Up or out ?
Portrait of young high-growth firms in Belgium

J. De Mulder
H. Godefroid
C. Swartenbroekx (*)

Introduction

In a context of limited growth potential, it is important to understand the factors that encourage or encumber the rapid expansion of young enterprises, and in particular those that facilitate the emergence of what is referred to in the literature as "gazelles", or young firms that post high growth rates during their first years of existence. These gazelles are in fact often frontrunners in using new technologies and/or putting new business models in place and their performance makes a significant contribution to job creation. Helping young businesses to flourish can also have positive spillover effects for the Belgian economy as a whole. This article analyses the characteristics of young firms' development in Belgium (up to their fifth year of activity). To this end, different sources of microeconomic data are used.

The article is divided into four main parts. The first one reviews some of the literature devoted to growth of young businesses and compares the situation in Belgium with that in other European countries on the basis of the figures available. The second part gives a definition of a young high-growth firm for the purposes of this article and sets out the method used. The third part maps young businesses that record rapid growth, *inter alia* by looking at their geographic location and by breaking them down by branch of activity. The fourth part outlines several notable features of these enterprises, especially as regards their national and international trade relations, as well as their structure in terms of employment. The article is wrapped up with the main conclusions and a series of policy recommendations.

(*) The authors would like to thank E. Dhyne for his expertise in the use and analysis of microeconomic databases.

1. Literature review

1.1 Small and young high-growth enterprises

According to Gibrat (1931), the (employment) growth of a firm is a random, unpredictable phenomenon, and therefore not related to its initial size (or its age). If this is the case, it makes little sense to attempt to determine the characteristics of high-growth firms. Nevertheless, several later research papers suggest that this "Gibrat's law" does not apply to small and/or young enterprises.

The first empirical analyses carried out by Birch (1979 and 1981) pointed up the more than proportional role that small firms play in job creation in the United States (in other words, it is not the large well-established firms that are the main source of new jobs). Since then, analyses concentrating on the growth dynamics of firms have been widened to other countries and characteristics. For instance, Haltiwanger *et al.* (2013) underlined that it is young firms in particular that contribute a great deal to net job creation : the inverse relationship between size and net employment growth is attributable to the fact that these young firms generally tend to be small. When

they survive, their growth rates exceed those of well-established firms. Their probability of exit is also higher, just as the resultant job destruction rate is proportionally higher and effectively means that these young businesses have to grow in order to survive (up or out).

International analyses carried out by various authors show that the demographic features of high-growth firms are related to their age, their size, or even the branch in which they operate. Despite the wide range of definitions of a high-growth firm, research work aimed at characterising them converges on four points : they refer to a small number of firms ; they were at the origin of most job creation in developed countries ; they tend to be young and are not over-represented in the technology branches, as might have been expected, but can actually be found across all branches of the economy (Coad and Moreno, 2015). In fact, whatever definition is selected to describe the sub-population of high-growth firms, it tends to be the knowledge-intensive firms that are over-represented in it in comparison to those with high technology content, suggesting in itself that it is mainly the level of human capital that matters in the emergence of these enterprises (Daunfeldt, Elert and Johansson, 2015). Analyses covering several different periods have also pointed up the difficulty for these firms to keep up this high rate of growth in the long run (Daunfeldt and Halvarsson, 2014). All this makes the introduction of targeted economic support policies rather delicate, given the difficulty of identifying *ex ante* a high-growth enterprise, the phenomenon itself being highly uncertain by its very nature (Hölzl, 2016).

1.2 Situation in Belgium

There is no one definition of a young high-growth firm or gazelle. At international level, however, wide use is made of the definition established by Eurostat and the OECD (OECD, 2007), referring to an enterprise up to five years old with ten or more employees at the beginning of the observation period and posting an average annualised growth in terms of employment or turnover greater than 20 % per annum over a period of three years. Additionally and based on the same criteria, a young moderate-growth firm is an enterprise which has an average annualised growth rate of between 10 and 20 %.

It is worth noting that employment and turnover do not necessarily move in the same proportions and simply may reflect different growth profiles, as the increase in business activity can be accompanied by productivity gains. For example, a rise in sales may precede a more or less proportional recovery in employment, or a firm with rapidly expanding turnover can adopt innovations (whether they are technical, managerial or organisational) that reduce the job content of the expansion of its activity (Davidsson *et al.*, 2005).

In 2014, high-growth firms (measured on the basis of employment and with no age limit) in Belgium accounted for 8 % of all companies employing more than ten employees (compared with 9.2 % for the EU as a whole) and 0.4 % of the total population of firms (Mignon, 2017). Just under one-third of these firms are young businesses. So, high growth is not solely the preserve of young firms.

Besides, high growth does not always reflect internal growth, but may also result from merger or acquisition operations. A study by the Federal Planning Bureau (Dumont *et al.*, 2017) revealed that, during the period running from 2002 to 2014, on average 4.7 % of all high-growth firms in Belgium had been involved in a merger or acquisition in the three years preceding the observation year. And among these, 0.23 % concerned young high-growth firms as targets and 0.25 % as young "acquiring" firms. Young high-growth firms' expansion through acquisition therefore concerns only a very low percentage of the population of young enterprises.

1.3 International prospects

The in-depth comparative study of entrepreneurial dynamics in different countries that the OECD has carried out (Criscuolo *et al.*, 2014) confirms that it is not so much small enterprises as young firms (less than five years old) that are more than proportionally involved in the dynamics of employment growth. In this respect, young firms make their contribution, on the one hand, by creating jobs when they enter the market and by destroying jobs in the event of failure (extensive margin), and, on the other hand, through the process of job creation/destruction in companies in the normal course of business (intensive margin). The net sum of these flows is positive for companies less than five years old. The OECD analysis (Criscuolo *et al.*, 2014 and Calvino *et al.*, 2015), covering a sample of 18 countries, suggest that young firms are net job creators (they take up on average 17 % of jobs but account for 41 % of all jobs created). During the economic and financial crisis, new enterprises were more badly hit than well established companies. Between 2002 and 2011, their share in total employment fell back from 1.8 to 1.2 %. This vulnerability is important, given that young enterprises are behind net job creation, just as they support productivity growth and are involved in the diffusion of innovation throughout the economic fabric (Dumont and Kegels, 2016).

Calvino *et al.* (2015) have estimated the contribution of young enterprises to net job creation by contrasting total employment in firms still surviving after the third year of existence with the initial total employment figure. This contribution varies a lot from one country to another, rising from 5.1 % in Sweden to 1.3 % in Belgium, where this rate is lowest. It can be broken down into four elements[1]:

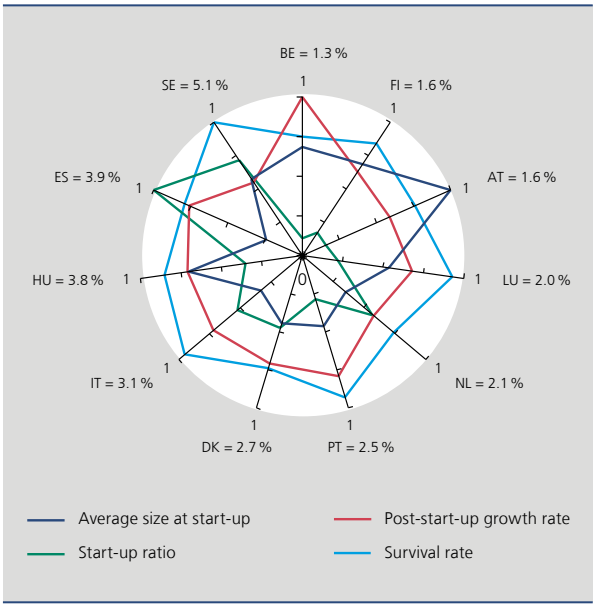
- the business start-up ratio (defined as the ratio between the number of firms created and total initial employment): this ratio reflects the relative importance of entrepreneurship within the economy;
- the average size of the company at the time of start-up (equal to the average number of employees in newly created firms);
- the survival rate of new entrants beyond three years (defined as the ratio of the number of firms surviving more than three years to the total number of firms created);[2]
- and the post-start-up employment growth rate (equal to the ratio between employment after three years and initial employment in the surviving young enterprises), which is associated with the company's growth potential and performance.

The entrepreneurial dynamics of young firms turn out to be very different between individual countries, and the four components interact in diverse ways. The company start-up ratio and the average size at start-up diverge hugely between countries, and they often offset each other. For example, the business start-up rate is high in Spain, while average size there is small; and in Austria, the opposite is true.

On the other hand, survival rates and growth rates are more similar between countries. It is during the first few years of activity that the selection is made and when job creations seem to be greatest. The average probability of leaving the market reaches a peak between the third and fourth year of existence. The vast majority of surviving companies do not grow, but the young ones that do survive are responsible for more than proportionate job creation.

CHART 1 BREAKDOWN OF NET JOB CREATION BY YOUNG FIRMS

(firms surviving after three years with a maximum of 50 salaried employees, standardised scale for each component compared with its maximum value among the countries analysed)



Sources: Calvino *et al.* (2015) and own calculations.

Belgium records particularly vigorous post-start-up growth, but this is not enough to compensate for the very low start-up rate. This appears to be connected with a very low degree of entrepreneurial culture as well as relatively higher risk aversion than in the other EU15 countries (De Mulder and Godefroid, 2016).

Following on from the OECD's work, the Federal Planning Bureau has published an analysis devoted to the role that young firms play in job creation and in the development of industrial productivity in Belgium (Dumont and Kegels, 2016). Not only is the business creation rate low, but the exit rate is too. It is below the company birth rate, which implies structural growth in the number of firms in business between 2008 and 2013. Since the beginning of the millennium, Belgian firms have embarked on net job creation, as growth in the services has been robust enough to offset job losses in the manufacturing industries.

1.4 The determinants of growth

Another section of the literature has endeavoured to analyse some of the possible determinants of corporate growth. These studies refer, on the one hand, to the entrepreneur's characteristics and the different strategies implemented, and, on the other hand, to external factors

(1) Net job creation rate of young firms

$$= \frac{E_{t+3}^{surv}}{E_t} = \frac{E_{t+3}^{surv}}{E_t^{surv}} x \frac{E_t^{surv}}{N_t^{surv}} x \frac{N_t^{surv}}{N_t} x \frac{N_t}{E_t}$$

where E = jobs, N = number of firms and $surv$ = surviving units
= (post-start-up growth rate) x (average size in t)
x (survival rate in t+3) x (the business start-up rate in t).

(2) The interpretation of the survival rate of new entrants after three years is relatively delicate. Indeed, a high survival rate is not necessarily a sign of optimal dynamics among the population of firms. A high rate can reflect a situation of an uncompetitive market where few firms are set up each year but manage to survive there, or a situation of sub-optimal resource allocation in favour of young but inefficient firms that should leave the market but which nevertheless manage to get hold of the resources needed for their survival to the detriment of potential entrants or other existing firms. Conversely, a low rate can reflect a process of setting up a highly dynamic enterprise in a very competitive market, involving a process of optimal resource allocation in favour of the best-performing (new) companies accompanied by the rapid exit of many young firms not doing so well.

such as the business environment and the regulatory framework.

As for the entrepreneur's abilities, a majority of studies have stressed the positive influence of motivation, level of education, managerial experience and the number of founders. By contrast, setting up a company after a period of unemployment tends to have a negative impact on growth. By contrast, other factors, like the gender, age or ethnic origin of the entrepreneur, do not seem to have any significant effect on the company's performance. The adoption of a proactive, innovative and not risk averse entrepreneurial orientation is also favourable to growth (Storey, 1994. In : Davidsson *et al.*, 2005).

The (high) growth that some companies enjoy may also be positively influenced by many different factors. As far as innovation is concerned, companies that innovate register a growth rate (in terms of employment and sales) double that of firms which do not innovate (Nesta, 2009). But this does not mean that there are more high-growth firms in innovating branches. An innovation strategy is not enough in itself : it has to translate into new products, while, in the case of process innovation, the impact on employment has not been determined (OECD, 2010). However, most analyses point to a positive relationship between product innovation, sales and rise in employment in high-growth enterprises (Coad and Moreno, 2015).

Adoption of an export strategy is relevant for a firm located in a small country because it boosts the size of its market and its growth prospects. The impact on growth nevertheless depends on resources that can be mobilised to get established on an international scale, which can prove to be rather difficult for young firms in view of their (small) size and limited resources (they are less diversified). Combined with the strong(er) competition faced on the international plane, this encourages a strategy of differentiation, which in turn leads them to focus on goods and services that meet the specific expectations of clients (Davidsson *et al.*, 2005).

Conclusion of partnership agreements and, more globally, involvement in networking, whether just within the branch itself or with clients, suppliers, distributors (in the case of international expansion) or research centres, may reinforce the resilience of high-growth enterprises (OECD, 2010).

Access to funding is also often cited as being a brake on the creation and development of a new activity/business. Young firms are frequently confronted with problems of moral hazard and adverse selection owing to the asymmetry of information about them on the capital markets (no credit history) and the lack of collateral for securing loans (Calvino *et al.*, 2016).

While the rise of young businesses is partly dependent on the founders' entrepreneurial capacity, the business environment in which they are expanding and any potential obstacles that they will have to face also influence their growth dynamics. In this regard, differences between entrepreneurial dynamics also have to be set against domestic policies that apply to young firms and the regulatory framework governing them. This applies, for instance, to conditions for access to the market for goods and services, financing or withdrawal from the market (related to bankruptcy laws). Calvino *et al.* (2016) make a distinction between the effect of these domestic policies on new businesses and the impact they have on established companies. For example, very young firms (with less than two years of activity under their belt) are systematically influenced more by the domestic economic context and by the regulatory framework than mature firms are. In fact, as they are smaller, they are less able than large firms to influence their environment.

2. Young high-growth firms in Belgium

2.1 Definition

The next part of the article highlights the results of the analysis of Belgian business data that we carried out. The findings concerning the number of young high-growth firms as well as their specific features are of course largely dependent on the definition used. If it is too wide, the number of companies qualifying would be too high and it would be pointless to try and highlight certain distinctive features. Conversely, too strict a definition would only take into account an extremely small number of enterprises, whose characteristics may not be truly representative.

In this regard, Eurostat and the OECD's approach to the subject (see above) has been chosen as the starting point. This approach nevertheless has some shortcomings when used for the purposes of our analysis. Firms that start out small (with less than ten workers) can thus never be labelled as young high-growth firms. This point is a major limitation, especially for Belgium, which is a nation of SMEs. The authors therefore felt it would be useful to adapt and supplement this definition (see Annex 1 for a more detailed discussion of the methodology used).

In this article, firms are considered to be gazelles, that is, they are regarded as young high-growth firms:

– on the basis of employment:
- if they employ at least ten workers at the beginning of the observation period and register annualised growth of employment greater than 20 % over a period of three years during their first five years in business;
- or if they employ less than ten workers at the beginning of the observation period and raise their staff numbers by at least seven employees over a period of three years during their first five years in business;

or

– on the basis of turnover:
- if they post a turnover of at least a € 2 million at the beginning of the observation period and record annualised growth of turnover greater than 20 % over a period of three years during their first five years in business;
- or if they post a turnover of less than € 2 million at the beginning of the observation period and record an increase in their turnover of at least a € 1.4 million over a period of three years during their first five years in business.

This definition makes it possible to identify companies with different growth profiles (increase in turnover, rise in employment, or both of them going up at the same time) with a view to measuring any high growth. It relies on the same criteria for increase in employment as that for turnover. These criteria are consistent with each other both in the case of firms that have only just reached the thresholds used (ten workers or a € 2 million turnover) and those that fall under them: the required expansion of seven members of staff or a turnover of € 1.4 million over a period of three years actually corresponds to the absolute increase implicitly required of companies attaining the fixed threshold.

To be able to assess the results and characteristics of young high-growth firms, these are first of all compared with the findings for young firms whose growth is said to be moderate. This corresponds to an annual increase of 10 to 20 % (or its equivalent) in employment or turnover, by using the same methodology. In addition, a second reference group is composed of all other young enterprises. These two control groups thus cover firms that are the same age as gazelles but which have posted lower growth. A third and final reference group includes mature firms, i.e. those that are at least ten years older than the young firms in question, covering all growth profiles.

The database covers all Belgian firms that filed their annual accounts with the National Bank of Belgium over the period running from 1996 to 2014. As the observation period spans the first five years of their existence, these companies were set up between 1995 and 2009. The annual accounts data have been combined with information on these firms' international trade flows found in the foreign trade statistics.

The analysis only concerns so-called "autonomous" enterprises, and not those belonging to a multinational or a Belgian group, as their performance is more likely to be due to the possibility of transferring sales and/or employment between companies in the same group than to their own intrinsic characteristics. Moreover, it is concentrated on private sector firms. For this reason, non-market services have been left out of the database. In view of their specific nature, agriculture, production and distribution of electricity, gas and water, as well as financial activities have not been taken into consideration either.

2.2 Findings

Almost 180 000 of the 215 000 autonomous companies established between 1995 and 2009 were still in activity five years later (i.e. roughly 83 %). Among these were a total of 6 133 gazelles, that is, 3.4 % of firms still in business. In addition, 6 % of this population posted moderate growth. So, average annual growth was less than 10 % for 91 % of young firms that had survived after five years.

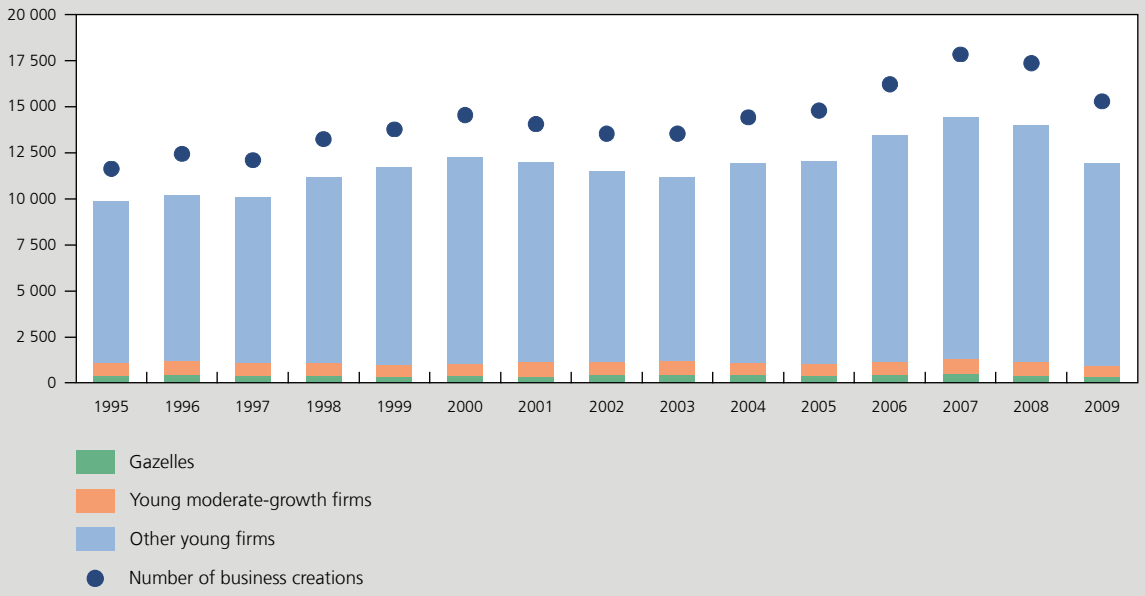
Analysis of the date on an annual basis reveals that just over 14 000 autonomous companies on average have been formed each year over the period under review. While the trend had originally been upward – approximately 11 600 companies were founded in 1995, compared with 17 800 in 2007 –, the economic crisis subsequently brought the numbers down. On an annual basis, among the firms that were set up between 1995 and 2009 (and that were still trading after five years), on average 400 per year registered high growth rates.

Roughly half of the 6 133 gazelles have reached the required development stage in terms of workforce. In this respect, it turns out that young high-growth enterprises thus also create a lot of jobs. And 82 % of them have qualified just by increasing their turnover [(1)]. This higher proportion depends on several different factors, such as the achievement of productivity gains. The fact that employment can only be gradually adjusted, unlike

(1) If the sum of the two proportions comes to more than 100 %, it is because some of the companies have registered the required growth rates in terms of both employment and turnover.

CHART 2 YOUNG FIRMS IN BELGIUM: BUSINESS CREATIONS, SURVIVAL AFTER FIVE YEARS AND GROWTH PROFILE

(autonomous firms set up between 1995 and 2009)



Source : NBB.

turnover, has a role to play here too : in effect, the workforce is often only expanded when sufficient business activity has been generated to enable them to take on one extra worker.

Roughly 29 % of the gazelles identified had initially exceeded the thresholds (or one of the thresholds). No less than 83 % of high-growth enterprises were selected on the basis of criteria applied below the thresholds[1]. As expected, these results highlight the huge importance of small enterprises in the Belgian economy, and therefore the value of widening the criteria with a view to measuring the high growth of young firms, which has made it possible to obtain a much more representative panel of gazelles.

3. Mapping the gazelles

In order to draw a map of high-growth firms, some of their features have been analysed and compared with those of two other types of young firms and mature firms. The results obtained are merely descriptive. As no adjustment has been made for other factors having an influence, it cannot be assumed that the bilateral consistency obtained points up any direct link between the variables in question and the rapid growth of a company, so it is not possible to conclude that there is any causality.

3.1 Where are they based ?

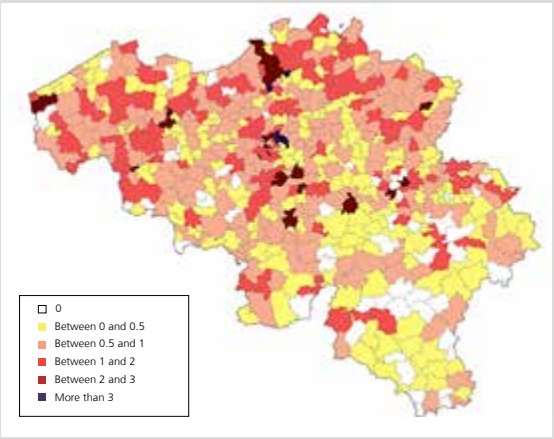
First of all, the geographical location of the gazelles has been established. The regional breakdown revealed that, over the whole period analysed, 61 % of them had their head office in Flanders, compared with 24 % in Wallonia and 15 % in Brussels.

To move on to a more accurate analysis, the data were examined at local municipality level, with the objective of determining whether there were more gazelles in given economic zones (clusters). Logically, a (high-growth) firm has more chances of being set up in a bigger municipality. For the purposes of adjustments seeking to take this factor into account, the total number of high-growth firms per municipality was compared with the working-age population (18-64 years). In the first place, the findings indicate that it is in Flanders and Brussels (and around them) that the most high-growth firms are created. The Antwerp (with its port) and

(1) Once again, overlaps are possible, for example when firms that did not reach the thresholds at the beginning of the first sub-period of three years exceed these lower limits (or one of them) the following year – that is, at the beginning of the second sub-period.

CHART 3 GEOGRAPHICAL SITUATION BY MUNICIPALITY

(autonomous firms set up between 1995 and 2009 per 1 000 inhabitants aged 18 to 64 years old)



Source: NBB.

Brussels regions were found to be economic clusters. In the latter case, the proximity to the national airport is likely to play a role, with the Machelen and Zaventem municipalities having the highest concentration of these companies.

Another piece of potentially interesting information comes from the breakdown by branch of activity. As observed in the literature, gazelles can be found in a wide range of branches. Three-quarters of all young high-growth firms provide market services; the bulk of them (38 %) are active in trade (wholesale and retail), while 17 % of them operate in business services and administrative services. Moreover, roughly 17 % of gazelles work in construction, and around 9 % of them in the manufacturing industry.

If mature firms are taken as a reference for determining the average share of branches of activity in the economy, it appears that high-growth firms are a bit more often active in construction and a little less in market services. However, within these services sectors, gazelles are relatively more frequently found in trade (and more precisely in wholesale trade) and transport.

There are comparatively more young zero- or low-growth firms (the other young firms) in the hotels and catering and information and communication sectors (principally IT services), as well as in business and administrative services (like management consulting).

3.2 Financial ratios

The data gleaned from companies' annual accounts also serve as a basis for calculating quite a few financial ratios. For the purposes of this article, four ratios covering various aspects of corporate financing and profitability have been selected.

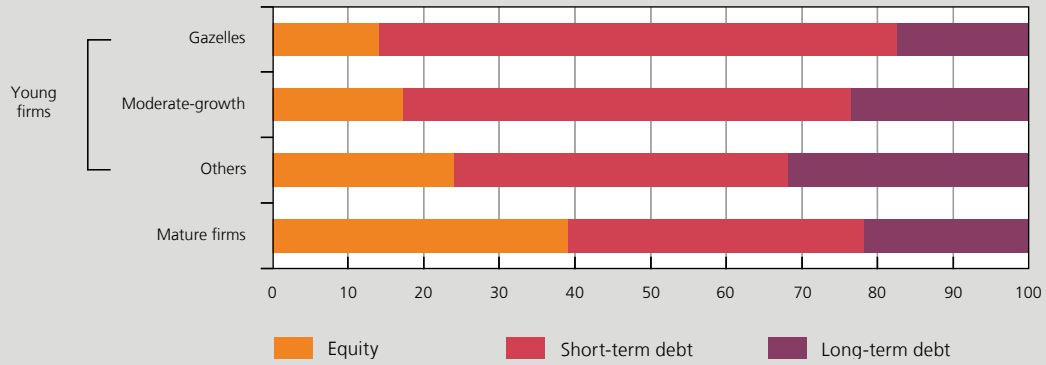
The structure of the liabilities side of the accounts was examined first of all, and more precisely the extent to which business activities were funded with the help of equity capital, on the one hand, and short- or long-term debts on the other. Generally speaking, the share of equity in total liabilities is lower among young firms than mature ones. That may simply be to do with the fact that mature firms, by definition, have been operating for longer and have thus been able to build up more equity capital (thanks, among other things, to retained earnings). It is among young moderate-growth firms and, even more so, among the high-growth ones that the share of equity is lowest; they are relatively more likely to turn to short-term borrowing. However, this should not lead to the conclusion that gazelles' funding base is fragile. In fact, they have obviously managed to convince the banks and other lenders to grant them the funds necessary for their growth. But this may still be a partial indication that young high-growth firms are struggling to attract venture capital (i.e. equity stakes) to fund their growth. These companies' risk profile generally tends to be higher than the others'. In addition, certain market imperfections related to their size and/or their age (for example an information gap between business start-ups and investors) complicate access to equity financing and thus prevent them from reaping the resultant benefits in terms of diversification and costs.

However, young high-growth firms record a much lower net sales margin than all the other corporate groups. This is the ratio between operating profit and turnover. It is quite possible that, during their first few years of existence, the accent is put on growth proper (notably on turnover growth), which pushes up this ratio's denominator, while it is difficult to boost profits at the same pace.

The net return on equity after tax for young high-growth and moderate-growth firms, on the other hand, is well above that for the other two groups of companies. As this ratio expresses the relation between operating profit and equity capital, it is partially influenced by the above-mentioned importance of own funds in the various corporate groups. When they are relatively more substantial, as is the case in established firms, the computed value of

CHART 4 COMPOSITION OF LIABILITIES

(in % of the total, autonomous firms set up between 1995 and 2009, during their fifth year of activity)



Source: NBB.

the ratio falls; and when own funds are limited, as they are for gazelles, the ratio goes up.

Lastly, liquidity in the strict sense, which relates short-term liquid assets[1] to debts payable within one year, is slightly higher in mature firms than in young firms. It is mainly in young high-growth and moderate-growth firms that this ratio is lower, because, as they tend to resort more to short-term debts to finance their business activity.

3.3 Situation after ten years

Although this article is focused on the development of companies over their first five years of activity, it is also interesting to see how they fare after that. There is always a possibility that some companies' growth is so fast at the outset that it subsequently tapers off to virtually nothing, for instance, or even enters negative territory, or that some of them do not record any solid growth for several years. To check this, the behaviour of different groups of companies, broken down according to their growth rate over the first five years, have been examined over the next five years. To avoid any recession-related bias to the conclusions, only results up to the year 2007 have been taken into account. So this analysis only concerns companies set up between 1995 and 1997.

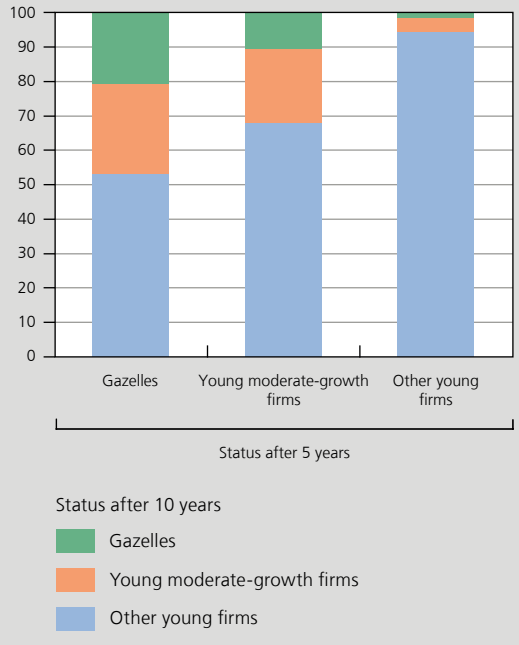
The survival rate after ten years gives an initial indication. That of firms posting high or moderate growth during the first five years (respectively between 74 and 79 %) is a lot higher than that of other young firms (66 %).

(1) This refers to liquid assets, cash investments and receivables within one year.

Furthermore, it is also possible to establish the growth profile of firms that have survived by applying exactly the same method as that used to break down the sample of

CHART 5 GROWTH PROFILE OF YOUNG FIRMS AFTER FIVE AND TEN YEARS

(in % of the total, autonomous firms set up between 1995 and 1997[1])



Source: NBB.

(1) The sample used has been scaled down to avoid any bias in the results from the 2008 recession.

companies during their first five years of existence[1]. Of course, gazelles cannot be expected to continue to register robust growth rates indefinitely: the higher the initial rate, the bigger the increase required in absolute terms to obtain the same growth rate. Thus, quite independently of their performance in the first five years, the majority of young firms are classed in the 'other firms' group – those whose annual average growth is less than 10 % – over the following five years. Likewise, among young firms that were also considered to be gazelles after five years, their expansion tapers off considerably: just over half of them no longer achieve the 10 % and roughly one-quarter still enjoy moderate growth. However, around 20 % of them manage to leap up to their initial growth rate of more than 20 %. They are thus clearly ahead of those firms that recorded moderate growth during their first five years of existence and are even well ahead of other young firms. In this last group, around 94 % continue to register a growth rate under 10 %; a low initial growth rate therefore only very rarely turns into high growth. By contrast, among the firms whose growth rates were only moderate during the first five years, some 10 % moved up into the group of high-growth firms. Obviously, some businesses are not able to generate growth before several years of activity.

4. Levers for development

As mentioned before, there is no one single model leading to high growth. Whether it is measured by increase in turnover or rise in employment, it actually depends on a multitude of idiosyncratic factors. Moreover, it is not easy to establish a causality link between high growth and one or several firm-specific characteristics. For instance, investment projects carried out can generate a big rise in turnover making it possible to finance other investment projects.

Nevertheless, there are some common features of development among gazelles that can be emphasised. Under certain conditions, these factors are likely to make a positive contribution to their expansion over the first few years of activity and therefore turn into growth levers. With this in mind, four of them have been assessed, namely integration into the domestic production network, international expansion, level of human capital and investment. All these elements are set out in the following sections.

As the objective is to provide structural information on young high-growth firms in Belgium, the results concern enterprises set up between 1995 and 2009. On a random basis, absence of some data has obliged us to reduce the analysis time frame.

We have chosen to examine our findings on the basis of the median rather than the average so as to prevent them from being influenced by outliers. For all the factors under consideration, statistical tests were carried out to compare the median figures for all the various sub-populations surveyed (see Annex 2). All these tests produce the conclusion that the median gazelle is significantly different from the median low- or negative-growth firm (other young firms), and is so right from the outset. This is also the case in comparison to the median young moderate-growth firm, except, for certain particular years of activity, when it comes to the number of suppliers, professional clients as well as amounts invested in intangible assets. Unless otherwise mentioned, the medians referred to in the rest of the article are statistically different from standard significance thresholds.

4.1 Integration into the domestic production network

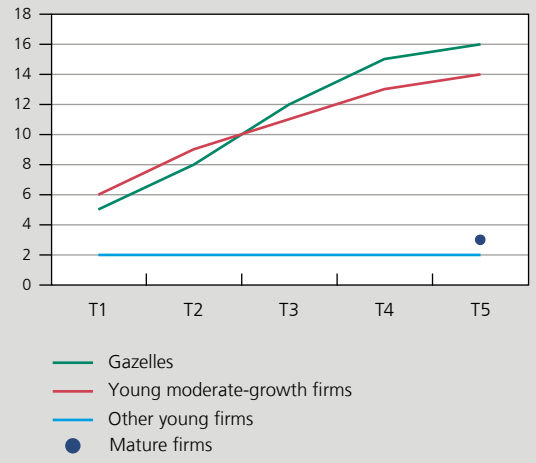
One first characteristic able to influence companies' performance (see Dhyne and Duprez, 2015 and 2017) is their integration into the domestic production network. There are two indicators for measuring this. The first is the median number of professional clients. This shoots up considerably in the first few years of activity for young high-growth and moderate-growth firms. More precisely, in the case of these two groups of companies, the median number of professional clients more than doubles between the first and the fifth year of existence. Conversely, for young firms posting a low or negative growth rate, the median number of professional clients does not rise and actually remains below that for other groups over the entire period. It seems quite logical that a firm which grows strongly enjoys an increase in its client numbers. But it does tell us something about the mode of growth in these businesses. A firm can in fact inflate its turnover by stepping up sales to its existing clients or by enlarging its customer portfolio. It appears that investing in building up its customer portfolio is an essential stage in any company's first few years of existence. This observation was also made by Foster *et al.* (2014) for the United States.

The second indicator for integration into the domestic production network is the median number of suppliers. This gives information about the degree of sophistication of the products developed in the companies. A greater number of suppliers may actually be a sign of wider diversification of inputs needed for production, frequently

(1) Thus, growth in employment and turnover growth are again taken into consideration for the two sub-periods of three years.

CHART 6 INTEGRATION INTO THE DOMESTIC PRODUCTION NETWORK [1]

(median number of professional clients, autonomous firms set up between 2001 and 2009)



Source : NBB.

(1) During most of the years in question, the statistical test tells us that the medians for gazelles and young moderate-growth firms are not significantly different.

leading to greater product sophistication. This indicator can also reflect the degree of specialisation of the company that prefers to outsource more tasks in order to concentrate on its core competences.

During the first year of activity, the median number of suppliers to gazelles and young moderate-growth firms is comparable. After that, it goes up a lot faster for the first group. The median number of suppliers of other young firms and mature firms is much lower.

More generally speaking, these two indicators provide information on the connections that young firms have with other firms established on the same territory. It is clear that the median number of professional clients and suppliers observed in the first year after start-up for gazelles and young moderate-growth firms is already relatively higher than for young low- or negative-growth firms and mature firms. Over time, the gaps get wider and wider.

These two indicators can also be interpreted as signs of less dependence on a client/supplier of the median young high-growth firm, which in this way diversifies the risks with which it is confronted. By widening its customer and supplier portfolio, the gazelle becomes less exposed to a negative shock affecting firms situated upstream and downstream from its business activity.

4.2 Expansion on an international scale

Just as it is important for a young firm to get integrated into the local economic fabric, it can also be crucial, in a small open economy like Belgium, for young firms to rapidly get a foothold on or start getting supplies from international markets. Alongside development at home, foreign markets also offer growth opportunities, both intensive and extensive, for young firms. In an increasingly globalised environment, it is a genuine network of interconnected enterprises that constitutes the productive base of the economy, and foreign companies are an integral part of it.

To estimate the implication of gazelles at international level, three separate indicators were used : the percentage of exporting and importing firms, the median number of products exported and imported, as well as the median number of countries of origin (destination) for the imports (exports).

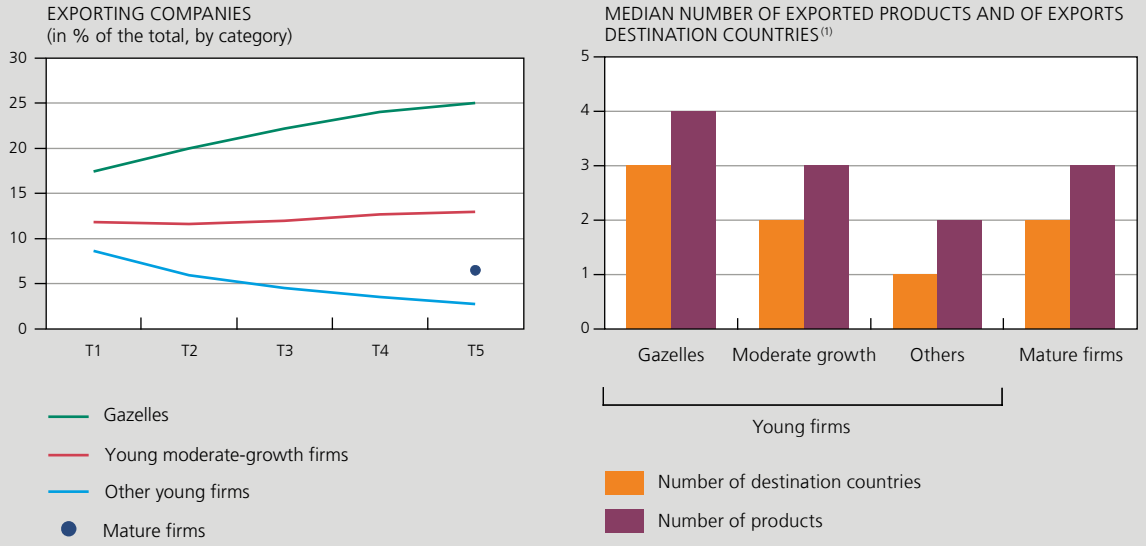
As for trade with the rest of the world, the situation during young firms' first few years of activity also varies according to their growth profile. In the first year of activity, 17 % of gazelles are found to be exporting. This percentage is significantly higher than that recorded among young moderate-growth firms (12 %) and other young firms (9 %), but also for mature firms (9 %). Subsequently, these differences become more pronounced. So, during their fifth year of activity, one-quarter of gazelles were found to be exporting. The percentage of exporting firms also goes up slightly among young moderate-growth firms. Other young firms are three times less likely to be exporting after five years in business (3 %). Furthermore, on average, a high-growth firm exports 1.31 times during its first five years in business, while young moderate- or low-growth firms only export, respectively, 0.82 and 0.34 times in five years.

More broadly speaking, it turns out that the majority of findings concerning exports are also reflected in those for imports. These divergences according to growth profile get worse over time, to reach 32 % for importing gazelles, compared with 19 % for young moderate-growth firms and barely 5 % for other young firms, after five years.

It therefore appears that there are proportionally more young high-growth firms involved in international trade, not only for obtaining the inputs needed for production (imports), but also when it comes to selling their products (exports). A further observation is that the average gazelle's exports and imports account for a comparatively larger share of its turnover than they do for other types of young enterprises involved in international trade. In this way, the median gazelle also diversifies the risks to which it is exposed.

CHART 7 INTEGRATION INTO INTERNATIONAL TRADE

(autonomous firms set up between 1995 and 2009)



Source: NBB.

(1) After five years for young firms and after at least 15 years for mature firms.

One further point can be added to the mix to help characterise the deeper integration of gazelles in international trade. The analysis of the median number of products exported after five years shows that exporting gazelles export more products (4) than young moderate- (3) or low-growth (2) exporting firms. The results for the median exporting gazelle after five years are higher than those for the median exporting mature firm.

On the import side of the equation, there seems to be even greater product diversification, in particular for importing gazelles, in the case of which the median number of products imported is 7. This median is higher than those recorded for mature importing firms (5) and for young moderate- (5) or low-to-negative-growth (2) importing firms.

It seems that the greater specialisation of the median gazelle has not just to do with a high number of domestic suppliers, but it is also due to a larger number of imported products when the firm decides to source its supplies from global markets. When gazelles develop their international operations, their sales abroad also start to diversify more.

Likewise, the median number of countries of origin of imports or destination of exports varies according to the growth profile of young enterprises. Thus, when it exports, the median gazelle sends its goods to a larger number of countries (3). This indicator is yet another example of the relatively more diversified nature of trade between gazelles and the rest of the world. This also goes for imports.

4.3 Structure of the workforce

A third source of growth for a company can also stem from the actual structure of its staff. As mentioned earlier, high-growth firms are very often active in knowledge-intensive branches. Therefore, a company's staff skills structure should have some influence on its performance (1). Since the analysis of this dimension relied on gathering data available in the social balance sheets, and in view of the limited amount of information, we were obliged to restrict the analysis to the period 2007-2009.

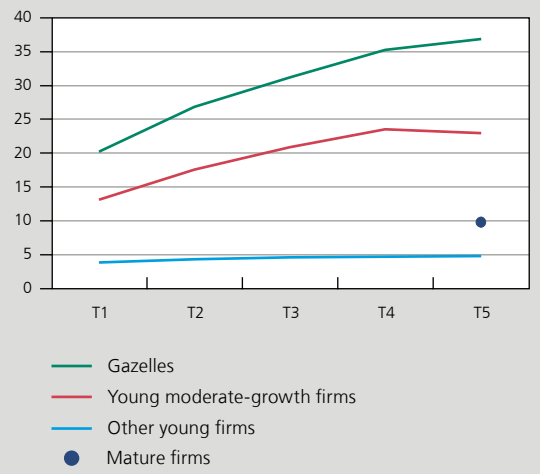
According to our data, one-fifth of all gazelles employ highly-skilled staff (2) right from the start of their

(1) Other characteristics of the workforce were also analysed (gender, type of contract, etc.), but no significant difference between the median firms from our various groups of companies could be found for these other dimensions.

(2) To be considered as highly-skilled, an employee must have a higher education diploma.

CHART 8 STAFF SKILLS

(percentage share of firms employing highly-skilled staff[1], autonomous firms set up between 2007 and 2009)



Source: NBB.

(1) To be considered as highly-skilled, an employee must have a higher education diploma.

business activities. This share is higher than in young moderate-growth firms (13 %) and low- or negative-growth firms (4 %). As they expand, this percentage will go up for gazelles and young moderate-growth firms. After five years in business, 37 % of gazelles employ highly-skilled staff, compared with 23 % of young moderate-growth firms and barely 5 % of low- or negative-growth firms. One-tenth of mature firms take on this type of staff.

4.4 Investment

Along with having a sufficiently skilled workforce, it is also important for young firms to invest with a view to expanding their production capacity and their innovative nature. They will thus be able to rapidly reach the technological efficiency frontier and not fall back in this area vis-à-vis their competitors. That could actually penalise them and jeopardise their short-term survival.

Business investment can be grouped into two main, but quite distinct, categories: investment in tangible assets, on the one hand, and investment in intangible assets, on the other hand. The first category covers, *inter alia*, all necessary machinery and equipment for production operations. The second one is an approximation that can take the innovative nature of firms into consideration. Investment in intangible assets is in fact partly composed of investment in R&D.

It appears that almost all young firms invest in tangible assets during their first years of development. For instance, in their fifth year of business activity, more than 90 % of young firms have made this type of investment.

However, this finding is not nearly so clear-cut when it comes to investment in intangible assets. When they start out, the percentage of young firms investing in intangible assets proves to be quite comparable (about 33 %), whatever their growth profile. It is afterwards, as they start expanding, that the proportions start to diverge.

The share of young high-growth firms investing in intangible assets increases to reach 40 % during the fifth year. This percentage is very close to that registered for young moderate-growth firms. Over the same period, barely only one-quarter or so of young low- or negative-growth firms invest in intangible assets, a level close to that for mature firms. Over the first five years of activity, almost one in every two young high-growth or moderate-growth firms invests in intangible assets at least for one year, compared with only one-third of other young firms and mature firms. What is more, on average, gazelles and young moderate-growth firms invest in intangible assets 1.75 times over the first five years, while the least-performing young enterprises only invest 1 and a half times in five years on average.

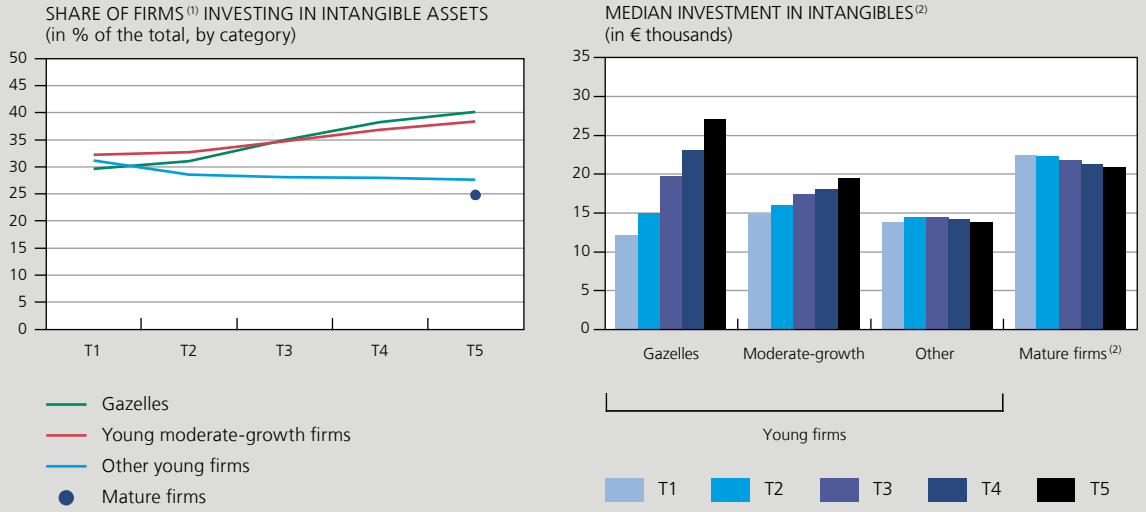
Breaking the findings down by growth profile of young firms, differences are also observed in terms of median amounts invested. Although the level of gazelles' investment in intangible assets is relatively lower when they start out, the median amounts invested rise sharply over time and, after a few years, overtake those recorded by other categories of young firms. As far as tangible assets are concerned, and compared with other groups of young firms, gazelles tend to invest more right from the start of their business activities, and the sums invested go up faster.

4.5 Multivariate analysis

The analysis of determinants described in sections 4.1 to 4.4 was limited to a purely bivariate analysis of the link between each factor and the companies' performance. These factors are nevertheless relatively correlated. To see whether the relationships observed between the variables are robust, we also carried out a multivariate analysis. The objective of this analysis is to test the influence of each lever on the probability of a

CHART 9 INVESTMENT IN INTANGIBLE ASSETS

(autonomous firms set up between 1995 and 2009)



Source : NBB.

(1) The statistical test shows that the medians for gazelles and young moderate-growth firms are not significantly different in T3.

(2) The observations for mature firms relate to their median investment between at least their 11th and their 15th years of activity.

young enterprise, at the time it is set up, of surviving for at least five years and making quite a lot of progress over these five years. In order to do so, on the basis of young enterprises' initial characteristics (1), we estimated their probabilities of (a) disappearing, (b) surviving for five years while posting low or negative growth, (c) surviving for five years posting moderate growth (d) surviving for five years by becoming a gazelle. The analysis sample is limited to only those companies set up between 2003 and 2009, a period for which information is available for most of the determinants, with the exception of skills level.

This study reveals that, apart from the number of suppliers for which the coefficient is not statistically significant, the various factors analysed all increase a young firm's probability of survival and its performance potential over the first five years of activity. So, it appears that greater integration into the domestic production network, involvement in international trade (as young importing, exporting or both importing and exporting firms) as well as investment in tangible and intangible assets are factors that are mutually reinforcing rather than having a common dimension. While corporate growth depends on many idiosyncratic factors, the levers for development pointed up in this article seem to play a positive role in creating an ecosystem that significantly encourages high growth in practice.

Conclusion

Young autonomous gazelles account for a very small share of young enterprises in Belgium (roughly 3 %). This percentage proves to be quite stable over time. Gazelles are active in many different branches of activity and are mostly concentrated in Brussels and Flanders. In this regard, there is a trend towards clustering of young high-growth firms around the port of Antwerp as well as Brussels National Airport.

Overall, young high-growth firms have less recourse to equity capital, expressed as a percentage of all liabilities, than more mature companies. Their net sales margin is a lot smaller, but the net profitability of their own funds after tax is distinctly higher. Their liquidity ratio in the strict sense is lower. These findings are partly to do with these companies' own specific growth characteristics ; it would thus be rather premature to draw any definite conclusions from them about these young firms' capitalisation and their financial situation, for instance.

The survival rate of young high-growth firms is higher after five years. Experiencing a spurt of high growth

(1) By making the future development of a firm conditional upon a whole range of characteristics, at the time it is set up, the return effects of the company's growth on these characteristics can be avoided.

TABLE 1 DETERMINANTS OF YOUNG FIRMS' GROWTH [1]

(ordered probit, autonomous firms set up between 2003 and 2009)

Explanatory variables	Coefficients [2]	Standard deviation
Number of employees (in log)	0.086***	(0.021)
Integration into the domestic production network (in log)		
Number of clients	0.112***	(0.017)
Number of suppliers	–0.025	(0.019)
Place in international trade		
Only exporting	0.478***	(0.146)
Only importing	0.276***	(0.106)
Exporting and importing	0.381***	(0.104)
Investment (in log)		
In tangible assets	0.021***	(0.003)
In intangible assets	0.013***	(0.004)
Estimated threshold [3]		
of survival	–0.758	
of moderate growth	1.399	
of high growth	1.765	
Annual binaries	Yes	
Sectoral binaries	Yes	
R^2	0.0585	
Number of observations	7 887	

Source: own calculations.

(1) In view of the small amount of data available, the workforce skills level is not included in this regression.

(2) A positive coefficient indicates a higher probability of a young firm surviving and posting high growth in its first years of activity. The coefficients ***, ** and * are significant at the respective thresholds of 1, 5 and 10 %.

(3) Multiplying the various coefficients by the data available in each of the firms surveyed gives a total figure for each firm in our sample. The thresholds presented indicate which value a firm must reach in order to survive and be able to move up into a group of enterprises with a higher growth profile.

between the first and the fifth year of activity raises the probability of going through a second one between the sixth and tenth year in business.

There is no single model leading to high growth. It actually depends on many idiosyncratic factors. Under certain conditions, some factors are nevertheless likely to make a positive contribution to the development of young firms, although the analysis does not enable any conclusions to be drawn about causality. Moreover, a multivariate analysis suggests that the various factors examined are all positively and significantly correlated to the probability of a newly established company posting robust growth during its first five years of existence. It therefore seems that they are mutually reinforcing rather than having a common dimension.

First of all, it appears that the median gazelle often has more professional clients and suppliers within Belgium, right from the start of its activities, and their numbers go up as the company expands. It is therefore better integrated into the domestic production network. A higher number of suppliers is also a sign of wider diversification of inputs and, by extension, greater product specialisation. In contrast to other categories of firms, gazelles are found to have more trade links with the rest of the world. And relatively more of them export and import. They are also more diversified, in terms of number of destinations/origins and products traded. The development of extensive margins may therefore be a source of growth. Going beyond their international orientation, which gathers momentum over time, gazelles thus tend to fill out their production network more and seem to resort to subcontracting more often. All these different elements can serve to make the median gazelle less dependent on one particular client or supplier, which in turn diversifies the risks to which it may be exposed. Next, right from the start of their business activities, one-fifth of all gazelles employ highly-skilled staff. This percentage is higher than for the other categories of firms, and it rises further in the first few years of activity. Lastly, the median gazelle tends to invest more in tangible and intangible assets, and the sums invested go up sharply during the first few years of activity.

The analysis also enables us to draw some policy recommendations. It is of utmost importance to stimulate all the levers that encourage growth. This argument is substantiated by international comparisons that show gazelles play a major role in terms of job creation.

To this end, it is important to encourage business creation, an entrepreneurial culture and innovative behaviour, so as to enable ideas with good growth prospects to flourish. More broadly, this approach must encourage risk-taking and reduce the fear of failure as well as the stigma it carries. The emphasis should be on policies for training young people, and young entrepreneurs in particular, with a view to giving them the tools and attitudes that are indispensable for launching their projects successfully.

Young firms should be encouraged to go international and measures to boost intangible investment as well as access to venture capital need to be put in place. In this regard, the recent extension of the so-called tax shelter for business start-ups to growing SMEs enables wider access to funding for these small businesses. Moreover, an efficient regulatory framework adapted to new business requirements is also essential here.

In view of the huge spectrum of growth determinants for young firms, there is a need to strike the right balance between support measures and to make sure they are complementary. If this is the case, these elements could contribute to an efficient allocation of resources which, quite apart from the increase in productivity that it generates, is also a precondition for a lasting recovery, inclusive growth and the prosperity of the Belgian economy as a whole.

Annex 1

Definitions used to measure high growth and their application

Eurostat and the OECD define young high-growth firms or gazelles as: "All enterprises up to five years old with average annualised growth greater than 20 % per annum over a three years period, and with ten or more employees at the beginning of the observation period" (OECD, 2007). This growth may concern employment or turnover.

However, this definition by Eurostat/OECD comes up against a series of limitations. For this reason, it was deemed appropriate to adapt and supplement this definition for the purposes of the analysis of Belgian data.

One first restriction is related to the fact that, according to the Eurostat/OECD approach, the start-up size is only measured by employment (with ten or more employees at the beginning of the observation period), even if it turns out that the companies achieve their growth in the form of a sharp rise in sales. Firms that record vigorous growth in their turnover without resorting intensively to manpower when they start out can therefore never be considered as being high-growth. So, it would be more consistent to only take into account any minimum initial employment if the high growth is achieved in this way, and, by analogy, use a condition of minimum initial turnover if growth is based on sales turnover.

Putting a figure on an initial minimum turnover is rather a delicate matter, however. If this minimum threshold is set too low, the required growth (of 20 % a year) will be equivalent to a rather modest absolute growth in turnover, so that (too) many young firms will qualify as being high-growth. But if it is set too high, only a very small number of young firms will be able to meet the required turnover growth (very high in absolute figures), so that a whole host of high-growth firms will not be identified as such. To get an objective view of this choice, we have examined the distribution, on the one hand, of initial employment and, on the other hand, turnover of young firms at the start of their business activity in Belgium over the period between 1995 and 2009. The minimum threshold of ten employees used by Eurostat/OECD turns out to correspond roughly to the 95th percentile. This is why the initial turnover figure chosen is in line with this same percentile in our definition, that is, roughly € 2 million in rounded figures.

A second limitation to the international approach concerns more specifically the threshold setting. Belgium is in fact a country of small enterprises. The Eurostat/OECD definition implies that 95 % of new firms will in any case never be able to qualify as high-growth firms, even if they post vigorous growth rates, as they employ less than ten people at the start of their business activity. Likewise, after this adaptation, 95 % of new companies will not be taken into account if only those enterprises that immediately achieve a turnover of at least € 2 million can be included. By strictly applying such thresholds, firms that start out small(er), and which subsequently post sharp and rapid growth (in employment or turnover), would then be left out of the analysis.

We have therefore sought to add criteria that also make it possible to identify as high-growth companies those firms that employ less than ten workers or have a turnover of less than € 2 million when they start out in business. In these cases, it is better not to use criteria based on percentage changes, where such growth rates turn out to be mathematically higher[(1)]. This is the reason why we have used criteria that take into account the absolute change in staff numbers or turnover. This change must be more than or equal to the absolute change implicitly required for a firm reaching the pivotal employment or turnover values. In the case of a firm employing ten workers to start with, growth of 20 % over three years implies that employment reaches a rounded number of 17 people and, for a company initially achieving a turnover of € 2 million that figure rises to (approximately) € 3.4 million. This is why our panel of young high-growth firms was extended to those that had less than ten people at the outset, but whose employment rose by at least seven workers over a period of three years. Young enterprises that initially achieve a turnover of less than € 2 million will also be considered as gazelles if, over a period of three years, they register a global increase in their turnover of € 1.4 million.

Young firms posting slightly lower growth (moderate growth), just like other young firms, serve as a reference group for high-growth firms. A group of mature firms also plays a role as a reference group; that is, all companies (whatever

(1) The shift from one to two employees implies a rise of 100 %, while this sort of firm is not intuitively considered as being high-growth.

their growth rate) that are at least ten years older than young firms. This age difference of ten years aims to avoid young firms being directly considered as mature firms at the end of their fifth year of existence, and thus being automatically included in the comparison with companies that are hardly any younger.

In short, the criteria used in this article can be summed up as follows:

BREAKDOWN OF YOUNG FIRMS BY THEIR GROWTH RATE: CRITERIA USED

	High growth (gazelles)	Moderate growth	Other
Employment (E)			
if			
$E_t \geq$ 10 employees	$\sqrt[3]{\frac{E_{t+3}}{E_t}} - 1 \geq 20\%$	$10\% \leq \sqrt[3]{\frac{E_{t+3}}{E_t}} - 1 < 20\%$	$\sqrt[3]{\frac{E_{t+3}}{E_t}} - 1 < 10\%$
$E_t <$ 10 employees	$E_{t+3} - E_t \geq 7$	$3 \leq E_{t+3} - E_t < 7$	$E_{t+3} - E_t < 3$
Turnover (T)			
if			
$T_t \geq$ € 2 000 000	$\sqrt[3]{\frac{T_{t+3}}{T_t}} - 1 \geq 20\%$	$10\% \leq \sqrt[3]{\frac{T_{t+3}}{T_t}} - 1 < 20\%$	$\sqrt[3]{\frac{T_{t+3}}{T_t}} - 1 < 10\%$
$T_t <$ € 2 000 000	$T_{t+3} - T_t \geq$ € 1 400 000	€ 600 000 $\leq T_{t+3} - T_t <$ € 1 400 000	$T_{t+3} - T_t <$ € 600 000

Source: NBB.
Note: where t = the first and second year available.

In view of the definition selected, only companies that are still in business five years after their establishment can be taken into account. For the purposes of isolating features specific to high-growth firms and, possibly, to make some policy recommendations, it is also pertinent not to include in the analysis companies that have already gone out of business during the five-year period.

This is why all firms that have been in business for at least five years are taken into consideration; the growth criterion selected nevertheless refers to two sub-periods of three years. So, a firm can be considered as high-growth if, during one of the two sub-periods of three years (or both the sub-periods), it registers sufficient growth in employment or turnover. If t_0 is the year of establishment [(1)], it refers to growth during the periods $t_1 - t_4$ and $t_2 - t_5$. Thus, a firm set up in 2005 will be qualified as a gazelle if employment and/or turnover show the required growth rate over the period between 2006 and 2009 and/or between 2007 and 2010. This growth is determined in absolute terms or in relative terms, depending on whether employment/turnover falls, respectively in t_1, or in t_2, below or above the established thresholds.

The database comprises information covering the period running from 1996 to 2014 and concerns Belgian companies that file their annual accounts with the National Bank of Belgium. These findings are combined with international trade data based on External Trade Statistics.

The analysis focuses on private sector firms. This is why the NACE branches O-U (non-market services) are left out of the database. In view of their specific features, companies in branches A-B (agriculture, forestry, fisheries, extractive industries), D-E (production and distribution of electricity, gas, water, etc.) and K (financial activities) are also left out.

(1) The year of establishment does not serve as a reference, since most of the time it concerns only part of a year – unless the company was set up on 1 January – which would bias the comparison over time.

Lastly, companies that belong to a multinational or a Belgian group are also left out of the analysis. Quite apart from their own characteristics, these companies' performance can be linked to the fact that sales and/or employment can be shifted from one company to another within the same group. As a result, any analysis of the specific features of these young firms could be widely biased. For this reason, it seemed more useful to concentrate the analysis on young 'autonomous' firms. A company is considered to be part of a group if at least 10 % of its capital is held by another company or if it holds a stake of at least 10 % of the capital of another firm itself.

Basic data from the annual accounts do not always cover a (full) calendar year. For this reason, if necessary, they have been annualised so as to obtain the data that systematically concern the 12-month period between 1 January and 31 December of a given year, which enables comparisons between companies and from one year to another. Furthermore, when the time series for a particular company was not complete, the data were also subjected to a linear interpolation, as long as the missing period was no longer than two years.

Annex 2

SIGNIFICANCE TESTS ON DIFFERENCE BETWEEN MEDIANS

(H_0: median for gazelle = median for other group, H_1: median for gazelle ≠ median for other group; autonomous firms set up between 1995 and 2009, over the first five years of activity)

Variables	Significance threshold for testing the difference in medians for gazelles against:	T1	T2	T3	T4	T5
Number of suppliers	Young moderate-growth firms	*0.126*	*0.027*	0.000	0.000	0.000
	Other young firms	0.000	0.000	0.000	0.000	0.000
	Mature firms	0.000	0.000	0.000	0.000	0.000
Number of professional clients	Young moderate-growth firms	*0.000*	0.307	0.078	0.003	0.110
	Other young firms	0.000	0.000	0.000	0.000	0.000
	Mature firms	0.122	0.000	0.000	0.000	0.000
Number of products exported	Young moderate-growth firms	0.000	0.000	0.000	0.000	0.000
	Other young firms	0.000	0.000	0.000	0.000	0.000
	Mature firms	0.000	0.000	0.000	0.000	0.000
Number of destinations for exports	Young moderate-growth firms	0.000	0.000	0.000	0.000	0.000
	Other young firms	0.000	0.000	0.000	0.000	0.000
	Mature firms	0.000	0.000	0.000	0.000	0.000
Number of products imported	Young moderate-growth firms	0.000	0.000	0.000	0.000	0.000
	Other young firms	0.000	0.000	0.000	0.000	0.000
	Mature firms	0.000	0.000	0.000	0.000	0.000
Number of countries of origin for imports	Young moderate-growth firms	0.000	0.000	0.000	0.000	0.000
	Other young firms	0.000	0.000	0.000	0.000	0.000
	Mature firms	0.000	0.000	0.000	0.000	0.000
Amounts invested in tangible assets	Young moderate-growth firms	0.006	0.000	0.000	0.000	0.000
	Other young firms	0.000	0.000	0.000	0.000	0.000
	Mature firms	0.000	0.000	0.000	0.958	0.000
Amounts invested in intangible assets	Young moderate-growth firms	*0.000*	*0.052*	0.617	0.073	0.044
	Other young firms	*0.002*	0.000	0.000	0.000	0.000
	Mature firms	0.000	0.000	0.000	0.000	0.000

Source: NBB.

Note: The figures in the table represent the thresholds below which the median for gazelles can be considered to be significantly different from the median for the other group of firms examined. In most cases, the median for gazelles is higher than that for the other groups; when this is not the case, the thresholds are indicated in italics.

Bibliography

Audretsch D. B. (2012), *Determinants of High-Growth Entrepreneurship*, Report prepared for the OECD/DBA International Workshop on "High-growth firms: local policies and local determinants", Copenhagen, 28 March.

Birch D. (1979), *The Job Generation Process*, MIT Program on Neighborhood and Regional Change, 302.

Birch D. (1981), "Who Creates Jobs?", *The Public Interest*, 65, 3-14.

Bravo-Biosca A., C. Criscuolo and C. Menon (2013), *What Drives the Dynamics of Business Growth?*, OECD Science, Technology and Industry Policy Papers No. 1, OECD Publishing, Paris.

Calvino F., C. Criscuolo and C. Menon (2015), *Cross-country evidence on start-up dynamics*, OECD Science, Technology and Industry Working Papers 2015/06, OECD Publishing, Paris.

Calvino F., C. Criscuolo and C. Menon (2016), *No Country for Young Firms?: Start-up Dynamics and National Policies*, OECD Science, Technology and Industry Policy Papers No. 29, OECD Publishing, Paris.

Coad A. and F. Moreno (2015), *High-Growth Firms: Stylized Facts and Conflicting Results*, SPRU Working Paper Series, SWPS 2015-05, February.

Coad A., S. Daunfeldt, W. Hölzl, D. Johansson and P. Nightingale (2014), "High-growth firms: introduction to the special section", *Industrial and Corporate Change*, 23(1), 91-112.

Coad A. and P. Nightingale (2014), "Muppets and gazelles: political and methodological biases in entrepreneurship research", *Industrial and Corporate Change*, 23(1), 113-143.

Criscuolo C., P. Gal and C. Menon (2014), *The Dynamics of Employment Growth: New Evidence from 18 Countries*, OECD Science, Technology and Industry Policy Papers No. 14, OECD Publishing, Paris.

Daunfeldt S., D. Halvarsson and D. Johansson (2015), *A cautionary note on using the Eurostat-OECD definition of high-growth firms*, mimeo.

Daunfeldt S., N. Elert and D. Johansson (2015), *Are High-Growth Firms Overrepresented in High-Tech Industries?*, IFN Working Paper No. 1062.

Daunfeldt S. and D. Halvarsson (2015), "Are high-growth firms one-hit wonders? Evidence from Sweden", *Small Business Economics*, February, 44(2), 361-383.

Davidsson P., L. Achtenhagen and L. Naldi (2005), "Research on Small Firm Growth: A Review", *European Institute of Small Business*.

De Mulder J. and H. Godefroid (2016), "How to stimulate entrepreneurship in Belgium?", NBB, *Economic Review*, September, 63-80.

Dhyne E. and C. Duprez (2015), "Has the crisis altered the Belgian economy's DNA?", NBB, *Economic Review*, September, 29-40.

Dhyne E. and C. Duprez (2017), "The world is a village… The integration of Belgian firms into the world economy", NBB, *Economic Review*, September, 25-36.

Dumont M. and C. Kegels (2016), *Young Firms and Industry Dynamics in Belgium*, Federal Planning Bureau, Working Paper 6-16.

Dumont M., C. Kegels, H. Spinnewyn and D. Verwerft (2017), "The role of mergers and acquisitions in employment dynamics in Belgium", in: *Business Dynamics and Productivity*, OECD Publishing, Paris, 59-82.

Foster L., J. Haltiwanger and S. Syverson (2014), *The Slow Growth of New Plants: Learning about Demand?*, NBER Working Paper No. 17853.

Gibrat R. (1931), *Les inégalités économiques: applications, aux inégalités des richesses, à la concentration des entreprises, aux populations des villes, aux statistiques des familles, etc., d'une loi nouvelle: la loi de l'effet proportionnel*, Paris, Librairie du Recueil Sirey.

Haltiwanger J., R. S. Jarmin and J. Miranda (2013), "Who Creates Jobs? Small Versus Large Versus Young", *The Review of Economics and Statistics*, XCV(2).

Hölzl W. (2016), "High growth firms in Europe", in: *Science, Research and Innovation performance of the EU. A contribution to the Open Innovation Open Science Open to the World Agenda*.

Mignon S. (2017), "Quelles sont les caractéristiques des entreprises belges à forte croissance?", *Carrefour de l'Économie*, 2017(12).

NESTA (2009), *The vital 6 per cent. How high-growth innovative businesses generate prosperity and jobs*.

OECD (2007), *Eurostat-OECD Manual on Business Demography Statistics*.

OECD (2010), *High-Growth Enterprises. What Governments Can Do to Make a Difference*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris.

Storey D. J. (1994), *Understanding the Small Business Sector*, Routledge, London, UK.

UWE (2017), Étude sur la situation de l'entreprise – *Thème 2017: croissance des entreprises*.