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Sleeping gazelles: High profits, but no growth!

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Abstract

Using data on on 95,057 limited liability firms in Sweden during 1997-2010, we show that a large share of these firms do not hire new employees despite of having high profits. Nearly one-third of these firms will not grow in the next three-year period either. A probit regression analysis indicate that these firms are not randomly distributed among the firm population; rather they tend to be small firms, have low own capital as share of total debts, and operate in local markets with high profits opportunities. We conclude that it might be more beneficial to focus policy towards these firms instead of targeting a few high-growth firms that in general are reluctant to grow in coming periods.

Keywords: Gazelles; High-growth firms;

JEL-codes: L11; L25

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1 Introduction

Previous studies have shown that most firms do not grow or grow slowly (Hodges and Østbye, 2010), while a few firms, so-called high-growth firms (HGFs), are crucial for job creation (Birch and Medoff, 1994; Brüderl and Preisendörfer, 2000; Davidsson and Henrekson, 2002; Delmar et al., 2003; Littunnen and Tohmo; 2003; Halabisky et al., 2006; Acs and Mueller, 2008; Acs et al., 2008). HGFs have therefore received increasing attention from policymakers in recent years. The Europe 2020 strategy, for example, explicitly mentions more HGFs as a political objective (European Commission, 2010).

An increasing number of studies have been focused on explaining what characterises HGFs, i.e., whether they are small (Delmar 1997; Delmar and Davidsson 1998; Weinzimmer et al. 1998; Delmar et al. 2003; Shepherd and Wiklund 2009), young (Delmar et al., 2003; Haltiwanger et al. 2010), belonging to an enterprise group (Delmar et al., 2003), family-owned (Bjuggren et al., 2010), belonging to a certain industry (Delmar et al, 2003; Davidsson and Delmar, 2003, 2006; Halabisky, 2006; Acs et al., 2008), region (Stam, 2005; Acs and Mueller, 2008), or country (Schreyer, 2000; Biosca, 2010), and so on.[1] The often implicit assumption behind these studies is that we might learn something from investigating HGFs; knowledge that can be used to increase the number of fast-growing firms in the economy.

Shane (2009) argues that the importance of a small number of HGFs suggests that policy should be re-directed from promoting start-ups towards

[1] Henrekson and Johansson (2010) provides an overview over the empirical literature on HGFs.

encouraging HGFs, and Mason and Brown (2012) presents a number of public policies that can be used to support HGFs. However, the focus towards HGFs might be problematic for at least two reasons. First, HGFs might experience high growth despite the existence of growth barriers. Removal of growth barriers might thus have no influence on the growth rates of HGFs, but instead promote growth of other firms. Second, as shown by Hölzl (2011) and Daunfeldt and Halvarsson (2012), HGFs are likely to be 'one-hit wonders'; implying that it is unlikely that they will repeat their high growth rates in coming periods. This seriously questions whether policymakers can target high-growth firms in order to design policies to promote future firm growth.

Thus, the characteristics and strategy of HGFs might not be useful for determining what need to be improved in order to create a business environment more favorable for firm growth. In fact, the focus towards HGFs might be directly misleading if we want to increase the number of job opportunities in the economy. We argue that a more relevant question to ask is: what kind of firms are most likely to benefit from the removal of growth barriers? Davidsson et al. (2009), for example, showed that firms with high profits, but low growth, are more likely to reach a state of high profitability and high growth in the future than firms that are growing before having high profits. Thus, profitability seem to be a preferable strategy for achieving sustainable high growth in the future. Our analysis is therefore focused on what we call "sleeping gazelles"[2], i.e., firms that have experienced high profitability, but

[2]The reason we call them sleeping gazelles is that HGFs were labeled as gazelles by Birch and Medoff (1994).

no employment growth.

The purpose of this paper is to investigate the firm dynamics of sleeping gazelles, and what characterises these firms at a given point in time. Our analysis is based on a comprehensive data-set covering all Swedish limited liability firms during 1997-2010.

Our results indicate that sleeping gazelles constitute 10.1-11.6% (depending on the chosen time period) of all firms in our samples. This means that these firms constitute a much larger share of the firm population than HGFs, suggesting that the Swedish unemployment rate would decline substantially if these firms, on average, choosed to hire only one more employee, *ceteris paribus*. However, the probability that sleeping gazelles will continue to have high profitability but zero growth in the next three-year period is as high as 0.31, revaling that these firms, despite high profitability, are reluctant to grow. Our results also indicate that sleeping gazelles in general are small firms with a low share of own capital in relation to total debts, and operates in local markets that are characterized by high profits, high MES, and a low number of firms. However, regional conditions does not seem to influence the likelihood of being classified as a sleeping gazelle.

On basis of our results, we argue that previous studies too much have been focused on analyzing HGFs, so-called gazelles, which are firms that constitute a small fraction of the firm population and are extremely unlikely to repeat their rapid growth in coming periods. Our results instead suggest that policymakers should focus more towards sleeping gazelles, i.e., firms that experience no growth even though they have relatively high profits.

The next section provides a theoretical background on what determines

firm growth and why certain firms might become sleeping gazelles, while the data are presented in Section 3. Section 4 then describes the empirical model, while the results are presented in Section 5. Section 6 summarizes and draws conclusions.

2 Understanding firm growth

A number of factors have been suggested as important for firm growth in the literature (for surveys, see Coad, 2009). In this paper, we focus on factors that are measurable using secondary data, and thus able to include as control variables in an empirical model. This means that we exclude factors such as growth ambitions, market orientation, business models, firm-level human assets, firm culture, governance modes, innovative orientation, and so on from our analysis.

One of the most studied relationships in the firm growth literature concerns whether firm growth is contingent on firm size. The starting point for most analysis is Gibrat's law, predicting that firm growth is a purely random effect and therefore should be independent of firm size (Gibrat, 1931). However, already Schumpeter (1912, 1934) emphasized the importance of new and small ventures for introducing novel ideas into the economic system, thereby promoting firm growth. The later Schumpeter (1943), was of another opinion, arguing that innovation was a routinized process best performed by large firms that could use economics of scale to their advantage with respect to growth. Small sized firms were often considered as inefficient and, at times, a waste of resources (Galbraith, 1956, 1967).

Birch et al. (1979) questioned this view, showing that large companies at a given time accounted for the largest employment share in the United States. But companies that were large in one period shrunk and were replace by new firms that used to be small. Thus, with this dynamic perspective, small firms were the job creators; whereas the group of large firms reduced their share of total employment. The results were considered controversial and have been heavily criticized (Davis et al., 1996, Kirchho and Greene, 1998). The key findings of Birch's analysis have been confirmed in more recent studies (Van Praag and Versloot, 2007), with one important addition; the majority of small firms do not grow. Instead, firm growth seem concentrated to a small share of frms in the economy (Birch and Medoff, 1994). Davidsson et al. (2005), for example, noted that "Most firms start small, live small and die small". This suggests that small firms should be overrepresentated among profitable firms that do not grow.

A number of studies have argued that younger firms should grow faster than older ones since they are more entrepreneurial, and therefore act faster on new business opportunities (Coad, 2009). Older firms are also more likely to have achieved their optimal size compared to younger firms. In fact, Haltiwanger et al. (2010) argues that after controlling for firm age, there is no systematic relationship between firm size and firm growth. This implies that older firms should be more likely to be classified as sleeping gazelles.

Ownership structure is another relevant firm-specific factor to consider with respect to growth rates. There is evidence of multi-plant firms having higher growth rates than single-plant firms, in the case of U.S. small busi-

nesses (Variyam and Kraybill 1992; Audretsch and Mahmood 1994), large European corporations (Geroski and Gugler 2004), and Italian manufacturing firms (Fagiolo and Luzzi 2006). Multiplant firms can be expected to have greater financial backing than single-plant firms and should thus be more likely to increase their number of employees when experiencing high profitability.

The financial strength of the firm might also determine whether profitable firms choose to grow or not. Cressy (2006) developed a theoretical model of firm growth, showing that firms often die young because financial resources are impoverished. Santarelli and Vivarelli (2007) also claim that credit constraints and lack of financial capital in general should limit firm growth. But other studies have indicated that credit-rationing has been overemphasized, and difficulties to get external finance may not be the cause of problems but a symptom of other problems. This argument is supported by De Meza (2002), who argues that asymmetric information and entrepreneurial over-optimism creates a possibilty of overlending to low-quality firms.

Industry-specific factors might also affect the likelihood of observing sleeping gazelles. Higher profit opportunities are often considered to stimulate firm growth, even though it has been difficult to prove it empirically (Geroski, 1995). Also, firms that are active in industries characterized by a high degree of uncertainty regarding future profits might choose not to hire more employees. Kan and Tsai (2006), for example, find that risk-aversion has a negative impact on the decision to become self-employed. Modern Austrian economists have a different perspective on uncertainty and entry

of new firms. According to Kirzner (1997, p. 73): "What drives the market process is entrepreneurail boldness and imagination".

The industry mimimum effecient scale (MES) might also affect growth rate since the scale disadvantage of a small firm is larger in industries with a larger MES. Small firms are thus forced to grow quickly in industries characterized by high MES (Strotman, 2007: p. 89), implying that sleeping gazelles should be less common in these industries.

Market concentration within industries has also been suggested to be an important determinant of firm growth (Geroski, 1995). Significant barriers to entry and growth might exist in industries characterized by a high degree of monopoly power. For example, large incumbents in these industries might engage in strategic behavior to prevent growth of smaller firms, suggesting that we should observe more sleeping gazelles in these industries.

Innovation activity is another industry-specific determinant of firm growth that has received a lot of study (e.g., Mansfield 1962; Scherer 1965; Mowery 1983; Geroski and Machin 1992; Geroski and Toker 1996; Roper 1997; Freel 2000; Bottazzi et al. 2001). Audretsch (1995) finds, for example, that while the likelihood of survival for new entrants is lower in innovative industries, those firms that do survive exhibit higher growth than in other industries. Acs and Audretsch (1990) also find that the degree of industry turbulence is inhibited by the overall amount of innovative activity, but promoted by the extent to which small firms innovate. Arrighetti and Vivarelli (1999) investigated the start-up decision of 147 entrepreneurs in Italy, finding that innovative motivation and experience in innovative activities were positively related to a superior post-entry performance. According to Cefis and Marsili

(2006), the ability to innovate increases the survival probability for manufacturing firms in the Netherlands across most industrial sectors, and the innovative premium seems to be highest for small and young firms. Thus, sleeping gazelles should be less common in innovative industries.

Region-specific characteristics are very seldom analyzed when investigating firm growth, even though studies (e.g., Audretsch and Dohse, 2007) have indicated that the regional factors might be important determinants of firm growth. Santarelli and Vivarelli (2007) state that since it has long been observed that entrepreneurial activity varies across geographic space, all positive effects of entrepreneurship and new firm startups ought to be particularly obvious at the regional level.

The "new economic geography" (Fujita et al. 1999) and endogenous growth theory (Romer, 1991) suggests that large common markets drive economic growth, Industrial networking might promote firm growth and firm survival, especially for small firms. Positive agglomeration externalities also mean that clustering might have a positive effect on the human capital formation of firms. Firm growth should thus be higher in more densely populated regions, which implies that sleeping gazelles should be more common in smaller local markets.

The education level in a region is another factor that might affect whether a firms choose to expand their businesses, since it facilitates knowledge spillovers (Audretsh, Keilbach and Lehman 2006; Acs et al. 2004). If firm growth primarily is determined by access to an educated workforce then firms should expand more in these regions compared to regions with lower educational attainment. Higher education might also encourage individuals

to become entrepreneurs (Daunfeldt et al., 2006; Brixy and Grotz 2007), and the presence of a university might increase business opportunities including university spin-offs (Goldstein and Renault 2004).

Entrepreneurial activity can also depend on its political and institutional setting (Baumol 1990). Left-of-center government parties are, for example, generally perceived as less favorable to entrepreneurship (Ayittey 2008, 146). Firms might also value stable rules of the game, which suggests thaty they should be more likely to hire employees if the local market is characterised by political stability, i.e., a high concentration of political power in the local parliament. On the other hand, a high degree of political power concentration might also be detrimental if there is less perceived need (by complacent politicians) to improve local business conditions.

Finally, firm growth might be lower during recession years, suggesting that firm growth is dependent on the study period.

To summarize, the theories discussed above show that a number of factors might influence whether we observe that a given firm experience employment growth or not. Sometimes theory give us no clear picture of how the various factors influence firm growth. We still hypothesize (based on what appear to be the most clear-cut results form the previous evidence) that small firms, old firms, firms that do not belong to a business group, and firms with low liquidity are more likely to become sleeping gazelles. The decision to expand the businesses might also be related to industry-specific factors. We expect that sleeping gazelles are more common in industries characterised by low profit opportunities, a high degree of industry uncertainty, low MES, high market concentration rates, and a low degree of in-

novation activities. As emphasized in this section, firm growth might also be determined by regional-specific conditions. Our hypotheses are that the likelihood of observing sleeping gazelles are higher in regions that are small, have no universities, a low educated workforce, are governed by left-wing parties, and characterised by a degree of party fragmentation in the local parliament. Firm growth is also less likely to be high during recession years.

3 Data and identification of sleeping gazelles

The data used here was collected from PAR, a Swedish consulting firm that gathers economic information from PRV (the Swedish patent and registration office), to be used foremost by decision-makers in Swedish commercial life. All limited liability firms in Sweden are legally bound to submit an annual report to PRV. The data comprises all Swedish limited liability companies active at some point during 1997-2010, 503,858 firms in total. The data include all variables found in the annual reports, i.e., measures of profits, number of employees, salaries, fixed costs, and liquidity.

Our two-period analysis reguires that the firms existed at least during two consectutive three-year periods. New entrants and firms that made exit during these periods are therefore excluded from our sample. Only active firms are included in the analysis, which means that we exclude firms with an annual turnover that is lower than 100,000 SEK.[3] Finally, we exclude a small number of extreme observations and observations with missing data. Our final sample then consists of 95,057 firms, and 380,228 firm-time-period

[3] This corresponds to around 15,000 US dollars (November 28, 2012).

observations.

Employment and sales are the most commonly used indicators of firm growth (Delmar, 1997; Daunfeldt et al., 2010). We choose to define firm growth (G_{it}) in period t for firm i as the change in the number of employees during a three year period. As firm growth fluctuates substantially over time, the period for which growth is measured can affect the results. We focus on three-year periods since most previous studies on HGFs have measured growth over three- or four-year periods (Henrekson and Johansson, 2010). We choose employment as our growth indicator since our study is focused towards the potential job contribution of firms that do not grow despite of high profitability.

In order to analyze the job dynamics of sleeping gazelles, we divide firms into six different categories: (1) Firms with a declining number of employees, but high profitability; (2) Firms with declining number of employees, and low profitability; (3) Firms with no employment growth, but high profitability; (4) Firms with no employment growth and low profitability; (5) Firms with high employment growth and high profitability; (6) Firms with high employment growth, but low profitability. Sleeping gazelles are defined as group (3), whereas HGFs in general is defined as subsamples of (5) and (6).

Return on total assets (ROA) during the studied 3-year period is used as our measure of profitabilty. In order to be defined as a sleeping gazelle, ROA need to be higher than the median ROA in the industry during each year under the study period. We choose this measure since previous studies have shown that employment growth often follows after (not before) having

high profits, and that firms achieving a state of high growth and high profitability are more likely to have expanded after observing high profitability (Davidsson et al., 2009).

Table 1: Number of Sleeping Gazelles per three-year period

Period	No. firms	Sleeping gazelles	Sleeping Gazelles/No. Firms
1998-2001	95057	9614	10.11%
2001-2004	95057	10423	10.96%
2004-2007	95057	10792	11.35%
2007-2010	95057	11063	11.64%

Table 1 shows the that the total number of sleeping gazelles varies between 9,614 and 11,063 firms during 1998-2010, representing 10.1-11.6% of our sample. We can thus conclude that a large number of firms are profitable, but choose not to expand their businesses.

On the basis of the theoretical discussion in Section 2, we include a number of explanatory variables to analyze what characterises a sleeping gazelle and the likelihood that these firms starts to increase their number of employees. The explanatory variables can be divided into firm-specific, industry-specific, region-specific, and time-specific determinants of firm growth.

Firm size, firm age, ownership structure and financial strenght are included as firm-specific variables in the empirical analysis; whereas profit opportunities, profit uncertainty, industry minimum efficient scale (MES), market concentration, and innovation activity are included as industry-specific variables. The degree of innovation activities in the industry is

based on Eurostat's degree of technological sophistication in manufacturing and service industries. Manufacturing industries are classified as either high-tech, medium-tech, medium low-tech, or low-tech. Service industries are classified as high tech-knowledge intensive, market knowledge intensive, other knowledge intensive, or less knowledge intensive. We include a dummy for firms in high-tech industries and high-tech knowledge intensive industries, respectively, to investigate whether innovative firms have higher growth rates.

Region-specific factors might also affect the likelihood of not observing any high growth rates, and we therefore control for population size, the presence of a university or a university college; the educational level of the population; political preferences; and political strength as explanatory variables in the estimated model. All region-specific characteristics are provided by Statistics Sweden and measured at the municipality level. We also include industry-specific and region-specific fixed effects to control for time-invariant heterogeneity across industries and regions. Finally, time-variant heterogenity in growth rates are controlled for using time-specific fixed effects.

Descriptive statistics of all varibles included in the empirical analysis are presented in Table 2. All varibles are defined and discussed more thourougly in Section 4.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Size	380228	13.46233	163.9871	0	20335.33
Age	380228	26.27967	13.82128	12	113
Enterprise	380228	0.441125	0.496522	0	1
ROA	378741	6.399455	330.9764	-25600	150600
Financial Strength	379304	10.72221	1122.602	-57876.9	368402.2
Profit Opportunity	380148	6.682509	264.4811	-9300	150600
Profit Uncertainty	371101	439002.9	4.77E+07	0	6.05E+09
MES	380228	4990.862	85321.15	0	1.64E+07
Number of Firms	380228	55.7906	166.3088	0	1219
Market Concentration	380228	0.09919	0.14574	0	1
High-Tech	380228	0.010247	0.100705	0	1
KIS	380228	0.364971	0.481423	0	1
Population	362428	225982.3	285759.3	2522.05	811572.6
Population Density	373989	1015.533	1538.245	0	4315.498
University	380228	0.49124	0.499924	0	1
Education	364326	0.201584	0.083793	0.0631	0.4319
Political Preferences	380228	0.318788	0.466007	0	1
Political Strength	364304	0.225137	0.038711	0.091669	0.49068

4 Dynamics of sleeping gazelles

Following Capasso et al (2009), Hölzl (2011), and Daunfeldt and Halvarsson (2012), we estimate transition probabilities that a firm in a given category in period t (vertical-axis) will be located in that or another category in period $t + 3$ (horizontal-axis). Note that we are using four three-year time periods meaning that one firm might have switched group more than once. The categories used are the same as described in the previous section, i.e.,

1. Firms with declining number of employees, but high profitability.
2. Firms with declining number of employees, and low profitability.
3. Firms with no employment growth, but high profitability (sleeping gazelles).

4. Firms with no employment growth and low profitability.

5. Firms with high employment growth and high profitability.

6. Firms with high employment growth, but low profitability.

The results from the transition probability analysis are presented in Table 3.

Table 3: Transition matrix

		To group					
		1	2	3	4	5	6
From group	1	0.11	0.18	0.17	0.23	0.17	0.15
	2	0.03	0.25	0.06	0.39	0.05	0.21
	3	0.05	0.10	0.31	0.36	0.09	0.10
	4	0.02	0.15	0.10	0.57	0.03	0.12
	5	0.12	0.19	0.13	0.14	0.25	0.17
	6	0.05	0.33	0.06	0.23	0.08	0.25

Firms that experience no employment growth, but high profitability, have a probability of 0.31 to remain in this category during the next three-year period. Thus, sleeping gazelles are very likely to be sleeping gazelles also in the nextcoming period. These firms are also likely (Pr = 0.36) to be characterized by low profitability and no growth in the next period. This illustrated that the observed profitability in the previous period was not sustainable, and that these firms therefore made a rational choice not to expand their business. This also implies that two-third of the sleeping gazelles will not change their number of employees during a 6-year period, but almost half of these firms will continue to have a ROA that is higher than the median firm in the industry. Note also that sleeping gazelles are

less likely than firms in other categories to experience decling growth rates in coming periods.

Firms with high employment growth, but low profitability, are very unlikely (Pr = 0.08) to obtain both high growth and high profitability in the next three-year period. The most likely outcome is in fact that they will end up with declining number of employees and low profitability. They are also quite likely to continue to have employment growth but low profitability, or to have low profitability but no growth in the next period. Firms that experienced high profitability seem, on the other hand, more likely to grow in the next period. A quarter of the firms with high employment growth and high profitability will, for example, remain in this category during the next period. This support Davidsson et al.'s (2009) finding that firms with high profitability are more likely to achieving a state of high growth and high profitability than firms that are growing before having high profits.

For firms located in any of the four groups with no or negative growth, group 4 (no growth and low profitability) is the most likely outcome in the next three-year period. We can see that for a firm with low growth and low profitability, the probablity of moving to any of the three groups with high profitability is only 0.14 which indicate that these firms have a hard time turning their businesses profitable.

5 What characterizes a sleeping gazelle?

5.1 A probit analysis

In every period a number of firms will choose not hire more employees despite high returns on total assets. In order to analyze what characterises these firms we estimate the following Probit model

$$\Pr(D_{it}) = F(\boldsymbol{\alpha}_k^{'}\mathbf{X}_{it-1} + \boldsymbol{\beta}_s^{'}\mathbf{Z}_{jt-1} + \boldsymbol{\delta}_v^{'}\mathbf{Y}_{mt-1} + \eta_v^{'}\mathbf{I}_j + \lambda_l^{'}\mathbf{R}_m + \boldsymbol{\theta}_h^{'}\mathbf{T}_t + \varepsilon_t) \quad (1)$$

where the dependent variable (D_{it}) takes the value one if firm i can be characterised as a sleeping gazelles during the three-year period t, and zero otherwise. Firm-specific characteristics are captured by the vector $\mathbf{X}_{it-1}$; $\mathbf{Z}_{jt-1}$ is a vector of industry-specific characteristics assumed to influence the probability of being a sleeping gazelle; $\mathbf{Y}_{mt-1}$ is a vector of municipal characteristics; $\mathbf{I}_j$, $\mathbf{R}_m$ and $\mathbf{T}_t$ are industry, municipality, and time-specific fixed effects; and $\boldsymbol{\alpha}_k^{'}$ $(k = 1, ..., 4)$, $\boldsymbol{\beta}_s^{'}$ $(s = 1, ..., 6)$, $\boldsymbol{\delta}_v^{'}$ $(v = 1, ..., 6)$, $\eta_v^{'}$ $(v = 1, ..., 318)$, $\lambda_l^{'}$ $(l = 1, ...24)$, and $\boldsymbol{\theta}_h^{'}$ $(h = 1, 2, 3)$ are the corresponding parameter vectors. All explonatary variables to be explained more fully below.

The firm-specific vector, $\mathbf{X}_{it-1}$, includes firm size, firm age, ownership status, and financial strenght.

Firm size is measured as the average number of employees in the previous three-year period, whereas firm age is defined as the observation year minus the registered start year. Information on start year is available from 1897.

Ownership status is measured using a dummy that takes the value one if firm i belongs to an enterprise group, while own capital as share of total debt during the previous three-year period is used as a proxy for the financial strength of the company.

The industry-specific vector, $\mathbf{Z}_{jt-1}$, includes profit opportunities in industry j in municipality m, uncertainty regarding profit opportunities, industry minimum efficient scale (MES), market concentration, industry size, and the degree of innovation activity in the industry.

Profit opportunities for potential entrants are measured by the average returns on total assets (ROA) in industry j in municipality m during the previous three year period $(t-1)$. Uncertainty concerning the future state of the market is proxied by the conditional variance in firms' ROAs during the same period.

MES has been measured in several ways. Audretsch (1995), for example, adopts the standard Comanor & Wilson (1967) proxy for measuring MES, i.e., the mean size of the largest plants in each industry, accounting for half of industry sales. Other commonly used proxies for MES are the size of the industry's median plant, and the ratio of that plant's output to total industry output (Sutton, 1991). We use total sales of the median firm in industry j during period $t-1$ as our measure of MES.

Market concentration (potential presence of dominant incumbent firms) is controlled for using a Herfindahl-index - calculated as the sum of squares of firms' market-shares, i.e., $s_{1m}^2+s_{2m}^2+...+s_{km}^2$, where k is the number of firms in municipality m - for each 5-digit industry j active in the municipality. If all firms had equal revenues, the concentration rate would then be $1/k$,

whereas it would be one if the entire local market were supplied by one firm. We also control for local competition by including the number of firms active in a specific industry j located in municipality m in the previous three-year period $t-1$.

In order to analyze whether the likelihood of observing sleeping gazelles is related to the degree of innovative activity in the industry, we include two dummy variables; taking the value one if the firm is active in a high-tech industry or knowledge intensive services, respectively, otherwise zero.

Region-specific factors included in vector $\mathbf{Y}_{mt-1}$ are population density; population size; the presence of a university; educational level; political preferences; and political power in the municipal government.

The availability of higher education is represented by a dummy variable assigned a value of one if a university is located in the region. The educational level in the municipality is measured as the percentage of people aged 16-74 with at least 3 years of post-secondary school education. Political preferences are indicated by a dummy variable with value one where non-socialist parties had a majority in the municipality government. Political strength is measured by a Herfindahl-index, calculated as the sum of squares of political parties' shares in the local government of the political parties.

5.2 Results

The estimation results from equation (1) are presented in Table 4.

Table 4: Marginal effects from probit regression

Variable	Marginal Effect
Size (L)	-0.00398***
	(9.76E-05)
Age	7.98E-05
	(4.93E-05)
Ownership structure	-0.00198
	(0.001352)
Financial strength (L)	-7.63E-06***
	(2.85E-06)
Profit opportunities (L)	1.61E-05***
	(4.62E-06)
Profit uncertainty	-5.48E-10
	(5.69E-10)
MES (L)	1.94E-08**
	(8.45E-09)
Market concentration	-0.00512
	(0.005987)
Number of firms (L)	-1.1E-05**
	(4.65E-06)
High-Tech	0.069947
	(0.067009)
Knowledge-Intensive services	0.039999
	(0.109764)
Population	4.31E-09
	(9E-09)
Population Density	-1.82E-06
	(1.7E-06)
University	-0.00034
	(0.002294)
Educational level	0.015536
	(0.014526)
Political preferences	-0.00166
	(0.001779)
Political strength	0.01203
	(0.019022)

Note: Standard errors in parentheses. * p<0.1; ** p<0.05; *** p<0.01. Fixed effects for 3-digit industry code and region included. (L) indicates that the variable has been lagged one three-year period.

The results indicate, in accordance with our hypothesis, that sleeping gazelles in general are smaller than other firms. A 1% increase in the number of employees in the previous period reduces the probability to be classified as a sleeping gazelle with 0.4%, which is a sizeable effect. This illustrates the fact that most smalll firms do not grow, and therefore are more likely to be classified as sleeping gazelles. The results also indicate that sleeping gazelles are characterized by a lower financial strength, which we measure as firm's own capital as a share of its total debt, but the economic significance of this effect is low. A 1% increase in the share of own capital to total debt reduces the probability that firms will be classified as sleeping gazelles with 0.00076%. The results weakly indicate that sleeping gazelles are older and more likely to belong to an enterprise group. This supports our hypothesis that older firms are more likely to have acheived their optimal size and that firms which belong to an enterprise group are more likely to increase their number of employees when experiencing high profitability. However, these results are not significant with p-values of 0.106 and 0.143, respectively.

Turning to the industry-specific characteristics, sleeping gazelles seem more likely to operate in local markets characterised by high profit opportunities, high MES, and a low number of firms. Sleeping gazelles are thus more likely to exist in local market that provide favorable conditions for firm growth, which is not expected. This might indicate that sleeping gazelles located in markets that provide good markets conditions are more likely to use it to increase their profits, rather than expanding their businesses. As expected, sleeping gazelles are also more common in markets characterized by high MES, and where the size of the industry is small. Note, however,

that the size of all these industry-specific effects are rather small.

Finally, none of the regional-specific characteristics are statistically significant at the conventional 5%-level, implying that regional conditions are not important for the emergence of sleeping gazelles.

6 Conclusions

A number of studies have shown that most jobs are created by a small number of HGFs, and these firms have therefore received an increasing amount of attention both among academic scholars and policymakers. The underlying assumption is that we might learn something from investigating HGFs; knowledge that can be used to increase the number of fast-growing firms in the economy. In this paper we have argued that this focus towards HGFs might be troublesome if we want to understand what kind of policies are important in order to increase the number of fast growing firms in the economy.

We have argued that more focus instead should be directed towards profitable firms that do not grow in terms of number of employees. The reason is that studies have shown that firms with high profits, but low growth, are more likely to reach a state of high profitability and high growth in the future than firms that are growing before having high profits.

Our results indicated that a large number of firms in fact do not grow in the future, despite of having high profitability. As many as 10.1-11.6% of all firms in our sample belonged to this category, which illustrates that a large number of new jobs could be created if they expanded their businesses. Tran-

sition probabilty analyses also showed that these firms were very reluctant to grow. Almost one-third of the firms with high profits, but no employment growth, would have high profits and no growth in the coming three-year period. Lack of growth ambitions or the presence of growth barriers thus seem to refraim profitable firms from expanding their businesses.

A probit regression analysis showed that firms with high profit but no growth were not randomly distributed among the firm population. In comparision to other firms, they were more likely to be small, have a low financial strength, and to be located in markets with high profit opportunities as well as high MES. This seems to suggest that policymakers should focus more towards removing growth barriers for small businesses.

The interesting question for further research is explaing *why* all these profitable firms chose not to increase the number of employees. How much can be explained by growth barriers such as minimum wage requirements, employment law protection, credit constraints, lack of qualified job candidates, or regulatory burden; and how much can simply be explained by lack of growth ambitions? One interesting avenue for further research is to use our identification strategy of sleeping gazelles to conduct surveys and interviews with these firms. This might provide us with valuable information on why sleeping gazelles choose not to hire more employees, even though they seem to have opportunities to expand their businesses.

Note that our study has been focused towards observable factors that might influence the decision to grow .But we know that unobserved firm-specific factors, such as business models (Cavalcante et al., 2011), firm-level human assets (Schiavone, 2011), firm culture (Barney, 1986), governance

modes (Cantarello et al., 2011), and innovative orientation (Rowley et al., 2011), also might explain differences in firm growth rates. We do belive that these variables are of great importance to deepening our understanding of firm growth. Sleeping gazelles might, for example, choose not to expand their businesses because they lack the entrepreneurial skills to expand their business. This also consititutes another important area for further research.

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