

Entrepreneurial dynamics and regional growth

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Abstract We give an overview of the contributions to this special issue and identify topics for further research. The contributions collected in this special issue document considerable advancements in the research about the effects of new business formation on regional development. Differences in these effects are found according to types of start-ups and their regional environment. Future research should try to shed more light on such differences. This particularly requires information about the characteristics of start-ups such as their knowledge intensity as well as their innovativeness and characteristics of their product program. Moreover, future research has to clarify to what extent new business formation is determined by previous or expected growth and to what extent start-ups have an effect on economic growth independent of an already existent development trend.

Keywords Entrepreneurship · New business formation · Regional development · Sector-specific effects

JEL Classifications L26 · M13 · O1 · O18 · R11

1 Aims and scope

Recent research has clearly demonstrated that new business formation may have considerable positive effects on regional development (for an overview see Fritsch 2008). A main result of this research was that the most important growth effects of start-ups tend to occur with a time lag of up to 10 years. In most of the analyses, a “wave” pattern of the effects has been found. This wave pattern suggests that, in the medium term, new businesses may induce displacements that lead to increased productivity but also to an employment decline. After about 5 or 6 years, the employment effect then becomes positive. An explanation for this long-term employment increase is that additional competition by entries and the subsequent process of market selection result in improvements on the supply side of the regional economy and enhanced competitiveness. Such supply-side improvements can particularly emerge from a reallocation of resources within and between industries and sectors. The empirical

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evidence suggests that growth effects of new business formation mainly result from a process of creative destruction that is initiated by new competitors entering the market.

Another important result of this research was that the effects of new business formation on employment may differ considerably between regions and nations (see, e.g., Acs and Mueller 2008; Fritsch and Mueller 2008; Mueller et al. 2008; van Stel and Suddle 2008). While in some regions new business formation comes along with significant employment growth, this effect may be negligible or may even be negative in other regions. Obviously region-specific factors do not only shape the level of new business formation and the types of new business that are created but also determine their effects on economic development.

The papers collected in this special issue all deal with the effects of business dynamics, particularly new business formation, in a spatial context. Compared with the papers in the special issue on “The Effects of New Businesses on Economic Development” (No. 1, Vol. 30, 2008, edited by Michael Fritsch) of *Small Business Economics*, the focus of this special issue is more on regional differences, on the effects of different types of start-ups and in different industries as well as on their intra- and intersectoral effects. Moreover, the important question is raised of to what extent new business formation can be regarded as a result of previous growth and to what extent it is a source of growth independent of the prevailing development trend. The papers collected in this special issue describe considerable progress in the ongoing research on the effects of new businesses on regional development.

Most of the contributions to this special issue have been selected from papers presented in a series of five sessions on “Entrepreneurship and the Region” that the editors organized at the 47th European Regional Science Association (ERSA) Congress held in Paris in August 2007. Furthermore, the editors invited two additional contributions that appeared to be of significant relevance for the topic of this special issue. All contributions went through a regular referee process that required intensive revisions. We are indebted to the authors and the referees for their cooperation. Particular thanks go to Zoltan Acs and David Audretsch, who agreed to have these significant papers collected in this special issue of this journal.

2 Overview of the contributions to this issue

The contribution by Michael Fritsch and Alexandra Schroeter systematically investigates regional differences in the effects of new business formation on regional employment growth in West German regions. They find that the marginal effect of increasing start-up rates is decreasing and may well become negative after having reached a certain level, which is, however, hardly ever realized in the regions under study. This matches with the results of Bosma et al. (this issue), who find a decreasing effect of business turbulence (number of entries plus number of exits) on growth of total factor productivity. According to Fritsch and Schroeter, population density has a strong influence on the effect of new business formation on regional employment, so that start-ups induce much stronger positive effects in high-density areas than in rural regions. Other variables that lead to relatively large employment effects of new businesses in a region are the share of medium-level skilled workers and the share of employees in research and development. High levels of short-term unemployed persons and of small-business employment in a region seem to cause comparatively low employment effects.

The interpretation of the wave pattern of the effects of new business formation on regional employment growth that has been found in recent analyses is based on the notion that, in the longer term, entry leads to improved productivity and competitiveness of the regional economy. Bosma et al. in their contribution investigate the relevance of such effects using total factor productivity as a measure of regional competitiveness. They analyze not only the effect of entry but also the effect of turbulence, defined as the number of entries *plus* the number of exits, which is supposed to describe the whole process of creative destruction in the sense of Schumpeter (1942). In their analysis for the regions of The Netherlands, they identify productivity-enhancing effects for start-ups in the service sector but not for start-ups in manufacturing. This result is comparable to the findings of Marcus Dejardin for Belgium (this issue). Bosma et al. find that the productivity effect of business dynamics in the service sector is relatively high in regions exhibiting diverse but related economic activities, which may be a rather conducive

environment for the emergence of knowledge spillovers. Another important result of their analysis is that the contribution of turbulence to the growth of total factor productivity decreases with a rising level of business dynamics. Bosma et al. identify an optimum rate of turbulence for which the effect of creative destruction on productivity growth reaches a maximum.

In their analysis for regions of Portugal, Rui Baptista and Miguel Preto find that the effect of new business formation tends to be considerably higher in agglomerations and in high-labor-productivity regions as compared with regions with a relatively low level of labor productivity. In all types of regions, start-ups in knowledge-based industries tend to have a pronounced positive effect on employment growth, while the effect of new businesses in the other sectors is rather small or nonsignificant. This indicates that the type of start-up is highly important for their employment consequences. The positive employment effect of knowledge-based start-ups is stronger in agglomerations and in high-productivity areas as compared with other regions. This strongly suggests that the characteristics of the regional environment—population density and regional labor productivity—are also important for the positive effects of these new firms on employment to unfold. Interestingly, such interregional differences cannot be found for entrants affiliated to non-knowledge-based industries.

Marcus Dejardin investigates the effect of new business formation measures on regional gross domestic product (GDP) growth in Belgium. A synthetic index of annual firm net entries in manufacturing and in services industries is used as an indicator of the distinctive capacity of regional entrepreneurial resources to enter new industries and create wealth. The estimated model includes lags of the annual index in order to translate the notion that new firms' contribution to the economic processes, if small initially, can increase over time. The results provide evidence that net entry may play a role in explaining regional economic growth. However, the causal relationship may range from unclear or inexistent to positive according to the industry under consideration. Dejardin finds some significantly positive effects of start-ups in services on regional growth but not for new ventures in the manufacturing sector.

The interpretation of the wave pattern that has been found for the effects of new businesses on employment implies that start-ups may induce considerable reallocation of resources in the respective regional economy (see Fritsch 2008, for details). Martin Andersson and Florian Noseleit in their analysis for Sweden focus on such intersectoral effects. In a first step, they confirm the well-known wave pattern for the Swedish economy as a whole. In a second step, the model is run for three sectors: manufacturing, low-end services, and high-end services. Andersson and Noseleit find that, in all three sectors, new business formation results in an employment increase in the respective sector. Analyzing the effect on overall employment change, start-ups in manufacturing have the strongest impact, followed by new business formation in low-end services. The effect of start-ups in high-end services on overall employment change is, however, hardly statistically significant. Andersson and Noseleit clearly show the presence of indirect effects by regressing new business formation in a certain sector on employment change in the other sectors of the economy. These indirect effects are strongest for start-ups in manufacturing, again followed by start-ups in low-end services and in high-end service industries.

Sierdjan Koster in his contribution investigates whether independent new firms and establishments started by existing firms (organizational foundings) have different effects on regional employment change. Such different effects may well be expected, since new establishments set up by existing firms can rely on the resource-base of their parent firm, which makes them less vulnerable and can result in relatively high survival and growth rates (Tübke 2004; Brüderl et al. 1992). In Koster's analysis for The Netherlands, however, individual start-ups have considerably stronger positive supply-side effects than new establishments that have been set up by existing firms. This supports the supposition that the organizational status of entries makes a difference.

The contribution of Anyadike-Danes et al. is devoted to the important but highly underresearched question of whether new business formation is a source or a consequence of economic growth. Based on data for Irish regions, they find high levels of net entry during the period of rapid economic growth between the years 1994 and 2000. The number of new businesses in relation to the number of

incumbent businesses remained, however, fairly constant in the long term. The same holds for the number of new businesses in relation to the number of employees. No statistical long-term relationship could be found between the start-up rate in terms of new businesses per 1,000 employees and regional employment growth. Anyadike-Danes et al. test for causality between the level of new business formation and employment change. They find some weak effect of gross entry on employment but no effect of employment on entry. These statistical tests are, however, confined by the limited length of the two time series. The number of businesses over population is rather constant across regions, and respective regional differences diminished over the period of analysis. This means that the growth of the Irish economy since the mid-1990s has been associated with some degree of spatial “catch-up” in business start-up rates.

3 Issues for further research

The contributions to this special issue provide a number of important insights into the effects of new business formation on regional development, thereby documenting rapid progress in this field of research. As could be expected, these new insights also raise a number of questions that should be subject to future analyses.

A key issue for further research are the effects of different types of new businesses on regional development. Many of the contributions to this special issue strongly indicate that industry affiliation of entries plays a role. There are, however, considerable differences with regard to the industry groups for which relatively strong effect of entries can be identified. Bosma et al. (this issue) for The Netherlands as well as Dejardin (this issue) for Belgium detect positive growth effects of business dynamics only for the service sector but not for manufacturing. According to Baptista and Preto (this issue), it is particularly new business formation in industries classified as knowledge based which leads to significant subsequent employment growth in Portuguese regions, while the effect of new businesses in other industries appears to be more or less negligible. Andersson and Noseleit in their analysis for Swedish regions (this issue) find the

strongest employment effects for start-ups in manufacturing, followed by new businesses in low-end services and by entries into high-end service industries. Since industries tend to be rather heterogeneous aggregates that comprise firms with quite dissimilar characteristics, closer inspection of such differences between economic sectors should try to make richer information about the characteristics of new businesses available beyond just their industry affiliation. Particularly, information about the qualification of the entrepreneur and of the employees, the innovativeness of the product program, the start-up size and the amount of capital invested, the embeddedness in networks, etc. may considerably contribute to explaining differences in their performance and their impact on development. The central result of Koster’s analysis for The Netherlands (this issue) is that independent start-ups have a larger impact on regional employment than do new subsidiary establishments (organizational foundations), which indicates a role of a start-up’s organizational status.

Another important result of the contributions to this special issue is that the impact of new business formation on growth differs considerably across regions. Particularly, the employment effects tend to be much more pronounced in high-density areas as compared with rural regions (Baptista and Preto this issue; Fritsch and Schroeter this issue), confirming earlier results by Fritsch and Mueller (2004, 2008). No such effect could, however, be found by Bosma et al. (this issue) for the turbulence of the regional business stock on the growth of regional total factor productivity in The Netherlands. According to this analysis, it is not the density of economic activity but the related variety of the industry structure in a region that is conducive to positive effects of start-ups on growth. Further characteristics of the regional environment which appear to be conducive for a growth-enhancing impact of new business formation are the share of medium-level skilled employees and the share of employees in research and development, while the effect of high levels of short-term unemployment and employment in small businesses seems to be negative (Fritsch and Schroeter this issue). It is also quite remarkable in this context that, according to the analysis of Baptista and Preto for Portugal (this issue), regional conditions tend to be more relevant for start-ups in knowledge-based industries than for

new businesses in industries that are not classified as knowledge based.

There are a number of possible explanations for the regional differences found, particularly for the larger effects of new businesses in high-density regions (for a detailed discussion see Schroeter 2009). Differentiated regional analyses are required in order to find out which of these hypotheses hold. Since it has been shown that the characteristics of start-ups as indicated by their industry affiliation and by other characteristics play an important role in this respect, such analyses should control for these factors. Another important question for further research on regional differences is why rising levels of business dynamics lead to a decrease of the respective effect, as reported in the contributions of Bosma et al. and of Fritsch and Schroeter (this issue). One possible explanation for this phenomenon could be that relatively high regional levels of new business formation include rather large shares of start-ups of low quality in terms of factors such as innovativeness, qualification of the entrepreneur, and overall resource endowment. Since such low-quality start-ups can hardly be regarded as a serious challenge to incumbents, they may primarily cause some churning but will probably not result in any significant effect on regional development (Fritsch and Schroeter 2009). Testing such types of explanation requires more detailed information on the characteristics of entries that should go beyond mere industry affiliation. A fundamental question investigated in the contribution of Anyadike-Danes et al. (this issue) concerns the relationship between new business formation and growth: to what extent is new business formation a result of regional growth and to what extent can it be regarded as a source impulse for growth? Based on data for Ireland, they find only weak confirmation for a causal effect of start-ups on subsequent growth, while the effect of growth on the level of new business formation activity remains insignificant. A more detailed analysis of this issue requires longer time series than Anyadike-Danes et al. had available. Again, such an analysis should account for the characteristics of the new businesses. It seems, for example, rather plausible to assume that the formation of certain types of business such as firms providing local consumer services (e.g., start-ups in the retail sector) is mainly stimulated by increased regional demand and that start-ups in these

sectors have no or only a rather weak impact on subsequent growth. In contrast, the emergence of innovative and growth-oriented new ventures that target national markets or attempt to sell their products worldwide may to a much lesser degree be linked to previous regional growth but can have a quite significant effect on development in subsequent years. Knowing more about the factors that determine different kinds of start-ups, especially the emergence of those types of new businesses that have a relatively high impact on development, could help answer such questions. Empirical analyses in this rather under-researched field should particularly try to account for the regional knowledge-base and the role of incubator institutions such as universities.¹

The contributions to this special issue are a further step towards a better understanding of the relationship between new business formation and the process of economic development. Much has been achieved in this field over the last years, but much also remains to be done. We very much hope that this special issue will stimulate further research in this important field.

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¹ Available analyses such as those by Audretsch et al. (2008), Bosma (2009), Bosma and Schutjens (2009) as well as Bade and Nerlinger (2000) and Harhoff (1999) are only a first step in this direction.

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