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Entrepreneurship in the old and new Europe

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Abstract: developing a dynamic SME sector is essential for countries transforming their centrally planned economy into a market oriented one. New firm formation is the major driver of this transition. Obviously, entrepreneurial energy is a necessary condition for new firm formation. This paper uses 2004 survey data from the 25 EU member states and the US to explain country differences in entrepreneurial energy. This energy is captured as latent and actual entrepreneurship. Latent entrepreneurship is measured by the probability of a declared preference for self-employment over employment. Next to demographic variables such as gender, age, education level and whether parents are self-employed, the set of explanatory variables used includes country specific effects, measures of risk tolerance, internal and external locus of control and four perceptions of 'obstacles'. The 'obstacle' variables include the perception by respondents of administrative complexities, of availability of financial support, of accessibility of information for start-up and whether the current economic climate is favorable. Specific attention is devoted to differences between the eight former communist member states and the 17 other EU member states. The most striking result is the higher influence of risk tolerance in shaping both latent and actual entrepreneurship in transition economies relative to market economies.

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1. Introduction

Developing an SME (small and medium-sized enterprises) sector is essential for countries transforming their centrally planned economy into a market oriented one. New firm formation is the major driver of this transition. Obviously, entrepreneurial energy is a necessary condition for new firm formation. The centrally planned economies of Central and Eastern Europe and the Baltics were particularly hostile toward entrepreneurial activities. Large state run enterprises in an economy dominated by heavy industries were considered the prime driver of economic progress and hence the symbol of the communist ideology (Earle and Sakova, 2000). The ensuing misallocation of resources led to the obvious gaps and shortages on the output side. Privatization of the existing large enterprises ruined by years of communist governance was generally considered inadequate to transform the centrally planned economies. A wider process of social and economic restructuring was needed (Blanchard, 1997) in which an entirely new private sector had to be put in place. A major challenge then becomes to develop an SME sector by means of stimulating entry. There are many roles of SMEs in the process of transformation (Smallbone and Welter, 2001b), the most important of which is channeling entrepreneurial energy. The present paper attempts to explain country differences in entrepreneurial energy. This energy is captured as latent and actual entrepreneurship. Level and determinants of both latent and actual entrepreneurship are investigated with specific attention to differences between transition and non-transition EU member states.

The main goal of the present paper is to establish whether entrepreneurial activity differs between the new and old member states of the European Union.[1] Particular attention will be paid to the eight former communist countries. In this sense the terms "old" and "new" Europe will be used in a loose fashion reflecting a direct interest in the role of transition versus market economies in shaping entrepreneurial energy. Our investigation uses 2004 survey data of 7914 participants of the 25 European member states including the US. The survey assesses both latent (declared preference, i.e., drive) and actual entrepreneurship. Moreover, several demographic, attitudinal and preference characteristics of the surveyed population are measured. This allows establishing whether the influence of these characteristics differs between new and old member states, in particular, between the eight former communist transition countries and the remaining 17 countries.

The transition phase with its dramatic institutional and economic shocks may have led to different entrepreneurial aspiration and activity levels when compared to long standing market economies which did not experience abrupt changes.[2] For instance, it is well-known that entrepreneurial opportunities are not just the result of the push effect of (the threat of) unemployment but also of the pull effect produced by a thriving economy as well as by past entrepreneurial activities.[3] This mix may be entirely different in transition countries than in existing market economies. The flood of new opportunities brought forward by the liberalization aspect goes hand in hand with the dramatic fall of the demand for labor due to the demise of the state run large enterprises. The present paper is a first step toward systematic investigation of entrepreneurial differences between transition and non-transition member states. It reports on the differences of the levels of latent and actual entrepreneurship, on the characteristics of those involved and on the determinants of these involvements.

[1] In May 2004 ten new countries joined the European Union. Of these ten countries the Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Slovenia and Slovakia are former communist ones. There has been considerable variety in the way central planning was maintained in these countries before the Berlin wall fell. For instance, central planning in Yugoslavia – hence in Slovenia – was already abolished in 1952. There has also been considerable variety is the policy approaches of these countries since the fall of the Berlin wall. See Earle and Sakova (2000) and Petrin (2005). Cyprus and Malta have no communist past.

[2] Earle and Sakova (2000), Smallbone and Welter (2001a and 2001b) and Verheul, van Stel and Thurik (2006).

[3] Wennekers and Thurik (1999) and Audretsch, Carree, Thurik and van Stel (2006).

Insight in the determinants of entrepreneurship is crucial for shaping public policies and the assessment of their merits. This is not only the case in the relatively robust environment of existing market economies (Verheul, Wennekers, Audretsch and Thurik, 2002, Storey, 2003 and Hart, 2003) but holds true in particular in the framework of the complex and sensitive transition process of the former communist economies (Smallbone and Welter, 2001b and Worldbank, 2005). Policy-makers' awareness that individuals may be discouraged to become entrepreneurs due to administrative hurdles, lack of information on how to start, an unfavorable economic climate and the absence of financial and human capital requires a sound knowledge of (dis)incentives. The present paper deals with these and other factors and their influence on latent and actual entrepreneurship, particularly in a setting were differences between transition and non-transition EU member states can be established.

The present paper follows the setup of Grilo and Irigoyen (2005) where 2000 survey data are used from the 15 EU member states and the US to establish the effect of demographic and other variables on latent and actual entrepreneurship. In Grilo and Thurik (2005a) a similar analysis is done using 2004 data. They show that in terms of unweighted averages actual entrepreneurship remained about the same in the period 2000 to 2004. Latent entrepreneurship dropped while this drop seems to have occurred evenly in the US and the old EU member states. 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 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 contribution of Grilo and Irigoyen (2005) and Grilo and Thurik (2005a) is that both the preference and the actual status of entrepreneurship are investigated in a multi-country setting using a structural two-equation model.[4] Grilo and Irigoyen (2005) find that concerning administrative and financial obstacles, both perceptions play a significant negative role in self-employment status, in addition to its indirect effect through preferences. They conclude that 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. Administrative complexities have both a direct and an indirect effect (through preferences) on actual entrepreneurship; while lack of financial support has only a direct effect on the fact of being self-employed but no significant impact on preferences.[5] Grilo and Thurik (2005a) report that, while a majority of the surveyed population identifies lack of financial support as an obstacle to starting a new business, the role of this variable in both latent and actual entrepreneurship appears to be even more counter-intuitive in 2004 than in 2000: it has no impact on actual entrepreneurship and is positively related to latent entrepreneurship.

The results of Grilo and Irigoyen (2005) and Grilo and Thurik (2005a) reinforce the message that the degree of entrepreneurship varies widely across countries. They show that country-specific effects are significant both for entrepreneurial drive and for entrepreneurial activity even after the effects on entrepreneurship of demographic and perception variables have been accounted for. The results show that no old EU country scores better than the US, confirming the widespread belief of a more developed entrepreneurial spirit across the Atlantic. In our present paper – covering 7914

[4] Blanchflower, Oswald and Stutzer (2001) use a similar approach though their model has more of a reduced form flavour whereas no perception variables are taken into account. Also Stel, Storey, Thurik and Wennekers (2006) apply a 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.

[5] Using an entirely different model explaining various entrepreneurial engagement levels Grilo and Thurik (2005b) conclude that, relative to never having considered setting up a business, the odds of thinking about it or having thought and given up are not significantly affected by the perception of administrative complexities. However, the odds of other more active entrepreneurial positions such as being in the process of starting a business or actually having started one (whether active for less or longer than three years) are significantly negatively affected by a perception of administrative complexity. However, they establish that the perception of lack of financial support has almost no discriminative effect across the various levels of entrepreneurial engagement.

respondents surveyed in 2004 - we will make a comparison of the determinants of the entrepreneurial drive and activity between the 15 old member states of the EU and the ten new ones - in particular the eight former communist ones. Also – when compared to Grilo and Thurik (2005a) – we will introduce several new covariates such as whether parents are self-employed, internal and external locus of control and the perception by respondents of accessibility of information for start-up and whether the current economic climate is favorable.

The contribution of the present paper is that a precise account is given of the differences of the levels of latent and actual entrepreneurship between the eight former communist member states of the European Union on the one hand and the remaining 17 countries on the other. Moreover, differences in the characteristics of the individuals surveyed are described. Finally and most importantly, differences in the determinants between the two groups of countries are established in a multi-country setting using a structural two-equation probit model explaining the probability of the preference to become self-employed and of actually being self-employed.

The most striking results of the present paper is that risk tolerance has a significantly higher influence on both latent and actual entrepreneurship in transition economies than in market economies. This opens the discussion on the importance for these countries of policy measures directed at the risks and consequences of business failure. Another important result concerns the impact of 'belonging to these economies' on latent and actual entrepreneurship once the available explanatory variables are accounted for. The results show that once these other variables are controlled for there is a significantly higher probability of being self-employed for a resident of a transition economy than for someone living in an EU market economy.

The present paper is organized as follows: section 2 highlights some literature and results concerning determinants of entrepreneurship. In section 3 the variables are discussed. In sections 4 and 5 the results of latent and actual entrepreneurship using the 2004 survey are presented. Section 6 concludes.

2. Determinants of entrepreneurship

Entrepreneurial activities differ largely between countries (Acs, Audretsch, Evans, 1994; Blanchflower, 2000 and 2004; Acs, Arenius, Hay and Minniti, 2005; Stel, 2005; Observatory of European SMEs, 2005a; Grilo and Irigoyen, 2005 and Grilo and Thurik, 2005b). This holds true for various measures of entrepreneurship such as start-up activity, business ownership, small business share, nascent entrepreneurship and the preference for entrepreneurship. Many determinants have been brought forward (Blanchflower, 2000, Parker, 2004, Verheul, Wennekers, Audretsch and Thurik, 2002; Wennekers, Uhlaner and Thurik, 2002). Next to many individual characteristics the level of economic development (Reynolds, Bygrave, Autio, Cox and Hay, 2002 and Audretsch, Carree, Thurik and van Stel, 2005) and cultural aspects (Noorderhaven, Wennekers, Thurik and van Stel, 2004 and Uhlaner and Thurik, 2005) are often mentioned as the principal drivers of entrepreneurial activity.

At the individual level, the tools of neo-classical microeconomics have provided a framework for studying self-employment decisions known as the theory of income choice. This field has proved useful in describing some of the factors influencing this occupational decision.[6]

This field has basically four dimensions. Some authors stress the role of entrepreneurial ability in the decision to become an entrepreneur. They postulate differences across potential entrepre-

[6] This approach views agents as (expected)-utility maximisers 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 being emphasized as playing the key role in explaining self-employment decisions, most of this constrained optimization approach can be traced back to the vision of the role of an entrepreneur found in the work of Knight (1921).

neurs (or firms) in terms of some form of entrepreneurial efficiency (Jovanovic, 1982 and 1994; Lucas, 1978; Murphy, Shleifer and Vishny, 1991; Holmes and Schmitz, 1990 and Lazear, 2004). The second dimension emphasizes the role of risk and underlines the importance of risk attitudes in the occupational choice. In Kihlstrom and Laffont (1979) and Parker (1996 and 1997) the degree of risk aversion and the differences in risk of the two occupational alternatives determine the occupational choice. A third dimension that has been emphasized in explaining different occupational choices is the existence of liquidity constraints. Evans and Jovanovic (1989) building upon Lucas (1978) and Jovanovic (1982) 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. This influential paper led to many follow up investigations of both conceptual and empirical nature. The empirical establishments of whether wealthier individuals have a higher probability of becoming entrepreneur is widely researched. See Holtz-Eakin, Joulfaian and Rosen (1994) and Taylor (2001). Hurst and Lusardi (2004) show that the relationship between household wealth and the propensity to start a business is highly non-linear.[7] The fourth dimension involves a more eclectic approach and uses a multitude of variables to describe the factors influencing the (relative) returns to self-employment such as the preferences, abilities and resources of the individuals. Most studies in this area use longitudinal data for a given country and have as dependent variable the transition into self-employment and sometimes the business longevity and the exit from self-employment. Typical explanatory variables include age, gender, race, 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 Bates (1990, Blanchflower (2004), Blanchflower and Meyer (1994), Blanchflower and Oswald (1998), Blau (1987), Douglas and Shepherd (2002), Evans and Leighton (1989, 1990), Grilo and Irigoyen (2005), Grilo and Thurik (2005a and 2005b), Lin, Picot and Compton (2000), Rees and Shah (1986), Reynolds (1997), Wagner (2003) and Wit and van Winden (1989).

In analyzing the determinants of entrepreneurship, Verheul, Wennekers, Audretsch and Thurik (2002) present an *Eclectic Framework* of the determinants of entrepreneurship bringing together elements from different fields and levels of analysis. In particular, they combine the supply effect of the above mentioned fourth dimension (preferences, abilities and resources of the individuals) with the demand effect of market opportunities.[8] Our approach is loosely inspired by the *Eclectic Framework.*[9]

Below we will list some earlier findings in the empirical literature of the determinants of entrepreneurship. We limit ourselves to variables available in the Flash Eurobarometer Survey 2004. For an extensive account of the literature on the determinants of entrepreneurship we refer to Grilo and Thurik (2005a and 2005c) and the references therein.

Being (or becoming) self-employed received ample attention as a variable to be explained.

- Most studies find that men have a higher probability of engaging in entrepreneurship than women.[10]
- The likelihood of becoming self-employed varies with age. Many business owners are within the age category of 25 to 45 years old.[11]
- The level of education is a variable for which contrasting results have been obtained. The results vary regarding the existence of a significant impact and the nature of

[7] Using American income data Hurst and Lusardi (2004) show that a positive relation can be found only for households in the top 5% of the wealth distribution.

[8] The *Eclectic Framework* also distinguishes between actual and 'natural' rates of entrepreneurship. The concept of 'natural' rate is relevant for analyzing government opportunities for and modalities of intervention. Clearly, there is room for the government to act when the actual rate of entrepreneurship deviates from the 'natural' rate. Verheul, Wennekers, Audretsch and Thurik (2002) discriminate between five types of interventon.

[9] See Grilo and Thurik (2005b) were the same set a variables is used in the context of a multinomial logit model.

[10] There are many sources. See Minniti, Arenius and Langowitz (2005) and Verheul, van Stel and Thurik (2006).

[11] See Storey (1994) and Reynolds, Hay and Camp (1999).

this impact. Among the studies finding that education has a significant impact, the nature of the impact varies from study to study – some find a positive relation others a negative one and still others a negative up to some level of education and positive thereafter.[12]

- The conventional wisdom that "breeding entrepreneurs starts at home" is confirmed by results in the literature. There are many results showing the positive intergenerational correlation often with some mediator like race, parents' occupation or sex.[13]
- Financial constrains, often evaluated through the role of capital assets in the probability of being self-employed[14], are generally found to have a negative impact on the decision to become an entrepreneur. Grilo and Irigoyen (2005) report a negative effect of the perception of lack of financial on the probability of being self-employed using European data of 2000 whereas Grilo and Thurik (2005a) report no effect for 2004.
- Both Grilo and Irigoyen (2005) and Grilo and Thurik (2005a) report a negative effect of the perception of administrative complexities on the probability of being self-employed using European data of 2000 and 2004, respectively.
- Grilo and Thurik (2005b) do not find a negative effect of the difficulty to obtain sufficient information nor of the perception of an unfavorable economic climate using their multinomial logit model of entrepreneurial engagement levels.
- Both Grilo and Irigoyen (2005) and Grilo and Thurik (2005a) report that, not surprisingly, having a preference for self-employment increases the probability of actually being self-employed.
- Risk tolerance is found to increase the probability of being self-employed.[15]
- The perception of internal and external success factors is closely related to the concept of locus of control. This refers to the perceived control over events. In his social learning theory Rotter (1966) differentiated between internal and external locus of control. Individuals with an internal locus of control believe themselves to be in control of their destiny. Individuals with an external locus of control believe that outside forces determine their future. The obvious expectation is that self-employed have a high internal locus of control and a low external one.[16]
- In cross country comparisons, and for the role of country specific effects, the few studies addressing this issue indicate that entrepreneurship is stronger in the US than in European countries. Below we will discuss some findings concerning former communist transition economies.

Preferences for self-employment, which can be seen as a measure of latent or potential entrepreneurship, have been less often analyzed.[17] Some influences generally found in other studies are listed below.

- Being a male has a positive significant impact on the decision to start a new firm, while this decision is negatively affected by age.[18]

[12] Robinson and Sexton (1994) and Cooper and Dunkelberg (1987) show that the self-employment decision is influenced by educational attainment. However, a study at the macro level by Uhlaner and Thurik (2005) shows that a higher level of education in a country is accompanied by a lower self-employment rate. See also Wit and van Winden (1989). Blanchflower (2004) reports that education is positively correlated with self-employment in the US but negatively so in Europe.

[13] See Matthews and Moser (1996), Dunn and Holtz-Eakin (2000) and Hout and Rosen (2000).

[14] The argument behind the use and interpretation of capital assets to proxy financial constrains is the so-called equivalence theorem in Evans and Jovanovic (1989). See Cressy (1999) for a discussion of the limitations of this theorem.

[15] See Grilo and Irigoyen (2005).

[16] In their literature review Rauch and Frese (2000) find mild empirical evidence for a relationship between internal locus of control and business success. See also Beugelsdijk and Noorderhaven (2005).

[17] See Blanchflower, Oswald and Stutzer (2001) for some first results.

[18] According to Reynolds, Bygrave, Autio, Cox and Hay (2002) men are about twice as likely involved in entrepreneurial activity than women. See also Minniti, Arenius and Langowitz (2005). See also Blanchflower, Oswald and Stutzer (2001), Grilo and Irigoyen (2005) and Grilo and Thurik (2005a).

- Nascent entrepreneurship rates are highest in the age category of 25 to 34 years old, although some studies suggest that people increasingly start businesses at a younger age.[19]
- The level of education does not have a significant impact on preferences for self-employment.[20]
- Grilo and Thurik (2005b) using their multinomial logit model of entrepreneurial engagement levels report that having self-employed parents increases the odds of all engagement levels, potentially leading to an effective entrepreneurial activity relative to not considering such activities. Moreover, the odds of having a young business relative to any low involvement category are boosted by having self-employed parents. Also, having had the example of self-employed parents makes giving up on starting a business less likely. More precisely, the odds of giving up relative to any category from taking steps onwards are negatively affected by this variable.
- Grilo and Irigoyen (2005) have studied the role of perceptions of administrative complexities and financial constraints on latent entrepreneurship. The results indicate that perceived administrative complexities have a negative impact while perceived financial constraints do not seem to play a role.
- Tolerance of risk – a key factor for entrepreneurship – has, as could be expected, a positive impact on the preference for self-employment.[21]
- Concerning cross country comparisons and the role of country specific effects, the results of Grilo and Irigoyen (2005) indicate that for most old EU countries entrepreneurial drive is lower than in the US.[22]

Some viewpoints on **the role of economic transition**, being the specific theme of the present paper, will be discussed in the remainder of this section. There are three questions to be discussed. First, whether the preference to be self-employed and the incidence of self-employment differ between former communist countries and countries with a longer capitalist history. Second, whether the characteristics of those involved differ between the two country groups. Third, whether the influence of the above mentioned factors on the probability of preferring to be self-employed and of actually being self-employed differs between these two categories of countries. We will abstain from making precise assumptions about the answers to these three questions because the existing literature provides only few hints and because this would result in a plethora of statements given our set-up with two equations and many variables. Rather, we concentrate on a posteriori interpretation of the outcomes of our analyses. Nevertheless, some connection to the existing literature will be given.

Obviously, the transformation process is intervening profoundly in economic and social life through elements like the shift from public to private ownership, the liberalization of markets and the creation of accompanying institutions like financial and service intermediaries. The effects on level and characteristics of entrepreneurial activities may be immense. It is straightforward to expect these effects to depend upon the phase and the speed of the transition (Mugler, 2000), the relative starting point (countries like Hungary and Poland experimented with mild forms of entrepreneurship in the last phase of the communist regime) and whether there is any tradition of private enterprise (like in 19th century Czechoslovakia). Smallbone and Welter (2001a) give many

[19] See Delmar and Davidsson (2000).
[20] The results of Delmar and Davidsson (2000) and Davidsson and Honig (2003) show a clear education effect in the case of nascent entrepreneurs.
[21] See Grilo and Irigoyen (2005) and Grilo and Thurik (2005a) for European data of 200 and 2004, respectively.
[22] After controlling for other factors influencing self-employment preferences, Greece Ireland, Italy and Portugal are exceptions to this result. Blanchflower, Oswald and Stutzer (2001) also perform cross-country comparisons and find results compatible with these.

examples of these dependencies and provide some evidence that different forms of entrepreneurship emerge with distinct characteristics of entrepreneurs.

During the transformation process the eight former communist countries entered the EU in 2004. We will not discuss the nature of the integration in terms of the important inflows of foreign direct investments as well as financial aid; the implementation of the 'acquis communautaire' (adjustments of legal and regulatory frameworks) and its consequences for the business environment; and the labor market with its consequences for entrepreneurial activities and opportunities (Observatory of European SMEs, 2005b). We cannot discriminate between former communist countries which entered the EU in 2004 and similar countries like Rumania, Bulgaria, etc which didn't. Our data set does not cover these non-EU countries. Below we will concentrate on the fact that these countries are formerly centrally planned.

The economic structure of former communist (or transition) countries differs from that of non-transition countries. In centrally planned economies entrepreneurial activity was restricted (or absent) as the emphasis was on economies of scale and the business culture did not support innovation and entrepreneurship (Roman, 1990; Mugler, 2000). During the transition process new, small firms start replacing the larger incumbent industrial enterprises and there is a shift away from unskilled, labor-intensive production towards capital-, technology- and skill-intensive production (Brunner, 1993). However, the development of entrepreneurship in most transition countries still lags behind that of non-transition countries.[23] This is because the business environment in transition countries is less favorable than in most non-transition economies. Transition economies tend to be characterized by a relatively unstable economic environment, a low domestic purchasing power and uncertainty with respect to property rights (Smallbone and Welter, 2001b). Probably, this instability is compensated by other positive aspects such as new opportunities in those former communist countries which accessed the EU in 2004. Other impediments to entrepreneurship in transition economies as described by Mugler (2000) include a shortage of entrepreneurial and management skills, underdevelopment of the regulatory system, bureaucratic and time-consuming registration, need for modernization of infrastructure and communication network, limited access to capital and limited knowledge and organization of market services. Furthermore, it is well-known that entrepreneurial opportunities are not just the result of the push effect of (the threat of) unemployment but also of the pull effect produced by a thriving economy as well as by past entrepreneurial activities. This mix may be entirely different in transition countries than in existing market economies. The flood of new opportunities brought forward by the liberalization wave go hand in hand with the dramatic fall of the demand for labor due to the demise of the state run large enterprises. Finally, it should be noted that the transition effect on entrepreneurship is likely to differ between transition countries, depending upon the phase and pace of the reforms (Smallbone and Welter, 2001a; Mugler, 2000). However, when comparing transition and non-transition countries we will not take into account the diversity within each group of countries when explaining the influence of determinants (socio-demographic and perceptions) on latent and actual self-employment. Summing up, it is expected that there is a negative effect of economic transition on both latent and actual entrepreneurship.[24]

[23] Grilo and Thurik (2005b) report on the differences of the entrepreneurial engagement levels between old and new member countries of the European Union. Wennekers, van Stel, Thurik and Reynolds (2005) show that a 'former communist' dummy plays a role regressing global entrepreneurship (GEM) 2002 data for nascent entrepreneurship in 36 countries on the level of economic development. Using the same data set Stel, Carree and Thurik (2005) show some weak evidence that Hungary, Poland and Russia belong to a group of countries for which the positive influence of entrepreneurship on economic growth is relatively low.

[24] The transition effect may be stronger for women who are twice as less likely to become entrepreneurs than men (UNECE, 2002). Although self-employment in the form of cross-border trade, street trade or subcontracting work at home is a much pursued avenue of employment for women in transition countries, at the same time they experience gender-related barriers with respect to access to information, networks and collateral (Ruminska-Zimny, 2002). Verheul, van Stel and Thurik (2006) do not find clear differences between men and women in former communist countries.

3. Data

Data used are from the Flash Eurobarometer survey on Entrepreneurship conducted during April 2004 on a random sample from the 25 Member States and the US, covering 19550 respondents[25]. The survey provides information on demographic variables such as gender, age, education level and whether parents are self-employed, four perceptions of 'obstacles' as well as information allowing the construction of loose measures of risk tolerance and of internal and external locus of control . The 'obstacle' variables include the perception by respondents of administrative complexities, of availability of financial support, of accessibility of information for start-up and whether the current economic climate is favorable. Two different indicators of entrepreneurship are used.

The first indicator of entrepreneurship aims at capturing the population's entrepreneurial drive (latent entrepreneurship). The following question provides the basis for the measure of entrepreneurial drive: *suppose you could choose between different kinds of jobs. Which one would you prefer: being an employee or being self-employed?* This is admittedly a simplified concept of latent entrepreneurship but has the advantage of consistency across our 26 countries.[26]

The second indicator, used to measure actual entrepreneurship –those effectively in self-employment – has been widely used in the empirical literature on entrepreneurship due to its generally good statistical availability and the ease in international comparisons.

In the next sections estimation results are presented 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:

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

where $y_1 = 1$ if the individual prefers self-employment and = 0 if the individual prefers employment and where X= (1, male, age, low education, high education, self-employed parent, lack of financial support, presence of administrative complexities, lack of start-up information, economic climate, risk tolerance, internal and external locus of control, country dummies);

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

where $y_2 = 1$ if the individual is self-employment and = 0 if the individual is employed.[27]

We did an equation-by-equation probit estimation using 7914 observations of the original 19550 interviews.[28] 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. The explanatory variables used in the present study can be divided into three types.

Socio-demographic variables: gender, self-employed parents, age and level of education. "Age when finished full education" is used to construct three education levels: The first encompasses those with no education or having left school before the age of 15; the second refers to

[25] This survey was conducted on behalf of the European Commission's Enterprise Directorate-General, and the key findings are presented in *Flash Eurobarometer 160* "Entrepreneurship", European Commission 2004, available at "http://europa.eu.int/comm/public_opinion/flash/fl160_en.pdf".

[26] As already remarked in Blanchflower, Oswald and Stutzer (2001) and Grilo and Irigoyen (2005), the answer to this type of questions can be misleading. In fact, a value judgement about attractive attributes associated with self-employment – independence, higher income, opportunity of tax evasion – may provoke a bias towards a preference for entrepreneurship.

[27] Grilo and Irigoyen (2005) and Grilo and Thurik (2005a) estimate a similar set of equations but there X= (1, men, age, low education, high education, lack of financial support, presence of administrative complexities, risk tolerance, country dummies).

[28] Given the recursive nature of the model this procedure provides consistent estimators provided the error terms are uncorrelated across equations. To investigate the assumption of across-equation independent errors 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.

those who left school between the age of 15 and 21; and the third to those having left school past the age of 21.[29] A dummy variable is used for the lower level and another for the higher level so that the intermediary level works as the base. Male and self-employed parents are the obvious dummy variables.

Perception and preference variables: the perception of lack of available financial support, the perception of complexity of administrative procedures, lack of sufficient information, economic climate 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."
- "It is difficult to obtain sufficient information on how to start a business."
- "The current economic climate is not favorable to start one's own business."
- "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 four statements.[30] For the fifth statement the risk tolerance dummy takes value "1" if "disagree" or "strongly disagree".[31]

The perception of internal and external success factors (internal versus external locus of control) is captured by the following questions:

When one runs a business, what do you think most determine its success (max two answers)?

a The director's personality.
b The general management of the business.
c The overall economy.
d The political context.
e Outside entities.
f Other.

Two dummy variables are constructed. Internal locus of control equals "1" if *a* and/or *b* are mentioned whereas *c*, *d* or *e* are not mentioned and external locus of control equals "1" if *c*, *d* and/or *e* are mentioned whereas *a* or *b* are not mentioned.

Country dummies: country-specific effects are evaluated using country dummy variables with the US as the base. Therefore the coefficients associated with these variables are to be interpreted as the impact of being in the corresponding country rather than being in the US. A country group dummy variable taking value one for observations from transition economies was also used in regressions discussed but not reported in this paper.

Table 1 Distribution of variables per country (2004).

[Table 1 about here]

[29] 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".

[30] These two dummy variables capture, at best, the perception individuals have of the existence of financial or administrative barriers not their actual existence. 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 obvious 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 revised accordingly if relevant.

[31] Clearly, this is a crude indicator of risk attitudes and calling this dummy "risk tolerance" may be abusive. Nevertheless, in the absence of a better measure we believe it provides some information on how taking risks is perceived by the respondent.

A very clear regularity reported in Table 1 is that in all 26 countries the proportion of the respondents with a declared preference for self-employment is higher than that actually involved in entrepreneurial activities.[32] The unweighted average of actual entrepreneurship is 19% whereas that of declared preference is 49%. This discrepancy between latent and actual entrepreneurship ranges from 49% in Lithuania to 8% in Finland. It is higher in the former communist Europe (32%) than in the remaining member states (28%) but still small when compared to the discrepancy in the US (47%). A high proportion of respondents perceiving a lack of financial support, complex administrative procedures or an unfavorable economic climate may explain this untapped entrepreneurial potential.[33] Average unweighted actual entrepreneurship in the non-communist Europe, the former communist Europe and the US is about the same (20, 18 and 21%, respectively). Average unweighted latent entrepreneurship in the former communist Europe is roughly the same as in the other EU member states, while that in the US is considerably higher (49, 48 and 68% respectively).

Clearly, all obstacles seem relevant in all countries. Noteworthy exceptions are start-up information in the Netherlands and Finland which is mentioned by only 17% and 22% respectively as difficult to obtain. Apart from start-up information the former communist Europe generally feels the obstacles more deeply than the non-communist Europe: 87% versus 72% for lack of financial support, 78% versus 69% for complex administrative procedures and 75% versus 65% for unfavorable economic climate. On the whole, start-up information is perceived as the least frustrating of the four obstacles: 46% and 43% in the former communist countries and the other countries, respectively. All four obstacles play a lesser role in the US when compared to the unweighted European average. In particular, the differences for complex administrative procedures and unfavorable economic climate are salient: the US reports 13% lower than Europe for both obstacles. Defining the General Obstacle Perception (GOP) as the average over the four obstacles per country we observe that the unweighted average of GOP for the non-communist Europe is 62%, whereas that for the former communist Europe is 71% and for the US 55%. Particularly interesting is the spread of GOP across countries: in the non-communist Europe it varies from Finland with 41% to Portugal with 83%. In the former communist Europe this variation is much lower: from Estonia with 61% to Slovenia with 77%.

The unweighted percentage of those having left school past the age of 21 ("high education") is higher in the non-communist member states than in the former communist one (39% versus 26%) but the European average is considerably lower than the US (36% versus 57%). Concerning risk tolerance, the population of the non-communist European countries reveals a more positive attitude (52%) than that in the former communist countries (34%) but the US ranks the highest (75%) followed by Ireland (69%) whereas the lowest level appears to occur in Hungary (17%). In terms of internal versus external success factors there are marked differences between the non-communist EU member states, the former communist ones and the US. In the US internal success factors dominate external ones (69% versus 23%). This is also the case in the non-communist Europe but to a lower degree (44% versus 20%). The reverse is observed in the former communist countries (18% versus 30%). This result reinforces the prejudice that despite the regime switch the population of former communist countries still believes strongly in the role of external factors.

Table 2 Correlation matrix (2004).

[Table 2 about here]

[32] This result was also reported and discussed in Blanchflower, Oswald and Stutzer (2001) and in Grilo and Irigoyen (2005) using the Eurobarometer 2000 survey.

[33] Alternative explanations may be that in the area of socio-demografic and personality characteristics there are principle differences between the self-employed and the salaried or unemployed or that there are simply not enough business opportunities (Verheul, Wennekers, Audretsch and Thurik, 2002). In the present data set, for instance, 43% of those being self-employed report self-employed parents, whereas of those not being self-employed only 23% have self-employed parents.

From Table 2 we see that there are only five coefficients in excess of |.25|. Obviously, those between actual self-employment and preference for self-employment and between age and age (squared); but also between low and high education and between internal and external success factors. It is not surprising that the correlation coefficient between perception of administrative complexities and insufficient information is also in excess of .25.

4. Analysis of latent entrepreneurship

This section uses the information concerning the revealed preference for self-employment versus employment and establishes, by means of a probit regression, the impact of gender, age, education level, self-employed parent, perception of availability of financial support, perception of complexity of administrative procedures, perception of accessibility of information for start-up and whether the current economic climate is favorable, risk tolerance, internal and external success factors and country effects on the probability of wanting to be self-employed. Table 3 presents the effects of each explanatory variable on the probability of preferring self-employment using probit estimation.

To establish differences between the former communist member states and the remaining 17 ones we constructed a dummy variable which has value "1" in case an observation belongs to one of the eight former communist countries and "0" otherwise. Using this dummy variable we investigated whether the influence of any of the 13 variables depends on the region of origin. We constructed 13 new variables equal to original variable times the former communist dummy[34]. Using a cut-off point represented by a t-value of the coefficient of this new interaction variable of 1.5 we left out those variables having a t-value below 1.5. The results of this second regression using a multiplicative dummy on self-employed parents, risk tolerance, internal and external success factors is given in Table 3.

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

[Table 3 about here]

Since the prime goal of this paper is to assess whether transition economies display differences relative to countries with a longer history of market economy, the first result noteworthy is the fact that in terms of possible difference in the influence of determinants of latent entrepreneurship only risk tolerance appears as having a significantly different impact on preference for self-employment in former communist countries compared to "old" Europe and the US[35]. More precisely, these results suggest that in former communist countries the fact of being risk tolerant increases the probability of preferring self-employment more than in "old" Europe[36]. The possible policy implications of this result are linked to the aspects that determine this risk tolerance. Recalling that this variable takes value one for those who do not think that one should not start a business if there is a risk it may fail, there are at least two avenues for action. One is by acting upon the consequences of a business failure for entrepreneurs (this may change the attitudes of some into more risk tolerance) for instance through bankruptcy law or efficient transfer or closing down procedures. The second policy avenue is to directly address the risks of failure rather than its conse-

[34] A likelihood ratio test showed that there is a significant difference between former communist countries and the other ones where in the restricted model all 13 multiplicative dummies are left out and in the unrestricted model they are all included. A second likelihood ratio test showed that there is also a significant difference between the restricted model and one where the four multiplicative dummies mentioned above are used. This finding is not surprising since the influence of risk tolerance differs significantly between former communist countries and other countries.

[35] Note that the group of countries against which the transition economies are being contrasted here includes the 15 "old" EU member states, Cyprus, Malta and the US.

[36] This can be seen by the fact that the only interaction variable with a significant, and positive, coefficient is risk tolerance.

quences. Every measure that enhances management competencies and specific skills needed to successfully run a business fall in this strand. This covers a wide array of policy measures, from education and training in entrepreneurship/management to support services to SMEs to help them survive and strive in the market. Recalling from the discussion of Table 1 in section 3 that former communist countries display lower rates of risk tolerance than the remaining EU member states, measures addressing the risk of failure and/or its consequences appear as particularly useful in fostering entrepreneurship in these countries.

Another interesting question when discussing possible differences between transition and market economy countries is whether, once all personal determinants (socio-demographic and perceptions) are accounted for, there remain significant differences in latent entrepreneurship between these two groups of countries. Table 3 reports the individual country dummies' coefficients. It shows that, relative to the US, belonging to any EU country decreases the probability of preferring self-employment, with the exception of Ireland, Portugal, Cyprus and Lithuania. Clearly, this information is not sufficient to assess whether the two groups can be said to be significantly different. To this end a regression where the individual country dummies are replaced by the US and former communist country dummies (leaving "old" Europe as the base) shows that there is no significant difference between the EU transition economies and EU market economies once all determinants are accounted for. This regression also shows that the US displays higher preference for self-employment than EU market economies even after other explanatory variables are controlled for. This unreported regression where individual country dummies are replaced by the US and former communist dummies presents the same qualitative results as those in Table 3 for all other explanatory variables.

We will not comment upon the results of Table 3 in detail and refer to Grilo and Thurik (2005a) for a deeper analysis of this type of results and its policy implications. We nevertheless signal the lack of significant impact of perceived lack of financial support on actual entrepreneurship and its counterintuitive positive effect on preference for self-employment. These results are in agreement with those in Irigoyen and Grilo (2005) and in Grilo and Thurik (2005a) and have been discussed at length there. The same applies to the positive effect of perceived insufficient information on both latent and actual entrepreneurship.

5. Analysis of actual entrepreneurship

This section uses the information concerning gender, age, education level, self-employed parent, preference for self-employment, perception of availability of financial support, perception of complexity of administrative procedures, perception of accessibility of information for start-up and whether the current economic climate is favorable, risk tolerance, internal and external success factors and country effects. This is done to establish their impact on the probability of actually being self-employed. Table 3 presents the effects of each explanatory variable on the actual employment status using probit estimation.

We attempted to establish the differences between the former communist member states and the remaining 17 ones similarly to the procedure explaining preference for self-employment. Using the former communist country dummy variable we investigated whether the influence of any of the 14 variables depends on the region of origin. We constructed 14 new variables equal to the original variable times the former communist dummy. Using a cut-off point represented by a t-value of the coefficient of this new variable of 1.5 we left out those variables having a t-value below 1.5. This second regression using a multiplicative dummy on perception of administrative complexities and risk tolerance is given in Table 3[37].

[37] A likelihood ratio test showed that there is no significant difference between former communist countries and the other ones where in the restricted model all 14 multiplicative dummies are left out and in the unrestricted model they are all included.

Following the same line of reasoning as in the previous section and concentrating on the differences between transition and market economies in terms of actual entrepreneurship, the last columns of Table 3 suggests that, again, only risk tolerance plays a more important stimulating role in entrepreneurship in transition economies relative to market economies. In particular, these results indicate that for market economies risk tolerance magnifies the willingness to become self-employed, and therefore indirectly increases the probability of actually being self-employed through the positive effect of preferences, but does not directly affect actual entrepreneurship. On the contrary, for transition economies risk tolerance positively affects actual entrepreneurship both indirectly, through preferences, and directly since the dummy "risk tolerance/former communist" displays a significant positive coefficient. This result reinforces the importance of policy measures addressing this factor for transition economies.

Concerning the possible differences in actual entrepreneurship between transition and market economies once all personal determinants (socio-demographic and perceptions) are accounted for, the results suggest significant differences between these two groups of countries. Table 3 reports the individual country dummies' coefficients showing that, relative to the US, belonging to any EU country decreases the probability of being self-employed only for France and Luxembourg while for all other countries it either has no effect or it increases this probability. As discussed in the previous section this information is not sufficient to assess whether the two groups can be said to be significantly different and a regression where the individual country dummies are replaced by the US and former communist country dummies (leaving "old" Europe as the base) shows that belonging to an EU transition country rather than to an EU market economy increases the probability of being self-employed once all determinants are accounted for. This regression also shows that the US displays lower self-employment than EU market economies after other explanatory variables are controlled for. This unreported regression where individual country dummies are replaced by the US and former communist dummies presents the same qualitative results as those in Table 3 for all other explanatory variables.

The higher "intrinsic" actual entrepreneurship, i.e. after controlling for other variables, in transition economies combined with the fact that this group of countries does not display a significant difference in actual entrepreneurship rates relative to EU market economies (see Table 1) suggests that the obstacles and other socio-demographic characteristics identified in this study go a long way in holding back the entrepreneurial potential of these economies.

6. Conclusion

In the last decade research concentrated on macro-economic, labor market and trade and investment effects of the enlargement process of the EU for both the incumbent countries and the candidate countries (Observatory of European SMEs, 2005b). The present paper is an attempt to disclose differences at the micro level in the year the eight former communist countries joined the EU and some fifteen years after the transition process from a centrally planned regime to a market oriented one started. EU membership represents a major challenge for countries where less than 15 ago hardly existed or not at all (Smallbone and Rogut, 2005). In this transition process the complete reorganization of the business sector plays a key role. The development of an SME sector with its new entrants plays a key role in this reorganization phase.[38] The present paper addresses the issue of latent and actual entrepreneurial energy behind this phase. In the next three paragraphs

Since only the influence of risk tolerance differs significantly between former communist countries and other countries this test suggests that this aspect is not sufficient to create an overall statistically significant difference between the two specifications. A second likelihood ratio test showed that there is a significant difference between the restricted model and one where the two multiplicative dummies mentioned above are used. The latter finding is not surprising since the influence of risk tolerance differs significantly between former communist countries and other countries.

[38] Long before any anticipation of former communist countries joining the EU D'Andrea Tyson, Petrin and Rogers (1994) already suggested a list of policy directives promoting entrepreneurship in Eastern Europe.

some remarks will be made concerning the three goals of the present paper: the investigation of the differences of the levels of latent and actual entrepreneurship, of the characteristics of those involved and of the determinants of these involvements between old and new member states.

A very clear regularity found in these data is the much higher proportion of the respondents with a declared preference for self-employment than of those actually involved in entrepreneurial activities in every country. This discrepancy between latent and actual entrepreneurship is higher in the former communist Europe than in the remaining EU member states.

This stronger discrepancy in transition economies may be the result of more deeply felt obstacles to entrepreneurial ventures. Data show that, with the exception of start-up information, the former communist Europe generally identifies the remaining three obstacles (lack of financial support, complex administrative procedures and unfavorable economic climate) more often than the non-communist Europe.[39] In terms of internal versus external success factors there is a very clear difference between transition economies and market economies: while in the US and in "old" Europe internal success factors dominate external ones, in transition countries the opposite is observed. This suggests that despite the regime switch, the population of former communist countries still believes strongly in the role of external factors in determining the success of a business. Concerning risk tolerance, the population in transition economies reveals a more cautious attitude than that of the "old" Europe or the US.

Once the various socio-demographic and perception variables are allowed to play their role in explaining entrepreneurship rates and their influence is allowed to differ between transition and market economies, we find that risk tolerance has a significantly higher influence on both latent and actual entrepreneurship in transition economies than in market economies. This result opens the discussion of the importance for these countries of policy measures directed at the risks and consequences of business failure. Another important result is that, once socio-demographic and perception variables are controlled for, there is a significantly higher probability of being self-employed for a resident of a transition economy than for someone living in an EU market economy while such difference is not found for latent entrepreneurship.

Despite the policy implications of these results a word of caution is in order. Even if entrepreneurship is conceivably linked to an enhanced economic performance this is no automatic justification for public policy intervention. The economic rationale for public intervention relies on the existence of distortions and market failures. In particular, the presence of externalities is an important element leading to market failures in the context of entrepreneurship. A first step in guiding policy action is to identify possible factors behind lower entrepreneurial energy or its materialization. This paper is an attempt in this direction. In designing policy measures a further effort has to be made to gauge whether the factors behind lower entrepreneurship result indeed from distortions or market failures.[40] The concept of a "level playing field" for businesses addresses a possible source of distortions in the treatment of different types of enterprises (according to their age, size, sector or origin). The establishment of a "level playing field" is therefore an aim of enterprise policy. Access to finance, taxation rules, labor and market regulations as well as administrative burdens fall within these preoccupations.

[39] All four obstacles play a lesser role in the US when compared to Europe.

[40] Note however that even if such failures exist it still needs to be discussed whether public intervention does not create further distortions when addressing the original ones.

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Table 1 - Distribution of variables by country (2004)

	Actual entrepreneurship	Latent	Low education	High	Self-employed parents	Financial support	Administrative complexities	Sufficient information	Economic climate	Risk tolerance	Intern success factors	Extern	Observations
Belgium	20	37	7	44	29	76	75	52	69	46	52	23	428
Denmark	14	39	3	70	29	52	81	31	50	51	35	18	195
Germany	19	46	8	45	24	74	69	40	76	46	28	19	490
Greece	42	57	18	44	54	88	71	60	80	62	41	12	451
Spain	18	59	22	40	31	80	76	56	62	59	60	14	312
France	10	42	8	44	29	82	75	56	71	62	55	14	472
Ireland	24	62	12	32	44	68	70	34	41	69	63	14	214
Italy	21	51	29	22	35	85	74	54	85	55	59	14	444
Luxembourg	10	52	10	42	26	79	65	47	62	47	37	20	219
Netherlands	20	36	6	43	32	47	60	17	61	59	39	21	471
Austria	21	48	24	19	32	70	59	35	61	36	40	24	168
Portugal	19	63	37	28	35	86	84	72	88	42	35	39	381
Finland	25	33	4	68	35	40	57	22	43	61	48	21	195
Sweden	14	39	5	46	28	74	70	45	67	52	27	41	222
UK	19	47	16	25	29	59	64	37	45	60	33	15	420
Cyprus	26	60	21	35	32	79	58	49	68	44	53	15	219
Malta	14	49	13	17	25	80	60	29	77	31	37	18	146
Czech Republic	20	38	7	14	9	78	73	37	82	37	10	29	435
Estonia	17	58	7	23	4	77	68	34	63	37	31	18	163
Latvia	9	48	5	28	6	95	78	34	69	44	18	43	197
Lithuania	12	61	3	30	3	85	88	48	76	29	7	37	161
Hungary	21	49	7	31	8	90	80	54	72	17	5	5	368
Poland	28	59	3	36	31	90	70	55	78	38	28	46	302
Slovenia	11	38	17	27	21	90	87	53	79	28	28	12	149
Slovakia	23	43	4	17	6	94	77	50	79	40	18	47	191
USA	21	68	2	57	29	70	59	36	55	75	69	23	501

Source: Eurobarometer 160.

Table 2 - Correlation matrix (2004)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Actual self-employment	**1.000**														
2. Pref. for self-employment	**0.301****	**1.000**													
3. Male	**0.127****	**0.148****	**1.000**												
4. Age	**0.153****	**-0.024***	**0.042****	**1.000**											
5. Age/100 (squared)	**0.157****	**-0.014**	**0.049****	**0.986****	**1.000**										
6. Low education	**0.069****	**0.017**	**0.016**	**0.185****	**0.196****	**1.000**									
7. High education	**-0.012**	**0.001**	**-0.024***	**0.003**	**-0.004**	**-0.279****	**1.000**								
8. Self-employed parents	**0.181****	**0.099****	**0.019**	**0.030****	**0.040****	**0.050****	**0.060****	**1.000**							
9. Financial support	**-0.009**	**0.026***	**-0.054****	**-0.024***	**-0.020**	**0.053****	**-0.084****	**-0.007**	**1.000**						
10. Admin. complexities.	**-0.057****	**-0.046****	**-0.026***	**0.042****	**0.043****	**0.054****	**-0.070****	**-0.017**	**0.202****	**1.000**					
11. Sufficient information	**0.022***	**0.016**	**-0.001**	**0.032****	**0.034****	**0.102****	**-0.073****	**0.009**	**0.215****	**0.270****	**1.000**				
12. Economic climate	**-0.013**	**-0.055****	**-0.041****	**-0.014**	**-0.014**	**0.069****	**-0.100****	**-0.008**	**0.264****	**0.171****	**0.179****	**1.000**			
13. Risk tolerance	**0.047****	**0.117****	**0.032****	**-0.083****	**-0.080****	**-0.081****	**0.169****	**0.065****	**-0.136****	**-0.139****	**-0.151****	**-0.183****	**1.000**		
14. Internal success factors	**0.040****	**0.076****	**0.029***	**-0.003**	**0.004**	**0.033****	**0.050****	**0.062****	**-0.076****	**-0.045****	**-0.012**	**-0.117****	**0.146****	**1.000**	
15. External success factors	**0.001**	**-0.038****	**0.019**	**0.019**	**0.020**	**0.013**	**-0.068****	**-0.013**	**0.065****	**0.036****	**0.060****	**0.100****	**-0.090****	**-0.422****	**1.000**

Source: Eurobarometer 160.

*indicates significance at the 5% level; ** indicates significance at the 1% level.

Table 3 – Effects on the probability of preferring to be self-employed and on the probability of being self-employed (2004)

	Preference for self-employment			Actual self-employment		
	Coefficient	Std. Error	dF/dx	Coefficient	Std. Error	dF/dx
Constant	0.453*	0.174	0.168*	-2.987*	0.218	-0.681*
Male	0.374*	0.029	0.138*	0.251*	0.037	0.057*
Age	-0.021*	0.008	-0.008*	0.030*	0.009	0.007*
Age/100 (squared)	2.236*	0.880	0.827*	-0.110	1.023	-0.252
Low education	0.008	0.050	0.003	0.134*	0.058	0.031*
High education	-0.036	0.033	-0.013	-0.049	0.041	-0.011
Self-employed parents	0.250*	0.036	0.092*	0.475*	0.039	0.108*
Self-employed parents former comm.	0.189	0.103	0.070	-	-	-
Perc. lack of financial support	0.112*	0.038	0.042*	-0.019	0.045	-0.004
Perc. administrative complexity	-0.106*	0.034	-0.039*	-0.139*	0.046	-0.032*
Perc. adm. complexity former comm.	-	-	-	-0.159	0.093	-0.036
Perc. insufficient info	0.063*	0.032	0.023*	0.099*	0.039	0.023*
Perc. unfavorable economic climate	-0.119*	0.034	-0.044*	0.026	0.042	0.006
Preference for self-employment	-	-	-	0.941*	0.039	0.215*
Risk tolerance	0.213*	0.035	0.079*	0.022	0.044	0.005
Risk tolerance former comm.	0.254*	0.072	0.094*	0.218*	0.087	0.050*
Internal success factors	0.135*	0.039	0.050*	0.114*	0.044	0.026*
Internal success factors former comm.	0.134	0.088	0.050	-	-	-
External success factors	-0.038	0.048	-0.014	0.114*	0.050	0.026*
External success factors former comm.	0.174	0.096	0.064	-	-	-
Belgium	-0.734*	0.088	-0.272*	0.232*	0.104	0.053*
Denmark	-0.618*	0.111	-0.229*	0.004	0.143	0.001
Germany	-0.411*	0.085	-0.152*	0.198	0.102	0.045
Greece	-0.310*	0.088	-0.115*	0.730*	0.097	0.166*
Spain	-0.200*	0.095	-0.074*	0.000	0.115	0.001
France	-0.622*	0.085	-0.230*	-0.235*	0.111	-0.054*
Ireland	-0.209	0.108	-0.077	0.128	0.125	0.029
Italy	-0.406*	0.087	-0.150*	0.121	0.103	0.028
Luxembourg	-0.331*	0.106	-0.123*	-0.389*	0.148	-0.089*
Netherlands	-0.747*	0.087	-0.276*	0.313*	0.102	0.071*
Austria	-0.436*	0.117	-0.161*	0.199	0.142	0.045
Portugal	-0.047	0.093	-0.017	-0.053	0.110	-0.012
Finland	-0.830*	0.113	-0.307*	0.480*	0.131	0.109*
Sweden	-0.636*	0.106	-0.235*	0.002	0.135	0.000
United Kingdom	-0.494*	0.089	-0.183*	0.165	0.106	0.038
Cyprus	-0.164	0.106	-0.061	0.280*	0.121	0.064*
Malta	-0.407*	0.123	-0.151*	-0.020	0.158	-0.005
Czech Republic	-0.917*	0.151	-0.339*	0.503*	0.134	0.115*
Estonia	-0.362*	0.164	-0.134*	0.208	0.163	0.047
Latvia	-0.643*	0.156	-0.238*	-0.081	0.176	-0.019
Lithuania	-0.251	0.168	-0.093	0.032	0.177	0.007
Hungary	-0.583*	0.162	-0.216*	0.501*	0.137	0.114*
Poland	-0.442*	0.143	-0.164*	0.459*	0.134	0.105*
Slovenia	-0.951*	0.172	-0.352*	-0.055	0.190	-0.013
Slovakia	-0.787*	0.157	-0.291*	0.539*	0.158	0.123*
Observations	7914			7914		
LR chi2 / Degrees of freedom	734.420		42	1458.826		41
Prob>chi2	0.000			0.000		
LogLikelihood	-5117.674			-3226.887		
Pseudo R2	0.067			0.184		

Source: Eurobarometer 160.
*indicates significance at the 5% level.