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Determinants of entrepreneurship in Europe

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Abstract: This paper presents an *Eclectic Framework* explaining (developments in and determinants of) entrepreneurship incorporating different streams of literature and spanning different disciplines. The *Eclectic Framework* integrates factors shaping the demand for entrepreneurship on the one hand, with those influencing the supply of entrepreneurs on the other hand. It also creates insight into the role of public policy identifying the channels through which the demand or the supply of entrepreneurship can be shifted. In its empirical part the present paper estimates a multinomial logit using survey data from the 15 EU member states, Norway, Iceland, Liechtenstein and the US to establish the effect of demographic and other variables on various entrepreneurial engagement levels. Other than demographic variables, the set of explanatory variables used includes the perception by respondents of administrative complexities, of availability of financial support, a rough measure of risk tolerance, the respondents' preference for self-employment and country specific effects. The most striking result is that the perception of lack of financial support has no discriminative effect across the various levels of entrepreneurial engagement.

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1. INTRODUCTION

When defining or measuring entrepreneurship, scholars have proposed a broad array of definitions and measures (Hébert and Link, 1989; Van Praag, 1999). Similarly, the origins and determinants of entrepreneurship span a wide spectrum of theories and explanations (Brock and Evans, 1989; Carree, 1997; Carree, Van Stel, Thurik and Wennekers, 2002; Gavron, Cowling, Holtham and Westall, 1998; OECD, 1998a). Finally, the impact of entrepreneurship on economic development is controversial (Baumol, 1990; Thurik, 1996; Audretsch and Thurik, 2000 and 2001; Carree, Van Stel, Thurik and Wennekers, 2002). Despite the lack of consensus with respect to different aspects of entrepreneurship scholars appear to agree that the level of entrepreneurial activity varies systematically both across countries and over time (Rees and Shah, 1986; Blanchflower, 2000; Blanchflower and Meyer, 1994; De Wit and Van Winden, 1989).

Scholars seem to have reached consensus about the 1980s being the turning point when entrepreneurship rates reversed their long-term downward trend (Blau, 1987; Acs and Audretsch, 1993; Acs, Carlsson and Karlsson, 1999; Carree and Thurik, 2000a; Carree, Van Stel, Thurik and Wennekers, 2001). Large firms have been subjected to waves of downsizing and restructuring and entrepreneurship has been (re)-discovered (Carree, 1997; Gavron, Cowling, Holtham and Westall, 1998; Thurik, 1999; Wennekers and Thurik, 1999). In the 1990s, careful systematic empirical evidence documented the shift in economic activity that was taking place away from large firms to small, predominantly young enterprises. While it is clear that such a shift has taken place, it is less clear why it has taken place.

Comparing the level of entrepreneurship across nations is difficult for several reasons. *First*, there is no generally accepted definition of entrepreneurship (OECD, 1998a; Van Praag, 1999; Lumpkin and Dess, 1996; Bull and Willard, 1993). Entrepreneurship is a multidimensional concept: its definition depends largely on the focus of the research undertaken. *Second*, and related to the first argument, measurement and comparison of the level of entrepreneurship for different time periods and countries is complicated by the absence of a universally agreed upon set of indicators (OECD, 1998a). In this study we will use the terms business ownership and self-employment as equivalent to entrepreneurship. The term self-employment refers to people who provide employment for themselves as business owners rather then seeking a paid job. A different perspective focuses on the so-called nascent and start-up activity, as well as on the net entry rate and the turbulence rate (total of entry and exit).

In the present paper we address the issue of why variations in entrepreneurship occur, making use of an *Eclectic Framework* of entrepreneurship first introduced in Audretsch, Thurik, Verheul and Wennekers (2002). The purpose of the *Eclectic Framework* is to provide a unified framework for understanding and analyzing what determines entrepreneurship. The *Eclectic Framework* of entrepreneurship integrates the different strands from the relevant fields into a unifying framework. At the heart of the *Eclectic Framework* is the integration of factors shaping the demand for entrepreneurship on the one hand, with those influencing the supply of entrepreneurs on the other hand. The *Eclectic Framework* also creates insight into the role of government policy by identifying the channels through which policy instruments shift either the demand or the supply sides (curves).

In the empirical part of this paper we present a multinomial logit model which estimates the influence of the explanatory variables on various entrepreneurial engagement levels using survey data (2002 and 2003) from the 15 EU member states, Norway, Iceland, Liechtenstein and the US. These engagement levels range from “never though about starting a business” to “thinking about it”, “taking steps for starting up”, “having a young business”, “having an older business” and “no longer being an entrepreneur”. Other than demographic variables such as gender, age and education level, the set of explanatory variables used includes the perception by respondents of administrative

complexities, of availability of financial support, a rough measure of risk tolerance, the respondents' preference to be self-employed and country specific effects.

2. DETERMINANTS OF ENTREPRENEURSHIP: AN ECLECTIC APPROACH

2.1 Eclectic Framework

A broad range of determinants explains the level of entrepreneurship. Moreover, it is generally accepted that policy measures can influence the level of entrepreneurship (Storey, 1994 and 1999; EZ, 1999). Several studies have been conducted to assess and explain the level of entrepreneurship (Reynolds, Hay and Camp, 1999; EIM/ENSR, 1996; Carree, Van Stel, Thurik and Wennekers, 2002; Acs, Audretsch and Evans, 1994). Moreover, several models have been developed that create insights into the origin of entrepreneurship and its consequences. These models include the model developed for the Global Entrepreneurship Monitor by Reynolds et al. (1999 and 2000), the Entrepreneurship Policy Typology proposed by Stevenson and Lundström (2001) and the Country Institutional Profile by Busenitz et al. (2000). Despite substantial differences these models share the purpose of developing a better understanding of cross-country variations in entrepreneurship. The *Eclectic Framework* proposed in the present study differs from these models in that it explicitly deals with macro conditions (economic and demographic), the individual decision making process, the market, and government policy. While the GEM model (Reynolds et al., 1999 and 2000) devotes attention to the individual decision making process, making a distinction between opportunities and capacity, the *Eclectic Framework* discusses the process by which an individual deliberates upon different activities in more detail. Moreover, it acknowledges that – when there are market imperfections – the government can intervene in the economic process following different routes. Although the Entrepreneurship Policy Typology (Stevenson and Lundström, 2001) also makes a distinction between different types of government policy influencing entrepreneurship, it does not link policy to other determinants of entrepreneurship, nor does it provide a direct rational for the government to intervene in the economic process. In the latter respect the *Eclectic Framework* makes a distinction between the actual and the equilibrium rate of entrepreneurship. The different components of the *Eclectic Framework* will now be discussed in more detail.

Discussion of the determinants of entrepreneurship cannot be confined to one discipline; psychology studies have focused on motives and character traits of (potential) entrepreneurs, sociological studies have focused on the (collective) background of entrepreneurs (margination theory), economic studies have focused on the impact of the economic climate - including scarcity and opportunity costs and yields - and technological developments on entrepreneurial activity, and the demographic perspective focuses largely on the impact of the demographic composition on entrepreneurship. From a regulatory perspective, the government can influence entrepreneurship both directly through support policies or establishment legislation and indirectly through policies not directly aimed at influencing the level of entrepreneurship (De Koning and Snijders, 1992; Storey, 1994 and 1999; European Commission, 2000; Audretsch and Thurik, 2001).

The determinants of entrepreneurship can also be studied according to level of analysis: micro, meso and macro level of entrepreneurship. Studies at the micro level have the individual entrepreneur or business as object of study and focus on the decision-making process by individuals and their motivation to become self-employed.[1] Research into the decisions of individuals to become either wage- or self-employed focuses primarily on personal factors, such as psychological traits, formal education and other skills, financial assets, family background and previous work experience (Van Praag, 1996; De Wit and Van Winden, 1991; Evans and Leighton, 1989b). Studies at the meso level of entrepreneurship, which use sectors of industry as unit of observation, often

[1] See Blanchflower (2000) for a review of studies.

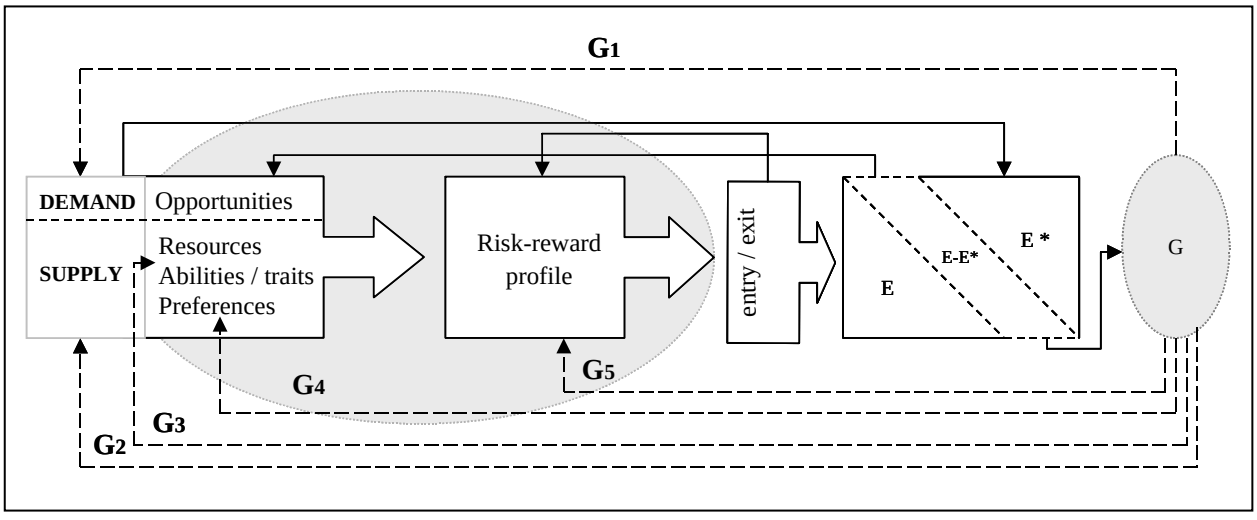
focus on market-specific determinants of entrepreneurship, such as profit opportunities and opportunities for entry and exit (Bosma, Zwinkels and Carree, 1999; Carree and Thurik, 1996). The macro perspective tries to aggregate the arguments at the micro and meso level and focuses on a range of environmental factors, such as technological, economic and cultural variables (Hofstede, Noorderhaven, Wennekers, Thurik, Uhlaner and Wildeman, 2004; Noorderhaven, van Stel, Wennekers and Thurik, 2004; Uhlaner and Thurik, 2004; Carree, Van Stel, Thurik and Wennekers, 2001) as well as government regulation (OECD, 1998a). The present study uses both the country level of analysis and the individual level and attempts to explicitly link the country level to the individual level.

The level of entrepreneurship in a particular country can be explained making a distinction between the supply side (labor market perspective) and the demand side (product market perspective; carrying capacity of the market) of entrepreneurship (Bosma, Zwinkels and Carree, 1999). Elsewhere this distinction is sometimes referred to as that between push and pull factors (Vivarelli, 1991). The demand side of entrepreneurship represents the opportunities for entrepreneurship. It can be viewed from a consumers' and from a firms' perspective. Within the first perspective, diversity of consumer demand is important. The greater this diversity, the more room is created for (potential) entrepreneurs. Within the second perspective, focus is on the industrial structure (sector structure, outsourcing, networking). The opportunities are influenced strongly by technological developments and government regulation. The supply side of entrepreneurship is dominated by the characteristics of the population, i.e., demographic composition. Key elements are the resources and abilities of individuals and their attitudes towards entrepreneurship, i.e., preferences. The cultural and institutional environment also influences the supply side of entrepreneurship.

When studying the impact of different factors on entrepreneurship it is important to distinguish between the actual rate of entrepreneurship resulting from the short-term interplay of supply and demand, and a long-term equilibrium rate determined by the state of economic development.

An *Eclectic Framework* is used to explain the role of the government that incorporates different disciplinary approaches, levels of analysis, a distinction between the demand and supply side as well as a distinction between the actual and the 'equilibrium' level of entrepreneurship. These distinctions are depicted in Figure 1. The *Eclectic Framework* refers to both the decisions of individuals to start up a firm and the decisions of incumbent firm owners to remain in business or to exit. Both elements will be covered in the empirical part of the present paper.

Figure 1: Eclectic Framework explaining entrepreneurship



The process by which the actual rate of entrepreneurship (E) is established involves both macro and micro components. On the demand side, entrepreneurial opportunities are created by the market

demand for goods and services, whereas the supply side generates (potential) entrepreneurs that can seize the opportunities provided they have the resources, abilities and preferences to do so. Distinction between demand and supply factors is customary when explaining the level of entrepreneurship (Blanchflower, 2000; Storey, 1994, Chapter 2). Supply and demand side factors create conditions for the entrepreneurial decision made at the individual level. This distinction between environmental (macro) and individual (micro) characteristics is also employed in the *OECD Employment Outlook* (2000) arguing that self-employment depends upon conditions as well as skills and spirit of the (potential) entrepreneur[2].

2.2 Demand side

The demand for entrepreneurship is determined by a combination of factors, including the stage of economic development, globalization and the stage of technological development. These factors influence the industrial structure and the (diversity in) market demand leading to opportunities for entrepreneurship. The demand side factors are highly interrelated and can be considered, to a certain extent, general factors that apply to all countries.

Technological developments favor small-scale production through cheaper capital goods, a decreasing minimum efficient scale and possibilities for flexible specialization (Piore and Sabel, 1984; Carlsson, 1989; Loveman and Sengenberger, 1991). The (marginal) costs of transforming information across geographic space have dramatically decreased. Information can be transferred through email, fax machines, and cyberspace (Audretsch and Thurik, 2000 and 2001). As a consequence, market-based coordination is cheaper relative to internal coordination, leading to a decline in firm size and diversification (Jovanovic, 1993). Technological advancements have induced a reallocation of resources towards new products, leading in turn to a more intense demand for entrepreneurship (Casson, 1995). Several studies show that the number of firms tends to rise in the early stages of the product life cycle (Klepper, 1996; Carree and Thurik, 2000b; Klepper and Simons, 1999). In addition, technological developments have resulted in information exchange and communication without boundaries (globalization) and have led to higher levels of prosperity, also influencing entrepreneurship.

Globalization involves the integration of world markets and, accordingly, offers opportunities for exploiting scale. The disappearance of trade barriers leads to an increase in international competition and variability in sales. Small firms can better absorb this risk adopting production technologies that permit them to adapt quickly to changes in market demand (Carree, 1997)[3]. Globalization indirectly influences entrepreneurship through the *diversity in demand*, resulting from the exposure of people to foreign products. People are increasingly aware of available consumer goods all over the world, creating new 'global' wants and needs. In the last decades there has been an increased demand for tailor-made and individualized goods and services. Next to the process of globalization, expressing itself through an increase in international competition and cross-cultural influences (Acs, Audretsch and Evans, 1994), this demand for variety can be attributed to an increasing prosperity (Jackson, 1984)[4].

The impact of *economic development* on entrepreneurship is ambiguous. On the one hand, economic development is accompanied by an increase in wages or an improved system of social

[2] In the OECD Employment Outlook (2000) 'conditions' include access to finance, administrative burdens, taxation and social security. 'Skills' include human capital and managerial skills and 'spirit' refers to personal choice (OECD, 2000). Within our framework, individual characteristics are defined broader, including the (individual) access to capital.

[3] The latter argument reveals the interrelationship between globalization and information technology. Globalization creates opportunities for small firms, provided that entrepreneurs use other or new (production) technologies, whereas information technology developments enable globalization (Audretsch and Thurik, 2000).

[4] An increasing prosperity creates preferences for goods and services fulfilling higher needs. Accordingly, a large number of niches has been created, offering opportunities to new entrepreneurs (Wennekers, 1997). Many speciality companies have entered the market place. Moreover, flexible specialization enables small firms to respond adequately to a change in consumer demands (Loveman and Sengenberger, 1991).

security. Rising real wages raise the opportunity costs of self-employment making wage employment more attractive (EIM/ENSR, 1996)[5]. Several studies show a negative effect of economic development on self-employment (Kuznetz, 1966; Schultz, 1990; Bregger, 1996). On the other hand it is observed that, since the 1980s, per capita income has a positive impact on the self-employment rate in most developed countries (Storey, 1999, p.26; Audretsch, Carree, and Thurik, 2001). Increasing wealth leads to higher consumer needs. The demand for a variety of products and services increases and small firms are well equipped to supply these new and specialized goods. Moreover, economic development tends to be accompanied by the emergence of new industries and technologies, creating opportunities for small firms. In addition, the employment share of the service sector – characterized by small firm size - increases with per capita income.

Several aspects of a changing *industrial structure* affect entrepreneurship: an increasing number of service firms, outsourcing and clusters. Several stages of economic development can be distinguished, each characterized by different levels of prosperity and self-employment (Acs, Audretsch and Evans, 1994). In the first stage the economy specializes in the production of agricultural products and small-scale manufacturing. In the second stage the economy shifts from small-scale agricultural production towards a large-scale manufacturing-oriented economy. In the third stage the economy shifts from manufacturing towards services. Countries in the Western world have experienced an increase in the number of service firms. The service sector is characterized by low initial capital requirements, thereby minimizing barriers to entry and making start-up easy. Most services are characterized by a relatively small average firm size (EIM/ENSR, 1997).

Although in the 1970s large business prevailed, exploiting economies of scale through mass-production, as of the 1980s large firms started concentrating on core competencies and outsourcing. The tendency of large firms to externalize activities not belonging to their core business or that are considered less profitable or more risky, creates opportunities for entrepreneurship, stimulating start-ups of both subsidiaries and new enterprises (Suarez-Villa, 1998). In addition, the number of corporate ventures, spin-offs and divestments has increased (Wennekers and Thurik, 1999).

Clusters – geographically agglomerated industries where there is both cooperation and competition between businesses (Audretsch and Thurik, 2001) – can foster entrepreneurship. High-tech developments are usually better supported by a group of cooperating businesses than by one or several large businesses because tacit knowledge is involved that is more easily transferred between cooperating firms. Not only high-tech clusters can stimulate new venture development; informal networking in general can impact the level of entrepreneurial activity, enhancing business development (OECD, 1998a). Thus, clusters create opportunities for new ventures and improve the competitiveness of established small firms.

2.3 Supply Side

The supply side of entrepreneurship is determined by the characteristics of the population, such as size, composition, growth and spatial dispersion. The dispersion of the population is expressed through population density and the urbanization rate. Composition factors include age structure, number of immigrants and women in the population or in the labor market. Some people are more likely to become self-employed than others. In addition, income levels, disparity and unemployment (Audretsch, Carree and Thurik, 2001) play an important role on the supply side of entrepreneurship, by influencing the career choice.

Population growth has a positive, long-term impact on entrepreneurship. Countries with an expanding population and work force are found to have a growing share of self-employed people in

[5] Moreover, as wages increase with economic development, fewer people are willing to leave 'secure' jobs (Iyigun and Owen, 1988) and marginal entrepreneurs may be induced to become employees which pushes up the average size of firms (Lucas, 1978).

the work force (ILO, 1990)[6]. If population growth is due to immigration, the composition of the population is altered. Ethnic origin is known to influence the choice between self-employment and paid labor (Storey, 1994). In addition, population growth may be accompanied by a downward pressure on wages and an increase in future demand. Expectations of future opportunities are likely to stimulate start-ups (Reynolds et al., 1999).

The influence of *population density*, as measured by the urbanization rate, on entrepreneurship is ambiguous. On the one hand, urban areas, with a high population density, provide appropriate infrastructure for business start-up and development (Brüderl and Preisendörfer, 1998; Storey, 1994). Research centers and education institutes, often located in cities, produce an educated work force. In addition, the establishment of firms in a certain area is likely to attract other businesses because of the opportunities of cooperation, spillover effects and the 'signaling effect' (Audretsch and Fritsch, 2000; OECD, 1998a)[7]. On the other hand, population density increases the opportunity to take advantage of economies of scale.

The *age structure* of the population influences entrepreneurship because the likelihood of becoming self-employed varies with age. Younger people are less likely to be(come) self-employed (Peters et al., 1999; Brock and Evans, 1986; Acs et al., 1994). Many entrepreneurs start a business between the age of 25 and 40 years old (Storey, 1994; Van Gelderen, 1999). At the macro-level, Evans and Leighton (1989a) show that a declining age of the population has a negative effect on the level of self-employment, whereas Reynolds et al. (1999) report that countries with more individuals in the age class of 25-44 years old have more start-ups.[8]

Immigration has consequences for the composition and growth of the population as immigrant families usually have more children and a younger age structure due to their religious and cultural beliefs. Next to this indirect effect, through demographic factors, immigration can have a more direct effect on the number of self-employed because the tendency and/or ability to become self-employed differs between native people and immigrants (Borooah and Hart, 1999; Bates, 1997). Entrepreneurial activities of immigrants may be influenced by specific factors, not applying to native people (EIM/ENSR, 1993). Immigrants often have problems with the native behavior, language and attitudes. Because of adjustment problems immigrants have more difficulties finding a job (SER, 1998). Starting a business is a means of earning a living, as well as a way of obtaining recognition and social acceptance (Veciana, 1999). This is in line with the 'margination theory' stating the importance of an (negative) event in triggering the start-up of new firms[9]. On the contrary, Clark and Drinkwater (2000) find that because of language problems immigrants are less likely to be self-employed[10]. Moreover, because ethnic entrepreneurs tend to serve their own community with products from the country of origin, this can lead to over-saturation of the sector and excess failure rates (Van den Tillaart and Poutsma, 1998).

The likelihood of women becoming self-employed increases with a higher *participation rate of women*[11]. Although the labor market participation of women increased in most developed countries in the last decades (OECD, 2000; OECD, 1998b), the share of self-employed women still lags

[6] Moreover, countries experiencing low population growth are found to have a diminishing share of entrepreneurs in the labor force (ILO, 1990).
[7] The 'signalling' effect refers to the fact that the mere establishment of businesses in a certain area is perceived as an indication of the attractiveness of this area by other businesses.
[8] Age structure also influences entrepreneurship through other factors, such as financial resources and networks, which depend upon a person's age (Peters et al., 1999).
[9] According to this theory, the creation of an enterprise is not always the result of a deliberate and intentional act or a result of rational decision making. For most people, starting a business begins with the shattering of a previous life pattern.
[10] Usually immigrants are not familiar with start-up procedures and there is a lack of trust on the part of other business parties, such as investors and suppliers, who consider a lack of knowledge of the home market, language and customs an important handicap for doing business.
[11] See Verheul, van Stel and Thurik (2004).

behind that of men[12]. The lower self-employment rates of women may be caused by financial constraints – women often have less collateral because of discontinuous labor market histories (OECD, 1998a, Hisrich and Brush, 1987; Riding and Swift, 1990)[13], or time constraints caused by the combination of household and work responsibilities (Loscocco, 1991)[14]. Participation of women may also influence entrepreneurship through exit rates. Several studies find that female entrepreneurs show lower performance and survival rates than their male counterparts (Du Rietz and Henrekson, 200l; Rosa et al., 1996)[15]. Other studies, such as that of Kalleberg and Leicht (1991), contradict this. In Section 3 we discuss the role of gender in both preferences for entrepreneurship and in actual status using micro-level data from a recent EU population survey.

The influence of *income level* on entrepreneurship is ambiguous. High wages raise the opportunity costs of self-employment, but are also an indicator of an affluent economy with above average survival rates of small businesses. Moreover, high-income levels, resulting from sustained high wage levels, enable business founders to raise start-up capital easily and at low cost. In addition, *income disparity* can influence entrepreneurship. On the supply side, high income disparity may push low wage earners into self-employment because the opportunity costs of entrepreneurship are relatively low for those in the low end. High income disparity may also provide people at the high end of the income distribution with the financial means to cover the risks associated with self-employment and to start a viable business. On the demand side, high income disparity is likely to cause a more differentiated demand for goods and services[16]. Based on a cross-section of 20 OECD-countries, Ilmakunnas, Kanniainen and Lammi (1999) show that income inequality positively influences the rate of self-employment.

As with income level, *unemployment* also has an ambiguous impact on self-employment. Unemployment has consequences for both the valuation of different types of employment and the number of entrepreneurial opportunities created on the demand side[17]. At the macro level, a high rate of unemployment can negatively impact the level of entrepreneurship through a decrease in the number of available business opportunities, induced by a depressed economy. Moreover, the failure rate of established businesses rises because of low revenues (EIM/ENSR, 1996). At the individual level, (the risk) of unemployment is likely to have a positive effect on the level of entrepreneurship by reducing the opportunity costs of self-employment. When there is little chance of finding paid employment, unemployed people have no other option than becoming self-employed (EIM/ENSR, 1996).[18].

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[12] See Verheul, van Stel and Thurik (2004).

[13] Evidence of financial problems of female entrepreneurs is mixed (Verheul and Thurik, 2001). Several studies argue that female entrepreneurs have equal or even better opportunities to raise financial capital than male entrepreneurs (Buttner and Rosen, 1989; Rosa et al., 1994).

[14] On the other hand, women are often attracted to self-employment by the flexible time schedules it offers them (Buttner and Moore, 1997; Brush, 1992).

[15] This may be attributed to the business sector in which female entrepreneurs engage and/or the time they spend running a business. Women are more inclined to start a business in retailing and services, sectors with relatively low capital investment, more possibilities for part-time entrepreneurship, and a lower expected life span of firms (EIM/ENSR, 1996). Moreover, women often have other activities next to their business, paid or unpaid, leading to time constraints restricting their entrepreneurial activities (Stigter, 1999; Bruce, 1999).

[16] Moreover, there may be a two-way causation in the relationship between entrepreneurship and income disparity as entrepreneurship is expected to increase income disparity. OECD (2000, p. 169) provides extensive empirical evidence supporting the argument that the income distribution of the self-employed tends to be less equal than that of wage and salary earners.

[17] When explaining spatial variations in rates of new firm formation, Storey (1994, p. 69) argues that: "…if unemployment is high, then more individuals would be prepared to offer themselves for self-employment, because of the shortage of alternative job opportunities. On these grounds high rates of, or increases in, unemployment would lead to higher rates of new firm formation. Yet, high rates of unemployment also reflect a lack of buoyancy in the economy, perhaps a lack of 'enterprise' in the population, and therefore a shortage of demand".

[18] There is evidence of a two-way causation in the relationship between unemployment and self-employment. On the one hand a high rate of self-employment can lead to a high growth level of the economy as a whole and to subsequent low levels of unemployment (Audretsch and Thurik, 2000; Carree, Van Stel, Thurik and Wennekers, 2001).On the other hand a low level of unemployment can be positively linked to entrepreneurship because it is an indicator of a thriving economy with ample opportunities for entrepreneurship (Audretsch, Carree and Thurik, 2001).

2.4 Individual Decision-Making

Demand and supply side factors at the macro level create conditions for the entrepreneurial decision at the individual level. These conditions consist of opportunities, 'external' resources (e.g., financial and technological resources and contacts in networks) and 'internal' individual characteristics (e.g., include ability, personality characteristics and preferences, i.e., values and attitudes).[19]

Opportunities[20] are created by the characteristics of the market. Opportunities for new products arise due to product or process innovations and when customers develop different wants and needs due to increasing income levels or technological development. Opportunities for new markets arise when the supply of existing goods and services can be extended to new (geographical) markets. New markets also arise with the growing tendency towards outsourcing of activities (Carlsson, 1989; Jovanovic, 1993). Moreover, opportunities for entrepreneurship depend upon the scope of the public versus that of the private sector, as well as that of the self-service and the informal or 'grey' sector. Finally, opportunities arise when the number of entrepreneurs is not in line with the optimal or equilibrium number of entrepreneurs.

Whereas opportunities are created at the demand side, the supply side generates (potential) entrepreneurs that can perceive and seize these opportunities provided they have the external and internal 'resources' to do so. Resources include financial capital and other physical means as well as (potential) assistance and information from human contacts (within networks) necessary to start a viable business. Financial means either refer to start-up capital in the form of savings, gifts and inheritance, or borrowing capacity based on real estate, reputation or former accomplishments[21]. Resources are considered external to the individual since we distinguish them from 'internal' individual characteristics, such as abilities, personality traits and preferences[22].

Ability has been defined as "an individual's capacity to perform the various tasks in a job" (Robbins, 1998, p. 46). It includes both acquired skills and knowledge and aptitude, i.e., the capability of learning, the latter of which is inborn (Robbins, 1998)[23]. For an entrepreneurial opportunity to materialize it is important that an individual has the ability to perceive the opportunity and possesses the knowledge and skills needed to act upon this perception. Adequate entrepreneurial skills and knowledge, such as managerial skills and knowledge of marketing and human resource management, can be developed through labor market experience or the start-up or management of a previous business. In addition, an individual needs to be able to adequately assess future rewards and risks of the perceived opportunity.

The extent to which individuals are fit to become self-employed also depends upon their personality characteristics. Personality traits often associated with entrepreneurial success are creativity, initiative, opportunity seeking, internal locus of control and persistence (Van der Kuip and Verheul, 2004). Entrepreneurial personality characteristics are partly inborn but can also be enhanced through previous self-employment and other relevant experience (Evans and Leighton, 1989a and

[19] A detailed listing of opportunities, resources, abilities, personality traits and preferences is not within the scope of the present paper. For this information we refer to the extensive literature on (micro-level) determinants of entrepreneurship (Blanchflower and Oswald, 1998; Blanchflower and Meyer, 1994; Evans and Jovanovic, 1989; De Wit, 1993; Van Praag and Van Ophem, 1995; Storey, 1994; Birley and Westhead, 1994; Reynolds, Miller and Maki, 1995).

[20] Van Praag and Van Ophem (1995) use a broader definition of opportunity, referring to opportunity as "the possibility to become self-employed if one desires this". In their view opportunity is determined by both individual characteristics and the (macro)-economic environment.

[21] The relevance of available financial means as a determinant of entrepreneurial activity has been extensively documented (Blanchflower and Oswald, 1998; Evans and Leighton, 1989a and 1989b; Van Praag, 1996).

[22] Individual characteristics also involve demographic characteristics, such as age, gender, marital status and ethnic background. These demographic characteristics to a certain extent determine the available internal and external resources to an individual.

[23] Other research in this area does not subsume aptitude under ability but refers to aptitudes as potential abilities and abilities as the knowledge and skills an individual currently possesses (Schermerhorn, Hunt and Osborn, 2000; Wagner and Hollenbeck, 1995). For the purposes of the present paper we choose to include aptitude inability.

1989b; Van Praag, 1996), and can possibly be developed through education and training, albeit in an early phase (Van der Kuip and Verheul, 2004).

Whereas resources, ability and, to a lesser extent, personality characteristics pertain to the possibility of an individual to take up a certain profession, preferences refer to the desire or willingness[24] of an individual to choose one profession over the other. In order for individuals to act upon an entrepreneurial opportunity it is a necessary (but not a sufficient) condition that they have a positive attitude towards, and place a value on, entrepreneurship. Personal preferences relate to the degree of openness of an individual to self-employment and include financial and immaterial goals, such as the valuation of autonomy. It also embraces the attitude towards risks. Section 3 uses survey data to establish, on the one hand the impact of demographic and perception of obstacles variables on individuals' preferences towards entrepreneurship, and on the other hand the role of these preferences on the materialization of entrepreneurship.

2.5 Risk-Reward Profile

In their occupational choice, individuals are assumed to compare the expected utility of financial and non-pecuniary rewards of alternative types of employment[25]. In addition to rewards, individuals compare the risks of occupational alternatives. Accordingly, the risk-reward profile[26] of self-employment versus other types of employment encompasses the valuation of expected relative rewards and risks, i.e., net rewards. Hence, an individual decides upon an entrepreneurial opportunity by comparing the subjective returns of becoming an entrepreneur with the subjective returns of performing an alternative income-producing activity (Minniti and Bygrave, 1999). Expected returns can both be financial, i.e., wages and profits, and non-pecuniary, i.e., working hours[27], and are weighted against the risks of failure or dismissal. These risks refer to both financial liabilities and the stigma attached to failure. Expected utility of each occupational alternative depends upon personal assessments of all risks and rewards. Weighing the alternatives according to personal preferences results in an individual's risk-reward profile of self-employment versus wage-employment (or unemployment).

The better the prospects of entrepreneurial income as compared to the income out of wage-employment or unemployment benefits, the more people will seriously consider the option of entrepreneurship. However, even when the average entrepreneurial income is high as compared to the average income out of wage employment (or unemployment), its dispersion is high and the success of a business is highly uncertain in the start-up phase (Parker, 1996; Bosma, Zwinkels and Carree, 1999). Moreover, when entrepreneurship entails the loss of health care coverage, pensions and invalidity insurance, the opportunity costs of self-employment increase, enhancing the preference for salaried employment[28].

2.6 Actual and Equilibrium Rates

The occupational choices made at the individual level materialize as entry and exit rates of entrepreneurship at the aggregate level. Hence, (changes in) the business ownership rate are determined by the entry and exit of entrepreneurs making occupational choices on the basis of their

[24] See Van Praag (1996).
[25] See Acemoglu (1995) and Murphy et al. (1991). An earlier model distinguishing between self-employment and wage-employment, couched in terms of opportunity costs of entrepreneurship, is presented by Lucas (1978).
[26] The concept of 'willingness' as proposed by Van Praag and Van Ophem (1995) bears resemblance to the concept of risk-reward profile in this paper. Van Praag and Van Ophem (1995) define willingness to start a business as "the valuation of self-employment versus wage- or unemployment, for otherwise identical situations". They consider willingness as "dependent upon both individual preferences for the special features of self-employment as well as on the available outside options and their perceived attractiveness".
[27] OECD (2000, p. 170/1) summarizes considerable evidence that on average self-employed people work longer hours than employees. At the same time, self-employed people have a higher level of work satisfaction.
[28] The (relative) absence of these benefits for self-employed people can be relevant particularly in the early phase of the business (OECD, 1998a) and is likely to discourage potential entrepreneurs from leaving secure jobs.

risk-reward profiles[29]. Weighing alternative types of employment people can trade-in their wage jobs (or unemployment) for self-employment; they can remain in the employment type they are currently in or they can exit from self-employment – either voluntary or involuntary. Together, both static and dynamic occupational decisions determine the actual level of entrepreneurship ('E' in Figure 1)[30].

The actual rate of entrepreneurship may deviate from the 'equilibrium' rate of entrepreneurship ('E*' in Figure 1). There are different views on the factors determining this equilibrium rate (Lucas, 1978; De Wit and Van Winden, 1991). Carree, Van Stel, Thurik and Wennekers (2002) present theoretical and empirical evidence of a long-term relationship between the stage of economic development and the equilibrium level of business ownership. There is some evidence that this relationship is U-shaped. Carree, Van Stel, Thurik and Wennekers (2002) mention a 'Schumpetarian regime switch' as the cause of the recent reversal of the prolonged downward trend in the equilibrium rate of entrepreneurship. Piore and Sabel (1984) use the term 'Industrial Divide' and Jensen (1993) refers to the 'Third Industrial Revolution'. Audretsch and Thurik (2001) make a distinction between the 'managed economy' and the 'entrepreneurial economy'. The study by Carree, Van Stel, Thurik and Wennekers (2002) also shows that countries where the business ownership rate does not equal the equilibrium rate suffer from a lower rate of macro-economic growth. In this respect the equilibrium level can also be interpreted as an 'optimal' level.

Many forces may cause the actual number of entrepreneurs to differ from the long-term equilibrium rate Carree, Van Stel, Thurik and Wennekers (2002) This 'disequilibrium' ('E-E*' in Figure 1) may stem from cultural forces and institutional settings, such as the regulation of entry, incentive structures and the functioning of the capital market (Davis and Henrekson, 1999; Henrekson and Johansson, 1999). The 'equilibrium' can be restored either through market forces or government intervention. The restoring capacity of the market works through (the valuation of) the number and type of entrepreneurial opportunities[31]. A surplus or lack of entrepreneurial opportunities relative to those being exploited leads to the entry and exit of entrepreneurs, respectively. In the late 1970s and the early 1980s the structurally low number of enterprises is likely to have contributed to a high level of unemployment (Carree et al., 2001). A high level of unemployment can push people into self-employment due to the relatively low opportunity costs of entrepreneurship (Storey, 1991; Evans and Leighton, 1989a; Audretsch and Thurik, 1998)[32]. Moreover, when the number of business owners exceeds the 'optimal' rate this is assumed to lead to diminishing profitability, due to higher competition, resulting in high exit or failure rates and lower entry.

The government can try to bridge the gap between actual and 'equilibrium' rates of entrepreneurship through intervention[33]. Depending on the direction of the (assumed) disequilibrium, the government can try to restore equilibrium through policies fostering or restricting entrepreneurship. Different perspectives exist on the role of the government in the economic process. Austrian and Chicago School theories consider government intervention in the national economy harmful and disturbing, whereas 'antitrust' schools of thought argue that the government has an important role in giving direction to the economic process, i.e., addressing market failure. Implicit in the different strands of thought is the trust on the government's ability to

[29] There is evidence of a feedback effect where entry and exit, in their turn, impact the perceived risk-reward profile of entrepreneurship. According to this 'demonstration effect' the mere dynamics of entry and exit influence the (perceived) attractiveness of self-employment. If many people enter self-employment this may signal to others the existence of attractive opportunities persuading them to start their own business, independently of real opportunities and personal resources.

[30] Note that different levels of analysis are linked here: the risk-reward profile shaped at the individual level determines the actual rate of self-employment at the country-level.

[31] See feedback loop from E-E* to opportunities in Figure 1.

[32] At the aggregate level (high) unemployment may also correlate with recession and declining entrepreneurial opportunities.

[33] In order to adequately intervene in the national economy, it is important that the government is able and willing to perceive a deviation from the 'optimal' rate of entrepreneurship. Moreover, the government may have its own (political) ideas about the desirable level of entrepreneurship.

correct market failures and restore equilibrium rather than aggravating the situation by misguided intervention.

2.7 Typology of Government Intervention

Arguing that the government can react to the 'imbalance' between the actual and 'optimal' entrepreneurship rate, the present study attributes a role to government intervention. Policy intervention can work through the different components of the *Eclectic Framework* (Figure 1). Policy measures and institutions may either influence the key determinants in the individual decision making processes, and in that way indirectly co-determine business ownership, or the mechanism itself, i.e., the manner in which these variables determine the decisions with respect to business ownership. In the *Eclectic Framework* (Figure 1) five avenues of policy measures are distinguished.

'Type 1' government intervention, as represented by arrow 'G1' in Figure 1, involves government intervention on the demand side of entrepreneurship. This type of intervention impacts the type, number and accessibility of entrepreneurial opportunities. A distinction can be made between demand side policies creating room for entrepreneurship and policies affecting the accessibility of markets. The latter type of intervention enables entrepreneurs to make use of the available room. Policies stimulating technological developments and income policy belong to the first category of policies, whereas competition policy and establishment legislation pertain to the latter category of policies. Technological advancements create opportunities for entrepreneurial ventures through new ideas or new application processes. These advancements can be stimulated by the government through (subsidizing) expenditures on R&D. Income policy can create opportunities for entrepreneurship through higher wealth or income disparity, inducing demand for tailor-made products and services and thereby stimulating demand for entrepreneurship. Competition policy improves the accessibility of markets by reducing market power of large firms and lowering barriers to entry for small businesses. Through establishment and bankruptcy legislation the government can also influence the accessibility of markets. When establishment requirements and bankruptcy legislation are strict and opaque (potential) entrepreneurs can be discouraged to fill in the market room.

'Type 2' government intervention, as represented by arrow 'G2' in Figure 1, involves government intervention affecting the number and characteristics of potential and future entrepreneurs at the aggregate (population) level. Policies that pertain to 'type 2' intervention include immigration policy and regional development policy (dealing with (sub)urbanization processes), influencing the composition and the dispersion of the population, respectively. Moreover, the fiscal treatment of families with children, including family allowances or child benefits, may influence the age structure of the population and the number of (potential) entrepreneurs in the long run.

'Type 3' government intervention, as represented by arrow 'G3' in Figure 1, impacts the availability of resources, the abilities and characteristics of potential entrepreneurs. Government policy can overcome finance and knowledge gaps by increasing the availability of financial and informational resources, respectively. For example, policies aimed at the (development of the) venture capital market can help improving the access of (small) business owners to financial capital needed to start or expand a business. Direct financial support, i.e., subsidies, grants and loan guarantees, can also increase the availability of resources of (potential) entrepreneurs. The knowledge base of (potential) entrepreneurs, consisting of both skills and knowledge, can be influenced through the direct provision of relevant 'business' information, i.e., advice and counseling, or through the educational system. However, inborn characteristics, such as learning capacity and personality traits, are difficult to develop through education and training[34]. 'Type 3'

[34] See Van der Kuip and Verheul (2004).

policies can be typified as input-related policies, since they refer to both material, i.e., financial capital, and immaterial, i.e., knowledge, inputs in the entrepreneurial process.

'Type 4' government intervention, as represented by arrow 'G4' in Figure 1, works through the preferences of individuals to become entrepreneurs. Preferences of people, as expressed through values and attitudes, are developed during upbringing. Because preferences are, to a large extent, determined by cultural background, they are difficult to influence or modify (OECD, 2000). The government can try to influence individual preferences by fostering an entrepreneurial culture. It can attempt to shape entrepreneurial values and attitudes by introducing entrepreneurial elements in the educational system and by paying attention to entrepreneurship in the media and by supporting the concept of role models in the area of entrepreneurship. 'Type 4' policies are characterized by the assumed broadness of the concept of government policy, including the educational system and overlapping, to some extent, with culture.

'Type 5' government intervention, as represented by arrow 'G5' in Figure 1, is directed at the decision-making process of individuals, i.e., potential entrepreneurs. Given opportunities, resources, ability, personality traits and preferences, the risk-reward profile of entrepreneurship can be influenced by this type of government intervention. Policies that are relevant in this respect are taxation (influencing business earnings), social security arrangements (influencing the willingness of people to give up their present state of (un)employment to become an entrepreneur), and labor market legislation regarding hiring and firing, thereby determining the flexibility of the business and the attractiveness to start or continue a business. Bankruptcy policy can also influence the risk-reward profile. For example, when legal consequences of bankruptcy are severe, this may lead people to shy away from self-employment.

3. DETERMINANTS OF ENGAGEMENT LEVELS IN EUROPEAN AND AMERICAN ENTREPRENEURSHIP

3.1 Observations and variables

This section estimates a multinomial Logit model where the dependent variable is a categorical variable describing different "levels" of engagement in the entrepreneurial process. Data are from two Entrepreneurship Flash Eurobarometer surveys conducted in the fall of 2002 and 2003 and covering the 15 EU member states, Norway, Iceland, Liechtenstein and the US. Together, these surveys contain over 20,000 observations.

The following question was used for the dependent variable:

Have you started a business recently or are you taking steps to start one?

- *"It never came to your mind"*
- *"No, you thought of it or had already taken steps to start a business but gave up"*
- *"No, but you are thinking about it"*
- *"Yes, you are currently taking steps to start a new business"*
- *"Yes, you have started or taken over a business in the last 3 years and still active"*
- *"Yes, you started or took over a business more than 3 years ago and still active"*
- *"No, you once started a business, but currently you are no longer an entrepreneur"*

Each one of these possible answers reflects a different, and increasing, level of involvement in entrepreneurship. Note that the last four options translate an active role in the entrepreneurial world, while the first three have a softer component of varying degrees of interest in the entrepreneurial activities. Respondents belonging to the last group may either have been successful entrepreneurs who retired or transferred their business or entrepreneurs which met with less success and failed.

The explanatory variables used here can be divided into three types.

Socio-demographic variables: Gender, age and level of education. "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.[35] A dummy variable is used for the lower level and another for the higher level so that the intermediary level works as the base.

Perception and preference variables: these include perception of lack of financial support, perception of administrative complexities, preference for self-employment and risk tolerance.

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. Most likely these perceptions are the closer to reality the higher the involvement of the respondent in active entrepreneurial activities.

For the third statement the risk tolerance dummy takes 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.

Preference for self-employment is constructed on the basis of a direct question asking respondents whether they would prefer to be employed or self-employed.

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.

3.2 Estimation results

The factors presented in Table 1 describe the effect of the corresponding variable on the odds (ratio of two probabilities) of the category in question relative to the base category (in our case the base is "It never came to your mind"). A factor above unity implies that the corresponding explanatory variable increases the odds of belonging to the category in question relative to the group "It never came to your mind". Conversely, a factor below unity implies that the variable decrease the odds.

Table 1: Odds relative to "never having considered starting a business": effect of one unit change in independent variables

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Insert Table 1 about here

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[35] 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".

Below we summarise the main results and will concentrate on the effect of three variables: gender, financial obstacles and administrative complexity. We will also discuss country effects.

Gender

Relative to not thinking about setting up a business, the odds of any other option are higher for men than for women. This is particularly the case when considering the odds of having an active business where, relative to not considering starting one, the odds for men are almost twice those of women for businesses with less than three years and two and a half as high for businesses with more than three years. Remark that these results are obtained from a regression where preferences for self-employment have been accounted for. It therefore suggests that this gender differential goes beyond the often observed lower entrepreneurship preferences of women. This suggests two fronts for action if women are to become equally represented in the entrepreneurial world. Firstly acting at the level of preferences by investigating and addressing the factors responsible for this possible lack of entrepreneurial drive. And secondly, address more directly the obstacles faced by women that may be hindering the materialisation of entrepreneurial spirit into actual entrepreneurship.

Administrative complexities

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. It is likely that for the first two categories the recognition of such obstacle is not binding enough to “make” them statistically different from those never having considered an independent status. What is however revealing in these results is the fact that when it comes to a more “engaged” entrepreneurial position these obstacles do play a role and one that hinders entrepreneurship.

Lack of financial support

Regarding the influence of lack of financial support the important result is the lack of significance of this variable across the board. In plain words this result means that the fact of acknowledging a lack of financial support plays no role in one’s entrepreneurial position. Unlike with administrative obstacles, lack of financial support does not seem to discourage an active involvement in entrepreneurial activity; even for those categories reflecting an effective business activity their odds relative to not considering an entrepreneurial activity are not significantly affected by a perception of financial obstacles. The result concerning financial obstacles is in stark contrast with the result for administrative complexities where the expected negative effect is evident for engaged entrepreneurship. Clearly, this somehow surprising result begs further investigation. In interpreting these results we have to bear in mind that the odds under consideration here are those of each category relative to a lack of interest for entrepreneurship. The obvious question is then whether a lack of financial support may play a role in the odds of other pairs of categories. Could it be the case that this obstacle is important in determining the odds of actually having a business relative to thinking about starting one or relative to having given up? Or, could it play a role in the odds of having an older business relative to having a younger one? Tests along these lines show that this variable has no significant effect on the odds of any pair of categories.

Country dummies

The large amount of individual country dummies for every category prevents an exhaustive discussion. However, the most relevant results are that

- Strikingly, the odds of having considered and subsequently having given up starting a business relative to not having thought about it are much stronger for any European country in the sample than for the US. Giving up rather than even considering an entrepreneurial activity appears to be a characteristic more present in the European population.
- When it comes to thinking about setting up a business as opposed to not considering it at all, the result is just the opposite of the preceding: no European country has higher odds than the US. Most countries have significantly lower odds and a few, such as Denmark, Germany, Greece, Ireland, Austria and the UK, are at par with the US.
- Looking at a more engaged stage in the entrepreneurial process, currently taking steps to start a new business, relative again to showing no interest, the results are the following: with the exception of Denmark and Austria for which the odds are above those for the US and of three countries (Germany, Ireland and Finland) for which the odds are not statistically different than in the US, all other European countries fare less well than the US.
- Relative to not considering an entrepreneurial activity, the odds of having a "young" business (less than three years) are never higher for European countries than for the US (for some countries they are statistically lower and for others they are at par).
- The situation changes dramatically when we look at the odds of having an older business (always relative to not wanting to start one). Here no country scores below the US and with the exception of Belgium, Spain, France and Portugal for which the situation is not statistically different from the US, all other European countries have significant higher odds than the US.
- Finally, it remains to see how nationality influences the odds of having once started a business but not being any longer an entrepreneur, relative to not being interested in such activities. Here no European country has lower odds than the US (some are at par while others are clearly above). This class of "have been entrepreneurs" is of course a rather heterogeneous group which makes it difficult to comment on these results. Its message would have to be tempered by the information on why the respondent is no longer an entrepreneur: has he succeeded in his venture and transferred it or has the business been a failure? Unfortunately we do not possess this type of information.

In the presentation of the results chosen here we have systematically looked at the odds of belonging to a given class relative to the class "It never came to your mind". Another way of looking at these results would be to look at odds of other pairs of classes. One might for instance want to know what the impact is of a certain explanatory variable on the odds of having an older business relative to having a younger one. The value of these impacts (though not its statistical significance) can be easily obtained by dividing the factor associated with the first class by the corresponding factor for the second class.

4. CONCLUSION

In the last two decades entrepreneurship re-emerged as a key agenda item of economic policy makers across Europe, both for individual nations as well as for the European Union as a whole (OECD, 1998a; European Commission, 1999 and 2004; EZ, 1999). It also returned as a topic of interest in the field of economics, having played a central role in economic theory between the 18th and early 20th centuries (Hébert and Link, 1989, Van Praag, 1999). Moderate economic growth coupled with persistently high levels of unemployment stimulated expectations of

entrepreneurship's potential as a source of job creation and economic growth (Acs, 1992; Thurik, 1996; Audretsch and Thurik, 2000; Carree and Thurik, 2003).

This ebb and flow of interest in entrepreneurship is probably due to variations of the role of entrepreneurship over time and across countries. Until the 1970s the proportion of self-employed and small businesses in most developed Western economies declined steadily. During this period, a focus on entrepreneurship was virtually absent from the European economic policy agenda. The exploitation of economies of scale and scope was thought to be at the heart of modern economies (Teece, 1993). Small businesses were considered to be a vanishing breed. This was also a period of relatively well-defined technological trajectories, of stable demand and of seemingly clear advantages of diversification. Neo-classical economics and equilibrium theory left little room for the concepts of initiative, autonomy and the struggle with new ideas and uncertainty. As a result, references to the entrepreneur receded from the microeconomic textbooks (Barreto, 1989; Kirchhoff, 1994). Audretsch and Thurik (2001) characterize this period as one where stability, continuity and homogeneity were the cornerstones and label it the *'managed economy'*. The last two decades witnessed massive downsizing and restructuring of many large firms built on certainty and the virtues of scale. This move away from large firms toward small, predominantly young firms was a sea-change, not just a temporary aberration. Audretsch and Thurik (2001) label this new economic period, based less on the traditional inputs of natural resources, labor and capital, and more on the input of knowledge and ideas, as the *'entrepreneurial economy'*. Paradoxically, the increased degree of uncertainty creates opportunities for small and young firms, and hence leads to higher rates of entrepreneurship. Further study shows that this change does not take place in all developed economies at the same time or to the same degree (Audretsch, Thurik, Verheul, Wennekers, 2002). Hence comparative research may explain these variations.

In spite of this growing interest in comparative research, the understanding of these variations in entrepreneurship at the macro level is limited. A comprehensive framework is needed to provide direction for this research. The goal of the present paper is to provide an overview and further direction for this emerging topic of macro-level analysis of entrepreneurship. To this end an *Eclectic Framework* is used explaining (developments in) entrepreneurship incorporating different streams of literature and spanning different disciplines. It is a framework for understanding and analyzing the determinants of entrepreneurship. At the heart of the *Eclectic Framework* is the integration of factors shaping the demand for entrepreneurship on the one hand, with those influencing the supply of entrepreneurs on the other hand. It also creates insight into the role of public policy identifying five channels: a general demand, a general supply, a resources and abilities, a preferences and a risk reward channel.

In its empirical part the present paper uses survey data (2002 and 2003) from the 15 EU member states, Norway, Iceland, Liechtenstein and the US to establish the effect of demographic and other variables on various entrepreneurial engagement levels, such as "thinking about it", "taking steps for starting up", "having a young business", "having an older business", etc. A multinomial logit model is used for estimating the influence of the explanatory variables on the various engagement levels. The five channel approach of the *Eclectic Framework* is used to classify the explanatory variables. Four of the five channels of the *Eclectic Framework* are "covered". Demographic variables such as gender, age and education level represent the supply channel, administrative complexities, availability of financial support and the respondents' self declared preference to be self-employed the preferences channel[36], a rough measure of risk tolerance the risk reward profile channel, and residual country specific effects (covered by dummy variables) the demand channel.

[36] Administrative complexities and availability of capital are interpreted as part of the preference channel and not of the resources and abilities channel because these variables are measured at the perception level and no "real" indicator is identified. Alternatively, to the extent that these variables proxy the "real" situation, administrative complexities may be viewed as belonging to type 5 or even type 1 policy channels while availability of capital could be seen as having a relation with type 3 policy channel.

The most important findings are that

- Relative to "not thinking about it" the odds of any other option are higher for men than for women while this effect is stronger for "having an active business" than for any other category.
- Perception of administrative complexities has no effect on the odds of "currently thinking" or of "gave up" relative to "never thought about it".
- Perception of administrative complexities plays a negative role for higher levels of "engagement".
- Perception of lack of administrative support has no discriminative effect across the categories.
- European countries have lower odds than the US for levels of engagement up to "having a young business".
- European countries have higher odds than the US for the category "having an older business".

Future research should concentrate on

- The explanation of the country differences: to what extent are cultural aspects, sector composition of economic activity, market legislation, tax environment, bankruptcy law, job security, social security regimes, etc determining factors.
- The role of the level and speed of economic development: to what extent do they have a moderating or mediating influence on the variables used in the present study and to what extent is this influence engagement level dependent.
- The role of the wage level relative to self-employment income: this important variable is not available in the present data set while it is generally assumed to be important in shaping entrepreneurial activity.
- The role of country specific aspiration levels: this role model effect could be captured, for instance, by engagement level averages.

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Table 1: Odds relative to "never having considered starting a business": effect of one unit change in independent variables

	Gave up		Thinking		Taking steps		Business<3yrs		Business>3yrs		No longer	
	Odds	P-value	Odds	P-value	Odds	P-value	Odds	P-value	Odds	P-value	Odds	P-value
Men	1,505	0,000	1,517	0,000	1,735	0,000	1,930	0,000	2,512	0,000	1,692	0,000
Age	0,998	0,127	0,962	0,000	0,956	0,000	0,986	0,000	1,017	0,000	1,040	0,000
Low education	0,823	0,042	0,724	0,014	0,886	0,367	0,581	0,005	0,666	0,000	0,969	0,722
High education	1,332	0,000	1,439	0,000	1,782	0,000	1,601	0,000	1,420	0,000	1,000	0,997
Preferences	2,414	0,000	4,538	0,000	6,143	0,000	8,366	0,000	9,265	0,000	2,650	0,000
Lack finance	1,028	0,681	0,919	0,254	0,954	0,524	0,872	0,176	0,876	0,077	0,937	0,383
Complexities	1,002	0,979	1,027	0,704	0,757	0,000	0,699	0,000	0,734	0,000	0,786	0,001
Risk tolerance	1,195	0,001	1,349	0,000	1,222	0,002	1,438	0,000	1,279	0,000	1,175	0,010
Belgium	2,728	0,000	0,342	0,000	0,471	0,000	0,444	0,003	1,528	0,064	1,159	0,492
Denmark	6,066	0,000	1,057	0,737	1,496	0,010	0,997	0,989	4,234	0,000	3,142	0,000
Germany	5,433	0,000	1,089	0,538	0,794	0,125	0,901	0,607	2,785	0,000	1,909	0,001
Greece	4,560	0,000	1,194	0,260	0,678	0,030	1,114	0,628	3,215	0,000	3,264	0,000
Spain	2,167	0,000	0,521	0,000	0,384	0,000	0,304	0,000	1,342	0,157	1,411	0,082
France	4,290	0,000	0,493	0,000	0,361	0,000	0,277	0,000	1,153	0,505	1,471	0,041
Ireland	2,310	0,000	0,782	0,114	1,034	0,824	0,685	0,093	1,817	0,005	1,023	0,921
Italy	1,890	0,003	0,387	0,000	0,320	0,000	0,390	0,000	1,713	0,006	1,887	0,001
Luxembourg	5,281	0,000	0,333	0,000	0,464	0,000	0,333	0,000	1,634	0,029	1,325	0,190
Netherlands	4,344	0,000	0,493	0,000	0,558	0,001	0,765	0,254	3,364	0,000	2,540	0,000
Austria	3,296	0,000	1,201	0,255	1,521	0,007	1,369	0,156	3,229	0,000	1,324	0,226
Portugal	2,531	0,000	0,287	0,000	0,427	0,000	0,500	0,005	1,358	0,167	1,045	0,841
Finland	5,038	0,000	0,689	0,040	0,710	0,059	0,748	0,272	4,816	0,000	2,568	0,000
Sweden	1,570	0,070	0,454	0,000	0,558	0,003	0,713	0,174	1,802	0,009	1,086	0,719
UK	2,801	0,000	0,897	0,453	0,643	0,006	0,969	0,871	1,965	0,001	2,189	0,000
Iceland	1,764	0,042	0,535	0,003	0,518	0,002	0,997	0,991	4,908	0,000	3,417	0,000
Norway	4,812	0,000	0,411	0,000	0,560	0,004	1,304	0,244	4,942	0,000	3,524	0,000
Liechtenstein	4,850	0,000	0,529	0,000	0,641	0,009	0,882	0,565	3,701	0,000	1,617	0,032

Note: DK/NA observations have been dropped from the sample. Base category: "It never came to your mind".
Source: Flash Eurobarometers 134 and 146 (conducted in 2002 and 2003).