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# Lumps, Bumps and Jumps in the Firm Growth Process

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# Lumps, Bumps and Jumps in the Firm Growth Process

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## ABSTRACT

Firm growth is a central topic in entrepreneurship research. The approach taken here is to survey the literature on lumps and discontinuities in the growth process, which may well correspond to the most interesting cases of firm growth. Our interdisciplinary review investigates stages of growth models, growth modes, growth strategies, and barriers and thresholds that hinder the growth of firms. Firm growth is theorized to be characterized by the addition and re-configuration of lumpy discrete resources. The distribution of annual growth rates follows a heavy-tailed distribution, which has led to interest in growth paths, growth spells, growth spikes, and the phenomenon of High-Growth Firms (HGFs). We conclude with implications for empirical and theoretical research.

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**Keywords:** firm growth; growth strategies; growth paths; Penrose; growth rate distribution; high-growth firms (HGFs)

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# 1

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## Introduction

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A central topic in entrepreneurship research is the growth of firms. Unsurprisingly, therefore, much research has been published on the topic. There is also a large number of surveys on the topic of firm growth, covering the literature on the topic from various angles, for example the following:

- Gilbert *et al.* (2006), and Davidsson *et al.* (2010) on new venture growth
- McKelvie and Wiklund (2010) and Achtenhagen *et al.* (2010) on small firm growth
- Henrekson and Johansson (2009, 2010), Coad *et al.* (2014), Moreno and Coad (2015) and Demir *et al.* (2017) on High-Growth Firms
- Nason and Wiklund (2018) on firm growth and Penrosean resource-based theorizing
- Sutton (1997) and Caves (1998) from the perspective of Industrial Organization and Economics
- Nichter and Goldmark (2009) on small firm growth in developing countries
- Coad (2009) as a book-length survey of firm growth.

These surveys generally focus on the determinants of firm growth, where firm growth is generally seen as “more of the same” in the context of a smoothly-expanding continuous variable that represents firm size. The current monograph seeks to contribute to the literature by taking a different angle to the phenomenon of firm growth – emphasizing the lumpy nature of growth, and focusing specifically on the discontinuities in the growth process.

The standard approach for empirical work into firm growth is to take annual growth as the dependent variable, and to explain this using a long list of explanatory variables:

$$Growth\_rate_{i,t} = \alpha + \beta_1 size_{i,t} + \beta_2 age_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t} \quad (1.1)$$

Here, the growth rate for firm  $i$  in year  $t$  is explained in terms of size, age, perhaps also size squared and age squared, and the usual vector of explanatory variables  $X_{i,t}$  that includes variables such as legal form, profits, innovation (R&D, patenting), advertising, multiplant firm dummy, sources of advice, industry growth rate, sector dummies, region dummies, and so on.

For example, much of the literature focuses on Gibrat’s Law, which essentially investigates if growth rate is independent of size (i.e., whether  $\beta_1 = 0$ ). There has been a flood of research on Gibrat’s law, to check whether it is verified or not (Audretsch *et al.*, 2004). The conclusion is that, generally, small firms grow faster (at least, up until a certain size threshold). It has also been found that young firms grow faster, with most of the effects in the first 5–7 years after entry (Coad, 2018). Stylized facts are also emerging for the effects of other variables on firm growth. However, the explanatory power (as shown by the  $R^2$  statistic) is generally low (Storey, 2011), leading some scholars to highlight the need to shift away from focusing on “how much” firms grow, and instead focusing on “how” firms grow (McKelvie and Wiklund, 2010). When calling for more research into “how” firms grow, McKelvie and Wiklund (2010) mainly discuss the “how” in terms of growth modes (organic vs. acquisitive growth, franchises, alliances, etc.) whereas this monograph discusses “how” firms grow by focusing on the discontinuous and lumpy nature of growth.

Much research into firm growth has implicitly taken the view that growth is a question of “more of the same”, as if growth was a kind of amorphous putty that can be squeezed out upon demand, like squeezing toothpaste out of a tube. Many of the literature reviews mentioned above give insufficient attention to the fact that growth is episodic, discontinuous, and that it brings about qualitative transformations within growing firms. This monograph seeks to discuss these issues head-on. Indeed, we argue that the most interesting growth events occur during these discontinuous lumps and spikes in the growth process. Lumps in the growth process are important phenomena because they have a disproportionate effect on overall firm growth and overall economic dynamism, they are important steps in theoretical models (e.g., Caliendo *et al.*, 2020), and they are also of particular interest to policy interventions that seek to support growing firms at critical junctures.

Our survey is necessarily multidisciplinary as we focus on various aspects of the growth process. Section 2 focuses on theoretical aspects of lumpy growth. We begin by discussing stages of growth models, before considering the various growth modes available to firms (growth by replication or diversification, organic vs. acquisitive growth, etc.). Regarding barriers to growth, we discuss which growth thresholds may discourage firms to grow beyond a certain size. We also discuss the various dimensions in which firm resources may be considered to be lumpy. Section 3 focuses on empirical research into the lumpiness of firm growth. The distribution of annual growth rates is not Gaussian but resembles the Laplace distribution (also known as the symmetric exponential), meaning that a fraction of firms can be expected to grow very fast in each period. Section 4 discusses how empirical research into the characteristics and performance of High-Growth Firms (HGFs) as well as searching for regularities in growth paths, growth autocorrelation patterns, growth spells, and growth spikes. We also discuss how changes in a firm’s organization (in terms of hierarchical layers) relate to firm dynamics. Section 5 discusses some implications of our literature review for empirical analysis, and Section 6 concludes.

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