a survival multilevel MODEL on eu companies (2006-2016)

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**Abstract (200 words)**

Firms’ survival and internationalization are key elements to assess a country’s competitiveness. In this paper, we draw on these two strands of literature and study how firms’ characteristics affect demographic dynamics. We focus on firms survival probability, modelling it on companies’ balance sheets’ set of characteristics using Cox regressions. This approach, however, does not consider the fact that the variables involved may refer to different levels (micro, firm level, or macro, contextual levels). In other words, business demography data are likely to have a hierarchical structure. Thus, to avoid biased and inefficient estimates (and forecasts) a mixed-effect component is required to generalize Cox regressions models. Mixed-effects survival models include both fixed effects and random effects. In longitudinal data, random effects are used to model intracluster correlation: observations in the same cluster are correlated since they share common cluster-level random effects. We use a sample of European firms in 2006-2016, analyzing their survival rates conditional to a set of company-level characteristics (sales, technological level, R&D expenditures, debt structure) and to a set of country-level characteristics (FDI inward, FDI outward, export to import ratio), to investigate whether and how the probability of survival may be influenced by the data hidden hierarchical structure.