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Entrepreneurship Vulnerability to Business Cycle. A new methodology for identification pro-cyclical and counter-cyclical patterns of entrepreneurial activity.

In literature, there is ongoing discussion whether entrepreneurial activity, approximated by, for instance, changes in self-employment, tends to behave pro-cyclically, counter-cyclically or rather is a-cyclical. Thus far, both theoretical and empirical evidence, where various multiple methodological approaches are used, does not provide clear answer to the latter; while widely offered explanations are scattered and lack robustness. Regarding the latter, some evidence may be traced in works of Kollinger and Thurik (2012), which using data for 22 OECD countries over the period 1972-2007, use Granger-causality tests to verify if entrepreneur activities are leading or lagging indicator over the business cycles; and their findings they show that entrepreneurship is leading indicator of the business cycle. Rampini (2004), using canonical real business cycle model, finds that entrepreneurship behaves pro-cyclical, which is associated with changes in risk aversion during respective phases of business cycle. Carmona et al. (2010), using quarterly data for self-employment and GDP in Spain and the United States, over the period 1987-2004, adopt the cross-correlations and VAR models to demonstrate that the hypothesis on pro-cyclicality of self-employment cannot be confirmed. At the same time, they present rather mixed results for various groups of self-employed. Klapper et al. (2014), using data for 109 countries over the period 2002-2012, find that entrepreneurial behavior demonstrates strong pro-



cyclical patterns. More recent evidence may be also found in works of, inter alia, Parker (2002), Parker et al. (2012a,b), Milan et al. (2012), Baptista and Preto (2011).

This paper is designed to contribute to the present state of the art, by presenting a novel methodological approach to identification of the relationship between the intensity of entrepreneurial activity and business cycle. Put differently, we aim unveil if entrepreneurship (approximated by changes in self-employment) behaves pro-cyclically, counter-cyclically or a-cyclically. To exemplify our new conceptual approach, we use quarterly data on deflated gross domestic product and self-employment. The empirical evidence presents the case of Italy. The period of analysis is restricted to the years 1995-2014. All statistics are extracted from OECD datasets on Annual Labor Force and Gross Domestic Product.