

Short-Time Compensation and Establishment Survival: An Empirical Analysis with French Data *

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Extended abstract

This paper questions about the efficiency of the short-time compensation (STC) program within French establishments by investigating the relationship between the STC use and establishment survival between 1995 and 2005. The STC program is a device of employment protection since it aims at avoiding layoffs in the case of short-term economic downturns or exceptional circumstances (for instance, disasters). Employers applying STC can temporarily reduce their employees' activity below the legal working time or eliminate a part of their total activity. STC allows employees to maintain a contractual bond with their employer. They receive a compensation for their wage loss that is partly paid by the State. Most developed countries use some form of an STC program: the "Chômage Partiel" in France, the "Cassa Integrazione Guadagni" in Italy, the "Kurzarbeitergeld" in Germany, and the "Short-Time Compensation Program" in the United States. Since the beginning of the economic crisis, the use of STC programs has been amplified especially in Europe.

From a theoretical point of view, the international literature clearly distinguishes the security and flexibility roles of the STC programs which differentiate North American and continental European systems (see the three main papers on this topic: Van Audenrode (1994), Houseman and Abraham (1994) and Burdett and Wright (1989)). The empirical analysis of the security role of STC focuses on its relationship regarding layoffs. We can distinguish three experiences concerning this relationship between STC and layoffs: the European experience (Vroman, 1992), the US experience (Needels et al., 1997) and the Canadian experience (the Ekos research, 1993). Most studies find that firms in both the American and the European systems are likely to use some combinations of STC and layoffs but the implications of STC on layoffs still remain unclear. In a previous study, Calavrezo,

* This work is an extension of a project financed by the Statistical Department of the French Ministry of Labour (DARES). Data availability: Final sample is available on request from the authors and initial databases can be requested from the institutions which produce them.

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Duhautois and Walkowiak (2009) analyze the effect of the French STC program on layoffs. They work with a panel of more than 36,000 French establishments with at least 50 employees and their results show that STC seems to significantly increase the number of layoffs or the probability of laying off. These empirical studies do not take into account whether firms survive or not. In this paper, we test the effect of STC on establishment survival.

We work with several annual samples. Our final samples are original statistical datasets obtained by merging five data sources. First, the STC databases provide exhaustive information about the STC authorizations obtained by French establishments. They cover the period 1995-2005. These files permit to construct for each establishment and for each year dummy variables indicating the participation in the STC program. Second, we use the SIRENE file. It is an administrative database indicating the situation of French establishments (establishments are active or they exit) and it also gives information on the date of creation of establishments. This file permits to calculate the age of the establishment and three survival dummy indicators: being active during the year of interest, being active a year after and being active two years after. Third, we use annual exhaustive administrative sources describing establishments affiliated to the unemployment insurance system and covering the 1995-2003 period: They give information about establishment size, establishment industry and about the structure of jobs within the establishment (women rate, etc.). Fourth, additional information is obtained from firm databases. They cover the period 1994-2005. They permit to construct indicators of the economic health of the firm to which the establishment belongs to (the value-added variation rate, the labor productivity ratio, investment, etc.). From 1998, several other variables are also given: the legal status of the firm, a variable indicating whether a firm was restructured, a variable indicating whether the firm belongs to a financial group. Finally, some supplementary information is obtained from other administrative files containing data at the establishment level. We mainly retain information about employee skill structure.

In order to obtain annual final samples, we impose three stages in the “cleaning” process. The first stage consists in erasing establishments which are supposed inactive, establishments which exit before the year of interest or are created after the year of interest (for example, for the year 2002 we erase establishments which “die” before 2002 or are created after 2002). In the second stage, we eliminate firms with 0 employees in order not to have incoherent values in terms of STC use. Finally, we erase all observations with missing values for our explanatory variables. By merging the five data sources we finally work each year with more than 1 million observations.

The use of STC among French establishments is not randomly distributed. So selection can be a potential problem because establishments which choose to have STC authorizations might do it as a consequence of their internal strategy. In order to analyse the effect of the French STC program on establishment survival and to control for the selection bias, we implement the propensity score matching methodology developed by Rosenbaum and Rubin (1983) and Heckman et al. (1999). This method consists in comparing the health of each establishment which receives the treatment (uses STC) with the health of an identical counterfactual establishment which does not receive the treatment (does not use STC). In this work, establishment health is given by survival dummy variables (being active during the year of interest...). To identify statistically the counterfactual establishment, an approach consists in building a counterfactual population for which the distribution of the propensity score calculated according to a number of observable characteristics is the same as for the group receiving the treatment. As the number of establishments which do not use STC is very high (the control group¹), we perform matching using the nearest neighbour method (more precisely, one-to-one matching). In order to calculate the propensity score, we use three different model specifications (because of the availability of the variables): the first model is estimated on the 1995-2005 period and contains the following variables: establishment's size, age, industry and geographic location, firm's apparent labour productivity and value-added variation rate; the second model is estimated on the 1998-2005 period and excepting the previous variables, contains firm's investment, firm's legal status, situation regarding firm's restructuring variables and firm's membership in a financial group; and the third model is estimated on the 2002-2005 period and contains supplementary variables of employee skill structure.

Our principal result underlines that the STC use increases significantly the probability of establishment exit. For example, in 2002, using STC increases by 3% the probability for an establishment to exit the same year². Additional econometric strategies (a Choice Based Sampling approach) and different subsamples are used in this paper for testing the robustness of results: The results hold.

Key words: Short-time compensation program, establishment survival, nearest neighbour matching estimates

¹ For example for the year 2002, the final sample contains 1.3 million establishments and only less than 4,000 establishments participate in the STC program.

² This result is obtained using the third model specification.