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Entrepreneurship turnover and endogenous returns to ability ☆

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Abstract

This paper proposes a model of entrepreneurial turnover highlighting a non-monotone relationship between technological change and ability-biased sorting into entrepreneurial types. Entrepreneurial decisions are examined in a two-stage model under uncertainty in which entrepreneurs decide to abandon a project and start a new venture depending on technological change and on ability. We show that technological change affects the quality distribution of entrepreneurship by increasing the ex-ante number of entrepreneurs undertaking the most efficient projects and decreasing the post-entry number of entrepreneurs of low-quality firms who choose to continue their initial business. A higher rate of technological change is therefore likely to induce a cleansing effect on entrepreneurial activity and to alter the market perception of business creation.

JEL classification: O33; M13

Keywords: Entrepreneur entry and exit; Technological change; Selection; Stigma

1. Introduction

The creation of new businesses and the decline or market exit of less productive firms are often regarded key to business dynamism and economic growth in OECD countries. New firms play an important role as job creators and firm turnover allows reallocating resources from low to higher productivity units. In fact, the entry and exit of firms in fact accounts for approximately 30% of total productivity growth in OECD countries (OECD, 2003). Yet, survival rates of new firms are strikingly low in many sectors. As documented by Scarpetta et al. (2002), only 30% to 40% of entering firms survive beyond the first two years of life. Explaining the start-up of new firms, their extremely diverse chances of

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survival and their different post-entry performance is therefore an important challenge for the understanding of entrepreneurship and growth.

Empirical evidence on business dynamics in Europe and in the US remains controversial but several stylized facts have reached a consensus in the recent past. First, at the *aggregate level* the rate of entrepreneurial activity is very different across OECD countries. In 2001 this rate varied from 7.2% in Europe (4.5% in Belgium, 7% in France, 7.5% in the UK, 12% in Ireland) to 12.2% in the US. Similarly, between 1995 and 2000, the annual average rate of new enterprise formation ranged from 6.5% in Denmark to 11.7% in France and 15.7% in Germany (European Commission, 2002). Second, at the *industry level* there are large differences across sectors. In particular, entry rates are very high in information and communication technology (ICT)-related industries (20% on average in computer-related service activities, which is two times higher than the entry rate in business services activities — see Brandt, 2004). In addition, entry and exit rates are highly correlated across industries suggesting that firm turnover is characterized by search and experimentation (Bartelsman et al., 2005; Santarelli and Vivarelli, 2006). Indeed, were firm turnover determined only by profit expectations (as a response to sub- or supra-normal profits), creation and destruction rates should be negatively correlated. In opposition, the observed correlation between entry and exit rates, together with high early failure rates, suggest that firm turnover is characterized by market churning and entry mistakes as hidden costs of exploring of entrepreneurial opportunities. Finally, at the *firm level* there exists a relationship between firms ex-ante characteristics and post-entry performance. In particular, the likelihood of new firms survival and post-entry performance tends to decrease with firm size and credit constraints and to increase with the technological environment and entrepreneur's education and human capital (Bates, 1990; Gimeno et al., 1997). Also, heterogeneity across entrepreneurial types is significant. Entrepreneurial ventures appear as a rather heterogeneous aggregate where innovative entrepreneurs meet passive followers, over-optimist gamblers and escapees from unemployment (Santarelli and Vivarelli, 2006).

In this paper we focus on two characteristics of business dynamics which seem to reach a consensus in the literature:

- Firm entry and exit exhibit strong heterogeneity and significant differences across countries, industries and entrepreneurs.
- New firm creation rests on a process of search and experimentation, with early failures, market churning and turbulence.

Many arguments have been developed in the literature to explain differences in entrepreneurship across countries: individual characteristics, institutional constraints (credit market frictions, administrative costs and barriers to entry), social environment (market's perception of failure), competition, technology and growth, business cycles, information asymmetry, corporate governance (for a recent comprehensive survey see Santarelli and Vivarelli, 2006). For Lazear (2002), the determinants of entrepreneurship lie in education as entrepreneurs are "jacks-of-all-trades who may not excel in any one skill, but are competent at many". Hence, individuals with experience of many different roles are more likely to become entrepreneurs (a positive effect between human capital and entrepreneurship is often observed in empirical studies, see e.g. Wagner, 2005). A less specialist and more versatile education should therefore help to spur the level of entrepreneurial activity. Yet, one may argue that the level of education alone does not provide a sufficient explanation of cross-country differences in entrepreneurial dynamism. Indeed, many more technology-intensive businesses are undertaken in the US compared to Europe,[1] even though these economies have comparable levels of skills and human capital.[2] The determinants of cross-country differences in business dynamics are therefore more complex.

For Scarpetta et al. (2002), greater financing possibilities combined with low administrative and financial costs in the US are likely to stimulate entrepreneurs with innovative projects and capacities to start on a small scale and then expand rapidly if successful. In Europe on the contrary, high entry and adjustment costs may rather stimulate a pre-

[1] According to Sapir et al. (2004), 50% of new pharmaceutical products are introduced by firms that are less than 10 years old in the United States, versus only 10% in Europe. Similarly, 12% of the largest US firms by market capitalisation at the end of the 1990s had been founded less than twenty years before, against only 4% in Europe, and the difference between US and European turnover rates is much bigger if one considers the top 500 firms.

[2] The labor force participation rates of individuals aged 25–64 with a tertiary level of education in 1998 was 86.3% in OECD countries, 87.7% in the US and 87.3% in European economies (OECD, 1999). Similarly, the average annual employment growth of high-skilled workers over the 1995-2001 period equals 2.79% both in the US and in Europe (OECD, 2004).