

Social Interactions and Entrepreneurial Activity

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Abstract. We show that individuals belonging to highly entrepreneurial social groups are more likely to become entrepreneurs and invest more in their own businesses, even though their entrepreneurial profits are lower and their alternative job opportunities more attractive. These findings are robust to the inclusion of local labor market fixed effects, social group fixed effects, extensive controls and the use of instruments for social group entrepreneurial activity. Our results suggest that peer effects create non-pecuniary benefits from entrepreneurial activity and play an important role in the decision to become an entrepreneur. Alternative explanations, such as entry costs, social learning, competition and informal credit markets, do not find support in the data.

Keywords: Private benefits; amenity potential; peer effects; social norms; learning

JEL Codes: M13; G31; J24; Z13; R12

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Non-technical summary

Entrepreneurial activity and new firm formation are considered engines of economic growth and innovation . However, the economic profession is still far from a complete understanding of what drives an individual to start a new business. Research so far has stressed the role of individual characteristics, access to initial capital and, more recently, institutions and entry regulation.

Social interactions may also play a role because, as shown by a growing literature, they affect the payoffs from a variety of economic decisions. There are several reasons why social interactions may matter for entrepreneurship. Individuals may learn how to run a business by observing their peers. Social interactions may also create non-pecuniary benefits from the entrepreneurial activity (e.g., social norms affecting whether entrepreneurs are highly regarded). Non-pecuniary benefits may have a major influence on occupational choice because social status, prestige or, simply, the desire to conform increase the utility from being an entrepreneur.

Social scientists, other than economists, have long recognized the importance of peer effects for the creation of new firms. Nevertheless, a thorough quantitative exploration is still missing. In this paper, we try to fill this gap.

To perform this task, we proceed as follows. We formulate predictions about the consequences of social interactions on different aspects of entrepreneurial activity. If peer effects matter, we expect that the probability of an individual becoming an entrepreneur is positively affected by the rate of entrepreneurship in her social group. Additionally, and perhaps more importantly, if peer effects increase entrepreneurial private benefits, relatively less productive individuals may choose to become entrepreneurs. Hence, we should observe that entrepreneurial profits (investment) are lower (higher) if an individual belongs to a highly entrepreneurial social group. This prediction contrasts with what social learning, knowledge spillovers and other forms of agglomeration economies would imply, as entrepreneurial profits would be higher if these factors enhanced entrepreneurial productivity.

A major problem in the identification of peer effects is that the correlation between individual and aggregate occupational choices could depend on several other factors such as unobserved characteristics of the social group or economic conditions. We attempt to overcome this problem by using a Swedish dataset that provides very detailed —probably unique— information on individual characteristics, sources of income and economic

environment. Thanks to the richness of our data set, we can exploit other aspects of entrepreneurial activity (in particular, entrepreneurial profits and investment), which do not involve regressing individual outcomes on aggregate outcomes. Additionally, we can also evaluate job opportunities, alternative to the entrepreneurial activity, of individuals belonging to different social groups.

Another aspect of the data helps us to limit identification problems. We can analyze entry in the entrepreneurial activity within local labor markets (henceforth, LLMs). Within a LLM, economic incentives and opportunities, entry costs and competition are homogeneous because individuals can easily commute. Still, individuals living in different municipalities (within the LLM) have closer interactions with their neighbors. We thus identify social groups with municipalities. If peer effects exist, entrepreneurial activity in the municipality where an individual lives should affect the probability of becoming an entrepreneur, entrepreneurial profits and investment, after controlling for LLM fixed effects (which capture omitted economic factors), dummies for the richest and poorest municipalities within a local labor market (which capture the fact that some social groups segregate in different areas and may have unobservable characteristics affecting their propensity to the entrepreneurial activity) and extensive individual and municipality level controls. To further reduce concerns that our estimates are affected by omitted characteristics of the social group, we instrument our proxies for entrepreneurial activity.

Overall, our analysis, relying on a collage of tests and empirical evidence, suggests that social interactions are important. We find that individuals belonging to highly entrepreneurial social groups are more likely to become entrepreneurs. They invest more but have lower entrepreneurial profits than entrepreneurs belonging to social groups with lower levels of entrepreneurial activity. Strikingly, non-entrepreneurs belonging to highly entrepreneurial social groups have higher wages. This suggests that individuals belonging to highly entrepreneurial social groups have, if anything, better outside options than other individuals in the same LLM. Nevertheless, they are more likely to pursue the entrepreneurial activity and thus earn lower profits than other entrepreneurs in the same LLM. Hence, peer effects seem to matter because they increase entrepreneurial private benefits, and not because, thanks to knowledge spillovers, they increase productivity in the entrepreneurial activity.

We also test whether social networks in high entrepreneurship municipalities ease access to credit. We find that small firms in high entrepreneurship municipalities do not rely on informal loans or financial debt to a larger extent than companies in other municipalities. This suggests that credit markets are unlikely to foster entry of entrepreneurs with lower

expected profits. Hence, the mechanism relating social interactions and entrepreneurial activity appears to be non-pecuniary.

1. Introduction

Entrepreneurial activity and new firm formation are unquestionably considered engines of economic growth and innovation (Baumol, 1990; Murphy, Shleifer and Vishny, 1991). Notwithstanding the importance of new firm formation for growth has been recognized since Schumpeter (1934), the economic profession is still far from a complete understanding of what drives an individual to start a new business. Research so far has stressed the role of individual characteristics, access to initial capital (Evans and Leighton, 1989; Evans and Jovanovic, 1989) and, more recently, institutions and entry regulation (Desai, Gompers and Lerner, 2005; Klapper, Laeven and Rajan, 2006).

Social interactions may also play a role because, as shown by a growing literature, they affect the payoffs from a variety of economic decisions.¹ There are several reasons why social interactions may matter for entrepreneurship. Individuals may learn how to run a business by observing their peers. Consistently with this view, Gompers, Lerner and Scharfstein (2005) find that entrepreneurial learning and networks appear important in creating venture-backed firms. Social interactions may also create non-pecuniary benefits from the entrepreneurial activity (e.g., social norms affecting whether entrepreneurs are highly regarded). Non-pecuniary benefits may have a major influence on occupational choice because social status, prestige or, simply, the desire to conform increase the utility from being an entrepreneur (Cole, Mailath and Postlewaite, 1992; Bernheim, 1994).

Social scientists, other than economists, have long recognized the importance of peer effects for the creation of new firms.² Nevertheless, a thorough quantitative exploration is still missing. In this paper, we try to fill this gap.

To perform this task, we proceed as follows. We formulate predictions about the consequences of social interactions on different aspects of entrepreneurial activity. If peer effects matter, we expect that the probability of an individual becoming an entrepreneur is positively affected by the rate of entrepreneurship in her social group. Additionally, and perhaps more importantly, if peer effects increase entrepreneurial private benefits, relatively less productive individuals may choose to become entrepreneurs. Hence, we should observe that entrepreneurial profits (investment) are lower (higher) if an individual belongs to a highly entrepreneurial social group. This prediction contrasts with what social learning, knowledge spillovers and other forms of agglomeration economies, pointed out by Saxenian (1994),

¹ See, for instance, Glaeser, Sacerdote and Scheinkman (1996), Borjas and Hilton (1996), Bertrand, Luttmer and Mullainathan (2000), Duflo and Saez (2002), Hong, Kubik and Stein (2004), Sorensen (2006).

² See Aldrich (2003) and Licht and Siegel (2005) for comprehensive surveys.

would imply, as entrepreneurial profits would be higher if these factors enhanced entrepreneurial productivity (Glaeser, Kallal, Scheinkman and Shleifer, 1992).

A major problem in the identification of peer effects is that the correlation between individual and aggregate occupational choices could depend on several other factors such as unobserved characteristics of the social group or economic conditions. We attempt to overcome this problem by using a Swedish dataset that provides very detailed —probably unique— information on individual characteristics, sources of income and economic environment. Thanks to the richness of our data set, we can exploit other aspects of entrepreneurial activity (in particular, entrepreneurial profits and investment), which do not involve regressing individual outcomes on aggregate outcomes. Additionally, we can also evaluate job opportunities, alternative to the entrepreneurial activity, of individuals belonging to different social groups.

Another aspect of the data helps us to limit identification problems. We can analyze entry in the entrepreneurial activity within local labor markets (henceforth, LLMs). Within a LLM, economic incentives and opportunities, entry costs and competition are homogeneous because individuals can easily commute. Still, individuals living in different municipalities (within the LLM) have closer interactions with their neighbors.³ We thus identify social groups with municipalities. If peer effects exist, entrepreneurial activity in the municipality where an individual lives should affect the probability of becoming an entrepreneur, entrepreneurial profits and investment, after controlling for LLM fixed effects (which capture omitted economic factors), dummies for the richest and poorest municipalities within a local labor market (which capture the fact that some social groups segregate in different areas and may have unobservable characteristics affecting their propensity to the entrepreneurial activity) and extensive individual and municipality level controls.

To further reduce concerns that our estimates are affected by omitted characteristics of the social group, we instrument our proxies for entrepreneurial activity. Our instruments are the proportion of pensioners who are members of the state church and the proportion of individuals voting for right-wing parties in the early 1980s.

Our instruments capture different social groups' cultural values, which —as we show— are related to differences in entrepreneurial activity. Both instruments are predetermined with respect to entrepreneurial activity in our sample period (the second half of the nineties). Additionally, Sweden underwent profound economic transformation in the 1980s and early

³ Urban sociologists (see, for instance, Wellman, 1996) provide evidence that a surprisingly high fraction of interactions takes place among individuals who live in the same neighborhood.

1990s. It experienced a banking crisis followed by widespread bankruptcies, a major tax reform in 1990-91 and the dissolution of the centralized wage-setting arrangements, which significantly modified Swedish industrial structure (Davis and Henrekson, 2005). To some extent, entrepreneurial activity has emerged as a result of these events and cultural values in the early 1980s can be considered exogenous with respect to entrepreneurial activity in our sample period.

We provide evidence that our instruments are unlikely to directly affect the decision to become an entrepreneur or to be correlated with some unobserved determinants of this decision. First, we control for nearly the corresponding individual cultural traits. Second, our instruments do not appear correlated with past or present economic characteristics of the social group that may affect the propensity to the entrepreneurial activity. Finally, using a test of over-identifying restrictions, we are unable to reject the null hypothesis that our instruments do not directly affect the decision of becoming an entrepreneur, entrepreneurial profits and investment.

Overall, our analysis, relying on a collage of tests and empirical evidence, suggests that social interactions are important. We find that individuals belonging to highly entrepreneurial social groups are more likely to become entrepreneurs. They invest more but have lower entrepreneurial profits than entrepreneurs belonging to social groups with lower levels of entrepreneurial activity. Strikingly, non-entrepreneurs belonging to highly entrepreneurial social groups have higher wages. This suggests that individuals belonging to highly entrepreneurial social groups have, if anything, better outside options than other individuals in the same LLM. Nevertheless, they are more likely to pursue the entrepreneurial activity and thus earn lower profits than other entrepreneurs in the same LLM. Hence, peer effects seem to matter because they increase entrepreneurial private benefits, and not because, thanks to knowledge spillovers, they increase productivity in the entrepreneurial activity.

Our findings are robust to the use of different proxies for entrepreneurial activity, the introduction of additional controls, and the use of different subsamples. They are also confirmed by several robustness checks. First, by looking at the behavior of movers, we do not find any support that the correlation between individual and aggregate occupational choices is due to sorting of individuals more prone to entrepreneurial activity in some municipalities.

Second, to increase the confidence in our identification strategy, we check that our results hold for young individuals who were not part of the labor force in the early 1980s, and who cannot have affected the cultural values we use as instruments. Most importantly, in this

subsample, we are able to control for the initial capital that may be informally available to potential entrepreneurs and the fact that children of entrepreneurs are more prone to start a business. Although the sample is dramatically reduced, our results remain qualitatively invariant.

Finally, we test whether social networks in high entrepreneurship municipalities ease access to credit. We find that small firms in high entrepreneurship municipalities do not rely on informal loans or financial debt to a larger extent than companies in other municipalities. This suggests that credit markets are unlikely to foster entry of entrepreneurs with lower expected profits. Hence, the mechanism relating social interactions and entrepreneurial activity appears to be non-pecuniary.

This paper contributes to two strands of the literature. First, it helps understanding the private benefits from running or controlling a business. In particular, it suggests that the amenity potential from running a business can pertain not only some specific industries, such as sports or media, in which the entrepreneur can influence exciting social, political or cultural events, as pointed out by Demsetz and Lehn (1985), but also some social groups that attribute high value to the entrepreneurial activity. Second, our findings are consistent with recent papers showing that entrepreneurial activity may involve substantial non-pecuniary benefits (Hamilton, 2000 and Moskowitz and Vissing-Jorgensen, 2002). Our contribution is to suggest that peer effects help explaining the “private equity puzzle”.

The rest of the paper is organized as follows. Section 2 describes how individual characteristics, social norms, and economic conditions are expected affect entrepreneurial choice, profits and investment. Section 3 describes the data. The results and the robustness checks are presented in Sections 4 and 5, respectively. Section 6 concludes.

2. Determinants of entrepreneurial activity

2.1 Hypothesis development and empirical predictions

In this section, we illustrate how the decision to become an entrepreneur, entrepreneurial profits and investment may differ across individuals belonging to different social groups.

Occupational choice may depend on social interactions in two different ways. First, in some social groups being an entrepreneur may create non-pecuniary benefits. Hence, the utility of entrepreneurs may increase not only in the entrepreneurial profits, but also in the output from the entrepreneurial activity. The extent to which entrepreneurial output is

weighted in the utility function may depend on the social norm prevailing in an individual's peer group. Second, belonging to a high entrepreneurial social group may increase profits from entrepreneurial activity because of social learning and knowledge spillovers.

Occupational choice is also affected by an individual's productivity and attitudes, which determine the profits from the entrepreneurial activity. Finally, an individual's location affects entrepreneurial productivity as some locations offer good infrastructure, easy access to intermediate goods, or other advantages that may enhance entrepreneurial productivity. Our empirical analysis however focuses on individuals belonging to different social groups in the same location (local labor markets within a country). Hence, geographical sources of heterogeneity in productivity are likely to play a minor role.

It is helpful to illustrate how these different factors that are supposedly important for entrepreneurial activity interact and the different implications of non-pecuniary benefits and learning.

Clearly, individuals with more entrepreneurial skills are more likely to become entrepreneurs because they can earn higher profits. The skill level of the marginal entrepreneur (i.e., the individual who is indifferent to being an entrepreneur or an employee) varies across social groups for several reasons. First, social learning leading to a higher stock of entrepreneurial knowledge affects individual productivity positively. Thus, for any given level of wages, relatively less skilled individuals will choose to become entrepreneurs. Second, if an individual can earn a higher wage in paid employment, he is less likely to become an entrepreneur. Finally, for any given level of entrepreneurial profits and wages, non-pecuniary benefits matter: Individuals belonging to social groups that value entrepreneurial output prefer to be entrepreneurs, even if they are relatively less productive or can earn relatively higher wages. Additionally, they over-invest in the entrepreneurial activity because they derive utility from doing so. Their entrepreneurial profits will thus be lower.⁴

The decision whether to become an entrepreneur may be correlated across individuals for different reasons. Interestingly, though, if social norms drive entrepreneurial choice, for given entrepreneurial skills, an individual's entrepreneurial profits are expected to be *lower* for individuals who belong to highly entrepreneurial social groups. In contrast, if social learning is relatively more important for entrepreneurial choice, we expect an individual's entrepreneurial profits to be higher in locations where entrepreneurship is more widespread.

⁴ We do not explicitly look at the exit from the entrepreneurial activity because both social norms and social learning would imply that individuals belonging to social groups that value entrepreneurial activity are less likely to abandon the entrepreneurial activity. In unreported regressions, we find that this is indeed the case.

2.2 What are non-pecuniary benefits?

In the previous subsection, we argue that non-pecuniary benefits from entrepreneurial activity may vary systematically across social groups. The methodology we put forward aims to evaluate the importance of these systematic differences in non-pecuniary benefits.

Peer effects may generate non-pecuniary benefits for several reasons. In the context of our paper, the most direct interpretation of non-pecuniary benefits is probably that different social groups confer prestige to different occupations. The interpretation would be analogous if individuals were influenced by their peers' actions only because they desire to conform.

Peers may also influence the ease with which an individual expects to run her own business, for instance, because she trusts and is trusted by others (Bhidé, 2000). Social contacts that facilitate access to input providers or potential customers may also reduce the effort involved in running a business. Utility increases if the level of trust is higher or social contacts more useful. Trust and business contacts may also have a positive effect on entrepreneurial profits. Hence, their effect is largely undistinguishable from social learning. To the extent that trust and business contacts increase utility without inducing pecuniary benefits, we also capture their effect.

We view as beyond the scope of this paper to try to distinguish between prestige, desire for conformity, availability of social contacts, and trust, to the extent that they affect the way entrepreneurial activity is perceived but *not* profits.

Finally, social interactions may matter for pecuniary reasons. First, the correlation among individual occupational choices may be due to social learning, which increase individual productivity, as Glaeser et al. (1992) note. These knowledge spillovers are distinguishable from non-pecuniary benefits because they enhance entrepreneurial profits. Second, thanks to social interactions, credit markets may work more efficiently. This may lower the cost of external finance and stimulate entry (and investment) of entrepreneurs with lower productivity, like non-pecuniary benefits. We explore this possibility in Subsection 5.3.

3. Data Description and Identification Strategy

3.1 Data Sources

Our main data source is *Linda*, a register-based longitudinal data set for Sweden, providing information about household organization, labor status, sources of income, wealth, housing, and other socio-economic characteristics. We match the individual data from *Linda*

with information about the 109 Swedish local labor markets (LLMs) –which in turn include 289 Swedish municipalities (*kommun*)⁵ – provided by *Statistics Sweden*. In addition, we use *Market Manager*, a data set containing the financial statements of all (private and public) companies incorporated in Sweden to obtain information about firm capital structure.

The Swedish data provide an ideal setting for studying the effect of social interactions on entrepreneurial choice for several reasons. First, *Statistics Sweden* creates local labor market (LLM) areas according to the observed commuting patterns. Within a LLM, economic incentives are expected to be homogeneous because individuals commuting to jobs face the same work opportunities. LLMs include several municipalities. Local organizations at the municipality level, such as churches, neighborhood clubs, schools, daycare centers, local sports, cultural associations and the administration of apartment buildings, foster social interactions among individuals who reside within a neighborhood.⁶ Hence, it seems reasonable to assume that an individual interacts more with individuals residing in the same municipality, while her economic incentives in choosing among occupations depend on the LLM. This provides a setting that, as we discuss in Section 3.3, we can exploit for identifying peer effects.

Second, the dataset we use is much more representative of the population than other data sets previously used in a similar context. *Linda* is a representative sample including some 300,000 households, or approximately 4% of the Swedish population. In contrast, the U.S. National Longitudinal Survey, used by Evans and Jovanovic (1989) and Evans and Leighton (1989), includes only 5,225 individuals. Analogously, the Survey of Consumer Finances used by Moskowitz and Vissing-Jorgensen (2002) includes only 4,000 U.S. households. Even if these data could be merged with information about households’ neighborhoods, it would be difficult to draw any conclusions about how social group characteristics influence individual occupational choice, because the number of observations for individuals who belong to the same social group is limited. This is not the case with *Linda*: Our sample includes on average 5% of the population (1,584 individuals) for all Sweden’s 289 municipalities and never less than 3.9% of the population (106 individuals).

⁵ We have only 288 municipalities until 1999, when one of the municipalities was split in two.

⁶ Like most of the existing literature, we assume that an individual’s peers are her neighbors and that social groups are defined by administrative boundaries (see, for instance, Bertrand, Luttmer and Mullainathan, 2000). This assumption is supported by the empirical evidence. For instance, Wellman (1996) show that about 38 per cent of Toronto inhabitants’ yearly contacts takes place between individuals who live less than 1 mile away. Similarly, Connerly (1995) finds that 41 percent of the respondents to a Toronto inhabitants’ survey had at least one third of their friends residing within 1 mile.

Finally, starting from 1995, *Linda* provides detailed information on whether an individual reports to the tax authority any capital income she has received from a company in which she works at least part-time and that she controls. This enables us to define entrepreneurial activity using individual tax returns, as did Holtz-Eakin, Joulfaian and Rosen (1994). For this reason, we limit our sample to 1995-2000.

3.2 Definition of entrepreneur and measures of entrepreneurial activity

Our definition of entrepreneur includes all individuals who receive salaries or capital income from a business in which they work at least part-time and that they control. The most of individuals we define as entrepreneurs run non-incorporated companies. Similarly to Holtz-Eakin, Joulfaian and Rosen (1994), we consider as entrepreneurs both individuals who are truly self-employed and those who run their own business as a second job. We include these individuals because all businesses, even the most successful ones, are generally started with very small investments. It is difficult to predict *ex ante* which businesses will indeed be lucrative and even individuals who run their own business on the side may become successful entrepreneurs (Bhidé, 2000).

We restrict our sample to individuals aged between 18 and 60, since individuals who are too young or too old are unlikely to set up a proper entrepreneurial activity. Additionally, we exclude individuals involved in agriculture, farming, and forestry, which are concentrated in rural areas and could bias our results towards finding a correlation between individual and aggregate occupational choices.

According to our definition, approximately 5 percent of the population is involved in entrepreneurial activities, slightly less than in previous studies (see, for instance, Blanchflower, 2000; Blanchflower, Oswald and Stutzer, 2001), which mostly also include farmers.

We mostly focus on the decision to *become* self-employed, which, in comparison to the decision to *be* self-employed, is less likely to be determined by the same, possibly omitted, factors of the level entrepreneurial activity. For this reason, we look at individuals who, according to our definition, can be classified as entrepreneurs in year t but not in year $t-1$. They represent approximately 1% of the working-age population each year.⁷

⁷ Individuals who already are entrepreneurs at $t-1$ are excluded from the sample. Results for the decision to be an entrepreneur are similar to the ones for the decision to become an entrepreneur and are also reported.

To analyze peer effects, we need to define entrepreneurial activity within an individual's social group, which we identify with the municipality. We use several proxies for entrepreneurial activity within the municipality: First, the fraction of entrepreneurs relative to all individuals under the age of 60, included in *Linda*, for a given municipality. The second definition takes into account that individuals may have closer interactions with individuals with similar educational achievement within the same municipality. Hence, for any individual, we construct a peer group of individuals in the municipality with a similar education level. We rely on three educational groups: individual with less than high school diploma, with high school diploma and with university degree. We define the variable of interest as the proportion of entrepreneurs with a given educational achievement in the municipality population with similar educational achievement. Since individuals with different educational achievements may have different propensities to become entrepreneurs, we include education dummies when we use this proxy.

Finally, we use a measure based on economic outcome, namely the proportion of entrepreneurs in the top quartile of the income distribution in each municipality. This proxy captures the fact that in municipalities where the richest individuals are entrepreneurs, this profession may be considered highly prestigious. Hence, this variable may be a more direct proxy for the existence of role models. It is also less likely to be affected by omitted variable bias as the occupational choices of the most successful individuals should have different determinants from the occupational choices of the rest of the population.

We use the proxy of entrepreneurship at $t-1$ to explain the probability of an individual becoming an entrepreneur at time t . For this reason, we lose one year. Our final sample consists of 469,504 individuals, and a total of 1,684,596 individual-year observations from 1996 to 2000.

Table 1 shows that there is substantial variation across municipalities both in the proportion of individuals who are entrepreneurs and in those who become entrepreneurs. There is also large variation in entrepreneurial income. Note that the entrepreneurial income we observe is always positive as eventual losses cannot be detracted from personal taxable income. This may lead us to over-estimate the income from entrepreneurial activity, which as will be clear later makes our results even more striking.

3.3 Identification

Interpreting the effect of alternative proxies for entrepreneurial activity on the probability of an individual becoming an entrepreneur (entrepreneurial income and investment) is problematic, because our variable of interest could be correlated with individual or social group characteristics that we do not observe, and that may have an independent impact on the dependent variable. Luckily, our data set presents features that allow the use of methodologies similar to the ones successfully used in identifying peer effects in different contexts. In what follows, we discuss how we overcome identification problems arising from the simultaneity of decisions, unobserved heterogeneity in the economic environment and unobserved heterogeneity between social groups.

3.3.1 Simultaneity of decisions

Identification problems are particularly insidious in the specifications in which we study an individual's probability of becoming an entrepreneur. In fact, as pointed out by Manski (1993), we may incur in the reflection problem because individual and aggregate occupational choices are likely to depend on the same factors.

We can overcome the problem arising from the simultaneity of the decisions of different members of the group (reflection problem), thanks to the time series nature of our data set. We believe that it is reasonable to postulate that, if social interactions matter, the *current* individual decision to become an entrepreneur depends on the *past* occupational choices of other members of the social group. Since the decision of becoming an entrepreneur does not depend only on peer effects but also on other factors, such as temporary shocks favoring entry and exit in the entrepreneurial activity, we can identify exogenous variables (i.e., past and current shocks to entrepreneurial entry and exit) that affect the individual decision but not the predetermined level of entrepreneurial activity and vice versa.⁸ As Moffit (2001) argues, this allows us to achieve identification.

3.3.2 Unobserved heterogeneity in the economic environment

From an economic point of view, in Sweden, the relevant unit of analysis is the local labor market (see Vlachos, 2004 for a similar argument). LLMs are constructed by Statistics Sweden on the basis of individuals' commuting patterns to jobs. Municipalities –which we

⁸ We use aggregate entry in (exit from) the entrepreneurial activity, which proxy for the temporary shocks affecting occupational choice.

have selected to identify social groups— are administrative units of analysis which coincide with different neighborhoods within a LLM.

Figure 1 shows the 109 LLMs and the municipalities within each LLM. To put things in perspective, Sweden has a population of nearly 9 million and comprises 109 LLMs. The average (median) population of a LLM is 81,200 (26,700). The average (median) area is 3,770 (2,318) sq km. The more densely populated LLM is Stockholm with 1,862,000 inhabitants and an area of 8,036 sq km. LLMs include a very different number of municipalities. For instance, Stockholm includes 30 municipalities, Göteborg includes 16, while 61 LLMs—the less populated ones— include only one municipality.

Individuals living in a LLM can be assumed to face the same incentives and opportunities in choosing between occupations as they generally commute from the municipalities where they reside to jobs in other municipalities within the LLM. Since individuals are more likely to interact with their neighbors, we treat municipalities within a LLM as an individual's social group. Individuals' attitude towards entrepreneurial activity may differ because they interact more closely with the members of their social group.

The context we have just described is similar to the one in which Bertrand, Luttmer and Mulainathan (2000) examine the role of social networks in welfare participation. Like them, we include LLM fixed effects to control for economic factors affecting incentives. The LLM fixed effects should capture differences in economic incentives to undertake the entrepreneurial activity, such as differences in entry costs, competition, financial development, market structure or labor market conditions.

It may be interesting to note that since in the econometric analysis we include LLM fixed effects, the extended and less populated LLMs in the North (which, as is apparent from Figure 1, mostly have only one municipality) do not contribute to the identification of the coefficient of our variable of interest. The variation we exploit in our estimates comes from the Southern and the Central LLMs that have smaller extension, more municipalities and are more densely populated.

3.3.3 Unobserved heterogeneity between social groups

LLM fixed effects allow us to control for differences in the economic environment. However, individuals in different social groups (municipalities) within a LLM may have different characteristics affecting their propensity to become entrepreneurs. To take this into account, we conjecture that individuals sort in different municipalities on the basis of their

initial wealth and include dummy variables for the richest and the poorest municipalities within the LLM. This is again similar to Bertrand, Luttmer and Mullainathan (2000). They infer an individual's network from the availability of contacts with individuals speaking the same language, and control for group heterogeneity including language group fixed effects.

We recognize that the dummies for the richest and poorest municipalities do not fully capture group heterogeneity across municipalities. To address this problem, we instrument our proxies for entrepreneurial activity and include extensive municipality and individual level controls that we summarize in Table 2 and describe in detail in the Appendix.

In selecting the instruments, we follow the methodology suggested by Case and Katz (1991), and followed, among others, by Cutler and Glaeser (1997) and Duflo and Saez (2002). We identify some instruments that are *not* expected to directly affect the individual decision to become an entrepreneur, but that do affect entrepreneurial activity, *without* being affected by it. In other words, we look for instruments that generate exogenous between-group variation.⁹

Our instruments are the proportion of pensioners who are members of the state church¹⁰ and the proportion of individuals who voted for right-wing parties in the early 1980s. Since in principle municipality culture, and therefore religious beliefs and political orientation, could be affected by entrepreneurial activity, we use predetermined proxies for cultural values. Even if we use current *pensioners'* religious beliefs, these are most often lifetime beliefs, and are therefore extremely unlikely to be affected by the current level of entrepreneurial activity.

Our instruments are unlikely to be jointly determined with the current level of economic activity (for instance because they are both related to entrepreneurial activity in the early eighties) for the following reason. During the 1980s and early 1990s, Sweden underwent profound economic transformation. It experienced a banking crisis followed by widespread bankruptcies, a major tax reform in 1990-91 and the dissolution of the centralized wage-setting arrangements, which significantly modified Swedish industrial structure (Davis and Henrekson, 2004). Much of the entrepreneurial activity we observe in our sample was initiated because of this process. Cultural values in the early 1980s can thus be considered exogenous with respect to the current level of entrepreneurial activity.

We conjecture that our instruments can explain the current level of entrepreneurial activity for the following reasons. First, in Sweden, left-wing parties have generally favored

⁹ In this way, as pointed out by Graham and Hahn (2005), we can overcome the reflection problem even when we study the probability of becoming an entrepreneur.

¹⁰ In Sweden, individuals who are members of evangelical churches are generally also members of the state church.

the expansion of the public sector and large established companies (Hogfeldt, 2004). A high fraction of votes for right-wing parties in the early eighties may be related to aversion towards large companies and the public sector and to the prestige attributed to self-employment. This may have affected the attitude towards entrepreneurial activity once institutions became more favorable to it. Similarly, as Weber (1905) first argued, religious beliefs are associated with different economic attitudes. More recently, Barro and McCleary (2003) and Guiso, Sapienza and Zingales (2003) find that religion is positively associated with economic performance and attitudes that are conducive to market-oriented institutions. Religiosity may thus create a positive environment for entrepreneurial activity.

The first-stage regression (which uses the proportion of entrepreneurs in the population as dependent variable) in Table 3 shows that our instruments have indeed high explanatory power for entrepreneurial activity¹¹ and enter in the first stage with the expected sign.

Still, these instruments are valid to assess the importance of peer effects only if they do not directly affect the individual decision to become an entrepreneur and are not correlated with unobserved determinants of the individual decision (see Duflo and Saez, 2002 for a similar argument). We attempt to mitigate concerns regarding the validity of the instruments as follows. First, we control for nearly the corresponding individual cultural traits. We do observe whether an individual is part of the state church, and therefore we can control for the fact that individual religious beliefs can directly affect the choice to become an entrepreneur. Additionally, we can control for individual income and wealth, which are correlated with the decision to vote for right-wing parties. Finally, we can control for factors affecting labor demand, which could be affected by a rightist local administration, such as the proportion of individuals employed in the public sector and the rate of unemployment.

Second, we perform tests of over-identifying restrictions. These tests never allow us to reject the null that our instruments do not have a direct effect on the dependent variable. Our exclusion restrictions are supported not only by statistical tests but also by several robustness checks, which include the analysis of own and cross-group influences: the latter that are more likely to capture the effect of unobservables (rather than social interactions) are found to be indistinguishable from zero.

¹¹ As shown in Tables 4 to 6, the F test of the regression of our variable of interest on the instruments is always strongly statistically significant even after controlling for all the independent variable we include in the second stage. Hence, we do not have to worry about possible inconsistency problems arising in instrumental variable estimation when the correlation between the instruments and the endogenous explanatory variable is weak (Bound, Jaeger and Baker, 1995).

Third, and perhaps more importantly, our instruments do not appear to be related to observable measures of social group economic outcomes other than the current level of entrepreneurial activity: In Table 3, we find that our instruments are unrelated to municipality income per capita, individual wealth and years of schooling. To the extent that our instruments are not related to social groups' observable characteristics, they are unlikely to capture unobservable characteristics of the social group which may affect the decision of becoming an entrepreneur.

4. Results

4.1 The decision to become an entrepreneur

We estimate the probability that an individual becomes an entrepreneur using a probit model, a linear probability model, and two-stage least squares. In all the specifications, we include 108 LLM fixed effects. When using the probit model, which notoriously creates problems when fixed effects are included, however, we include only 7 regional dummies.

Table 4 presents the parameter estimates. Results show that individual and aggregate occupational choices are correlated: The proportion of entrepreneurs in a social group (municipality) has a positive and significant effect on the probability of an individual becoming an entrepreneur.

Results are qualitatively similar when we use only one of the two available instruments and for the alternative measures of entrepreneurship. Interestingly, the marginal effect of the proxy for entrepreneurial activity is similar in the probit model –when LLM fixed effects are not included– and in the linear probability model. Our results are also confirmed by the use of the third variable measuring entrepreneurial activity: We check whether for individuals in the three lowest quartiles of the income distribution the decision to become an entrepreneur is affected by the proportion of entrepreneurs in the highest quartile. We find that indeed this is the case.

Since we control for LLM fixed effects, the positive correlation between individual and aggregate occupational choice is unlikely to depend on differences in entry costs, labor market conditions or other omitted economic factors. We can interpret our estimates of the coefficient of the variable measuring the municipality's entrepreneurial activity as evidence of peer effects if we believe that our instruments are not correlated with omitted individual or social group (municipality) characteristics that could have an independent effect on occupational choice. Since we control for a long list of individual and municipality

characteristics, this is unlikely to be the case. Most importantly, since we have two instruments, we can test over-identifying restrictions using Hansen's J-statistics. We can never reject the null hypothesis that the instruments do not have a direct impact on the choice of becoming an entrepreneur with approximately 10 percent confidence level. As we discuss below, the probability that the null hypothesis is true is even higher in our favored specifications.

Peer effects appear significant also from an economic point of view. One standard-deviation increase in the proportion of entrepreneurs in a municipality increases the probability of an individual becoming an entrepreneur by approximately 0.27 percentage points in the two-stage least squares estimates when we use the proportion of entrepreneurs and the proportion of entrepreneurs with a given educational achievement as measures of entrepreneurial activity (our favored specifications). The economic magnitude is larger when we use the proportion of entrepreneurs in the top quartile of the income distribution. In this case, a one-standard deviation increase in the proxy for entrepreneurial activity increases the probability that an individual becomes an entrepreneur by 0.72 percentage points.¹²

Our specification tests for the quality of instruments, however, suggest that the more conservative estimates based on the proportion of entrepreneurs are more reliable. In fact, when we use the proportion of entrepreneurs in the top quartile of income distribution, our instruments are weak according to the Bound-Jaeger-Baker test. Additionally, the test for over-identifying restrictions suggests that the probability that the instruments have no direct impact on dependent variable is slightly lower than 10 percent.

Our identification assumptions are also supported by a more direct test of the mechanism of social interactions. In the last two regressions of Table 4, we define an individual's social group using both municipality and education. In fact, it seems reasonable to assume that an individual interacts more closely with individuals with similar education level residing in the same neighborhood. Besides our variable of interest, we can then include the level of entrepreneurship among individuals with different educational achievement than the individual under consideration. This variable is unlikely to capture social interactions; a positive and significant coefficient would suggest that our estimates are biased by omitted factors. The estimates provide support to our interpretation that social interaction matter. Not only the level of entrepreneurship in the individual's social group is always positive and

¹² The magnitude of the effect is similar if we use the whole sample instead of only the individuals in the lowest three quartiles of income distribution. This suggests that the larger impact is due to the different proxy for entrepreneurial activity and not to the different sample.

significant, but also has a larger effect on the individual decision to become an entrepreneur than the level of entrepreneurship among individuals with different educational achievement (which is not significant).

Some of the control variables also provide interesting information. Individuals who perceive a high wage premium, high salaries or are part of households whose members earn high incomes are less likely to become entrepreneurs. As expected, wealth increases the probability of any individual becoming an entrepreneur because liquidity constraints are less likely. Surprisingly, the individual employment status has no effect on the decision to become an entrepreneur and unemployed individuals are even less likely to become entrepreneurs if they belong to high unemployment social groups.

Municipality characteristics, other than those proxying for entrepreneurial activity, have a marginal impact on the decision to become an entrepreneur suggesting that individual level controls capture most of the heterogeneity in the population within the LLM.

4.2 Entrepreneurial profits, investment and alternative job opportunities

In analyzing the determinants of entrepreneurial profits, we take into account that individuals self-select into the entrepreneurial activity. Therefore, we use a selection model. First, we estimate the probability of individual i *being* an entrepreneur, using a specification similar to the one that we use to estimate the probability of individual i *becoming* an entrepreneur. To correct the bias due to self-selection, we use these estimates to compute the Mills' ratio. Then, we include the inverse Mills' ratio, together with our main variable of interest and the control variables, in the equation for individual profits.¹³ We estimate the profits equation both by ordinary least squares and two-stage least squares.

The results are presented in Table 5. The selection equation holds no surprises: The probability of an individual being an entrepreneur has largely the same determinants of the probability of an individual becoming an entrepreneur. The only difference is that this time we also include a dummy that takes value 1 if the individual was an entrepreneur also during the previous year. The inverse Mills' ratio enters significantly into the second stage regression, indicating that there is self-selection.

¹³ The system is identified not only by the distributional assumptions but also by the following exclusion restrictions: in the second stage we do not include the individual's salary and the income of the other household members, which should be unrelated to the productivity of the entrepreneurial activity.

The results that emerge are striking: Not only our results indicate that individuals who belong to more entrepreneurial social groups are willing to be entrepreneurs even if on average they earn lower profits, but they also suggest that individuals with very different productivities become entrepreneurs in municipalities with higher level of entrepreneurial activity. In fact, the income of entrepreneurs in the lowest quartile of income distribution is lower in social groups where a larger proportion of the richest individuals are entrepreneurs. This suggests that individuals with lowest and highest productivity have high propensity to the entrepreneurial activity, as is consistent with the hypothesis that individuals in these social groups enjoy high non-pecuniary benefits from running their own business.

The results are not only statistically but also economically significant. A one-standard deviation increase in the proportion of entrepreneurs (the proportion of entrepreneurs with a given educational achievement in the social group) decreases entrepreneurial profits by slightly more than 10 percent. Also in this case, the effect is more pronounced when we use the proportion of entrepreneurs in the top quartile of income distribution as a proxy for entrepreneurial activity: A one-standard deviation increase in the proxy is associated with a 35 percent decrease in the entrepreneurial profits of the individuals in the three lowest quartiles of income distribution.¹⁴ Also in this case, however, our specification tests for the quality of instruments suggest that the more conservative estimates based on the proportion of entrepreneurs are more reliable. The specification tests for the first two proxies for entrepreneurial activity suggest that our instruments are strong. Most importantly, we cannot reject the null that the instruments have no direct impact on entrepreneurial profits. When we use the proportion of entrepreneurs in the top quartile of income distribution, however, our instruments are weak. Additionally, the test for over-identifying restrictions suggests that the probability that the instruments have no direct impact on entrepreneurial profits is slightly lower than 10 percent.

Also note that our results do not depend on the fact that there may be more part-time entrepreneurs in some municipalities, as the coefficient of our variable of interest remains negative and significant when we control for the share of individual income earned in the entrepreneurial activity (by including a dummy for part-time entrepreneurs or the share of income earned from the entrepreneurial activity). Similarly, results are qualitatively invariant

¹⁴ Also in this case, the magnitude of the effect is similar if we use the whole sample instead of only the individuals in the lowest three quartiles of income distribution. This suggests that the larger impact is due to the different proxy for entrepreneurial activity and not to the different sample.

if we control for tenure by including a dummy variable capturing whether the individual has been self-employed for more than one year.

The result that entrepreneurial profits are lower in municipalities where the entrepreneurship rate is higher is not completely surprising in the light of recent papers suggesting that the non-pecuniary benefits of self-employment are substantial. Moskowitz and Vissing-Jorgensen (2002), for instance, show that entrepreneurs largely under-diversify their portfolios investing in their own businesses, and the returns they enjoy on their entrepreneurial activities are too low to justify their behavior. As a consequence, they expect entrepreneurs to enjoy large non-pecuniary benefits. Along the same line, Hamilton (2000) finds that entrepreneurs enter and persist in business despite the fact that they have both lower initial earnings and lower earnings growth than they would as employees. Our contribution is to show that the importance of non-pecuniary benefits may vary substantially across social groups.

A possible criticism to our results is that entrepreneurial income is often underreported for tax reasons. Since we compare entrepreneurial income in different locations, not entrepreneurial income with employees' wages, our results should be immune to this criticism as long as social interactions do not make individuals more efficient in avoiding taxes. To further check our interpretation of the empirical evidence, we analyze real estate ownership. Real estate ownership may be considered a crude proxy for standard of living and is not affected by tax avoidance like entrepreneurial income. It provides an alternative way to test whether individuals in high entrepreneurship social groups enjoy private benefits from entrepreneurial activity and thus accept to have not only lower income but also lower living standards.

Since some individuals may choose not to own real estate, we need to correct for two types of sample selection: individuals choose whether to become entrepreneurs and whether to hold real estate. In Table 6, we show that entrepreneurs in higher entrepreneurship municipalities own less valuable real estate (after controlling for the value of real estate in the municipality). Hence, not only these individuals have lower taxable income, but they also live in cheaper houses. This again suggests that they derive private benefits from entrepreneurial activity.

We also analyze how entrepreneurial activity is related to entrepreneurial investment which we observe for a subsample of entrepreneurs. We conjecture that if peer effects increase the utility from entrepreneurial activity, individuals in high entrepreneurship municipalities invest more, even if *ceteris paribus* they earn lower profits than entrepreneurs

in other municipalities. We control for the return to entrepreneurial activity by including entrepreneurial profits. Additionally we take into account that individuals self-select into the entrepreneurial activity by using a two-stage selection model.

Our conjecture is confirmed in Table 6. Overall, it appears that entrepreneurial investment is larger when peer effects are stronger. A one-standard deviation increase in the proxy for entrepreneurial activity is associated with an almost 30 percent increase in investment.

These results not only confirm our interpretation of previous findings but also allow excluding a potential alternative explanation. Entry costs could potentially differ across municipalities. Even though differences in entry costs are unlikely to be generated by differences in regulations, which are homogeneous within the country, social interactions within the municipality could generate valuable information on how to start a business. This information could lower the (fixed) entry cost without increasing the productivity in the entrepreneurial activity. Differences in entry costs are consistent with higher entry rates and lower entrepreneurial incomes in high entrepreneurship municipalities (see Klapper, Laeven and Rajan (2006) for a similar argument). However, they cannot explain why individuals invest more if they are surrounded by entrepreneurs. Less productive entrepreneurs who start a business in supposedly low-entry cost municipalities should invest less, not more than similar entrepreneurs. Non-pecuniary benefits from entrepreneurial activity deriving from peer effects can instead explain our findings on both entrepreneurial profits and investment.

Overall, these findings are compatible with the existence of peer effects. An alternative explanation could be that LLMs are not the relevant economic unit of analysis. If the labor market were segmented within the LLM, stronger competition in the labor or the product market in municipalities where there are more entrepreneurs could explain why individuals invest more in the entrepreneurial activity and at the same time have lower profits.¹⁵ As we argue in Subsection 3.3, we think that this is unlikely because LLMs have relatively small extension and are defined on the basis of *observed* commuting patterns. This implies that even though entrepreneurs live in high-entrepreneurship municipalities, they work in other municipalities.

Segmentations could arise from the fact that individuals living in different municipalities have unobservable characteristics that affect their job opportunities. In Table 6,

¹⁵ Note that we include a variable measuring the number of firms per employee in the municipality relative to the number of firms per employees in Sweden, which Glaeser et al. (1992) use as a proxy for competition. This variable is indeed negative and significant, and should capture the effect of competition on profits.

we explore this possibility by looking at the labor income of individuals who are not entrepreneurs. We estimate a selection model like the one for entrepreneurial income. We find that the labor income of non-entrepreneurs in high entrepreneurship municipalities is higher suggesting that job opportunities are actually stronger in these municipalities. If anything, individuals in higher entrepreneurship social groups appear to have better outside options. Therefore, they should not invest more to earn lower profits than others. Overall, their behavior appears to support the existence of non-pecuniary benefits from entrepreneurial activity deriving from peer effects.

5. Robustness and alternative explanation

5.1 Sorting

One possible problem with our estimates is that entrepreneurs or potential entrepreneurs move to municipalities that are more favorable to entrepreneurial activity. In this case, the positive correlation between individual and aggregate occupational choices could be biased.

We test whether sorting of individuals more prone to entrepreneurial activity can explain our results by looking at movers: We find that individuals who move to municipalities with more entrepreneurs are not more likely to become entrepreneurs than similar individuals (as suggested by the insignificant coefficient of the variable obtained interacting the mover dummy with the proportion of entrepreneurs in the destination municipality in Panel A of Table 7). The result does not depend on the time horizon we choose for identifying movers. The coefficient of the interaction variable continues to be insignificant if we define as movers individuals who moved between 1 and 3 years before.

Furthermore, in Panel B of Table 7, we analyze individual moving decisions. We find that entrepreneurs are always less likely to move. Most importantly, individuals who are not entrepreneurs are more likely to move to higher entrepreneurship municipalities than are entrepreneurs. Overall, the evidence does not support the possibility that individuals who are inclined to become entrepreneurs or are already self-employed sort in municipalities where there are more entrepreneurs.

5.2 Young people's entrepreneurial choices

To further understand why the level of entrepreneurial activity affects individual occupational choice, we analyze the occupational choice of young people, whose age ranges

between 18 and 30 in 1995. For this subsample, we are able to observe the capital profits of the parents. This is a good proxy for family wealth and an imperfect proxy for whether an individual's parents were involved in entrepreneurial activity. We can thus test whether social interactions within the municipality still matter after controlling for the fact that an individual may have inherited a business or received loans and transfers from the parents.

The young people subsample also allows us to further check the quality of our instruments. Our identification strategy so far has relied on the fact that, thanks to the large institutional changes that affected Sweden during the 1980s, differences in culture in the early 1980s are predetermined with respect to the current level of entrepreneurial activity. Entrepreneurial activity was without doubt a much less common phenomenon in the early 1980s. However, there may have been some preexisting differences in entrepreneurial activity that affected the local culture. Also, if individuals persist in the entrepreneurial activity, some of the entrepreneurial activity we observe nowadays may have affected the local culture in the early eighties.

Our instruments, however, are certainly exogenous with respect to the occupational choices of young individuals who were not part of the labor force in the early 1980s. We re-estimate both our equations of interest considering only the level of entrepreneurial activity among young people and how this affects other young people's occupational choices and entrepreneurial profits.

Table 8 shows that our main results are qualitatively unchanged: Entrepreneurial activity has a positive (negative) effect on the probability of becoming an entrepreneur (entrepreneurial profits) as we find in Section 4.¹⁶ Family wealth, as proxied by the capital income of the parents, does not have a significant effect on the decision of becoming an entrepreneur. It is, however, negatively related to entrepreneurial profits, suggesting that wealthy individuals may enjoy higher utility from the entrepreneurial activity. This finding is consistent with Hurst and Lusardi (2004) who argue that being an entrepreneur may be a sort of luxury good.

5.3 Informal credit markets

¹⁶ The economic effect of the proxy for entrepreneurial activity on the probability of becoming an entrepreneur is only 0.19 percentage points. The effect on the income however is larger in this subsample. A one-standard deviation increase in entrepreneurial activity is associated with a 40 percent decrease in income.

The estimates reported in Section 4 and the tests of over-identifying restrictions mitigate concerns that our instruments have an effect on the decision of becoming an entrepreneur, entrepreneurial profits and investment that does not pass through the level of entrepreneurial activity. We can also exclude that the level of entrepreneurial activity affects the decision to become an entrepreneur because it increases the profits of the entrepreneurial activity. However, the reasons why peer effects affect entrepreneurial activity might not be necessarily non-pecuniary, as we implicitly assumed so far. In high entrepreneurship municipalities, social networks might ease access to credit and facilitate entry and investment for less profitable entrepreneurs.

To explore this possibility, we use data from *Market Manager*. We examine the capital structure of firms that have less than 50 employees and less than SEK 1,000,000 (approximately USD 130,000) in assets. If our results were driven by the availability of cheap informal credit, small firms, incorporated in municipalities where entrepreneurial activity is higher, should use more trade credit and other informal loans. Similarly, if access to formal credit markets were easier, small firms should have higher leverage.

To explore these possibilities, we investigate how firms finance their assets distinguishing among loans from financial institutions, trade credit, and other loans. We also look at how much trade credit firms grant. If informal loans help to spur entrepreneurial activity, we should observe that small firms receive and grant more trade credit, and have access to more financial and/or non-financial loans in municipalities with higher level of entrepreneurial activity.

The estimates reported in Table 9 show that our proxy for entrepreneurial activity is not related to the firm financial ratios neither in ordinary least squares nor in 2SLS regressions. If anything, firms in high entrepreneurship municipalities grant less trade credit. This casts doubts on the importance of credit markets and supports the interpretation that peer effects matter because they affect entrepreneurial private benefits.

5.4 Over-confidence

In principle our findings that some individuals have lower entrepreneurial profits and at the same time invest more could be explained by the fact that they are overconfident. In this case, our instruments should capture an omitted characteristic of the individual –over-confidence—and using Manski’s (1993) terminology, the correlation we observe would be due to correlated effects.

The tests of over-identifying restrictions and the fact that we control for nearly the corresponding individual cultural traits, however, suggest with a reasonably high level of confidence that religiosity and political orientation enter in the equation through the level of entrepreneurial activity. Hence, it seems that the very fact that some individuals are entrepreneurs affects the individual occupational choice.

The level of entrepreneurial activity, however, could create herding problems similarly to Bernardo and Welch (2001): Some individuals observing high level of entrepreneurial activity may revise upward (downward) their expectations on entrepreneurial profits (effort) and thus be more likely to become entrepreneurs. In this respect, high level of entrepreneurial activity would endogenously generate over-confidence. Social interactions would increase the utility from entrepreneurial activity without affecting the actual profitability (effort).

We view this as a non-pecuniary effect of social interactions, similar to desire for conformity or prestige. We are unable to fully distinguish between these effects. We can provide, however, time-series evidence suggesting that social interactions are unlikely to generate over-confidence. Individuals should have become particularly over-confident in the late 1990s, during the high-tech boom, when the number of IPOs dramatically increased and many entrepreneurs made fortunes. Potentially, in areas with more successful entrepreneurs, some individuals may have over-estimated their expected profits from the entrepreneurial activity and decided to become entrepreneurs. In this case, our results should be driven by the correlation between individual and aggregate occupational choices in the second part of the sample (1998-2000). In fact, the results for the subperiods 1996-1997 and 1998-2000 are similar to the ones we report. This suggests that herding phenomena are unlikely to explain our findings.

5.5 Further robustness checks

Our results are robust to a number of modifications of the equations we present. For instance, we check whether the definition of entrepreneurship is a key determinant of our results. In fact, it is not. The estimates remain qualitatively invariant if we define as entrepreneurs only the individuals who derive at least 30 percent of the income from the entrepreneurial activity. We also re-estimate all equations excluding individuals who run incorporated businesses. These individuals can save through their company. It is thus difficult to evaluate the income of entrepreneurial activity because we have no measure of capital gains for unlisted companies. All our results, however, are qualitatively invariant if we

include only individuals with non-incorporated businesses who not having the option of saving through their companies cannot benefit from capital gains.

To gauge better understanding of why entrepreneurial activity matters, we explore the mechanism through which social interactions and social norms should operate. Community attachment is generally much stronger in rural areas. Hence, the effect of social interactions on occupational choice should be stronger in rural than in urban areas. If the parameter estimates of our variable of interest are due to social interactions, we expect our results to be stronger in rural LLMs. If instead our results depend on the failure of appropriately controlling for social group heterogeneity, we would expect the correlation between the proxies for entrepreneurial activity and our variable of interest to be stronger for urban LLMs (Stockholm, Göteborg, Malmö and Uppsala). In this case, in fact, a LLM includes many more municipalities and our control may capture social group heterogeneity to a lesser extent.

To test whether this is the case, we separate the municipalities that belong to urban areas from non-urban municipalities, where approximately two-thirds of the individuals represented in our sample live. We re-estimate the two equations of interest by interacting our proxy for entrepreneurship with two dummies, one equal to 1 for urban areas and the other equal to 1 for non-urban areas. We find that the effect of the variable proxying for social interactions on the decision to become an entrepreneur is positive and significant for both urban and non-urban areas. However, only in non-urban municipalities, entrepreneurial profits are negatively related to the proxy for entrepreneurial activity. Hence, entrepreneurs seem to enjoy non-pecuniary benefits by conforming to other individuals' choices only where we expect peer effects to be stronger.

Finally, we remove subsets of the control variables, and, in particular, the education and LLM fixed effects. None of these robustness checks produces results that are significantly different from the ones we report. This increases our confidence that our results are not due to omitted variable bias. If unobservable characteristics about individuals or municipalities drove our results, one would expect that increasing the set of unobservable characteristics by treating observable characteristics as unobservable would have a large impact on the estimate of the social interaction term. In fact, the estimates are almost invariant.

6. Conclusions

This paper suggests that peer effects play a significant role in the individual decision to become an entrepreneur. Individuals who belong to more entrepreneurial social groups earn

lower entrepreneurial profits and invest more in their own business, even though their alternative job opportunities appear more attractive. This suggests that peer effects may increase the amenity potential of running one's own business.

Our results indicate that cultural values may have an indirect effect on economic decisions. We find that in religious communities, there are more entrepreneurs, and for this reason an individual is *ceteris paribus* more likely to choose the entrepreneurial activity. This suggests that social capital measures that have been shown to be related to economic performance (Knack and Keefer, 1997) and financial decisions (Guiso, Sapienza, and Zingales, 2004), may matter because they generate peer effects (individuals who trust others buy more stocks and are imitated because of peer effects by non-trustful individuals) rather than only because of a direct effect of trust on economic choices. In this respect, small differences in social capital or cultural values may lead to dramatic differences in economic outcomes. We believe that this is an interesting topic for future research.

Appendix

Control variables

We control for many individual and municipality characteristics.

Panel A of Table 2 summarizes the individual characteristics. These are:

1. The logarithm of the salary received by an individual plus 0.01 (LABOR INCOME) and the logarithm of the income of the other members of the household plus 0.01 (INCOME OF OTHER HH MEMBERS), both measured the year before the occupational choice. These variables proxy for how remunerative the status of employee is, and the resources available to the household. While an increase in non-entrepreneurial income is expected to decrease the probability of an individual becoming an entrepreneur, the income of the other household members may have a positive effect because more resources are available to set up a new business.
2. EXPERIENCE is a dummy variable for individuals who have been self-employed for more than one year. It is included to capture the fact that tenure can affect the profits from entrepreneurial activity.
3. A dummy variable for individuals who earn less than 80 percent of the income from the entrepreneurial activity (PART-TIME). This variable takes into account that an individual

may have lower entrepreneurial income because she is involved part-time in the entrepreneurial activity.

4. The logarithm of wealth (WEALTH) and the square of the logarithm of wealth ($WEALTH^2$) of an individual's household. Wealth includes all financial and real assets of the household that are subject to wealth tax plus 0.01. These variables have been included because wealthy individuals are less likely to be subject to liquidity constraints that keep them from starting a business (Evans and Jovanovic, 1989; Holtz-Eakin, Joulfaian and Rosen, 1994). We also include the quadratic term because very wealthy individuals may not have an incentive to undertake the entrepreneurial activity.
5. The logarithm of the ratio of liquid assets, including securities and bank accounts plus 0.01 to total wealth (SHARE OF LIQUID ASSETS IN HH WEALTH), which takes into account that only the most liquid assets may be available to fund a new business.
6. The individual age (AGE) and its square (AGE^2), which are commonly believed to be negatively correlated with risk aversion (Evans and Leighton, 1989), and should therefore be negatively related to the probability of an individual setting up her own business.
7. A dummy variable for men (MALE), to account for possible gender differences.
8. A dummy variable for married individuals (MARRIED), a dummy variable for divorced individuals (DIVORCED), the logarithm of the number of children in the household (NUMBER OF CHILDREN), a dummy variable equal to 1 if either the number of children or the marital status changed in the last year and equal to zero otherwise (CHANGES IN FAMILY STRUCTURE). These variables may be related to an individual's risk aversion because they proxy for the responsibility an individual has towards the household (Evans and Leighton, 1989). Moreover, individuals whose status recently changed may have a stronger need for extra resources. This may affect their willingness to start a new business.
9. A dummy variable for individuals born abroad (IMMIGRANT); a dummy for individuals that changed municipality during the last year (MOVER) and a dummy variable for individuals who were unemployed the year before starting the entrepreneurial activity (UNEMPLOYED).
10. The wage premium or discount (WAGE PREMIUM). This variable has been computed as the residual of the regression of the individual labor income on individual age and its square, the variables regarding the family status mentioned before, a dummy equal to 1 for individuals with a handicap, and finally dummy variables controlling for immigrant status,

education level, industry of employment, occupation, and the seven Swedish macro-regions.

11. A dummy equal to 1 for individuals who are members of the state church (CHURCH).

Panel B of Table 2 summarizes the municipality characteristics from Market Manager and Statistics Sweden that we use to capture any characteristics of an individual's social group which are not accounted by the richest and poorest municipality dummies. These are the following:

1. The level of unemployment in a municipality (UNEMPLOYMENT RATE) and the proportion of public sector employees in the population (PROPORTION OF PUBLIC SECTOR EMPLOYEES). This account for the labor market status of individuals in a given municipality.
2. The proportion of unemployed enrolled in entrepreneurship programs (PROPORTION OF UNEMPLOYED IN ENTREPRENEURSHIP PROGRAMS), which is obviously expected to have a positive effect on the decision to become an entrepreneur.
3. The proportion of employment in the financial sector (PROPORTION OF FINANCIAL SECTOR EMPLOYEES), which captures financial development. Although this variable is endogenous, and a more developed financial sector may certainly depend on higher demand for financial services in municipalities with more entrepreneurs, we include it as a control variable because firm creation is positively affected by financial development (see, for instance, Guiso, Sapienza and Zingales, 2004). If we did not control for this variable, the stock of entrepreneurs in a municipality may help explain occupational choices because of the greater availability of financial services to some social groups.
4. The share of the top five industries in local employment to the share of the top five industries in national employment (SPECIALIZATION), which provides a measure of specialization. This variable proxies for the existence of dynamic externalities (Glaeser et al., 1992), which may increase productivity in areas that specialize in few sectors, and determine a concentration of entrepreneurs in some municipalities.
5. The number of firms per employee incorporated in a municipality relative to the number of firms per employee in Sweden (COMPETITION).¹⁷ This variable measures average firm size in the municipality, and has been used as a proxy for competition in the labor

¹⁷ The number of firms incorporated in a municipality differs from the number of self-employed, because in many cases firms are not incorporated.

market (Glaeser et al., 1992). It helps to control for the fact that some workers may decide to reside in some municipalities in order to be close to firms. Also, it helps to mitigate concerns that competition may vary within the LLM by control for competition in the product market that may drive down profits.

6. Per capita income (INCOME PER CAPITA) and per capita wealth tax (WEALTH TAX PER CAPITA). Both variables proxy for the availability of funds in a given social group.
7. Entrepreneurial entry (ENTRY RATE) and exit rates (EXIT RATE), which capture temporary shocks that may favor entry into the entrepreneurial activity. They also control for differences in firm dynamics that can influence our results. If in municipalities with a high proportion of entrepreneurs, more firms die and are replaced by new ones, we could observe a positive correlation between the individual decision to become an entrepreneur and the proportion of entrepreneurs in a municipality. This, however, would not indicate either social learning or social norms but would simply be related to firm dynamics. By controlling for firm birth and exit rates, we overcome this problem.

Additionally, we include two education-group fixed effects (for individuals with high school diplomas and university education, respectively), 11 sectoral dummies, which refer to the sector in which an individual is employed, and four year dummies. Finally, as we explained discussing our identification strategy, we include 108 LLM fixed effects and dummy variables for the richest and poorest municipalities within a LLM.¹⁸

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¹⁸ In other specifications, we also control for other municipality characteristics including proxies for firm performance and population density and a variable ranging from 1 to 6 that measures the individual educational level more precisely than the fixed effects. Since these variables are not statistically significant and do not affect the coefficients of the other explanatory variables, we do not report the results.

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Table 1: Cross-municipalities differences in entrepreneurial activity

The variable Entrepreneurship is the ratio of entrepreneurs relative to the population of the municipality; Entry rate is the ratio of new entrepreneurs relative to the number of entrepreneurs in the municipality; Exit rate is the ratio of entrepreneurs abandoning entrepreneurial activity relative to the number of entrepreneurs in the municipality. The following three rows present the ratio of the entrepreneurs with a given education level relative to the municipality population with the same educational achievement. The education level is indicated in the first column. Proportion of entrepreneurs in the top quartile is the proportion of entrepreneurs in the top quartile of the municipality income distribution. Entrepreneurial income (investment) is the average income (investment) per entrepreneur within the municipality. The statistics employ observations for all municipalities from 1996 to 2000 (288 from 1996 to 1998, 289 from 1999 to 2000). All individuals aged between 18 and 60 who have some entrepreneurial income are classified as entrepreneurs. The population includes all individuals aged between 18 and 60. Farmers have been excluded.

Entrepreneurial activity	Mean	Median	Minimum	Maximum	Standard Deviation	Interquartile Range
Entrepreneurship	0.057	0.052	0.015	0.183	0.023	0.029
Entry rate	0.241	0.239	0.000	0.750	0.145	0.124
Exit rate	0.224	0.204	0.000	0.600	0.144	0.149
Entrepreneurship by education level:						
Less than high school diploma	0.013	0.011	0.000	0.061	0.009	0.011
High school diploma	0.008	0.006	0.000	0.110	0.014	0.017
University education	0.016	0.015	0.000	0.065	0.009	0.011
Proportion of entrepreneurs in the top quartile	0.053	0.050	0.000	0.188	0.027	0.030
Entrepreneurial income (SEK 000)	103.81	99.43	14.48	444.35	29.81	24.72
Entrepreneurial investment (SEK 000)	1.46	0.65	0.00	37.50	2.73	1.63
Instruments						
Proportion of individuals older than 60 member of the state church	0.936	0.947	0.728	1.000	0.040	0.045
Proportion of votes for right-wing parties in 1982 elections	0.460	0.461	0.151	0.747	0.114	0.146

Table 2: Descriptive statistics
Panel A: Individual characteristics

LABOR INCOME is the logarithm of the salary of individual i plus 0.01. INCOME OF OTHER HH MEMBERS is the logarithm of the income of the other household members plus 0.01. EXPERIENCE is a dummy variable that takes value one for individuals who are entrepreneurs both at time t and $t-1$ and zero otherwise. PART-TIME is a dummy variable that takes value one if the individual earn less than 80 percent of the income from the entrepreneurial activity, and zero otherwise. WEALTH is the logarithm of the total wealth plus 0.01. SHARE OF LIQUID ASSETS IN HH WEALTH is the logarithm of the proportion of individual wealth invested in bank accounts or securities plus 0.01. AGE is an individual's age. MALE is a dummy variable that takes value 1 for males and zero otherwise. MOVER is a dummy variable that takes value 1 if the individual changed municipality during the previous year and zero otherwise. CHANGES IN FAMILY STRUCTURE is a dummy variable that takes value one if there have been any changes in family structure during the previous year and zero otherwise. NUMBER OF CHILDREN is the number of children. MARRIED is a dummy variable that takes value one if the individual is married and zero otherwise. DIVORCED is a dummy variable that takes value one if an individual is divorced and zero otherwise. UNEMPLOYED is a dummy variable that takes value one if an individual is unemployed and zero otherwise. IMMIGRANT is a dummy variable that takes value one if an individual is an immigrant and zero otherwise. The WAGE PREMIUM is the residual of the regression of the individual labor income on individual age and its square, the variables regarding the family status mentioned before, the immigrant dummy, a dummy equal to 1 for individuals with a handicap, the unemployed dummy, and finally dummy variables controlling for an individual's education level, industry of employment, occupation, and seven regional dummies. CHURCH is a dummy variable that takes value one if the individual is member of the Church of Sweden and zero otherwise. All observations from 1995 to 2000 are included.

Variable	Mean	Median	Minimum	Maximum	Standard Deviation	Interquartile Range
LABOR INCOME	5.220	5.211	0.000	7.309	5.148	5.193
INCOME OF OTHER HH MEMBERS	5.191	5.131	0.000	7.309	5.241	5.377
EXPERIENCE	0.056	0.000	0.000	1.000	0.229	0.000
PART-TIME	0.035	0.000	0.000	1.000	0.184	0.000
WEALTH	5.876	5.912	0.000	9.013	0.431	0.429
SHARE OF LIQUID ASSETS IN HH WEALTH	-1.209	-0.561	-6.695	0.777	1.796	1.261
AGE	40.488	40.000	19.000	69.000	11.776	17.000
MALE	0.494	0.000	0.000	1.000	0.500	1.000
MOVER	0.093	0.000	0.000	1.000	0.290	0.000
CHANGES IN FAMILY STRUCTURE	0.173	0.000	0.000	1.000	0.378	0.000
NUMBER OF CHILDREN	1.111	1.000	0.000	12.000	1.184	2.000
MARRIED	0.551	1.000	0.000	1.000	0.497	1.000
DIVORCED	0.072	0.000	0.000	1.000	0.259	0.000
UNEMPLOYED	0.135	0.000	0.000	1.000	0.342	0.000
IMMIGRANT	0.096	0.000	0.000	1.000	0.295	0.000
WAGE PREMIUM	0.011	0.035	-6.663	4.175	0.569	0.390
CHURCH	0.824	1.000	0.000	1.000	0.381	0.000

Panel B: Municipality characteristics

PROPORTION OF UNEMPLOYED IN ENTREPRENEURSHIP PROGRAMS is the proportion of unemployed enrolled in entrepreneurship programs; UNEMPLOYMENT RATE is the rate of unemployment; PROPORTION OF FINANCIAL SECTOR EMPLOYEES is the share of employment in the financial sector; SPECIALIZATION is the share of employment in the five most important industries; COMPETITION is the number of firms per employee in the municipality relative to the number of firms per employee in Sweden; INCOME PER CAPITA is the income per capita; WEALTH TAX PER CAPITA is the wealth tax per capita.

Variable	Standard Interquartile					
	Mean	Median	Minimum	Maximum	Deviation	Range
PROPORTION OF UNEMPLOYED IN ENTREPRENEURSHIP PROGRAMS	0.252	0.219	0.027	1.147	0.135	0.136
UNEMPLOYMENT RATE	6.335	6.129	1.216	13.789	2.172	3.148
PROPORTION OF FINANCIAL SECTOR EMPLOYEES	0.010	0.009	0.003	0.117	0.007	0.003
SPECIALIZATION	0.451	0.438	0.341	0.706	0.066	0.078
COMPETITION	1.960	1.944	0.703	3.561	0.503	0.644
PROPORTION OF PUBLIC SECTOR EMPLOYEES	0.068	0.069	0.038	0.104	0.010	0.014
INCOME PER CAPITA	156662	154339	600	340051	21467	22817
WEALTH TAX PER CAPITA	1137	1030	300	6986	594	757

Table 3: The effects of cultural values on municipality characteristics

The dependent variables are the proportion of entrepreneurs, the average educational attainment, the average per capita wealth and the average per capita income in the municipality. All explanatory variables are defined in Tables 1 and 2. All the equations include four year dummies and 108 LLM fixed effects. The standard errors are corrected for heteroskedasticity and take into account that observations for the same municipality may be correlated. *T-statistics* are reported in parentheses. We also report the Adjusted – R-Squared and the Joint F-test for the instruments used in the rest of the paper (the proportion of individuals older than 60 who are members of the state church and the proportion of votes for right-wing parties in the 1982 elections). 1442 observations were used.

	Proportion of Entrepreneurs		Education level		Log(Total Wealth)		Log(Labor Income)	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
DIVERSITY	0.0192	(2.25)	0.3895	(2.96)	0.0436	(0.56)	0.0519	(3.23)
COMPETITION	0.0015	(1.11)	0.0227	(1.25)	0.0076	(0.72)	-0.0034	(-1.53)
UNEMPLOYMENT RATE	-0.0026	(-5.15)	-0.0059	(-0.78)	0.0009	(0.26)	0.0027	(2.94)
PROPORTION OF UNEMPLOYED IN ENT. PROG.	0.0117	(2.67)	-0.0792	(-1.21)	-0.0426	(-1.06)	0.0008	(0.10)
SHARE OF EMPLOYED IN FIN SECTOR	0.1443	(2.85)	-1.2649	(-1.59)	-0.2373	(-0.41)	0.1866	(1.92)
PROPORTION OF PUBLIC EMPLOYEES	-0.1200	(-1.56)	-2.1079	(-1.77)	-0.5800	(-0.96)	-0.1910	(-1.31)
INCOME PER CAPITA	0.0855	(12.75)	-0.1247	(-1.20)	1.5396	(24.71)	0.0756	(5.96)
WEALTH TAX PER CAPITA	-0.3024	(-18.73)	-3.0133	(-12.54)	-0.2122	(-1.54)	0.5993	(20.41)
UNEMPLOYMENT RATE	0.0000	(-0.07)	0.0015	(0.97)	-0.0027	(-2.64)	-0.0002	(-0.97)
PROPORTION OF IMMIGRANTS	-0.0034	(-0.21)	0.4900	(1.92)	0.3338	(1.88)	0.0923	(2.95)
ENTRY RATE	-0.0657	(-12.79)	0.0871	(1.14)	-0.0005	(-0.01)	-0.0070	(-0.74)
EXIT RATE	0.0047	(0.69)	0.2427	(2.44)	-0.0303	(-0.46)	-0.0029	(-0.24)
WEALTHIEST KOMMUN IN LLM	-0.0091	(-6.53)	-0.1409	(-6.70)	0.0169	(1.59)	-0.0024	(-0.93)
POOREST KOMMUN IN LLM	-0.0004	(-0.31)	0.0363	(1.75)	-0.0047	(-0.43)	-0.0027	(-1.06)
SHARE OF RIGHT-WING VOTERS IN 1982	0.0014	(18.38)	-0.0009	(-0.80)	0.0004	(0.68)	-0.0002	(-1.06)
FRACTION OF COS MEMBERS	0.0399	(2.53)	0.0170	(0.07)	-0.1635	(-1.30)	-0.0552	(-1.90)
LLM fixed effects	Y		Y		Y		Y	
Adjusted R-Square	0.718		0.359		0.688		0.789	
Joint F-test of instruments	337.16	0.000	0.63	0.426	1.01	0.366	2.37	0.094

Table 4: The decision to become an entrepreneur

The dependent variable is a dichotomic variable that takes value one if individual i becomes an entrepreneur at time t and zero otherwise. Individuals who were already entrepreneurs at time $t-1$ are excluded. In the specification “without education groups”, ENTREPRENEURSHIP is defined as the proportion of individuals who are entrepreneurs in the municipality; in the specification “with education groups”, ENTREPRENEURSHIP is the proportion of entrepreneurs among the individuals with a given education level in a given municipality. ENTREPRENEURSHIP IN THE TOP QUARTILE is the proportion of entrepreneurs among individuals in the top quartile of the income distribution in a given municipality. ENTREPRENEURSHIP OUTSIDE THE SOCIAL GROUP is the proportion of entrepreneurs among individuals with different education level residing in the same municipality. All remaining explanatory variables are defined in Tables 1 and 2. All the equations include four year dummies, two education dummies for individuals with high school and university degrees, and eleven dummies that refer to the sector where an individual is employed. The equation is estimated using a probit and a linear probability model (LPM). The latter is estimated using OLS or 2SLS. In the linear probability model we have included 108 LLM fixed effects, while in the probit model 7 regional fixed effects. In the 2SLS estimates, the instruments are the proportion of individuals older than 60 who are members of the state church and the proportion of votes for right-wing parties in the 1982 elections. The standard errors are corrected for heteroskedasticity and take into account that observations for the same municipality may be correlated. *T-statistics* are reported in parentheses. In the probit model, the marginal effects have been calculated setting the variables equal to the mean. We also report the Adjusted – R-Squared (Pseudo-R-Squared for probit estimates). For the 2SLS estimates we report the result of Bound-Jaeger-Baker’s (1995) test for the quality of instruments and Hansen’s J statistics for over-identifying restrictions. Estimates for the linear probability model are multiplied by 100. In the specification where the proxy for entrepreneurial activity is entrepreneurship in the top quartile, we include only observations relative to individuals in the three lowest quartiles of income distribution.

Variable	Without education groups						Entr. in top quartile		With education groups		With education groups		
	Probit estimates			OLS estimates		2SLS estimates		2SLS estimates		2SLS estimates		2SLS estimates	
	Estimate	T-stat	100xME	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
ENTREPRENEURSHIP	416.82	(26.22)	14.22	15.09	(17.97)	11.90	(7.53)	26.71	(3.62)	12.03	(7.57)	4.43	(5.49)
ENTREPRENEURSHIP OUTSIDE THE SOCIAL GROUP												0.03	(0.46)
Individual level controls													
INCOME OF OTHER HH MEMBERS	-1.66	(-10.39)	-0.06	-0.06	(-10.96)	-0.06	(-10.97)	-0.06	(-10.95)	-0.06	(-10.50)	-0.03	(-4.42)
LABOR INCOME	-2.45	(-6.91)	-0.08	-0.09	(-6.84)	-0.09	(-6.83)	-0.09	(-6.83)	-0.10	(-7.00)	-0.17	(-6.58)
WEALTH	1.76	(12.50)	0.06	-0.43	(-10.06)	-0.43	(-10.07)	-0.43	(-10.00)	-0.43	(-10.27)	0.03	(3.85)
WEALTH^2	-0.03	(-5.87)	0.00	0.09	(13.06)	0.09	(13.08)	0.09	(12.97)	0.09	(13.21)	0.00	(0.30)
SHARE OF LIQUID ASSETS IN HH WEALTH	0.21	(1.19)	0.01	0.05	(7.71)	0.05	(7.69)	0.05	(7.42)	0.05	(7.72)	-0.01	(-0.76)
AGE	5.78	(22.37)	0.20	0.17	(21.60)	0.17	(21.61)	0.17	(21.66)	0.16	(20.91)	0.13	(17.52)
AGE^2/100	-6.01	(-19.99)	0.00	-0.20	(-19.21)	-0.20	(-19.21)	-0.20	(-19.25)	-0.20	(-18.52)	-0.15	(-15.44)
MALE	25.60	(39.54)	0.87	0.87	(37.08)	0.87	(37.11)	0.87	(37.25)	0.87	(36.97)	0.68	(25.01)
MOVER	0.20	(0.12)	0.01	0.03	(0.49)	0.03	(0.48)	0.03	(0.46)	0.02	(0.42)	0.00	(-0.03)
CHANGES IN FAMILY STRUCTURE	1.41	(1.65)	0.05	0.06	(1.95)	0.06	(1.96)	0.06	(1.96)	0.06	(1.94)	0.01	(0.30)
NUMBER OF CHILDREN	1.33	(4.35)	0.05	0.10	(7.96)	0.10	(7.98)	0.10	(8.01)	0.10	(8.19)	0.06	(4.07)
MARRIED	7.22	(8.70)	0.25	0.24	(7.92)	0.24	(7.91)	0.24	(8.10)	0.24	(7.97)	0.22	(5.34)
DIVORCED	1.40	(1.06)	0.05	0.07	(1.82)	0.07	(1.81)	0.08	(1.95)	0.08	(2.05)	0.13	(2.84)
UNEMPLOYED	-0.38	(-0.16)	-0.01	0.01	(0.14)	0.01	(0.07)	-0.01	(-0.07)	0.00	(0.02)	0.17	(2.56)
IMMIGRANT	-4.61	(-1.99)	-0.16	-0.08	(-1.07)	-0.08	(-1.02)	-0.05	(-0.58)	-0.10	(-1.30)	0.15	(1.35)
WAGE PREMIUM	-5.73	(-11.07)	-0.20	-0.22	(-9.23)	-0.22	(-9.24)	-0.22	(-9.21)	-0.23	(-9.25)	-0.43	(-14.80)
CHURCH	-1.36	(-1.55)	-0.05	-0.09	(-2.91)	-0.09	(-2.86)	-0.09	(-2.66)	-0.10	(-3.02)	-0.09	(-3.00)
Municipal level controls													
DIVERSITY	-1.37	(-0.23)	-0.05	0.27	(1.55)	0.19	(1.00)	0.56	(1.43)	0.20	(1.06)	-0.04	(-0.15)
COMPETITION	2.22	(-2.77)	0.08	0.03	(0.89)	0.04	(1.42)	0.06	(1.11)	0.04	(1.43)	0.11	(3.02)
UNEMPLOYMENT RATE	-0.40	(-1.47)	-0.01	0.00	(0.00)	-0.02	(-1.28)	-0.02	(-0.79)	-0.02	(-1.47)	-0.02	(-1.22)
PROPORTION OF UNEMPLOYED IN ENT. PROG.	2.25	(-0.63)	0.08	0.09	(0.88)	0.13	(1.27)	0.14	(0.81)	0.12	(1.17)	-0.02	(-0.19)
SHARE OF EMPLOYED IN FIN SECTOR	31.92	(-1.11)	1.09	1.45	(1.91)	2.03	(2.22)	-1.78	(-0.86)	1.87	(2.05)	0.30	(0.32)
PROPORTION OF PUBLIC EMPLOYEES	19.54	(-0.56)	0.67	0.37	(0.30)	-0.24	(-0.19)	-2.55	(-1.36)	-0.33	(-0.27)	1.39	(0.71)
INCOME PER CAPITA	0.00	(-0.79)	0.00	-0.20	(-1.26)	0.15	(0.73)	-0.19	(-0.35)	0.15	(0.72)	-0.18	(-0.59)
WEALTH TAX PER CAPITA	0.00	(-0.58)	0.00	0.18	(0.49)	-0.71	(-1.37)	-2.81	(-3.59)	-0.85	(-1.68)	0.22	(0.25)
UNEMPLOYMENT RATE * UNEMPLOYED	-0.56	(-2.40)	-0.02	-0.02	(-2.63)	-0.02	(-2.56)	-0.02	(-2.33)	-0.02	(-2.49)	-0.02	(-3.08)
PROPORTION OF IMMIGRANTS * IMMIGRANT	-35.35	(-1.25)	-1.21	-1.52	(-1.78)	-1.56	(-1.81)	-2.11	(-2.17)	-1.29	(-1.60)	-2.58	(-2.13)
ENTRY RATE	165.97	(-31.57)	5.66	5.68	(20.75)	5.44	(19.84)	5.56	(13.43)	5.43	(19.91)	5.61	(18.88)
EXIT RATE	3.90	(-0.61)	0.13	-0.20	(-1.24)	-0.25	(-1.57)	-2.18	(-3.80)	-0.27	(-1.66)	-0.35	(-1.41)
LLM fixed effects	NO			YES		YES		YES		YES		YES	
N	1493927			1493927		1493927		1120445		1493927		1493927	
Adjusted R2	0.040			0.007		0.007		0.006		0.007		0.007	
Log-Likelihood	-100585												
						Statistics	p-value	Statistics	p-value	Statistics	p-value	Statistics	p-value
Test of over-identifying restrictions						0.16	0.69	2.74	0.10	0.53	0.47	0.00	0.98
Bound-Jaeger-Baker F-test						28.80	0.00	3.49	0.02	29.54	0.00	22.07	0.00
Test of ENTR=ALT ENT												31.35	0.00

Table 5: Profits from the entrepreneurial activity

In the selection equation, the dependent variable is a dummy variable that takes value 1 if an individual is an entrepreneur at time t and zero otherwise. In the second stage, the dependent variable is the logarithm of the income from entrepreneurial activity plus 0.01. In the specification “without education groups”, ENTREPRENEURSHIP is defined as the proportion of individuals who are entrepreneurs in the municipality; in the specification “with education groups”, ENTREPRENEURSHIP is the proportion of entrepreneurs among the individuals with a given education level in a given municipality. ENTREPRENEURSHIP IN THE TOP QUARTILE is the proportion of entrepreneurs among individual in the top quartile of income distribution in a given municipality. ENTREPRENEURSHIP OUTSIDE THE SOCIAL GROUP is the proportion of entrepreneurs among individuals with different education level residing in the same municipality. LAMBDA is the inverse Mills’ ratio. All remaining explanatory variables are defined in Tables 1 and 2. All equations include four year dummies, two education dummies for individuals with high school and university degrees and eleven dummies that refer to the sector where an individual is employed. In the selection equation we also include 7 regional dummies. In the second stage we include 108 LLM fixed effects. The selection equation has been estimated using a probit model. The second stage equation has been estimated using OLS or 2SLS. In the 2SLS estimates, the instruments are the proportion of individuals older than 60 who are members of the state church and the proportion of votes for right-wing parties in the 1982 elections. The standard errors are corrected for heteroskedasticity and take into account that observations for the same municipality may be correlated. *T-statistics* are reported in parentheses. In the probit estimates, marginal effects have been calculated setting the variables equal to the average. We also report Adjusted R –Squared (Pseudo-R-Squared for selection equation). For the 2SLS estimates we report the result of Bound-Jaeger-Baker’s (1995) test for the quality of instruments and Hansen’s J statistics for over-identifying restrictions. In the specification where the proxy for entrepreneurial activity is entrepreneurship in the top quartile, we include only observations relative to individuals in the three lowest quartiles of income distribution.

Variable	Without education groups				Entrepreneurship in top quartile				With education groups			
	Selection equation		OLS estimates		2SLS estimates		OLS estimates		2SLS estimates		2SLS estimates	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
ENTREPRENEURSHIP	2.301	(23.82)	-2.041	(-4.72)	-2.757	(-3.01)	-1.826	(-5.84)	-6.987	(-2.63)	-2.197	(-2.22)
ENTREPRENEURSHIP OUTSIDE THE SOCIAL GROUP											-5.114	(-2.47)
Individual level controls											-0.445	(-1.50)
LABOR INCOME	-0.115	(-67.61)										
INCOME OF OTHER HH MEMBERS	-0.014	(-14.18)										
EXPERIENCE			-0.023	(-2.25)	-0.023	(-2.26)	-0.022	(-2.21)	-0.021	(-2.14)	-0.023	(-2.15)
PART TIME			-0.508	(-6.79)	-0.372	(-6.57)	-0.491	(-1.99)	0.082	(0.53)	-0.293	(-2.17)
WEALTH	-0.025	(-3.40)	-0.034	(-2.43)	-0.031	(-2.12)	-0.034	(-2.48)	-0.019	(-1.05)	-0.025	(-1.57)
WEALTH^2	0.012	(9.12)	0.003	(1.16)	0.002	(0.64)	0.002	(1.09)	-0.005	(-1.01)	-0.002	(-0.46)
SHARE OF LIQUID ASSETS IN HH WEALTH	0.016	(15.16)	-0.011	(-4.19)	-0.013	(-3.88)	-0.012	(-4.33)	-0.022	(-3.35)	-0.017	(-3.75)
AGE	0.048	(40.24)	-0.010	(-2.08)	-0.014	(-1.95)	-0.011	(-2.29)	-0.040	(-2.29)	-0.026	(-2.31)
AGE^2	0.000	(-35.94)	0.000	(1.70)	0.000	(1.74)	0.000	(1.88)	0.000	(2.22)	0.000	(2.18)
MALE	0.136	(55.46)	0.039	(3.61)	0.029	(1.77)	0.036	(3.35)	-0.035	(-0.85)	-0.004	(-0.14)
MOVER	-0.254	(-27.75)	-0.173	(-8.70)	-0.153	(-4.26)	-0.165	(-8.33)	-0.014	(-0.16)	-0.084	(-1.43)
CHANGES IN FAMILY STRUCTURE	-0.024	(-7.82)	-0.026	(-2.21)	-0.024	(-1.95)	-0.026	(-2.18)	-0.009	(-0.66)	-0.016	(-1.22)
NUMBER OF CHILDREN	0.008	(5.20)	0.013	(2.62)	0.013	(2.51)	0.012	(2.48)	0.009	(1.58)	0.010	(1.96)
MARRIED	0.047	(11.47)	0.020	(1.35)	0.017	(1.16)	0.019	(1.25)	-0.003	(-0.17)	0.008	(0.47)
DIVORCED	0.004	(0.74)	0.147	(7.11)	0.145	(6.93)	0.146	(7.08)	0.136	(6.17)	0.141	(6.66)
UNEMPLOYED	-0.168	(-16.05)	-0.079	(-1.92)	-0.068	(-1.48)	-0.071	(-1.72)	0.029	(0.39)	-0.018	(-0.32)
IMMIGRANT	-0.096	(-9.58)	0.168	(5.12)	0.175	(5.09)	0.161	(4.86)	0.201	(5.15)	0.194	(5.14)
WAGE PREMIUM	0.073	(29.71)	0.048	(7.77)	0.043	(4.13)	0.047	(7.67)	0.015	(0.78)	0.029	(2.01)
CHURCH	0.009	(2.21)	-0.050	(-3.70)	-0.049	(-3.71)	-0.051	(-3.81)	-0.055	(-3.99)	-0.052	(-3.89)
Municipality level controls												
DIVERSITY	-0.050	(-1.95)	-0.064	(-0.52)	-0.067	(-0.54)	-0.100	(-0.83)	-0.192	(-1.32)	-0.081	(-0.65)
COMPETITION	0.005	(1.22)	-0.032	(-1.93)	-0.030	(-1.84)	-0.040	(-2.35)	-0.043	(-2.19)	-0.040	(-2.41)
UNEMPLOYMENT RATE	-0.002	(-1.23)	0.024	(3.04)	0.021	(2.41)	0.032	(4.20)	0.026	(2.91)	0.031	(3.80)
PROPORTION OF UNEMPLOYED IN ENT. EDUC. PROGRAMS	0.005	(0.29)	-0.005	(-0.09)	0.004	(0.07)	-0.038	(-0.67)	-0.047	(-0.73)	-0.036	(-0.64)
SHARE OF EMPLOYED IN FIN SECTOR	1.053	(7.86)	-0.716	(-1.75)	-0.692	(-1.48)	-0.491	(-1.04)	0.073	(0.09)	-0.878	(-1.84)
PROPORTION OF PUBLIC EMPLOYEES	-0.082	(-0.43)	-0.126	(-0.17)	-0.191	(-0.26)	0.065	(0.09)	0.217	(0.35)	-0.100	(-0.14)
INCOME PER CAPITA	-0.046	(-2.10)	0.221	(2.34)	0.292	(2.46)	0.076	(0.85)	0.251	(1.77)	0.137	(1.32)
WEALTH TAX PER CAPITA	0.067	(1.21)	-0.083	(-0.31)	-0.259	(-0.80)	0.483	(1.85)	0.582	(1.72)	0.239	(0.86)
UNEMPLOYMENT RATE * UNEMPLOYED	0.000	(-0.08)	0.005	(1.38)	0.006	(1.48)	0.005	(1.29)	0.005	(1.33)	0.005	(1.35)
PROPORTION OF IMMIGRANTS * IMMIGRANT	0.171	(1.46)	-1.490	(-4.39)	-1.503	(-4.50)	-1.326	(-3.71)	-1.240	(-3.61)	-1.485	(-4.36)
ENTRY RATE	0.327	(17.95)	-0.274	(-3.64)	-0.342	(-2.93)	-0.143	(-1.99)	-0.401	(-2.62)	-0.306	(-2.36)
EXIT RATE	-0.067	(-3.15)	-0.016	(-0.16)	-0.013	(-0.13)	0.211	(2.17)	0.724	(2.59)	0.067	(0.69)
LAMBDA			-0.318	(-17.42)	-0.368	(-5.16)	-0.333	(-18.91)	-0.678	(-3.45)	-0.523	(-4.08)
LLM fixed effects	NO		YES		YES		YES		YES		YES	
N obs	1684596		79356		79356		56642		56642		79356	
Log-likelihood	-446016											
Adju	0.470		0.170		0.170		0.170		0.165		0.169	
					Statistics	p-value			Statistics	p-value	Statistics	p-value
Test of over-identifying restrictions					0.877	0.349			4.628	0.099	1.034	0.309
Bound-Jaeger-Baker F-test					29.210	0.000			2.120	0.097	30.230	0.000
Test of ENTR=ALT_ENT											6.07	0.014

Table 6: Entrepreneurial living standards, investment and alternative job opportunities

The dependent variable are the logarithm of the value of real estate plus 0.01 (real estate), the logarithm of entrepreneurial investment plus 0.01 (investment) and logarithm of non-entrepreneurial labor income plus 0.01. ENTREPRENEURSHIP is defined as the proportion of individuals who are entrepreneurs in the municipality. LAMBDA is the inverse Mills' ratio. LAMBDA1 is the inverse Mills' ratio of a selection equation in which the dependent variable is equal to 1 if an individual owns real estate and equal to zero otherwise. All remaining explanatory variables are defined in Tables 1 and 2. All the equations include four year dummies, two education dummies for individuals with high school and university degrees and eleven dummies that refer to the sector where an individual is employed. In the selection equation we also include 7 regional dummies. In the second stage we include 108 LLM fixed effects. The selection equations (not reported) have been estimated using a probit model. The second stage equation has been estimated using 2SLS. The instruments are the proportion of individuals older than 60 who are members of the state church and the proportion of votes for right-wing parties in the 1982 elections. The real estate and investment equations include only observations referring to individuals who are entrepreneurs, while the labor income equation includes only observations referring to individuals who are not entrepreneurs. The standard errors are corrected for heteroskedasticity and take into account that observations for the same municipality may be correlated. *T-statistics* are reported in parentheses. We also report the Adjusted R –Squared, the result of Bound-Jaeger-Baker's (1995) test for the quality of instruments and Hansen's J statistics for over-identifying restrictions.

Variable	Real Estate		Investment		Labor Income	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
ENTREPRENEURSHIP	-1.144	(-2.31)	4.875	(2.16)	0.650	(3.50)
Individual level controls						
MEAN VALUE OF REAL ESTATE IN MUNICIPALITY	0.442	(7.13)				
ENTREPRENEURIAL INCOME			0.019	(4.10)		
EXPERIENCE	0.008	(2.25)	-0.057	(-2.40)		
PART_TIME	-0.169	(-4.34)	-0.490	(-2.96)		
WEALTH	0.010	(4.48)	-0.027	(-0.88)	0.041	(30.74)
WEALTH^2	0.000	(0.00)	0.010	(1.80)	-0.001	(-26.99)
SHARE OF LIQUID ASSETS IN HH WEALTH	0.009	(4.08)	0.014	(1.76)	0.000	(0.62)
AGE	0.000	(0.00)	0.050	(3.10)	0.116	(40.32)
AGE^2	0.000	(0.00)	0.000	(0.00)	-0.001	(-35.91)
MALE	0.014	(2.06)	0.354	(8.46)	0.289	(67.47)
MOVER	-0.050	(-1.81)	-0.198	(-2.46)	-0.081	(-13.69)
CHANGES IN FAMILY STRUCTURE	0.002	(0.43)	0.000	(0.00)	0.038	(12.93)
NUMBER OF CHILDREN	-0.001	(-0.34)	0.027	(2.26)	-0.102	(-39.67)
MARRIED	0.067	(7.74)	0.121	(3.92)	-0.060	(-11.65)
DIVORCED	0.004	(0.23)	0.065	(1.15)	-0.079	(-13.27)
UNEMPLOYED	-0.104	(-4.76)	-0.109	(-0.75)	-0.972	(-35.01)
IMMIGRANT	0.066	(1.39)	-0.190	(-2.78)	-0.637	(-34.11)
WAGE PREMIUM	0.030	(4.43)	0.003	(0.11)	0.728	(36.19)
CHURCH	0.010	(0.81)	0.030	(0.93)	0.256	(25.25)
Municipality level controls						
DIVERSITY	-0.112	(-1.72)	0.354	(1.35)	-0.121	(-5.08)
COMPETITION	-0.002	(-0.16)	0.047	(1.59)	-0.001	(-0.27)
UNEMPLOYMENT RATE	0.004	(0.74)	0.007	(0.28)	-0.024	(-13.30)
PROPORTION OF UNEMPLOYED IN ENT. EDUCATION PROGRAMS	-0.019	(-0.79)	0.307	(1.21)	-0.046	(-2.26)
SHARE OF EMPLOYED IN FIN SECTOR	-0.002	(0.00)	1.396	(1.78)	0.618	(5.54)
PROPORTION OF PUBLIC EMPLOYEES	-0.143	(-0.28)	-0.837	(-0.51)	0.234	(0.74)
INCOME PER CAPITA	0.230	(3.18)	-0.247	(-0.80)	-0.271	(-8.37)
WEALTH TAX PER CAPITA	-0.457	(-2.93)	0.398	(0.52)	0.456	(6.28)
UNEMPLOYMENT RATE * UNEMPLOYED	0.002	(1.42)	-0.013	(-0.47)	0.006	(3.26)
PROPORTION OF IMMIGRANTS * IMMIGRANT	-0.195	(-0.43)	1.557	(2.35)	-0.301	(-2.14)
ENTRY RATE	0.088	(1.25)	0.313	(1.14)	0.111	(4.23)
EXIT RATE	0.084	(2.26)	0.323	(1.43)	-0.039	(-1.74)
LAMBDA	0.154	(4.55)	0.363	(2.43)	-1.719	(-18.10)
LAMBDA1	-0.438	(-17.74)				
LLM fixed effects	YES		YES		YES	
N	68762		33192		1605240	
Adjusted R2	0.321		0.007		0.2829	
	Statistics	P-value	Statistics	P-value	Statistics	P-value
Test of over-identifying restrictions	2.793	0.247	1.872	0.392	3.343	0.187
Bound-Jaeger-Baker F-test	33.09	0.000	18.01	0.000	1.19E+05	0.000

Table 7: Sorting

In Panel A, the dependent variable is a dichotomic variable with a value equal to 1 if individual i becomes an entrepreneur at time t and equal to zero otherwise. Individuals who are already entrepreneurs at time $t-1$ are excluded. ENTREPRENEURSHIP is defined as the proportion of individuals who are entrepreneurs in a municipality. DIFF(ENTREPRENEURSHIP) is the difference between level of entrepreneurial activity in the municipality of residence and the previous municipality. MOVER is the dummy which is equal to 1 if an individual moved within 1 or 3 years (column 1 and 2, respectively) and equal to zero otherwise. All remaining explanatory variables are defined in Tables 1 and 2. All the equations include year dummies, two education dummies for individuals with high school and university degrees, 108 LLM fixed effects and 11 dummies that refer to the sector where an individual is employed. The equation has been estimated using OLS. The standard errors are corrected for heteroskedasticity and take into account that observations for the same municipality may be correlated. *T-statistics* are reported in parentheses. We also report the Adjusted R-Squared. Estimates are multiplied by 100.

Panel A: The decision to become an entrepreneur and sorting

Variable	Movers within 1 year		Movers within 3 year	
	Estimate	T-stat	Estimate	T-stat
ENTREPRENEURSHIP	15.458	(16.39)	15.882	(8.22)
MOVER* DIFF(ENTREPRENEURSHIP)	0.335	(0.20)	3.094	(1.41)
Individual level controls				
INCOME OF OTHER HH MEMBERS	-0.058	(-9.30)	-0.053	(-5.65)
LABOR INCOME	-0.094	(-6.28)	-0.118	(-5.34)
WEALTH	-0.418	(-9.93)	-0.305	(-6.06)
WEALTH^2	0.091	(12.76)	0.072	(7.96)
SHARE OF LIQUID ASSETS IN HH WEALTH	0.051	(7.10)	0.047	(5.02)
AGE	0.163	(19.12)	0.123	(9.24)
AGE^2	-0.002	(-16.89)	-0.001	(-8.22)
MALE	0.864	(32.89)	0.863	(24.78)
MOVER	0.073	(1.20)	0.147	(1.33)
CHANGES IN FAMILY STRUCTURE	0.052	(1.37)	0.007	(0.14)
NUMBER OF CHILDREN	0.095	(7.27)	0.117	(5.64)
MARRIED	0.216	(6.87)	0.233	(4.69)
DIVORCED	0.076	(1.67)	0.163	(2.36)
UNEMPLOYED	0.006	(0.08)	-0.159	(-0.89)
IMMIGRANT	-0.064	(-0.84)	0.016	(0.16)
WAGE PREMIUM	-0.229	(-7.57)	-0.248	(-5.29)
CHURCH	-0.089	(-2.47)	-0.046	(-0.79)
Municipal level controls				
DIVERSITY	0.205	(1.02)	-0.116	(-0.37)
COMPETITION	0.015	(0.51)	0.011	(0.23)
UNEMPLOYMENT RATE	0.010	(0.75)	0.028	(0.93)
PROPORTION OF UNEMPLOYED IN ENT. EDUCATION PROGRAMS	-0.061	(-0.28)	0.170	(0.46)
SHARE OF EMPLOYED IN FIN SECTOR	1.134	(1.64)	0.658	(0.71)
PROPORTION OF PUBLIC EMPLOYEES	0.444	(0.33)	1.543	(0.70)
INCOME PER CAPITA	-0.147	(-0.76)	-0.306	(-0.92)
WEALTH TAX PER CAPITA	0.230	(0.50)	0.732	(0.81)
UNEMPLOYMENT RATE * UNEMPLOYED	-0.016	(-2.09)	0.001	(0.04)
PROPORTION OF IMMIGRANTS * IMMIGRANT	-1.590	(-1.79)	-1.933	(-1.88)
ENTRY RATE	5.557	(18.17)	5.875	(11.22)
EXIT RATE	-0.270	(-1.37)	-0.099	(-0.29)
LLM fixed effects	YES		YES	
N	1179314		497308	
Adjusted R2	0.007		0.007	

Panel B: Mobility of entrepreneurs and non-entrepreneurs

	Non-entrepreneurs		Entrepreneurs	
	1 year	3 years	1 year	3 years
Did not move	96.44%	92.60%	97.87%	94.78%
Move to higher entrepreneurship area	1.78%	3.23%	1.03%	2.09%
Move to lower entrepreneurship area	1.78%	4.17%	1.10%	3.13%

Table 8: Young people's entrepreneurial choice

Only young individuals (defined as individuals younger than 18 in 1983) are included in the sample. We report the estimates for the linear probability model (as in Table 4) and entrepreneurial income (as in Table 5). The explanatory variables are defined in Tables 1 and 2. The PARENTAL CAPITAL INCOME in 1970 is the parental capital income in 1970. LAMBDA is the inverse Mills' ratio. The standard errors are corrected for heteroskedasticity and take into account that observations for the same municipality may be correlated. *T-statistics* are reported in parentheses. We also report the Adjusted R-Squared. The coefficient for PARENTAL CAPITAL INCOME in 1970 in income equation is multiplied by 1000.

	Decision to become an entrepreneur				Entrepreneurial profits			
	OLS estimates		2SLS estimates		OLS estimates		2SLS estimates	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
ENTREPRENEURSHIP	12.787	(3.54)	8.391	(1.60)	-4.569	(-2.25)	-9.955	(-1.98)
Individual level controls								
PARENTS' CAPITAL INCOME in 1970	0.356	(1.46)	0.355	(1.46)	0.199	(-3.99)	0.203	(-7.96)
EXPERIENCE					-0.021	(-0.44)	-0.024	(-0.49)
PART_TIME					-0.433	(-10.51)	-0.393	(-5.59)
INCOME OF OTHER HH MEMBERS	-0.071	(-3.64)	-0.071	(-3.64)				
LABOR INCOME	-0.092	(-2.24)	-0.090	(-2.20)				
WEALTH	-0.240	(-3.18)	-0.230	(-3.07)	0.064	(1.19)	0.101	(1.45)
WEALTH^2	0.057	(4.14)	0.056	(4.07)	-0.032	(-2.80)	-0.044	(-2.54)
SHARE OF LIQUID ASSETS IN HH WEALTH	0.017	(0.73)	0.015	(0.68)	-0.048	(-2.58)	-0.058	(-3.40)
AGE	0.258	(2.02)	0.258	(2.01)	0.225	(1.76)	0.207	(1.60)
AGE^2	-0.003	(-1.18)	-0.003	(-1.19)	-0.007	(-2.62)	-0.007	(-2.61)
MALE	0.639	(8.39)	0.642	(8.51)	-0.177	(-2.09)	-0.273	(-2.55)
MOVER	0.062	(0.60)	0.060	(0.60)	0.110	(1.00)	0.220	(1.48)
CHANGES IN FAMILY STRUCTURE	0.262	(2.81)	0.259	(2.77)	0.128	(1.64)	0.191	(2.14)
NUMBER OF CHILDREN	-0.004	(-0.08)	-0.001	(-0.02)	0.168	(3.38)	0.227	(3.25)
MARRIED	0.259	(2.06)	0.255	(2.03)	0.104	(1.35)	0.112	(1.40)
DIVORCED	-0.299	(-1.15)	-0.314	(-1.21)	0.761	(2.40)	0.792	(4.80)
UNEMPLOYED	-0.003	(-0.01)	-0.079	(-0.30)	0.115	(0.56)	0.159	(0.66)
IMMIGRANT	-0.283	(-0.63)	-0.345	(-0.78)	0.292	(0.87)	0.376	(1.25)
WAGE PREMIUM	-0.049	(-0.72)	-0.054	(-0.79)	-0.022	(-0.53)	-0.059	(-1.25)
CHURCH	-0.285	(-1.56)	-0.276	(-1.51)	-0.180	(-1.89)	-0.201	(-1.91)
Municipality level controls								
DIVERSITY	-2.073	(-2.45)	-0.553	(-0.71)	0.686	(1.21)	0.820	(1.47)
COMPETITION	-0.143	(-1.07)	-0.079	(-0.64)	0.082	(1.16)	0.115	(1.44)
UNEMPLOYMENT RATE	0.075	(1.40)	-0.038	(-0.76)	0.006	(0.19)	-0.015	(-0.38)
PROPORTION OF UNEMPLOYED IN ENT EDUCATION PROGRAMS	-0.328	(-0.68)	-0.374	(-0.90)	0.472	(1.54)	0.621	(1.73)
SHARE OF EMPLOYED IN FIN SECTOR	2.401	(0.68)	2.525	(0.90)	-2.608	(-1.10)	-3.000	(-1.29)
PROPORTION OF PUBLIC EMPLOYEES IN POPULATION	3.699	(0.63)	-1.570	(-0.33)	-3.233	(-1.02)	-4.490	(-1.48)
INCOME PER CAPITA	-1.594	(-1.95)	-0.373	(-0.41)	-0.143	(-0.34)	0.320	(0.57)
WEALTH TAX PER CAPITA	3.327	(1.85)	-1.122	(-0.51)	0.038	(0.03)	-1.229	(-0.78)
UNEMPLOYMENT RATE* UNEMPLOYED	-0.031	(-1.43)	-0.023	(-1.05)	0.004	(0.18)	0.009	(0.39)
PROPORTION OF IMMIGRANTS * IMMIGRANT	4.376	(0.81)	5.158	(0.97)	2.147	(0.53)	2.495	(0.80)
ENTRY RATE	2.862	(3.90)	2.670	(3.47)	-0.629	(-1.24)	-1.314	(-1.78)
DEATH RATE	0.761	(0.97)	0.990	(1.24)	-0.876	(-1.61)	-1.061	(-1.88)
LAMBDA					-1.062	(-4.30)	-1.427	(-3.67)
LLM fixed effects		YES		YES		YES		YES
N obs	81185		81185		1946		1946	
Adjuster R2	0.006		0.005		0.188		0.184	

Table 9: The capital structure of small firms

We report estimates for informal debt (defined as the ratio the sum of long-and short term liabilities not granted by financial institutions or firms within the same industrial group and total assets), account payables (defined as the ratio of account payables and total assets), financial leverage (defined as the ratio of financial loans and total assets) and account receivables (defined as the ratio of account receivables and sales) as function of ENTREPRENEURSHIP (as defined in Table 1), returns on assets (ROA), the ratio of fixed assets to total assets (TANGIBLE ASSETS), and the logarithm of total assets. We also include LLM fixed effects and industry fixed effects at the 4-digit level. All dependent variables are normalized by total assets. The standard errors are corrected for heteroskedasticity and take into account that observations for the same municipality may be correlated. *T-statistics* are reported in parentheses. We also report the Adjusted R-Squared. The sample consists of firms with less than 50 employees and less than SEK 1,000,000 assets. The sample includes 185,294 firms and is based on year 2000 financial statements. Coefficient estimates for ROA in the Financial Leverage and Accounts Receivable regressions were multiplied by 10000.

	Informal Debt				Trade Credit			
	OLS estimates		2SLS estimates		OLS estimates		2SLS estimates	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
ENTREPRENEURSHIP	1.8149	(1.44)	1.7699	(0.56)	-0.1206	(-0.84)	-0.6315	(-1.57)
ROA	-0.7557	(-5.16)	-0.7557	(-5.16)	-0.0076	(-7.54)	-0.0075	(-7.54)
TANGIBLE ASSETS	-0.0617	(-0.54)	-0.0615	(-0.53)	-0.0270	(-2.17)	-0.0250	(-1.96)
TOTAL ASSETS	-1.9985	(-3.02)	-2.0006	(-3.01)	-0.2045	(-5.77)	-0.2049	(-5.78)
Adj R2	0.7868		0.7868		0.0513		0.0513	
	Financial Leverage				Accounts Receivable			
	OLS estimates		2SLS estimates		OLS estimates		2SLS estimates	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
ENTREPRENEURSHIP	-0.0646	(-0.74)	0.1403	(0.39)	-0.0972	(-2.91)	-0.1693	(-2.33)
ROA	-1.7126	(-0.84)	-1.7119	(-0.84)	0.0220	(2.28)	0.0225	(2.28)
TANGIBLE ASSETS	0.0408	(4.39)	0.0401	(4.12)	-0.0885	(-21.19)	-0.0881	(-21.32)
TOTAL ASSETS	-0.1304	(-2.77)	-0.1307	(-2.77)	0.0401	(17.31)	0.0401	(17.34)
Adj R2	0.0016		0.0016		0.1575		0.1574	

Figure 1
Local labor market and municipalities

