Nascent and infant entrepreneurs in Germany

Wagner, Joachim

Publication date:
2005

Document Version
Publisher's PDF, also known as Version of record

WORKING PAPER

Nascent and Infant Entrepreneurs in Germany. Evidence from the Regional Entrepreneurship Monitor (REM)

by

Joachim Wagner

University of Lüneburg
Working Paper Series in Economics

No. 1

March, 2005

www.uni-lueneburg.de/vwl/papers

ISSN 1860 - 5580

Nascent and Infant Entrepreneurs in Germany

Evidence from the *Regional Entrepreneurship Monitor (REM)*

Joachim Wagner

Institute of Economics, University of Lueneburg, Germany
Institute for the Study of Labor IZA, Bonn, Germany

This version: March 1, 2005

Prepared for
Nascent Entrepreneurship: the Hidden Potential
A Research Conference
Durham Business School, Centre for Entrepreneurship, 21-23 September 2005

Abstract:

Based on data from a recent representative survey of the adult population in Germany this paper documents that the patterns of variables influencing nascent and infant entrepreneurship are quite similar and broadly in line with our theoretical priors – both types of entrepreneurship are fostered by the width of experience and a role model in the family, and hindered by risk aversion, while being male is a supporting factor. Results of this study using cross section data are in line with conclusions from longitudinal studies for other countries finding that between one in two and one in three nascent entrepreneurs become infant entrepreneurs, and that observed individual characteristics – with the important exception of former experience as an employee in the industry of the new venture - tend to play a minor role only in differentiating who starts and who gives up.

Keywords: Nascent entrepreneurs, infant entrepreneurs, Germany

JEL Classification: J23

Acknowledgement: Financial support by the German Research Foundation DFG under grants WA 610/2-1 and WA 610/2-2 for the project *Regional Entrepreneurship Monitor (REM) Germany* is gratefully acknowledged.

1. Motivation

The creation of a new venture is a process. Following Reynolds and White (1997, p. 6) and Reynolds (2000, p. 158ff.) this process, analogous to biological creation, can be considered to have four stages (conception, gestation, infancy, and adolescence), with three transitions. The first transition begins when one or more persons start to commit time and resources to founding a new firm. If they do so on their own, and if the new venture can be considered as an independent start-up, they a called *nascent entrepreneurs*. If they are sponsored by an existing business, they are considered nascent intrapreneurs. The second transition occurs when the gestation process is complete, and when the new venture either starts as an operating business, or when the nascent entrepreneurs abandon their effort and a stillborn happens. The third transition is the passage from infancy to adolescence – the fledgling new firm's successful shift to an established new firm.

This paper deals with the first three stages and the first two transitions of this process, and with their main actors – nascent entrepreneurs and infant entrepreneurs. This means that we will neither look at nascent intrapreneurs, nor will we deal with the survival (or not) and growth pattern of adolescent entrepreneurs and their firms. And we will not look at those who just state that they would prefer being self-employed over being an employee – a group which can be labeled latent entrepreneurs (Blanchflower, Oswald and Stutzer 2001; Blanchflower 2004, p. 16ff.). Instead, we will focus on people who are either currently taking explicit steps to start a new business or who indeed started their new venture within the last 2.5 years. To fix ideas, and following the definition used in the Panel Study of Entrepreneurial Dynamics (PSED) (Reynolds 2000, p. 170f.) and in the Global Entrepreneurship Monitor (GEM) (Reynolds et al. 2004b), a *nascent entrepreneur* is defined as a person who is now trying to start a new business, who expects to be the owner or part owner of the new firm, who has been active in trying to start the new firm in the past 12 month, and whose start-up did not

have a positive monthly cash flow that covers expenses and the owner-manager salaries for more than three month. (Note that self-employed who are active in starting another new venture are not counted as nascent entrepreneurs here.) An *infant entrepreneur* is a person who is self-employed (in her or his main occupation) and who owns (alone or in part) a business that paid salaries to the owner(s) or made profits for no longer than 2.5 years.

Given that newly founded firms are important for the economic development of nations and regions, and that nascent entrepreneurs are by definition important for the foundation of new firms, information about nascent entrepreneurs is important for understanding crucial aspects of the economy. This information, however, can not be found in publications from official statistics. It takes taylor made surveys to collect the facts, and microeconometric methods to learn from the data. Based on projects that are part of or related to the Panel Study of Entrepreneurial Dynamics (PSED) and the Global Entrepreneurship Monitor (GEM) during the past ten years or so a new literature (surveyed in Wagner 2004a) emerged that deals with many aspects of nascent entrepreneurship.

Evidently, not all nascent entrepreneurs see their vision through to an eventual start-up. However, information about those who succeed as an entrepreneur, and about the differences between nascent and infant entrepreneurs, is scarce. This paper intends to contribute to filling this gap. Using data from a recently performed representative survey of the German adult population the following questions are considered: How many nascent and infant entrepreneurs were active in 2003? Who are these entrepreneurs? How do nascent and infant entrepreneurs differ from each other, and from other people who are on the labor market? What can we learn from these differences about which nascent entrepreneurs see their vision through to eventual start-up?

2. Nascent and infant entrepreneurs in Germany, Summer 2003

Some ten years ago we knew next to nothing about nascent entrepreneurs. The situation improved considerably when results from two pioneering studies – the Wisconsin Entrepreneurial Climate Study conducted in Spring 1993, and a national pilot study for the U.S. done in October / November 1993 – were published (see Reynolds and White 1997). Furthermore, for the U.S. the Panel Study of Entrepreneurial Dynamics (PSED) that started in 1998 now is a representative national database on the process of business formation (Reynolds 2000; Reynolds et al. 2002b, 2004a). In 1999 the Global Entrepreneurhip Monitor (GEM) project was started (Reynolds et al. 1999). At the heart of this international project are representative surveys of the adult population in the participating countries that use an identical questionnaire to measure various aspects of entrepreneurial activity. 31 countries participated in the 2003 wave of GEM (Reynolds et al. 2004b).

Germany has been part of GEM from the beginning (for the 2003 report, see Sternberg, Bergmann and Lückgen 2004). Based on the data collected in these surveys descriptive evidence for the number of nascent and young entrepreneurs, and for some of their characteristics, are given in the annual reports. This paper uses data from a project that is closely related to, but independent from, GEM Germany – the *Regional Entrepreneurship Monitor (REM) Germany*. REM was started in 2000 with a focus on the differences in entrepreneurial activities between German regions. Two representative telephone surveys of the adult population were conducted in the summer of 2001 and 2003, collecting data from 10.000 and 12.000 persons, respectively (for details, see the REM reports by Bergmann, Japsen and Tamásy 2002, and by Lückgen and Oberschachtsiek 2004). The advantage of the data from the REM survey of 2003 compared to the GEM data is that the questionnaire for the REM 2003 survey contains important items that are not available from the GEM Germany survey, and that REM has information from 12.000 adults compared to 7.500 in GEM 2003.

According to the REM survey in the summer of 2003 the share of nascent entrepreneurs in the adult population (aged 18 to 64 years) in Germany was three percent; the share of infant entrepreneurs was less than half in size – 1.3 percent. Are nascent and infant entrepreneurs different from each other, and from the rest of the adult population on the labor market, and is there a typical nascent or infant entrepreneur with a typical set of characteristics? Table I reports mean values and standard deviations of selected personal characteristics and attitudes that are expected to be related to entrepreneurial activities for three groups: nascent entrepreneurs, infant entrepreneurs, and a control group made of all people who are either paid employees or unemployed (i.e. all adults which are on the labor market but are neither self-employed nor nascent entrepreneurs).

[Table I near here]

Differences between mean values of the characteristics and attitudes for the three groups will be discussed in turn:

Sex (a dummy variable taking the value one if the interviewee is male). It is a stylized fact that men do have a higher propensity to step into self-employment than women, although the theoretical reasons for this gender specific difference in behavior are still open for debate (see Wagner 2004b). Table I gives the familiar picture: The proportion of men among both nascent and infant entrepreneurs is much higher than that of women, while the share of men and women among paid employees and unemployed is about the same. Note that the difference in the proportion of men between nascent and infant entrepreneurs is not statistically significant at a conventional level, while for both groups of entrepreneurs the gender difference in the propensity to be an entrepreneur is.

Age (measured in years). On the one hand, age is a proxy variable for personal wealth - the older a person is, the longer is the potential period to accumulate wealth. Given that young

firms are often constrained by lack of credit because banks usually demand collateral to finance investments, a certain amount of wealth is crucial for starting a new business (see Evans and Jovanovic 1989). This leads to the expectation of a positive impact of age on entrepreneurial activities. On the other hand one has to acknowledge that starting a new business often leads to high sunk costs - think of all the effort to set up a business plan, doing market research, dealing with legal and administrative problems, etc. The shorter the expected life span of the new business, the shorter is the period over which these sunk costs can be earned back. To put it differently, setting up a new business with high sunk costs is more attractive at the age of 45 than at the age of 60, ceteris paribus. This leads to the expectation of a negative impact of age. Given these two opposite influences of age on the propensity to become an entrepreneur it is an empirical question whether one dominates the other, or whether both net out (see Evans and Leighton 1989). According to table I both nascent and infant entrepreneurs are on average three years younger than paid employees and unemployed. Again, the difference in the mean age between nascent and infant entrepreneurs is not statistically significant, but the difference between entrepreneurs and the members of the control group is.

In two recent papers Lazear (2002, 2004) proposed the jack-of-all-trades view of entrepreneurship. Based on a coherent model of the choice between self-employment and paid employment he shows that having a background in a large number of different roles increases the probability of becoming an entrepreneur. The intuition behind this proposition is that entrepreneurs must have sufficient knowledge in a variety of areas to put together the many ingredients needed for survival and success in a business, while for paid employees it suffices and pays to be a specialist in the field demanded by the job taken. The variety of professional experience of an interviewee that is at the heart of Lazear's theory of entrepreneurship is measured by two variables:

Number of fields of experience. The survey includes a tailor-made question asking in how many different professional fields the interviewee has been active in the past, explaining that this does not mean the number of employers she/he worked for.

Number of professional degrees. The survey collects information about professional degrees completed after school, i.e. whether or not the interviewee successfully passed apprenticeship, managed to qualify formally as a master craftsperson, or received a degree from a polytech or university.

Results reported in table I are broadly in line with Lazear's theory (see Wagner 2003a, 2003b for evidence of the empirical validity of the jack-of-all-trades view in Germany). Nascent and infant entrepreneurs have significantly higher mean values for the number of professional degrees than the paid employees and the unemployed. The mean number of fields of experience, however, is only higher for nascent entrepreneurs, while the difference is insignificant for infant entrepreneurs compared to the control group.

Fear of failure a reason not to start (a dummy variable taking the value one if the interviewee agreed that fear to fail would prevent him from founding a firm). If the interviewee answered this question in the affirmative we consider this as an indicator of a high degree of risk aversion, and we expect a negative impact on the probability of becoming an entrepreneur (see Kihlstrom and Laffont 1979). Evidence reported in table I supports this view: The share of 'cowards' is smallest among the infant entrepreneurs; it is nearly twice as high among the nascent entrepreneurs, and four times as high among the paid employees and unemployed. All these differences are highly significant statistically.

Role model (a dummy variable taking the value one if there is or was at least one self-employed in the family of the interviewee). We expect a positive impact of contact with such a 'role model'. As Simon Parker (2004, p. 85) puts it, self-employed parents might offer their offspring informal induction in business methods, transfer business experience and provide access to capital and equipment, business networks, consultancy and reputation. Furthermore,

children of self-employed parents can be expected to have more pro-business attitudes on average. Again, the results reported in table I are in line with our expectations: The share of interviewees with a role model in the family is highest among the infant entrepreneurs, and much lower among the paid employees and the unemployed. Note that while the difference in this share is highly significant statistically when either nascent or infant entrepreneurs are compared with paid employees and unemployed, it does not differ significantly between nascents and infants.

The comparative descriptive evidence reported in table I shows that certain types of individuals are more likely to be involved in creating or owning a new venture, but that individuals from all categories – men and women; young and old people; people with a broad or a narrow professional background; those who do or do not consider fear of failure a reason not to start an own business; people who have or have not at least one self-employed role model in their family - are involved in entrepreneurship activities to some extent.

3. What makes a nascent or infant entrepreneur?

Although the descriptive evidence discussed in section 2 shows important facts about nascent and infant entrepreneurs in Germany it does not reveal the extent to which the various factors considered are interrelated. To give just one example, consider the relationship between gender and nascent entrepreneurship on the one hand, and between risk aversion and nascent entrepreneurship on the other hand. Men are more often involved in creating new ventures than women, and women are known to be more risk avert than men (see Wagner 2004b). What is the ceteris paribus effect of being male, and of considering fear of failure a reason not to start an own business, on the propensity of being a nascent or an infant entrepreneur? Descriptive bivariate comparisons can not reveal this. Multivariate analyses can.

Empirical investigations of the ceteris paribus impact of individual (and other) characteristics and attitudes on the propensity to become an entrepreneur are usually – either explicitely or implicitly - based on a theoretical framework that can be outlined as follows:

Consider a utility-maximizing individual that has the choice between paid employment and self-employment (taking the decision to participate in the labor market as given). This person will choose the option self-employment if the discounted expected life-time utility from self-employment ($DELU^s$) is higher than that from paid employment ($DELU^p$). The difference N_i between $DELU^s_i$ and $DELU^p_i$,

(1) $N_i = DELU^s_i - DELU^p_i$

therefore, is crucial for the decision of individual i, and it will choose self-employment if N_i is positive. $DELU^s_i$ and $DELU^p_i$ are determined by the expected monetary and non-monetary returns from self-employment and paid employment according to the utility function of the person and the individual's discount rate. Higher returns lead to higher values of DELU.

The expected monetary and non-monetary returns from both types of employment depend on variables like age, having a university degree or not, or the degree of risk-aversion. All these variables are summarized in a vector x_i. Given that N_i depends on $DELU^s_i$ and $DELU^p_i$, and $DELU^s_i$ and $DELU^p_i$ depend on the monetary and non-monetary returns, N_i can be written as a function of x_i:

(2) $N_i = N_i(x_i)$

Elements of x_i that have a more positive or less negative impact on $DELU^s_i$ than on $DELU^p_i$ increase N_i (and vice versa). Given that the expected monetary and non-monetary returns from both types of employment, the utility function, and the discount rate of an individual are unknown to an observer, we cannot observe N_i. Therefore, we cannot test directly whether an individual characteristic or attitude (say, a university degree, or a high degree of risk aversion) has a positive impact on N_i or not. If, however, N_i is greater than the

critical value zero, according to our theoretical framework a person will choose to become an entrepreneur, and the decision to do so or not is observable.

Empirical models that investigate the ceteris paribus influence of the elements of x_i on the probability that a person is a nascent or an infant entrepreneur use this known decision pro or contra. In these models the dummy variable indicating whether a person is an entrepreneur or not is regressed on a set of exogeneous variables made of characteristics and attitudes of the individual. Given the dichotomous nature of the endogeneous variable these empirical models are estimated by (variants of) logit or probit, and the empirical approach can be labeled a reduced form logit (or probit) approach.

Note that looking at nascent entrepreneurs means focussing on the factors affecting the decision *to become* self-employed as opposed to remaining in paid-employment, instead of looking at differences in the probability that people *are* self-employed rather than employees. In doing this one avoids confounding entry and survival effects: The probability of being self-employed at a point in time depends on the probability of switching into self-employment in the past and then surviving as a self-employed until the time of the survey (see Parker 2004, p. 25f).

While there is a large empirical literature on the ceteris paribus impact of personal and other variables on the probability of being an "adolescent" entrepreneur versus a paid employee (surveyed in Parker 2004, ch. 3), econometric investigations that ask what makes a nascent or an infant entrepreneur are scarce. Using the data from the REM 2003 survey (mentioned earlier) and the reduced form logit approach outlined above such an investigation is performed next. Before discussing the empirical model used, however, a remark on the estimation strategy used here is in order:

Starting a new business is a rare event. In the sample used here, only 360 of all persons included are nascent entrepreneurs, and only 152 are infant entrepreneurs, while 6.995 persons form the control group of paid employees and unemployed. Application of standard

textbook probit or logit methods to estimate the empirical models is not appropriate here. Gary King and Langche Zeng (2001a, 2001b) recently developed a version of the logit model to compute unbiased estimates in a situation like this. This method - labeled Rare Events Logistic Regression, or RELOGIT - is applied here. RELOGIT estimates the same logit model as the standard logit procedure, but uses an estimator that gives lower mean square error in the presence of rare events data for coefficients, probabilities, and other quantities of interest. Furthermore, to take the survey design into account and to allow that the observations might be dependent within a region, the variances of the estimated coefficients were estimated with the region as a cluster.[1] Note that spatial autocorrelation is not an issue in our study because the regions included are scattered all over Germany.

That said, we now turn to the results from the rare events logit estimation of two reduced form type empirical models for being a nascent entrepreneur or an infant entrepreneur, respectively. The exogeneous variables in these models are identical to those used (and motivated) in the descriptive analysis in section 2 – sex, age, the number of fields of experience, the number of professional degrees, considering fear of failure a reason not to start an own business or not, and the presence or not of at least one self-employed in the family. Note that age is included in squares, too, to allow for a non-linear relationship with entrepreneurship. The estimated coefficients and their prob-values are reported in table II.

[Table II near here]

Starting with the results for the probability of being a *nascent entrepreneur vs. a paid employee or unemployed*, the estimated coefficients for the variables measuring sex, the width of experience, the degree of risk aversion, and the presence or not of a role model in the family all have the expected signs, and they are statistically different from zero at an error level of 7 percent or better. Note that age is not related to nascent entrepreneurship;

[1] All computations were done with Stata/SE 8.2 (see StataCorp 2003) using the RELOGIT ado-file available from Gary King's homepage at Harvard <http://gking.harvard.edu>.

accordingly, the positive and negative influences of a higher age on the probability of being involved in starting a new venture (discussed above) tend to cancel out.

Discussion of results hitherto was limited to the statistical significance of the estimated coefficients and the direction of influence conducted by the variables. Information on the extent of this influence, or on the economic importance, however, is even more important. Evidently, a variable that has no statistically significant impact can be ignored from an economic point of view, but the opposite is not true: A variable that is highly significant statistically might not matter at all economically - if the estimated probability for becoming a nascent entrepreneur diminishes by 0.00001 percent when a person considers fear of failure as a reason not to start a business, we can ignore the "fear of failure" - variable in any discussion on nascent entrepreneurs irrespective of any high level of statistically significance indicated by the prob-value.

Unfortunately, the estimated coefficients from a rare events logit model (or for any other non-linear model) can not easily be used for statements about the size of the ceteris paribus effect of a change of the value of an exogenous variable (e.g., to consider fear of failure as a reason not to start a business, or not to do so) on the value of the endogenous variable (e.g., the probability of becoming a nascent entrepreneur), because the size of this effects depends on both the value of the exogenous variable under consideration and on the values of all other variables in the model (see Long and Freese, 2001, 87ff.).

A way to ease interpretation of the estimation results is to compute the estimated values of the endogenous variable (here: the probability of being a nascent or an infant entrepreneur) for a person with certain characteristics and attitudes, and to show how a change in the value of one exogenous variable at a time changes the estimated probability.

For expository purposes, we start by looking at Person A, a 40 years old man with three fields of experience and one professional degree who does not consider fear of failure a reason not to start his own business and who has at least one self-employed person in his family. According to the results reported in table II the estimated probability for being a

nascent entrepreneur for person A is 11 percent.[2] If this person is a women instead, the estimated probability goes down to 8 percent. Gender matters. Now consider person B who is identical to Person A but has four instead of three fields of experience – the probability is 11.4 percent. For person C who is identical to person B but who holds two professional degrees instead of only one, the probability is 13.1 percent. This illustrates that the width of experience matters for becoming a nascent entrepreneur. To demonstrate the importance of risk aversion let us now look at person D who is identical to person C but who does consider fear of failure a reason not to start his own business. For this person the estimated probability of being a nascent entrepreneur drops to 3.8 percent. Last, let us look at person E who is identical to person D but has no self-employed in his family – the estimated probability goes down to 2.4 percent. Role models matter, too.

To repeat, the size of any effect of a change in the value of one independent variable on the estimated probability of being a nascent entrepreneur depends on both the value of the exogenous variable under consideration and on the values of all other variables in the model. Therefore, the illustrative simulations given above can not be more than exercises to demonstrate that the variables which are statistically significant in the reduced form logit model for nascent entrepreneurs do matter economically, too.

Let us now turn to the results for the probability of being an *infant entrepreneur vs. a paid employee or unemployed*. The estimated coefficients for the variables measuring sex, the number of professional degrees, the degree of risk aversion, and the presence or not of a role model in the family all have the expected signs, and they are statistically different from zero at an error level of 5 percent or better. Age is related to infant entrepreneurship in a non-linear way – the probability of being a nascent entrepreneur increases ceteris paribus up to the age of 41.75 years and decreases afterwards. Note that contrary to our theoretical priors and in contrast to the results from the empirical model for nascent entrepreneurs the estimated coefficient for the number of fields of experience is not statistically significant at any conventional level (and has the wrong sign).

[2] All simulations were done in Stata 8.2 using the SETX and RELOGITQ programs that come with RELOGIT; see footnote 1.

To illustrate the effect of changes in the exogeneous variables on the probability of being an infant entrepreneur we will again consider some fictive persons. We start by looking at Person F, a 40 years old man with three fields of experience and two professional degrees who does not consider fear of failure a reason not to start his own business and who has at least one self-employed person in his family. According to the results reported in table II the estimated probability for being an infant entrepreneur for person F is 10 percent. If this person is a women instead, the estimated probability goes down to 6.5 percent. Gender matters. Now consider person G who is identical to Person F but is 50 years instead of 40 years old (and, therefore, older than the estimated peak age of 41.75 years) – the probability is 6.2 percent. Age is important. For person H who is identical to person F but who holds only one professional degrees instead of two, the probability is 7.6 percent. This illustrates that the width of experience matters for being an infant entrepreneur. To demonstrate the importance of risk aversion let us now look at person I who is identical to person H but who does consider fear of failure a reason not to start his own business. For this person the estimated probability of being a nascent entrepreneur drops to 1.2 percent. Last, let us look at person K who is identical to person I but has no self-employed in his family – the estimated probability goes down to 0.6 percent. Role models matter, too.

Like in the case of nascent entrepreneurs discussed earlier in this section the simulations demonstrate that the variables which are statistically significant in the reduced form logit model for infant entrepreneurs do matter economically, too.

A comparison of the results from the empirical models for nascent and infant entrepreneurs shows that the patterns are quite similar and broadly in line with our theoretical priors – both types of entrepreneurship are fostered by the width of experience and a role model in the family, and hindered by risk aversion, while being male is a supporting factor.

4. Nascent vs. infant entrepreneurs: What can we learn from the differences?

Not all nascent entrepreneurs see their vision through to an eventual start-up and become infant entrepreneurs. A number of studies report empirical findings on this proportion, and on

variables that differentiate between nascents that do and do not become infants. This literature is surveyed in Wagner (2004a) where the core findings are summarized country by country, and differences and similarities are reviewed afterwards. Comparability across space, however, is limited. Furthermore, the rather small and sometimes tiny samples, different time frames for follow-up studies, and different specifications of the empirical models used make it impossible to draw any definite conclusions. However, at least two tentative conclusions emerge: First, a significant fraction of nascent entrepreneurs – between one in two and one in three - step into the next phase, becoming infant entrepreneurs in the year following the first survey. Second, observed individual characteristics tend to play a minor role only in differentiating who starts and who gives up.

We have nearly no empirical evidence for Germany on the proportion of nascent entrepreneurs which become infant entrepreneurs or not, and on their respective characteristics. An exception is a small study by Bahß, Lehnert and Reents (2003) who use data from the KfW-Gründungsmonitor project to investigate how many of those persons who stated in April – July 2002 that they intend to step into self-employment during the next six month did so until February 2003. From the 300 participants in this follow-up survey 29% were indeed self-employed, 21% were still trying, 32% delayed their project, and 18% gave up. The authors mention that unemployed more often stop the process of setting up a new venture compared to paid employees, and that "starters" and "stoppers" do not differ in important personal characteristics like risk aversion and aspiration for independence; details, however, are not reported (see also Reents, Bahß and Billich 2004). Given that those who state in a survey that they intend to become self-employed in the next half year can not be considered to be nascent entrepreneurs according to the definition given in section 1 above, these findings are not strictly comparable to the results reported in other studies. However,

they provide the only information available for Germany that at least comes close to, because no longitudinal study on German nascent entrepreneurs has been done as yet.[3]

Given that the two surveys conducted in the Regional Entrepreneurship Monitor (REM) Germany project in 2001 and 2003 are cross section surveys it is not possible to follow nascent entrepreneurs over time and to find out which of the nascents in 2001 are infants in 2003 and how they differ from those who did not (yet) succeed in setting up their new venture. But a comparison of the 2003 cohorts of nascent entrepreneurs and infant entrepreneurs might at least point to differences in characteristics and attitudes between the two groups that are or are not related to the successful transition from nascent to infant entrepreneurship.

To start, consider the size of the two groups – 360 nascents and 152 infants. These orders of magnitude are in line with the first of the two tentative conclusions mentioned above that emerge from a survey of the international literature: Between one in two and one in three nascents step into the next phase and become infant entrepreneurs. Next, remember the comparison of nascents and infants performed in section 2 on the basis of the figures reported in table I: Nascent and infant entrepreneurs do no differ significantly by sex, age, number of professional degrees, and the presence or not of a role model in the family. But infant entrepreneurs do on average consider fear of failure a reason not to start an own business significantly less often than nascents. This striking difference in risk aversion, however, might be an artifact: Both infants and nascents are asked the question at the same time – when infants already "made it" and, therefore, might be more confident than they have been before when they themselves were nascents. These findings, therefore, are well in line with the second tentative conclusion mentioned above: Observed individual characteristics tend to play a minor role only in differentiating who starts and who gives up.

[3] See Bergmann (2000) for a fruitless attempt to use the German household panel GSOEP for an investigation of this topic. Note that the German part of the GEM project (like most other country studies in GEM) consists of a

At last, consider an information from the survey not used up to now: members of both groups of entrepreneurs were asked whether or not they were active in the industry of their new venture as an employee before. 55 percent of the nascents, but 68 percent of the infant entrepreneurs, answered this question in the affirmative; this difference is statistically significant at an error level of less than one percent. This might be seen as evidence for the fact that previous experience in the field of business an entrepreneur is (going to be) active in helps in the transition from a nascent to an infant entrepreneur.

5. Concluding remarks

While we knew next to nothing about nascent and infant entrepreneurs ten years ago, thanks to the joint effort of a group of researchers most of whom are affiliated with the Global Entrepreneurship Monitor (GEM) project we now have reliable information on the share of nascent and infant entrepreneurs in the population of a large number of countries, including Germany. Furthermore, we have a sound knowledge about the prevalence of these entrepreneurs in certain sub-groups (like males and females, or people with various educational backgrounds).

Less is known about factors that are important for becoming a nascent entrepreneur, and for crossing the threshold between nascent and infant entrepreneurship. Based on data from a recent representative survey of the adult population in Germany this paper contributes to the literature by documenting that the patterns of variables influencing nascent and infant entrepreneurship are quite similar and broadly in line with our theoretical priors – both types of entrepreneurship are fostered by the width of experience and a role model in the family, and hindered by risk aversion, while being male is a supporting factor. Results of this study using cross section data are in line with conclusions from longitudinal studies for other

series of cross section surveys only that do not allow to follow nascent entrepreneurs over time.

countries finding that between one in two and one in three nascent entrepreneurs become infant entrepreneurs, and that observed individual characteristics – with the important exception of former experience as an employee in the industry of the new venture - tend to play a minor role only in differentiating who starts and who gives up.

References

Bahß, Christian, Nicole Lehnert and Nicola Reents (2003). Warum manche Gründungen nicht zustande kommen. KfW-Research, Nr. 10, Oktober, 2-9.

Bergmann, Heiko (2000). Gründungspotenzial und Gründungsengagement im Spiegel des Sozioökonomischen Panels (SOEP). Essen: RWI.

Bergmann, Heiko, Andrea Japsen and Christine Tamásy (2002). Regionaler Entrepreneurship Monitor (REM). Gründungsaktivitäten und Rahmenbedingungen in zehn deutschen Regionen. Universität zu Köln, Universität Lüneburg.

Blanchflower, David G. (2004). Self-employment: More may not be better. National Bureau of Economic Research NBER Working Paper Series #10286, February.

Blanchflower, David G., Andrew Oswald and Alois Stutzer (2001). Latent entrepreneurship across nations. European Economic Review 45, 680-691.

Evans, David S. and Boyan Jovanovic (1989), An Estimated Model of Entrepreneurial Choice under Liquidity Constraints. Journal of Political Economy 97, 808-827.

Evans, David S. and Linda S. Leighton (1989), Some Empirical Aspects of Entrepreneurship. American Economic Review 79, 519-535.

Kihlstrom, Richard E. and Jean-Jacques Laffont (1979), A General Equilibrium Entrepreneurial Theory of Firm Formation Based on Risk Aversion. Journal of Political Economy 87, 719-748.

King, Gary and Langche Zeng (2001a), Logistic Regression in Rare Events Data, Political Analysis 9 (2), 137-163.

King, Gary and Langche Zeng (2001b), Explaining Rare Events in International Relations, International Organization 55 (3), 693-715.

Lazear, Edward P. (2002). Entrepreneurship. National Bureau of Economic Research Working Paper 9109, August.

Lazear, Edward P. (2004). Balanced Skills and Entrepreneurship. American Economic Review – Papers and Proceedings 94 (2), 208-211.

Long, J. Scott and Jeremy Freese (2001). Regression Models for Categorical Dependent Variables using Stata. College Station, Texas: Stata Press.

Lückgen, Ingo and Dirk Oberschachtsiek (2004). Regionaler Entrepreneurship Monitor (REM II 2003/2004). Zur Dynamik von Gründungsaktivitäten in Deutschland: Ausmaß und Ursachen. Universität zu Köln, Universität Lüneburg.

Parker, Simon (2004). The Economics of Self-Employment and Entrepreneurship. Cambridge etc.: Cambridge University Press.

Reents, Nicola, Christian Bahß and Christopher Billich (2004). Unternehmer im Gründungsprozess: Zwischen Realisierung und Aufgabe des Gründungsvorhabens. KfW-Research, Mittelstands- und Strukturpolitik, Ausgabe 31, November. Frankfurt am Main: KfW Bankengruppe.

Reynolds, Paul D. (2000). National panel study of U.S. business startups: Background and methodology. In Jerome A. Katz (Ed.), Databases for the study of entrepreneurship (Advances in entrepreneurship, firm emergence, and growth, Volume 4). Amsterdam etc.: JAI, 153-227. [Download: projects.isr.umich.edu/PSED/Files/background.pdf]

Reynolds, Paul D. and Sammis B. White (1997). The Entrepreneurial Process. Economic Growth, Men, Women, and Minorities. Westport, Connecticut, and London: Quorum Books.

Reynolds, Paul D., Michael Hay and S. Michael Camp (1999), Global Entrepreneurship Monitor 1999 Executive Report. Kauffman Center for Entrepreneurial Leadership at the Ewing Kaufman Foundation.

Reynolds, Paul D., Nancy M. Carter, William B. Gartner, Patricia G. Greene, and Larry W. Cox (2002). The Entrepreneur next door. Characteristics of Individuals Starting Companies in America. An Executive Summary of the Panel Study of Entrepreneurial Dynamics. Ewing Marion Kauffman Foundation, Kansas City, Missouri.

Reynolds, Paul D., Nancy M. Carter, William B. Gartner and Patricia G. Greene (2004a). The Prevalence of Nascent Entrepreneurs in the United States: Evidence from the Panel Study of Entrepreneurial Dynamics. Small Business Economics 23, 263-284.

Reynolds, Paul D., William D. Bygrave, Erkko Autio et al. (2004b), Global Entrepreneurship Monitor 2003 Executive Report. Babson College, London Business School, and Kauffman Foundation.

StataCorp (2003). Stata Statistical Software: Release 8.0. College Station, TX: Stata Corporation.

Sternberg, Rolf, Heiko Bergmann and Ingo Lückgen (2004). Global Entrepreneurship Monitor. Unternehmensgründungen im weltweiten Vergleich. Länderbericht Deutschland. Universität zu Köln – Wirtschafts- und Sozialgeographisches Institut.

Wagner, Joachim (2003a). Testing Lazear's Jack-of-All-Trades View of Entrepreneurship with German Micro Data. Applied Economics Letters 10, 687-89.

Wagner, Joachim (2003b). Are Nascent Entrepreneurs Jacks-of-All-Trades? A Test of Lazears's Theory of Entrepreneurship with German Data. Institute for the Study of Labor IZA Discussion Paper No. 911, October.

Wagner, Joachim (2004a). Nascent Entrepreneurs. Institute for the Study of Labor IZA Discussion Paper No. 1293, September.

Wagner, Joachim (2004b). What a Difference a Y Makes: Female and Male Nascent Entrepreneurs in Germany. Institute for the Study of Labor IZA Discussion Paper No. 1134, May.

Table I: A comparison of nascent entrepreneurs, infant entrepreneurs, and paid employees/unemployed

	Sex (dummy; 1 = male)	Age (years)	Number of fields of experience	Number of professional degrees	Fear of failure a reason not to start an own business (dummy; 1 = yes)	At least one self-employed in the family (dummy; 1 = yes)
			Mean (Std. Dev.)			
Nascent entrepreneurs (N = 360)	0.60 (0.49)	38.2 (10.1)	4.03 (3.93)	1.10 (0.61)	0.21 (0.41)	0.59 (0.49)
Infant entrepreneurs (N = 152)	0.63 (0.48)	38.0 (8.7)	3.30 (2.33)	1.17 (0.51)	0.13 (0.33)	0.64 (0.48)
Paid employees and unemployed (N = 6995)	0.48 (0.50)	41.0 (10.4)	3.26 (2.61)	1.03 (0.53)	0.53 (0.50)	0.44 (0.50)
			Prob-values for test of H_0: Difference in means = 0			
Nascent vs. infant entrepreneurs	0.54	0.80	0.01	0.19	0.02	0.26
Nascent entrepreneurs vs. paid employees and unemployed	0.00	0.00	0.00	0.03	0.00	0.00
Infant entrepreneurs vs. paid employees and unemployed	0.00	0.00	0.87	0.00	0.00	0.00

Note: A prob-value of less than 0.05 means that the null-hypothesis of equal means for both groups can be rejected at an error level of less than 5 percent.

Table II: Rare events logit estimates for being a nascent or an infant entrepreneur

	Nascent entrepreneur	Infant entrepreneur
Sex	0.338	0.463
(dummy variable; 1 = male)	0.008	0.000
Age	-0.001	0.167
(years)	0.980	0.001
Age squared	-0.32e-3	-0.002
	0.623	0.000
Number of fields of experience	0.058	-0.031
	0.000	0.456
Number of professional	0.116	0.314
Degrees	0.069	0.052
Fear of failure a reason not to	-1.344	-1.947
start an own business	0.000	0.000
(dummy variable; 1 = yes)		
At least one self-employed	0.495	0.706
in the family	0.000	0.000
(dummy variable; 1 = yes)		
Constant	-2.702	-6.630
	0.017	0.000
Number of cases	7335	7147

Note: Prob-values are reported below the estimated coefficients. See text for details.

Working Paper Series in Economics

(see www.uni-lueneburg.de/vwl/papers for a complete list)

1 Joachim Wagner, Nascent and Infant Entrepreneurs in Germany. Evidence from the Regional Entrepreneurship Monitor (REM). March 2005

2 Ingrid Ott and Stephen Turnovsky, Excludable and Non-Excludable Public Inputs: Consequences for Economic Growth, March 2005 (also published as CESifo Working Paper 1423)

3 Thomas Wein and Reimund Schwarze, Is the Market Classification of Risk Always Efficient? - Evidence from German Third Party Motor Insurance, March 2005

4 Joachim Wagner, Exports and Productivity: A Survey of the Evidence from Firm Level Data. March 2005

5 Christiane Clemens and Maik Heinemann: Endogenous Redistributive Cycles - An Overlapping Generations Approach to Social Conflict and Cyclical Growth, March 2005

6 Christiane Clemens and Maik Heinemann: On the Effects of Redistribution on Growth and Entrepreneurial Risk-Taking, March 2005.

7 Thomas Wein, Associations` Agreement and the Interest of the Network Suppliers - The Strategic Use of Structural Features, March 2005

8 Joachim Wagner, Exports, Foreign Direct Investment, and Productivity: Evidence from German Firm Level Data. March 2005

9 Gabriel Desgranges and Maik Heinemann: Strongly Rational Expectations Equilibria with Endogenous Acquisition of Information, March 2005

Universität Lüneburg
Institut für Volkswirtschaftslehre
Scharnhorststr. 1
D-21332 Lüneburg
Tel: ++49 4131 78 2321
email: brodt@uni-lueneburg.de
www.uni-lueneburg.de/vwl/papers