Entrepreneurship in the EU: to wish and not to be

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Abstract: The entrepreneurial capacity in an economy is a key determinant of economic growth and productivity improvements. This paper uses survey data from the 15 EU Member States and the US to investigate two aspects of entrepreneurial capacity: latent and actual entrepreneurship. Latent entrepreneurship is measured by the probability of a declared preference for self-employment over employment. Other than demographic variables such as gender, age and education level, the set of explanatory variables used includes country specific effects, the perception by respondents of administrative complexities and of availability of financial support and a rough measure of risk tolerance. The most striking result is the lack of explanatory power of the perception of lack of available financial support in the latent entrepreneurship equation.

Keywords: Entrepreneurship, self-employment, administrative complexities, access to finance, risk attitudes, probit regression.

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1 - Introduction

It is often argued that the key to economic growth and productivity improvements is entrepreneurial capacity[1]. Baumol (1968) already observed that encouraging entrepreneurial activities is a focal issue in market economies. Since then the literature on the consequences of entrepreneurship has been generally restricted to three units of observation: that of the region (e.g., Audretsch and Fritsch, 2002), that of the industry (e.g., Carree and Thurik, 1999) and that of the establishment or firm (e.g., Caves, 1998). Only recently has research linking entrepreneurship and national economic growth started to develop. See Carree and Thurik (2003 and 2006) for surveys of the literature. It is now generally accepted that entrepreneurship contributes to achieving higher levels of economic development. For instance, using recent data of 18 European countries Audretsch, Carree, van Stel and Thurik (2002) even conclude that lagging behind in the process of restructuring from larger to smaller firms comes at an economic cost. As a consequence, investigating the determinants of entrepreneurship has become an important research topic. Knowledge of its determinants provides the rationale for devising public entrepreneurship policies and for assessing their relative merits (e.g., Storey, 2003).

Though the concept of entrepreneurship itself and the angles from which it can be tackled are multiple[2], the main aim of this paper is to provide further information on a particular measure of entrepreneurial spirit and disentangle the role of demographic variables, of perception of obstacles such as lack of financial support or administrative complexity, and of country specific effects on this measure.[3] The particular measure we use is the declared preference for self-employment of a sample of the workforce in 15 EU member states and the US.

Several studies have already stressed the fact that the degree of entrepreneurship varies widely across countries[4]. This study reinforces this message by showing that even after the effects on entrepreneurship of other variables have been accounted for, country-specific effects are still

[1] Audretsch and Thurik (2001 and 2004) observe that a fundamental shift from the 'managed' economy to the 'entrepreneurial' economy is taking place in OECD countries. They attempt to identify the dimensions of this shift by contrasting the most fundamental elements of the newly emerging 'entrepreneurial' economy with those of the 'managed' economy. The common thread throughout these trade-offs is the increased role of new and small enterprises in the 'entrepreneurial' economy.

[2] See Hébert and Link (1989), Storey (1991) and Wennekers and Thurik (1999) for a discussion of the different definitions of entrepreneurship and streams of literature on entrepreneurship.

[3] Blanchflower, Oswald and Stutzer (2001) provide the first study using a similar approach. Grilo and Thurik (2005a) use the two-equation set-up of the present study to compare 2000 and 2004 and show that, once all other factors are controlled for, an improvement in actual entrepreneurship in the EU relative to the US has taken place in these four years.

[4] See Reynolds et al. (2001) for evidence on various measures of entrepreneurship and their different levels across 29 countries using the GEM data set. See Audretsch, Thurik, Verheul and Wennekers (2002) for evidence using business ownership data of 23 OECD countries using the Compendia data set.

significant both for entrepreneurial drive (i.e., latent entrepreneurship) and for entrepreneurial activity (i.e., actual entrepreneurship). The results show that no EU country scores better than the US, confirming the widespread belief of a more developed entrepreneurial spirit across the Atlantic.

The recent evidence on the links between economic performance and entrepreneurship as well as the acknowledgement of under-developed entrepreneurial activity in some countries or regions has prompted the promotion of these activities and the enhancement of an entrepreneurial friendly environment to the front stage of policy preoccupations. As a consequence, entrepreneurship policy as an instrument to foster competitiveness and growth has recently emerged in a growing number of countries. Measures in this policy area range from initiatives aiming at improving the business environment and the incentives to engage in entrepreneurial activity to actions which directly target specific population groups[5]. Improvement of access to finance and simplification of administrative procedures are examples of the former, while programmes targeting women, minorities and young people have often been advocated in the context of the latter. This paper aims at contributing to the debate on the relative merits of different policy variables by identifying the role of factors such as age, gender, attitudes towards risk or the perception of the administrative burdens and of access to finance on the entrepreneurial drive of the population. Moreover, by contrasting the role of such variables on entrepreneurial drive with their role on the eventual materialization of such drive into actual entrepreneurship further insight can be gained into possible policy measures.

The present paper complements the existing literature in that both the preference toward and the actual status of entrepreneurship are investigated in a multi-country setting using a heuristic structural model. Blanchflower, Oswald and Stutzer (2001) use a similar approach though their model has more of a reduced form flavor and no perception variables are used. Grilo and Thurik (2005a) use the present model for a comparison with 2004 survey data.[6] Stel, Storey, Thurik and Wennekers (2005) use a similar two-equation model explaining the nascent entrepreneurship rate and the young business entrepreneurship rate using a sample of countries participating in the Global Entrepreneurship Monitor between 2002 and 2004. The importance of perception variables is also clear in Arenius and Minniti (2005) in the context of their binary logit analysis of nascent entrepreneurship.

[5] See the green paper on Entrepreneurship in Europe (European Commission, 2003).
[6] Grilo ad Thurik (2005b) explain various entrepreneurial engagement levels using in multinomial logit model and the same 2004 data set.

The paper is organized as follows. Section 2 provides a brief discussion of related literature. Section 3 discusses the data used. Section 4 deals with the latent entrepreneurship determinants. Section 5 is devoted to the actual self-employment versus employment situation, compares preferences with facts and offers some tentative explanations for the differences found. Finally, section 6 concludes.

2 – Related Literature

The study of entrepreneurship and its determinants has built on a variety of disciplines such as economics, sociology and psychology, reflecting the multidimensional nature of this phenomenon.[7] From an economic theory perspective, the tools of neo-classical microeconomics have provided a framework for studying self-employment decisions, known as the theory of income choice, which has proved useful in describing some of the factors influencing this decision. This approach views agents as (expected)-utility maximizers taking an occupational choice decision – to become employees or entrepreneurs (self-employed) – on the grounds of the utility associated with the returns accruing from the two types of activity. Though the specification and the working assumptions used in this strand of literature vary according to the factor that is being emphasized as playing the key role in explaining self-employment decisions, most of the research can directly or indirectly be traced back to the vision of the role of an entrepreneur found in the work of Knight (1971). In this work Knight views the entrepreneur as playing a twofold function: "(a) exercising responsible control and (b) securing the owners of productive services against uncertainty and fluctuations in their incomes"[8]. In other words, as provider of entrepreneurial inputs and as risk bearer. The first function suggests a first explanation as to why different individuals make different occupational choices by emphasizing the role of entrepreneurial ability in the decision to become an entrepreneur. Lucas (1978), Holmes and Schmitz (1990) and Jovanovic (1982 and 1994) follow this route by postulating differences across potential entrepreneurs (or firms) in terms of some form of entrepreneurial efficiency[9]. The second function gives a particular role to the presence of risk and underlines the

[7] See Wennekers and Thurik (1999) and Wennekers, Uhlaner and Thurik (2002).
[8] Knight (1971, p. 278).
[9] In Jovanovic (1982) the costs of production are random and different across potential firms, and decisions (entry, exit, quantity) are taken on the basis of expected profit maximisation. In a broad sense, the differences in production costs can be interpreted as reflecting differences in entrepreneurial ability. Though risk is present, differences in individual decisions cannot be attributed to differences in risk-attitudes. Lucas (1978) expressly postulates a distribution of managerial "talent" in the population and no element of risk. In both papers the modelling of occupational decision is an intermediate ingredient for studying firm size and dynamics rather than the ultimate goal. Jovanovic (1994) extends Lucas (1978) by allowing heterogeneous workers' skills. Holmes and Schmitz (1990) see entrepreneurs as individuals responding to opportunities for creating new products. In this view entrepreneurial and management tasks (production of products previously introduced) are distinct and require different talents.

importance of risk attitudes in the occupational choice. Examples of work along this avenue are Kihlstrom and Laffont (1979) and Parker (1997) where the degree of risk aversion and the differences in risk of the two alternatives are given the central role in the determination of the occupational choice. Another aspect that has been emphasized in explaining different occupational choices is the existence of liquidity constraints[10]. Evans and Jovanovic (1989) show that under certain conditions, due to capital constraints, there is a positive relationship between the probability of becoming self-employed and the assets of the entrepreneur[11].

The occupational choice approach has been used in several empirical studies of self-employment decisions. They estimate the relationship between the probability of being or becoming self-employed and a variety of variables. These variables are meant to describe the factors influencing returns to self-employment and to employment, their relative risk, or the preferences of the individuals. Most studies in this line use longitudinal data for a given country and have as dependent variable the transition into self-employment and sometimes the exit from self-employment. Typical explanatory variables include age, education, earnings, capital assets, previous professional experience, marital status, professional status of the parents and scores from psychological tests. Examples of empirical work following this approach can be found in Blanchflower and Meyer (1994), Blanchflower and Oswald (1998), Douglas and Shepherd (2002), Evans and Leighton (1989, 1990), Lin, Picot and Compton (2000), and Reynolds (1997), and their finding will be contrasted with ours in later sections.[12]

3 - Data and measurement issues

All data used in this paper are from the Flash Eurobarometer survey on Entrepreneurship conducted during September/October 2000 on a random sample from the 15 Member States and the US, covering roughly 8500 respondents[13]. The survey provides information on variables such

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Specialisation of labour between these two types of activity will lead to changes over time in who operates a given business and thus to business transfers.

[10] Even if risk is not explicitly modelled in some of the papers dealing with liquidity constraints, these constraints play their full role in the presence of risk/informational asymmetries since otherwise the capital market would easily step in and finance a viable project even in the absence of collateral.

[11] For a discussion and a precision of the role of capital constraints in the dependence of self-employment decisions on assets see Cressy (1999). Blanchflower and Oswald (1998) further develop the capital-constraints model and find empirical evidence for the UK of a positive impact of inheritance or gifts received by the surveyed individuals on their probability of becoming self-employed.

[12] The concept of occupational choice is also central in the eclectic framework of the determinants of entrepreneurship developed by Audretsch, Thurik, Verheul and Wennekers (2002) which brings together a broad range of economic and social factors.

[13] This survey was conducted on behalf of the European Commission's Enterprise Directorate-General, and the key findings are presented in "*Attitudes to Entrepreneurship in Europe and the United States -Some results from Flash Eurobarometer 83*", European Commission 2001, available at http://europe.eu.int/comm/enterprise/enterprise_policy/survey/eurobarometer83.htm.

as age, gender, education and professional status, and includes questions that can be used to roughly capture risk tolerance and the role of the perception of the availability of financial support and of the complexity of administrative procedures on entrepreneurial activity. We use two different indicators of entrepreneurship. The first one aims at capturing the population's entrepreneurial drive and we refer to it as latent entrepreneurship. The second indicator aims at capturing the actual entrepreneurial activity of the population as measured by the percentage of self-employed.

The following question provides the basis for our measure of entrepreneurial drive:

Suppose you could choose between different kinds of jobs. Which one would you prefer: - being an employee or - or being self-employed?

This is admittedly a simplified concept of entrepreneurship, but it has the advantage of consistency across countries and allows us to exploit recent survey data on EU Member States as well as the US.

Clearly, the answer to this type of questions can be misleading.[14] In fact, the hypothetical flavor of the question may unleash a deep-buried whim or value judgment over some attractive attributes popularly associated with self-employment – independence, higher income, option of tax evasion – without taking on board all the consequences that would have been considered by a respondent had he been confronted with a more realistic setting. Nevertheless, and to the extent that this bias is of similar magnitude across countries, age, gender, etc – and there is no a priori reason to believe otherwise – the usefulness of this question in evaluating the impact of the different explanatory variables on latent entrepreneurship remains unaffected.

Another shortcoming of this measure relates to more qualitative aspects. Depending on the type of activity envisaged as self-employed, the level of risk-taking, resources needed and commitment required may vary substantially. In other words, even assuming that a declared preference for self-employment corresponds to a genuine wish to start a business, having in mind to become the owner of a restaurant or of a grocery store does not have the same implications for growth or competitiveness as having in mind to set-up a software or other innovative enterprise. Ideally, one would prefer to have an indicator that captures these differences. Needless to say, we have no means of distinguishing these different preferences, or abilities, in the survey data.

[14] This was already brought forward in Blanchflower, Oswald and Stutzer (2001). These authors, however, use the International Social Survey Programme data set "Working Orientation II" from 1997.

The second indicator, used to measure actual entrepreneurship – percentage of actual self-employment – is not flawless either and the comments on the qualitative aspects made above apply equally to this measure. Despite its shortcomings this measure has been widely used in the empirical literature on entrepreneurship due to its general availability and the ease in international comparisons.

Table 1 gives an idea of the share of individuals across countries frustrated in their desire to become entrepreneurs. Even admitting that the percentage of respondents reporting a preference for self-employment overstates the measure of a more operational concept of entrepreneurial spirit, it is difficult to deny, on the face of these figures, that, as far as entrepreneurial activity goes, a large number of individuals "wishes without being".

[Table 1 about here]

The percentage of the population expressing a preference for self-employment (both in the total and in the active population) is in general quite high and highly variable across countries, with Greece, Portugal and the US displaying the highest values. However, more interesting is the fact that these values are 1.5 (in Finland) to 5 (in France) times higher than the percentage of the sampled active population actually self-employed.

The methodology used in the next sections is the estimation of two probit equations relating the probability of revealing a preference for self-employment and the probability of actually being self-employed to various explanatory variables.[15] More precisely we estimate the following set of equations:

$\Pr(y_1=1|X) = F(Xb_1)$,

where y_1 = 1 if the individual prefers self-employment and = 0 if the individual prefers employment and X= (1, men, age, low education, high education, lack of financial support, presence of administrative complexities, risk tolerance, country dummies)

$\Pr(y_2=1|X, y_1) = F(Xb_2+y_1a)$,

where y_2 = 1 if the individual is self-employed and = 0 if the individual is employed.

[15] The precise definition of each variable is given in the following sections.

We did an equation-by-equation probit estimation.[16] We also estimate a reduced form of this model where the vector of explanatory variables for y_2 (actual status) does not contain y_1 (preference for self-employment).

To the best of our knowledge, Blanchflower, Oswald and Stutzer (2001) provide the first study using a similar approach which can be compared with the results in this paper. The main difference between the two models being that Blanchflower, Oswald and Stutzer. (2001) estimate a preference and an actual status equation where the explanatory variables are gender, age, education, part-time dummies and country dummies. This choice of explanatory variables can be seen as a description of a reduced form model where all independent variables can be considered exogenous - with the possible exception of the part-time dummies.

4 - Latent Entrepreneurship

This section exploits the information concerning the revealed preference for self-employment vs. employment and aims at assessing, by means of a probit regression, the impact of gender, age, education level, perception of availability of financial support, perception of complexity of administrative procedures, risk tolerance and country effects on the probability of wanting to be self-employed. The sample used in the estimation contains the observations of the active surveyed population (in the sense of being either employed or self-employed) and for which respondents have answered all the questions used to construct the explanatory variables.[17]

"Age when finished full education" is used to construct three education levels: The first encompasses all those with no education or having left school before the age of 15; the second those who left school between the age of 15 and 21; and the third those having left school past the age of 21.[18] A dummy variable is used for the lower level and another for the higher level so that the intermediary level works as the base.

[16] Given the recursive nature of the model this estimation procedure provides consistent estimators provided the error terms are uncorrelated across equations. To investigate whether this assumption of across-equation independent errors is reasonable we estimated each equation by least squares using a linear probability setting and then performed a seemingly unrelated regression on the two-equation model. The results show that: first, equation by equation estimation using probit or linear probability gives similar results; second, we performed a Breusch-Pagan test and concluded that there is no evidence that the error terms are correlated across equations. We therefore present our results on the basis of an equation-by-equation probit estimation.

[17] We are assuming implicitly that the fact of not having answered one or more of the questions concerned is not related to the preferences expressed.

[18] We chose not to treat this information as a continuous variable due to the discontinuity associated with the group "never having attended full time school" and due to the fact that the encoded datasheet aggregates in one code some of the intervals. We experimented with different values for the cut-off ages defining these three levels of education and the qualitative results did not change.

The perception of lack of available financial support, the perception of complexity of administrative procedures and risk tolerance are captured, respectively, by the following questions:

Do you strongly agree, agree, disagree or strongly disagree with the following statements?
- It is difficult to start one's own business due to a lack of available financial support.
- It is difficult to start one's own business due to the complex administrative procedures.
- One should not start a business if there is a risk it might fail.

For each statement a dummy variable was constructed. The dummy variables take the value "1" in the case of "strongly agree" or "agree" for the first two statements. These first two variables capture, at best, the perception individuals have of the existence of financial or administrative barriers not their actual existence. Nevertheless, to a large extent perceptions of these barriers are probably more influential in determining an individual's willingness to become self-employed than the actual existence of such barriers. The importance of perceptions over actual existence is probably less clear cut when discussing the influence on actually being self-employed. Most likely, in the process of becoming self-employed, one's perceptions of barriers are confronted with reality and, if far from it, revised accordingly.

For the third statement the risk tolerance dummy takes the value "1" if "disagree" or "strongly disagree". Clearly, this is a very rough indicator of risk attitudes and calling this dummy "risk tolerance" may be abusive; nevertheless, in the absence of a better measure we believe it gives some useful information on how taking risks is perceived by the respondent.

Finally, country-specific effects are evaluated using country dummy variables with the US as the base. Table 2 presents a summary description of some of these explanatory variables by country.

[Table 2 about here]

The perceptions of the existence of administrative complexities and of lack of financial support are spread widely across the countries, with lack of financial support being more frequently perceived in the US than in the EU while the opposite happens for administrative complexities. Clearly, both obstacles seem to occur in basically all countries. Concerning risk tolerance, the US population reveals a more positive attitude than in the EU and ranks the highest followed by Ireland and the UK; the lowest levels appear to occur in Germany, Luxembourg and Portugal.

Table 3 presents the results of the probit estimation in the form of effects of each explanatory variable on the probability of preferring self-employment[19] (columns 1 and 2): For the sake of comparability with Blanchflower, Oswald and Stutzer (2001), the last two columns present the results when risk tolerance and the obstacles are omitted. This omission does not influence the qualitative results concerning the remaining explanatory variables.

[Table 3 about here]

According to these estimates men have on average a significantly higher probability of preferring to be self-employed than women**,** and the probability of preferring self-employment decreases with age. Other authors reach similar conclusions. For example, Blanchflower, Oswald and Stutzer (2001), using also the expressed preference for self-employment, find the same qualitative results for age and gender, and Reynolds (1997) using a concept of "nascent entrepreneurs" finds, in some of his estimations, that being a male has a positive significant impact on the decision to start a new firm while the effect of age is negative[20].

Relative to the intermediate education level, the fact of belonging either to the higher or to the lower education group has no significant impact on preferences. In other words, according to these estimates, the level of education does not play a role in explaining preferences for self-employment. This result is comparable with that in Blanchflower, Oswald and Stutzer (2001) where education, measured as years of schooling, is not significant in explaining latent entrepreneurship. Reynolds (1997) results suggest that the effect of education on nascent entrepreneurs is non-linear and subject to cross effects with other variables such as age and gender.

As one would have expected, the tolerance of risk increases the preference for self-employment. Risk tolerance is frequently identified as a fundamental driving force for entrepreneurship[21], and it is often considered to be one of the main factors of the weaker entrepreneurial spirit in EU countries relative to the US.

[19] For continuous variables (age) the reported value measures the impact of an infinitesimal change while for dummies it measures the change in probability associated with a change from zero to one in the corresponding variable. These "derivatives" are evaluated for a population profile corresponding to the average profile in the sample population. Estimations were performed with STATA using *dprobit*.

[20] Reynolds (1997) bases his analysis on the concept of "*nascent entrepreneurs*" who are identified as those who, in a telephone interview, report "two or more firm gestations behaviours" (e.g. sought a bank loan, filed for incorporation, leased equipment, etc.).

[21] See Douglas and Shepherd (2002) who show, using a sample of business graduates from an Australian university, that a lower risk aversion significantly increases entrepreneurial intention.

Somehow surprisingly, the perceived availability of financial support is not significant in explaining the preference for self-employment[22], though it can not be excluded that these results be due to the lack of realism of the survey. Clearly, the lack of explanatory power of these financial obstacles in the preference for self-employment should not be used as an argument against policy measures aiming at overcoming these obstacles. It cannot be ignored that over three quarters of the sampled population identified the presence of these obstacles. Even if individuals' entrepreneurial drive is not affected by the presence of such obstacles, it is conceivable that these financial constraints – by holding back potential entrepreneurs –are part of the explanation for the disparity between actual status and revealed preferences. Moreover, even if presently latent entrepreneurship has not suffered from these obstacles, the persistence of an environment where access to finance is seen as a constraint is likely to lead to some erosion of entrepreneurial drive in the future.

Several studies have investigated the role of financial constraints on the probability to become or to be self-employed. The most common avenue of research has been based on the results from Evans and Jovanovic (1989) linking the presence of financial constraints with that of assets in explaining self-employment. Evans and Jovanovic (1989) and Evans and Leighton (1989 and 1990) find that the probability of entry into self-employment increases with the level of assets and conclude that potential entrepreneurs do face capital constraints. Blanchflower and Oswald (1998) show that the presence of inheritance or gifts increases the probability of being self-employed, again confirming the existence of capital constraints. On the contrary, Reynolds (1997) finds in the estimation of a logistic regression that a variable roughly measuring the availability of personal financial reserves is not significant in explaining the prevalence of "*nascent entrepreneurs*"[23].

Note that the above results are not directly comparable with ours for two reasons. First, the dependent variable is not the same: we look at preferences while the above mentioned work deals with actual self-employment (either in the form of flow or stock). It is therefore plausible that liquidity constraints while not discouraging people from wishing to be self-employed do in practice prevent them from actually becoming so. Second, we have explicit information on the

[22] To test the robustness of this result we ran the same exercise on a larger sample which includes both active and non-active population, and found again that this perception has no significant impact on the expressed preference for self-employment. We also ran probit estimations country by country (hoping to identify a group of countries for which this result does not hold), and with the exception of Luxembourg the perception of lack of financial support was never significant in explaining self-employment preferences. This result is also supported by the fact that the probability of choosing self-employment conditional on having perceived a lack of financial support is not statistically different from the same probability conditional on not having perceived this lack of financial support.

[23] Nevertheless, availability of financial reserves appears as critical for the age group "55 and up".

respondents' perception of financial constraints while the papers discussed above infer the existence of such constraints from the significance of assets in the self-employment equation. As envisaged in Blanchflower and Oswald (1998), larger assets may be related to a higher proneness towards entrepreneurship, to higher entrepreneurial ability or to any other set of unknown variables that are behind this correlation, which therefore may not necessarily imply the presence of financial constraints.[24]

Concerning our results, the difficulty in reaching a clear interpretation of the links between perceived obstacles and latent entrepreneurship, together with the importance of these issues for policy purposes, points to the need of continuing research and information gathering in this area. In particular, gathering further information on more relevant sub-sets of the population could help in evaluating the expected link between these obstacles and the decision to engage in entrepreneurial activities.

The perception of administrative complexities has a negative impact on the preference for self-employment. This points at evidence for the existence of for entrepreneurial drive. This result confirms the importance of initiatives aiming at simplifying administrative procedures, as well as measures ensuring a widespread dissemination of information regarding the existing facilities for setting up a new business, such as one-stop shops and business support centers.

Concerning nationality, and using the US as benchmark, the data suggest that being of Greek, Irish, Italian or Portuguese nationality does not have a significant impact on attitudes towards self-employment. On the contrary, having any of the other nationalities, rather than being American, decreases the probability of wanting to be self-employed. The results in Blanchflower, Oswald and Stutzer (2001) concerning nationality are not directly comparable[25]. Nevertheless there is some similarity in that Portugal seems comparable to the US as in our case, while the case of Italy is difficult to gauge; as for Greece and Ireland they are not in the sample.

Finally, given the difficulty in apprehending attitudes towards entrepreneurship, we tried to gain insight by exploiting additional information from the survey. People were asked to imagine that their son wanted to start his own business, and whether they would approve or disapprove of it[26]. Using approval as a proxy for a positive attitude towards entrepreneurship, we investigated the

[24] Note that Evans and Jovanovic (1989) explicitly postulate independence between entrepreneurial ability and assets when stating their equivalence result.
[25] The set of countries in Blanchflower, Oswald and Stutzer (2001) is not the same as in our analysis, although a number of them are present in both studies, and the country of reference is West Germany there while we use the US.
[26] The same question was asked for the case of a daughter rather than a son but the replies are not significantly different in the two cases.

role of the following variables: perception of availability of financial support, perception of complexity of administrative procedures, risk tolerance, and country effects. The estimation shows that only the attitude towards risk plays a role in explaining this form of approval of self-employment. Both country effects and the perception of obstacles to business creation seem to be irrelevant in determining the probability of approving such a decision.

5 - The actual (declared) situation

In this section we move from the analysis of the expressed preferences to consider the actual situation as declared by the population interviewed (self-employed vs. employed).[27] We also compare the results of the estimation concerning the actual employment status with those on preferences from the previous section.

The sample used is the same as in the previous section. Given that the dependent variable refers to actual status which is the result of a decision made at some point in the past, it would have been desirable to have as explanatory variables the perceptions of financial support and administrative complexities at the moment such decisions were taken. We do not have this information, nevertheless there are two reasons why the perceptions at the moment the survey was conducted may still be relevant: first, for some individuals these perceptions may not have changed significantly; second, even for those who adjusted their perception of obstacles the fact that they remained self-employed (or became so) is then a function of the revised perceptions.

Table 4 presents the results of a probit estimation where the dependent variable is the employment status. The first two columns refer to a structural model where the explanatory variables are those used in the latent entrepreneurship estimation plus the declared preference for self-employment.[28] The next two columns correspond to the reduced form of the model, therefore without the variable latent entrepreneurship while the last two columns report results more comparable with Blanchflower, Oswald and Stutzer (2001) by omitting the obstacle and risk variables which are not available there.

[Table 4 about here]

[27] Therefore we use the fact of being self-employed as dependent variable; in other words, we look at the stock rather than the flow into self-employment. Empirical studies on determinants of self-employment have used either, depending on the characteristics of the data. Clearly, our data precludes the estimation of flows. When comparing results from estimations using these two concepts some caution is warranted since the effect of a particular explanatory variable on a stock variable combines its effect on entry into self-employment with its impact on survival and exit.

[28] Omitting the perception variables (if one believes they are too far from the perceptions having guided the entrepreneurial decision) does not change the qualitative results for the remaining variables.

According to these estimations gender has no significant impact on the probability of being self-employed. This is the case even in the reduced form version though in the restricted reduced specification in last column the case is border line. Recall that when looking at preferences for self-employment being male has a substantial positive impact on the probability of preferring to be self-employed. Clearly, this gender differential does not materialize in the actual professional status. In other words, the discrepancy between willingness and the actual status is stronger for men than for women. If willingness to be self-employed is to be a guiding criterion when choosing target groups for specific entrepreneurship support actions, the implications of these results should not be ignored. The results suggest that investigating the reasons behind the gender differential in willingness to be an entrepreneur may prove more fruitful than direct actions in favor of women entrepreneurship. Unless we know concretely why women have a lower preference for entrepreneurship, direct actions may be misguided.

Other empirical studies find opposite qualitative results concerning the role of gender. Blanchflower, Oswald and Stutzer (2001) find, using data covering 20 countries, that being a male has a strong positive impact on the probability of being self-employed. Looking at the last columns in Table 4, which allow a closer comparison with the results in Blanchflower, Oswald and Stutzer (2001), we find that the gender variable becomes significant at 6% which suggests that when other variables relevant in entrepreneurial decisions are controlled for, gender loses its hedge[29]. Blanchflower and Meyer (1994) and Lin, Picot and Compton (2000) find that being a male increases the probability of moving into self-employment.[30]

The probability of being self-employed increases with age, while, as we have seen in the previous section, the probability of preferring self-employment decreases with age. There is a natural explanation for this discrepancy: younger people, though more willing to engage in self-employment than older people (e.g. due to lower risk-aversion), face more stringent constraints, and are less able to fulfil their aspirations (e.g. due to having less collateral or less business experience). From a dynamic perspective one can think of young cohorts in which a large fraction wants to be self-employed, but few are, due to lack of opportunities. As time goes by, some of them seize the opportunity of becoming self-employed, which explains why older cohorts display a higher fraction of self-employment. In other words, this may be just the result of a time lag between the moment the willingness to become independent arises and the moment an opportunity to actually become one materializes. The discrepancy may even be exacerbated by the fact that older people, though less willing to become self-employed, are pushed into self-

[29] For an elaborate discussion of this phenomenon and evidence in this direction see Verheul (2005).

employment, or kept in the self-employment situation chosen when younger, by labor market conditions. The extreme case is that after the age of compulsory retirement being employed is no longer an option.

These opposite signs for the impact of age on the probability of being self-employed and the probability of preferring so is also confirmed by Blanchflower, Oswald and Stutzer (2001). Lin, Picot and Stutzer (2000) find that the probability of entering self-employment decreases with age.

Relative to the intermediate level of education, belonging to the higher or the lower education group has a positive impact on being self-employed. In other words, the relationship between education and self-employment seems to be U-shaped. The results from other studies where education is used as an explanatory variable in self-employment regressions are difficult to compare with ours. Blanchflower, Oswald and Stutzer (2001) and Evans and Leighton (1989, 1990) use years of education entering in linear form in the regression; the first study finds a negative impact while the last two conclude that education increases the probability of being self-employed.[31] Lin, Picot and Compton (2000) do not find evidence of a significant impact of education on entry into self-employment while Blanchflower and Meyer (1994) find a positive effect in the US but none in Australia.

Risk tolerance has no significant impact in the structural self-employment estimation but it becomes significant in the reduced form estimation which suggests that its impact on actual status is through preferences.

Not surprisingly, the fact of having a preference for self-employment increases the probability of actually being self-employed. To the extent that these preferences have not changed over time, it appears that being self-employed is, at least partially, the expression of a genuine wish rather than an accident or a constrained choice.

Concerning administrative and financial obstacles, both perceptions play a significant negative role in self-employment status, over and above its indirect effect through preferences. These results, combined with the ones obtained for latent entrepreneurship, indicate that administrative complexities hinder both the willingness to become self-employed and its materialization in actual status having therefore both a direct and an indirect effect (through preferences) on actual

[30] Blanchflower and Meyer (1994) use data for the US and Australia and Lin, Picot and Compton (2000) for Canada.
[31] These contradictory results may be due to the linear treatment of the variable. It may be the case that the introduction of a quadratic term would have confirmed the existence of a U-shaped relationship.

entrepreneurship; while lack of financial support has only a direct effect on the fact of being self-employed but no significant impact on preferences.

Concerning nationality, the data suggest that, relative to being American, being of Greek or Irish nationality does not have a significant impact on the actual professional status, the case of Italy is border line since the dummy is significant at 6% level. On the contrary, having any of the other nationalities, rather than being American, decreases the probability of being self-employed.[32]

6 - Concluding remarks

Probit analysis of survey data covering all the EU Member States and the US has provided a first glimpse of the factors behind latent and actual entrepreneurship. The main results from the preceding sections can be summarized as follows. Strikingly, though an overwhelming majority of the surveyed population identifies the lack of financial support as an obstacle to starting a new business, the perceived lack of financial support does not seem to have a significant impact on the revealed preference towards self-employment. On the contrary, administrative complexities, also perceived as an obstacle by a large majority of the population, play a significant role in explaining entrepreneurial drive. Both obstacles have a significant negative direct impact on self-employment status. The level of education does not appear to have any significant impact on self-employment preferences. On the contrary, age plays a role on these preferences. In fact, young people, relative to older people, are more prone to prefer self-employment but less likely to be self-employed. Gender-wise, men display a much stronger preference for self-employment than women though in practice being a man has no significant impact on being self-employed. In other words, the gender differential in terms of preferences does not materialize in the professional status. By identifying a number of factors that increase entrepreneurial proclivity, the results suggest that governments have a role to play in enhancing the entrepreneurial dynamism of the economy. In particular, the fact that a perception of administrative complexities has a negative impact on the preference for self-employment indicates that such complexities may deter individuals from even considering an entrepreneurial activity and thus stymie the economy's entrepreneurial potential. Indeed, we believe that an important contribution of the present paper to this strand of empirical literature lies in the analysis and discussion of the possible links between potential obstacles, such as administrative complexities and access to finance, and entrepreneurial drive.

[32] Though not directly comparable, the results in Blanchflower, Oswald and Stutzer (2001) seem compatible with ours in that in both studies being of Swedish, French and Danish nationality appears to reduce the most the probability of being self-employed.

Our results show that country-specific effects are important both for latent and for actual entrepreneurship. This raises the question of whether these country differences are to be traced to intrinsic cultural differences or rather to more prosaic material considerations such as differences in labor market legislation, social security regimes, tax environment, bankruptcy law, etc. Though this question can not be given an answer in the context of this study, it clearly is of crucial importance for policy recommendations and warrants further research. The sectoral composition of economic activity might also play a role in explaining differences across countries in terms of both measures of entrepreneurship. Some sectors such as tourism-related activities may present lower barriers and be less demanding in terms of human or financial resources required to start a business, which may create a bias towards countries where these activities are more demanded. Another issue in understanding cross-country differences that deserves further research is the role of job security and of wage level relative to self-employment income in shaping entrepreneurial activity.

One likely shortcoming of the present study hinges on the way the sample used was drawn. As suggested in section 4 when discussing the role of perceptions of availability of financial support, using a better targeted rather than a random sample from the total population might give us more meaningful information on how to improve the framework conditions that impinge on entrepreneurial drive and on its realization.

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Table 1 – Self-employment: preferences and actual status (in %)

	Preferences		Status		Number of observations	
Country	**Total population**	**Active population**	**Total population**	**Active population**	**N total**	**N active**
Belgium	36.94	35.34	6.96	15.52	517	232
Denmark	37.53	34.42	8.53	12.99	469	308
Greece	74.41	75.85	20.04	39.83	469	236
Spain	64.69	61.26	7.82	19.37	473	191
France	57.58	53.75	5.33	10.28	488	253
Ireland	63.97	68.60	18.42	37.60	494	242
Italy	60.38	65.22	12.71	28.99	472	207
Luxembourg	46.43	47.41	7.56	14.34	476	251
Netherlands	41.50	40.30	14.57	21.82	494	330
Austria	37.66	37.94	8.66	15.81	462	253
Portugal	71.64	71.43	11.94	22.86	469	245
Finland	27.97	26.04	10.02	16.67	479	288
Sweden	33.40	32.80	4.07	7.60	467	250
United Kingdom	49.00	49.66	9.40	15.99	500	294
West Germany	54.80	56.13	9.59	16.73	469	269
East Germany	41.56	42.34	6.54	12.50	474	248
US	70.10	70.97	24.33	42.29	485	279

Note: revealed preferences for self-employment and the effective self-employed percentages are calculated using both total surveyed population (left column) and the active population sub-sample (right column). The number of observations for each sample is given in the last two columns.
Source: Flash Eurobarometer 83

Table 2 – Distribution of variables by country (in %)

Country	Actual Entrepreneurship	Latent Entrepreneurship	Men	Low education	High education	Financial Support	Administrative Complexities	Risk Tolerance
Belgium	17	37	44	08	43	77	83	49
Denmark	14	37	52	07	65	67	84	64
Greece	39	75	64	17	37	91	77	58
Spain	19	60	61	19	44	90	81	62
France	10	53	53	08	36	90	88	60
Ireland	38	68	63	07	24	79	72	73
Italy	30	64	62	26	22	89	88	57
Luxembourg	16	48	56	04	41	85	65	43
Netherlands	23	43	58	04	37	45	59	56
Austria	15	38	54	07	20	75	68	49
Portugal	23	70	61	24	28	86	83	46
Finland	17	27	48	03	53	62	69	60
Sweden	08	35	44	06	41	72	87	48
UK	17	54	56	00	25	81	65	69
West Germany	16	56	52	10	30	75	70	44
East Germany	12	42	49	03	29	79	81	36
EU	19	50	55	09	36	77	76	55
US	43	71	48	03	51	86	66	78

Note: The values (percentage of observations answering "1") are computed for the observations used in the regressions in Tables 3 and 4 (observations for which there is no missing value for any of the independent and dependent variables). This means that only employed and self-employed are represented while retired, students, unemployed etc are not part of this sub-sample.
Source: Flash Eurobarometer 83

Table 3 – Effects on the probability of preferring to be self-employed

	dF/dx	P>|z|	dF/dx	P>|z|
Male	0.152*	0.000	0.154*	0.000
Age	-0.002*	0.008	-0.002*	0.003
Low education	-0.048	0.146	-0.054	0.101
High education	-0.007	0.720	0.000	0.980
Perceived lack of financial support	0.019	0.374	-	-
Perceived administrative complexity	-0.042*	0.038	-	-
Risk tolerance	0.063*	0.000	-	-
Belgium	-0.303*	0.000	-0.310*	0.000
Denmark	-0.329*	0.000	-0.328*	0.000
Greece	0.048	0.274	0.042	0.424
Spain	-0.104*	0.033	-0.126*	0.016
France	-0.167*	0.000	-0.190*	0.000
Ireland	-0.046	0.315	-0.056	0.268
Italy	-0.059	0.215	-0.084	0.107
Luxembourg	-0.227*	0.000	-0.246*	0.000
Netherlands	-0.284*	0.000	-0.291*	0.000
Austria	-0.328*	0.000	-0.325*	0.000
Portugal	0.001	0.987	0.027	0.595
Finland	-0.429*	0.000	-0.400*	0.000
Sweden	-0.321*	0.000	-0.327*	0.000
United Kingdom	-0.185*	0.000	-0.194*	0.000
West Germany	-0.126*	0.005	-0.155*	0.001
East Germany	-0.261*	0.000	-0.283*	0.000
	Number of observations = 3782		Number of observations = 3782	
	LR $chi^2(23)$ = 427.04		LR $chi^2(20)$ = 409.04	
	Prob > chi^2 = 0.0000		Prob > chi^2 = 0.0000	
	Log likelihood = -2406.846		Log likelihood -2415.842	
	Pseudo R^2 = 0.0815		Pseudo R^2 = 0.0781	

* Underlying coefficient significant at 5%
Source: Flash Eurobarometer 83

Table 4 – Effects on the probability of being self-employed

	dF/dx	P>|z|	dF/dx	P>|z|	dF/dx	P>|z|
Male	-0.008	0.547	0.021	0.112	0.025	0.053
Age	0.004*	0.000	0.004*	0.000	0.004*	0.000
Low education	0.075*	0.003	0.062*	0.016	0.058*	0.022
High education	0.054*	0.000	0.053*	0.000	0.063*	0.000
Preference for self-employment	0.187*	0.000	-	-	-	-
Perceived lack of financial support	-0.054*	0.001	-0.051*	0.002	-	-
Perceived administrative complexity	-0.057*	0.000	-0.065*	0.000	-	-
Risk tolerance	0.017	0.192	0.027*	0.049	-	-
Belgium	-0.119*	0.000	-0.146*	0.000	-0.153*	0.000
Denmark	-0.142*	0.000	-0.169*	0.000	-0.173*	0.000
Greece	-0.024	0.439	-0.020	0.544	-0.033	0.305
Spain	-0.121*	0.000	-0.134*	0.000	-0.142*	0.000
France	-0.160*	0.000	-0.176*	0.000	-0.183*	0.000
Ireland	-0.017	0.587	-0.024	0.461	-0.024	0.463
Italy	-0.059	0.055	-0.065*	0.040	-0.080*	0.009
Luxembourg	-0.126*	0.000	-0.148*	0.000	-0.152*	0.000
Netherlands	-0.096*	0.000	-0.129*	0.000	-0.119*	0.000
Austria	-0.123*	0.000	-0.153*	0.000	-0.152*	0.000
Portugal	-0.102*	0.000	-0.105*	0.000	-0.116*	0.000
Finland	-0.108*	0.000	-0.151*	0.000	-0.149*	0.000
Sweden	-0.162*	0.000	-0.185*	0.000	-0.189*	0.000
United Kingdom	-0.120*	0.000	-0.143*	0.000	-0.141*	0.000
West Germany	-0.141*	0.000	-0.154*	0.000	-0.157*	0.000
East Germany	-0.138*	0.000	-0.161*	0.000	-0.167*	0.000
	Number of observations = 4213 LR chi2(24) =527,44 Prob > chi2 = 0.0000 Pseudo R2 = 0.1364 Log likelihood=-1669.1		Number of observations = 4213 LR chi2(23 = 332,12 Prob > chi2 = 0.0000 Pseudo R = 0.08559 Log likelihood=-1766.8		Number of observations = 4213 LR chi2(20)= 295,39 Prob > chi2 = 0.0000 Pseudo R2 = 0.0764 Log likelihood=-1785.1	

* Underlying coefficients significant at 5%
Source: Flash Eurobarometer 83