entrepreneurial learning will predict that firms will tend to start small. Hence, the economy will be creating small and micro firm jobs constantly. What Table 1 is telling us is that creation in small firms will be more difficult *ceteris paribus*.

We also exploit econometrically a useful question from the survey where people are asked why they lost their last job. This is the question we use to construct Figure 3 in Section 2 where we suggest that smaller firms seem to have had a greater sensitivity to the Asian Crisis shock, and that this greater sensitivity is expressed in a larger percent of job destruction caused by bankruptcies. We will now attempt to see if this result survives a regression where we control for all other factors. So, we estimate

[10]It is important to point out that we are not counting as "jobs" the activities of self employed workers. If we did that, and counted these workplaces as micro and small firms we would find that 40%-50% of our workplaces were small or micro, which is a number that is closer to public policy folklore that believes that small and micro firms employ 80% of the workforce. It is also important to remember that in this chapter we are defining small and micro firms by the number of workers. Folklore classifies firms according to sales.

$$P(Bkr/Dest)_{t,f,i} = F\left(\beta_0 Yr + \beta_1 Mth + \beta_2 \theta_{t,i} + \beta_3 DSc_{t,f} + \beta_4 DS_{t,f}\right) \tag{13}$$

Where $P(Bkr/Dest)$ is the probability of having been fired because of bankruptcy, conditional on having lost a job. Despite its usefulness, one of the problem that this question of the survey has is that it is answered by very few workers. Of a total of 666,825 possible observations[11] we only have 60,957 that answer this question. This accounts for a sharp fall in the estimated standard errors and the significance of the parameters of Table 3.4.

The fourth column of Table 1 shows us that bankruptcy is 2% more likely as a cause for workplace destruction among smaller firms. This difference is significant with a confidence level of 99% and is on the higher range of the differences we could infer from the stylized facts of Figure 3. However, what is most interesting is to look at the evolution of parameter $\hat{\beta}_4$. It seems clear that the regression for the whole sample draws it's significance from the post crisis years of 1998-99 (the Asian Crisis) and 2002-03 (9/11 Credit Squeeze). In those years the difference between smaller and larger firms increased into the 4%-5% range which is much higher than what can be inferred from Figure 3.

4 Who and Where Are the Fragile Workers?

4.1 Where are They?

In this section we try to characterize job creation, destruction and churning in Chile across sectors using the INE panel database. In (O. 2006) we have shown some evidence that most of the sensitivity to macro shocks is explained by creation, destruction and performance of firms in commerce, construction and services. First we try to measure sensitivity to shocks of different sectors by setting up likelihood ratio tests similar to those of Section **??** of (O. 2006). The test is set up by estimating:

$$P(Event)_{t,f,i} = F\left(\beta_0 Yr + \beta_1 Mth + \beta_2 \theta_{t,i} + \beta_4 DS_{t,f}\right) \tag{14}$$

for events in each sector and extract the log likelihood statistic for the complete regression, which we call ll_c; then we estimate the restricted regression:

$$P(Event)_{t,f,i} = \left(\beta_1 Mth + \beta_2 \theta_{t,i} + \beta_4 DS_{t,f}\right) \tag{15}$$

[11] Total observations in the database amount to 2,646,228. However, to be elegible for this regression an observation has to correspond to a worker that has been matched in two consecutive quarters and is working in the first of the two.

Table 2: Likelihood Ratio Test on Year Shock Dummies

Sample	Workplace Destruction		Workplace Creation		Destruction by Bankruptcy	
Agriculture, Forestry, Fishing	24.87	***	74.98	***	23.63	***
Mining, Quarrying	39.39	***	12.90		28.35	***
Manufacturing	34.88	***	44.08	***	25.97	***
Utilities	9.11		25.18	***	6.70	
Construction	133.61	***	87.46	***	33.10	***
Commerce, Hotels, Dinning	161.80	***	63.34	***	17.61	**
Transport, Communications	46.56	***	37.00	***	11.22	
Financial, Prof. Services	70.85	***	24.41	***	22.52	***
Non Financial, Pers. Services	68.85	***	72.75	***	17.90	**

Note: * is 90% significance, ** is 95% significance,*** is 99% significance.

which is the same regression as 14 but without the year dummies (which we hypothesize are capturing the macroeconomic shocks of this economy). Again we extract the the log likelihood statistic, which we call ll_r. Finally we calculate:

$$LRT = -2(ll_r - ll_c) \sim X(n) \tag{16}$$

and this is what we report in Table 2. We will interpret the sign of this test as an indicator of sensitivity of sector to shocks. The variables that will represent shocks will be the year dummies, the importance of their absence in the regression an indicator of sensitivity to macro shocks. The month dummies will remain in the restricted probit to avoid measuring differential seasonality, which, given the results reported in panel (d) of Figure 1 that seasonality of job creation and destruction is a mayor feature of the Chilean economy. In the table we observe that the year dummies are significant at some level for almost all sectors in almost all probits. Interestingly, both commerce and non financial and personal services are among the most sensitive sectors to macro shocks across all types of probits. Construction seems to be relatively sensitive in destruction and creation but not so much in churning. All in all, there is some coherence between the results of Table 2 and the results found in (O. 2006). However, there are some discrepancies. It seems that one of the most sensitive sector in workplace creation and Schumpeterian churning is Agriculture, Forestry and Fishing. This was not observed in the firm panel of the previous chapter. Moreover, in that database, firms from rural sectors were quite insensitive to shocks. This means that firms in these sectors tend to be insulated in these sectors but not necessarily the jobs they offer.

Table 3 reports the estimated $\hat{\beta}_4$ parameters for the three types of probits for

which we run a model of the sort described in equation 14 for each sector sub sample. The table shows that the small firm dummy is highly significant in almost all sectors for predicting the probability of workplace destruction. However, it also shows that the 11.3% marginal effect that we estimate for the whole of the sample is actually an average across highly heterogeneous sectors. For example, in Mining and Quarrying small firms are 23% more likely to destroy jobs, while in agriculture, forestry and fishing this marginal effect falls to 4.7%. Interestingly, this last sector is quite volatile in job creation, and also has small firms being 75% less likely to create jobs. Finally, the services sector seems to be the place were being a smaller firms determines a very high propensity towards workplace destruction and a very low propensity to creation. This is consistent with the results of (O. 2006) that show services as one of the most sensitive sectors with most firm fragility. Meanwhile manufacturing, which was also a relatively volatile sector in the results of (O. 2006) is the sector where firms have the highest relative probability of destroying jobs because of bankruptcy.

4.2 Who are they?

The nature of this database allows us to study the demographic and socioeconomic characteristics of the workers that are being subjected to the fragility of workplaces in the Chilean economy. We will address this by studying three characteristics of workers: (i) sex, (ii) age, (iii) years of schooling. We report the results in Table 4.

The first row of Table 4 shows the full sample estimation for the female dummy parameters. Table A-1.2 of Appendix **??** has the robustness check for year sub samples and from it we can infer that the results are very robust. Being occupied by a female does not make a dependant workplace more likely to be destroyed or more fragile. However, if a job is created it is less likely that it will be assigned to a female (controlling for characteristics of the worker, see full regression in Appendix **??**). If destroyed it is less likely that it was motivated by efficient reallocation and less likely that it was motivated by bankruptcy. We anticipated these last two results since females are expected to leave workplaces voluntarily to breed progeny. Still, the result in column 2 indicates that firms do resist themselves to occupy vacancies with females workers, but column 1 seems to indicate that they are not noticeably discriminated against when deciding to destroy a workplace.

Schooling clearly makes workers less fragile (less probabilities of destruction and more probabilities of creation), although, curiously, schumpeterian churning becomes less likely and bankruptcy more so. The effects of schooling on fragility are very strong. Schooling is a continuous variable that is denominated in years, so Column 1 indicates that, for example, 5 years of additional schooling lower the probability of workplace destruction in 4%.

Finally we show the effect of experience, which, in our specification is captured by a level and a quadratic variable. Since the marginal effect of experience is not linear

Table 3: Parameter $\hat{\beta}_4$ from Destruction, creation and Schumpeterian Churning Probits (complete sample and sector sub samples)

No.	Sample	Workplace Destruction	Workplace Creation	Destruction by Bankruptcy
	All sectors	12.36% (0.18%)***	-3.67% (0.01%)***	2.47% (0.02%)***
1.	Agriculture, Forestry and Fishing	5.08% (0.33%)***	-75.75% (0.20%)***	-1.73% (1.18%)*
2.	Mining and Quarrying	25.75% (2.40%)***	1.63% (0.36%)***	-3.09% (4.30%)
3.	Manufacturing	15.79% (0.56%)***	-0.08% (0.13%)	7.35% (2.18%)***
4.	Utilities	3.28% (2.74%)	-1.61% (0.93%)**	4.72% (9.40%)
5.	Construction	19.91% (0.81%)***	0.64% (0.17%)***	-1.84% (1.96%)
6.	Commerce, Hotels and Restaurants	7.99% (0.42%)***	1.15% (0.08%)***	5.66% (1.27%)***
7.	Transport, Storage and Communications	11.81% (0.63%)***	-0.39% (0.13%)***	4.39% (1.86%)***
8.	Financial and Professional Services	13.05% (0.81%)***	-58.39% (0.70%)***	6.36% (3.73%)**
9.	Non Financial and Personal Services	15.82% (0.36%)***	-67.75% (0.30%)***	-0.67% (1.28%)

we must represent it as a function. to understand how we construct it represent the generic probit corresponding to any given column of Table 4 as

$$P(Event) = F\left(\alpha + \theta_1 X + \theta_2 X^2\right) \tag{17}$$

where α represents everything else that enters the regression. We are interested in the marginal effect of experience which is

$$\nu_c = \left(\frac{\partial P(Event)}{\partial X}\right)_{complete} = \frac{\partial F}{\partial X}\left(\theta_1 + 2\theta_2 X\right) \tag{18}$$

and we know that the marginal effect of the linear component of experience (by itself) is

$$\nu_p = \left(\frac{\partial P(Event)}{\partial X}\right)_{partial} = \frac{\partial F}{\partial X}\theta_1 \tag{19}$$

and both ν_p and θ_1 are outputs that we can infer from the probit. Hence we can calculate

$$\nu_c = \frac{\nu_p}{\theta_1}\left(\theta_1 + 2\theta_2 X\right) \tag{20}$$

We find that potential experience diminishes the probability of loosing a job up to 32 years. Since average schooling in Chile is still only around 8 years, this means that, on average, people minimize their probability of loosing a job (their workplace fragility) in Chile at 45. On the other hand, the probability of entering into a new workplace is maximized at 26 years of experience implying an age of 39. It seems quite clear that the concavity of this variable is a result of it combining to different effects: age and experience, and is a undesired result of not having actual experience and being forced to use potential. Experience is probably always a plus. What our results are saying is that the net effect of experience and age net each other out at 45. After that age, each year makes the worker more and more fragile.

5 Conclusions

In this chapter we used the INE-BFL panel database to characterize job creation and destruction in Chile. We have shown, as expected, that smaller firms have a significantly increased probability of destroying jobs and a lower probability of creating them. we have shown that when jobs are destroyed in small firms it is less likely to have been caused by a schumpeterian reallocation of workers and more likely to have been caused by bankruptcy. We also show that this differential propensity to bankruptcy is clustered in periods that follow major macroeconomic shocks.

Table 4: Marginal Effect of Female Dummy, Schooling and Experience on Destruction, Creation and Schumpeterian Churning from Weighted Probits (complete sample and year sub samples)

Sample	Workplace Destruction	Workplace Creation	Schumpeterian Churning	Destruction by Bankruptcy
Female Dummy	1.36%	-2.80%	-4.93%	-2.47%
	(1.86%)	(0.03%)***	(0.12%)***	(0.00%)***
Schooling	-0.79%	0.16%	-0.12%	0.33%
	(0.02%)***	(0.00%)***	(0.01%)***	(0.09%)***
Marginal Effect of Experience (ν_c) at:				
0 Years	-1.03%	0.26%	-0.18%	0.17%
10 Years	-0.71%	0.16%	-0.17%	0.16%
20 Years	-0.39%	0.06%	-0.17%	0.15%
30 Years	-0.07%	-0.04%	-0.16%	0.14%
40 Years	0.24%	-0.13%	-0.15%	0.13%
50 Years	0.56%	-0.23%	-0.14%	0.12%
60 Years	0.88%	-0.33%	-0.13%	0.11%
Peak Full Sample	32.32	26.39	192.04	161.65

Note 1: table reports marginal effects of variables in a probit regression, with standard errors in parenthesis.
Note 2: * is 90% significance,** is 95% significance, *** is 99% significance.
Note 3: Re-weighting is done by rescaling the observations of the database to preserve the number of observations so that standard errors are not underestimated by artificially increasing the size of the sample ("aweight" command in Stata).

We show evidence that most of the creation and destruction volatility is concentrated in urban industrias such as construction, manufacturing, commerce and services, and that job creation is especially weak in small service firms. We show that females are not more fragile workers, but are discriminated against in job creation. We show that schooling significantly diminishes fragility and that experience seems to have a net positive effect (discounting the effect of age) on diminishing fragility up to and around 45 years of age (32 years of experience).

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Appendix

A-1 Complete Tables for Job Side Probits

Table A-1.1: Full Output of Preferred Weighted Probits (for the full sample)

Dependent Variable:	Workplace Destruction	Workplace Creation	Schumpeterian Churning	Destruction by Bankruptcy
size dummy	12,36%	-3,68%	-2,14%	2,48%
	(0.18%)***	(0.01%)***	(0.12%)***	(0.69%)***
schooling	-0,80%	0,16%	-0,13%	0,33%
	(0.02%)***	(0.00%)***	(0.01%)***	(0.09%)***
experience	-1,03%	0,26%	-0,18%	0,17%
	(0.01%)***	(0.00%)***	(0.01%)***	(0.06%)***
experience^2	0,02%	0,00%	0,00%	0,00%
	(0.00%)***	(0.00%)***	(0.00%)	(0.00%)
female	-0,14%	-2,81%	-4,94%	-2,48%
	(0.18%)	(0.03%)***	(0.12%)***	(0.66%)***
sector 2	1,93%	81,42%	9,47%	4,02%
(mining and quarrying)	(0.49%)***	(0.51%)***	(0.47%)***	(2.32%)**
sector 3	3,04%	73,74%	8,54%	0,93%
(manufacturing)	(0.27%)***	(0.29%)***	(0.25%)***	(0.97%)
sector 4	13,01%	94,84%	20,35%	-4,50%
(utilities)	(0.91%)***	(0.38%)***	(0.89%)***	(1.79%)**
sector 5	15,17%	71,68%	10,03%	5,21%
(construction)	(0.35%)***	(0.35%)***	(0.31%)***	(1.04%)***
sector 6	3,42%	65,61%	7,88%	-1,54%
(commerce, hotels and restaurants)	(0.28%)***	(0.34%)***	(0.27%)***	(0.92%)
sector 7	5,02%	63,90%	8,34%	-2,24%
(transport, storage and communications)	(0.34%)***	(0.42%)***	(0.32%)***	(1.01%)**
sector 8	7,87%	79,78%	13,42%	-0,67%
(financial and professional services)	(0.38%)***	(0.35%)***	(0.38%)***	(1.26%)
sector 9	-7,98%	71,81%	-0,51%	-1,46%
(non financial and personal services)	(0.24%)***	(0.32%)***	(0.21%)***	(0.95%)
1997 dummy	-1,41%	-0,16%	-0,35%	-2,71%
	(0.31%)***	(0.05%)**	(0.22%)	(1.05%)**
1998 dummy	-2,22%	-0,45%	-1,17%	-2,27%
	(0.31%)***	(0.05%)***	(0.21%)***	(1.01%)**
1999 dummy	-0,58%	-0,46%	-1,11%	-0,60%
	(0.33%)***	(0.05%)***	(0.22%)***	(1.14%)
2000 dummy	-0,20%	-0,63%	-1,37%	0,44%
	(0.31%)	(0.04%)***	(0.21%)***	(1.12%)
2001 dummy	-0,52%	-0,61%	-1,36%	1,90%
	(0.31%)**	(0.04%)***	(0.21%)***	(1.25%)
2002 dummy	-1,03%	-0,76%	-1,49%	-1,27%
	(0.31%)***	(0.04%)***	(0.21%)***	(1.04%)
2003 dummy	-2,13%	-0,96%	-2,05%	-1,12%
	(0.30%)***	(0.04%)***	(0.20%)***	(1.07%)
2004 dummy	-0,17%	-0,66%	-0,76%	-3,57%
	(0.32%)	(0.04%)***	(0.22%)***	(0.96%)***
February dummy	-0,21%	-0,08%	-0,07%	-1,47%
	(0.36%)	(0.06%)	(0.26%)	(1.08%)
March dummy	-1,23%	-0,31%	-0,49%	-1,65%
	(0.35%)***	(0.06%)***	(0.26%)*	(1.08%)
April dummy	-1,82%	-0,24%	-0,48%	-2,52%
	(0.35%)***	(0.06%)***	(0.26%)*	(0.97%)**
May dummy	-2,41%	-0,11%	-0,34%	-0,45%
	(0.35%)***	(0.06%)*	(0.26%)	(1.26%)
June dummy	-2,58%	-0,03%	-0,47%	-1,76%
	(0.35%)***	(0.06%)	(0.26%)*	(1.07%)
July dummy	-2,14%	0,03%	-0,10%	-0,04%
	(0.36%)***	(0.06%)	(0.26%)	(1.25%)
August dummy	-2,45%	0,18%	0,14%	-0,80%
	(0.35%)***	(0.06%)***	(0.26%)	(1.23%)
September dummy	-2,71%	0,28%	-0,12%	-1,13%
	(0.35%)***	(0.06%)***	(0.26%)	(1.19%)
October dummy	-1,11%	0,35%	0,45%	0,26%
	(0.36%)***	(0.07%)***	(0.27%)*	(1.32%)
November dummy	-1,30%	0,24%	0,35%	-0,24%
	(0.36%)***	(0.07%)***	(0.27%)	(1.24%)
December dummy	0,10%	0,07%	0,53%	0,57%
	(0.37%)	(0.06%)	(0.27%)**	(1.29%)
Observations	666,823	2,060,682	666,823	22,715
Log Pseudo Like	-380260.66	-306569.35	-244230.15	-7457.7476
Pseudo R2	0.04	0.52	0.04	0.02

Note 1: dummies for January, 1996 and sector 1: agriculture, forestry and fishing are dropped to avoid collinearity.
Note 2: table reports marginal effects of variables in a probit regression, with standard errors in parenthesis.
Note 3: * is 90% significance,** is 95% significance, *** is 99% significance.
Note 4: Re-weighting is done by rescaling the observations of the database to preserve the number of observations so that standard errors are not underestimated by artificially increasing the size of the sample ("aweight" command in Stata).

Table A-1.2: Parameter for Female Dummy from Destruction, creation and Schumpeterian Churning from Weighted Probits (complete sample and year sub samples)

Sample	Workplace Destruction	Workplace Creation	Schumpeterian Churning	Destruction by Bankruptcy
All years	1.36%	-2.80%	-4.93%	-2.47%
	(1.86%)	(0.03%)***	(0.12%)***	(0.00%)***
1996	-0.07%	-3.54%	-5.80%	-5.85%
	(0.58%)	(0.10%)***	(0.40%)***	(2.71%)**
1997	0.09%	-3.30%	-5.43%	2.47%
	(0.58%)	(0.10%)***	(0.40%)***	(2.05%)
1998	1.16%	-3.01%	-4.63%	-1.71%
	(0.68%)**	(0.10%)***	(0.40%)***	(1.79%)
1999	-0.29%	-3.16%	-5.22%	-5.86%
	(0.61%)	(0.10%)***	(0.41%)***	(1.76%)**
2000	-1.00%	-2.69%	-5.29%	-4.53%
	(0.54%)**	(0.09%)***	(0.35%)***	(1.71%)**
2001	-0.25%	-2.70%	-4.84%	-4.50%
	(0.55%)**	(0.09%)***	(0.35%)***	(2.14%)**
2002	-0.54%	-2.37%	-4.34%	-3.30%
	(0.52%)	(0.09%)***	(0.35%)***	(1.50%)**
2003	0.07%	-2.26%	-3.64%	-1.33%
	(0.52%)	(0.09%)***	(0.35%)***	(1.74%)
2004	-0.32%	-2.45%	-5.36%	-2.47%
	(0.54%)	(0.10%)***	(0.36%)***	(1.51%)

Note 1: table reports marginal effects of variables in a probit regression, with standard errors in parenthesis.
Note 2: * is 90% significance,** is 95% significance,
*** is 99% significance.
Note 3: Re-weighting is done by rescaling the observations of the database to preserve the number of observations so that standard errors are not underestimated by artificially increasing the size of the sample ("aweight" command in Stata).

Table A-1.3: Parameter for Schooling Variable from Destruction, creation and Schumpeterian Churning from Weighted Probits (complete sample and year sub samples)

Sample	Workplace Destruction	Workplace Creation	Schumpeterian Churning	Destruction by Bankruptcy
All years	-0.79% (0.02%)***	0.16% (0.00%)***	-0.12% (0.01%)***	0.33% (0.09%)***
1996	-0.55% (0.07%)***	0.20% (0.01%)***	-0.16% (0.05%)***	0.45% (0.28%)*
1997	-0.54% (0.07%)***	0.17% (0.01%)***	0.00% (0.05%)	0.30% (0.24%)
1998	-0.80% (0.07%)***	0.17% (0.01%)***	-0.10% (0.05%)***	0.43% (0.23%)*
1999	-0.88% (0.07%)***	0.17% (0.01%)***	-0.10% (0.05%)***	0.10% (0.27%)
2000	-0.87% (0.07%)***	0.13% (0.00%)***	-0.15% (0.05%)***	0.62% (0.26%)**
2001	-0.96% (0.07%)***	0.14% (0.00%)***	-0.20% (0.05%)***	0.13% (0.28%)
2002	-0.96% (0.07%)***	0.13% (0.00%)***	-0.18% (0.05%)***	0.25% (0.22%)
2003	-0.75% (0.07%)***	0.14% (0.00%)***	-0.13% (0.05%)***	0.05% (0.24%)
2004	-0.86% (0.07%)***	0.17% (0.01%)***	-0.13% (0.05%)***	0.45% (0.21%)**

Note 1: table reports marginal effects of variables in a probit regression, with standard errors in parenthesis.
Note 2: * is 90% significance,** is 95% significance,
*** is 99% significance.
Note 3: Re-weighting is done by rescaling the observations of the database to preserve the number of observations so that standard errors are not underestimated by artificially increasing the size of the sample ("aweight" command in Stata).