



# Business Takeover or New Venture? Individual and Environmental Determinants From a Cross-Country Study

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Whereas the determinants of entrepreneurial choice have been thoroughly analyzed in the literature, little is known about the preferred mode of entry into entrepreneurship, such as taking over an existing business or starting a new venture. Using a large international data set, this study reports considerable differences in takeover preferences across 33 countries. Hierarchical (multilevel) regressions are performed to explore individual-level and country-level determinants of the preferred mode of entry. At the individual level, a person's human capital, risk attitude, and inventiveness influence the preference for starting a new venture versus taking over an existing business. At the country level, the culture-inherent level of risk tolerance, the country's level of innovation output, and the administrative difficulty of starting a new business are found to explain the between-country variation in the preferred mode of entry. Implications of our findings for research and practice are also discussed.

## Introduction

There are multiple ways to become an entrepreneur (Cooper & Dunkelberg, 1986; Dennis, 1997). A clear distinction can be drawn between starting a new firm (new venture start-up) and taking over an existing one (business takeover). The literature to date has extensively analyzed individual-level determinants of entrepreneurial choice (Grilo & Thurik, 2008; Parker, 2009, chap. 4). Furthermore, many studies exist on the country-level drivers of entrepreneurship (Bowen & De Clercq, 2008; Carree, Van Stel, Thurik, & Wennekers, 2002; Parker & Robson, 2004; Wennekers, Thurik, Van Stel, &

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Noorderhaven, 2007). However, with a few exceptions (Bastié, Cieply, & Cussy, *in press*; Parker & Van Praag, 2012), researchers have been silent about the determinants of the mode of entry into entrepreneurship. This paper attempts to explain both individual-level and country-level differences in preferences for starting a new business rather than taking over an existing business.

The fact that only a few studies have focused on the mode of entry into entrepreneurship is surprising given its practical relevance for policy makers and entrepreneurs seeking to exit their businesses. From the perspective of existing enterprises, there is a considerable demand for entrepreneurs willing to take over existing businesses. Many business owners seek successors outside of their family or their business (Scholes, Wright, Westhead, Bruining, & Kloeckner, 2009; Van Teeffelen, 2010). This demand for takeover candidates will most likely increase in the coming years as the population in many industrialized countries ages and many business owners approach retirement (Lévesque & Minniti, 2011). The demographic change also affects the supply of potential entrepreneurs. That is, many investigations show an inverse U-shaped relationship between age and the decision to become an entrepreneur (Bönte, Falck, & Heblrich, 2009; Evans & Leighton, 1989; Lévesque & Minniti, 2006). The European Commission (2006) estimates that approximately one third of European enterprises will require takeover in the next 10 years. From the perspective of potential entrepreneurs, the preference for taking over an existing business is not much more uncommon: approximately 30% of potential entrepreneurs report that they prefer taking over an existing business to starting a new one (European Commission, 2003a).<sup>1</sup> If incumbent business owners do not find successors for their businesses, the economic value of these businesses may be lost, with negative implications for employment, entrepreneurial experience, and economic growth. Policy initiatives may raise awareness of takeover opportunities and focus on creating a better match between potential buyers and sellers in marketplaces for business transfers.

Concerning the individual level, we argue that an individual's psychological characteristics influence the preferred mode of entry into entrepreneurship. New venture start-ups and business takeovers differ regarding their levels of business risk and inventiveness. Starting a business from scratch can be considered more entrepreneurial, more exciting, more complex, and riskier than taking over an existing business with an already-developed business model and an established customer base. Furthermore, prior research shows that entrepreneurs differ in their motivations and goals in starting a venture. In addition to financial aspects, there are a number of nonfinancial reasons to become an entrepreneur, including being independent or autonomous, having the opportunity to use one's skills and abilities, and the nature of the work (Benz & Frey, 2008; Block & Koellinger, 2009; Hundley, 2001). Starting a business from scratch may be more rewarding in terms of these nonfinancial aspects. Research shows that substantial heterogeneity exists among entrepreneurs regarding, for example, risk attitude (Block, Sandner, & Spiegel, *in press*; Caliendo, Fossen, & Kritikos, 2010), innovation orientation (Cliff, Jennings, & Greenwood, 2006; Koellinger, 2008), and human capital (Bosma, Van Praag, Thurik, & De Wit, 2004; Shane, 2000). Along with these arguments, we propose that an individual's psychological factors, such as growth ambition, risk attitude, and inventiveness, influence his/her preferred mode of entry into entrepreneurship.

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1. This percentage is approximately 20% in the United States. See Dennis (1997) in the 1995 Wells Fargo/NFIB series on business entries and exits.

Although entrepreneurial action is undertaken by individuals, the country context plays an inevitable role (Noorderhaven, Thurik, Wennekers, & Van Stel, 2004; Shepherd, 2011; Uhlaner & Thurik, 2007; Wennekers et al., 2007). Relatively recently, scholars have begun to simultaneously analyze individual- and country-level influences on entrepreneurial activity by means of multilevel analyses (De Clercq, Lim, & Hoon Oh, 2011; Stephan & Uhlaner, 2010). Thus, this paper adopts a multilevel approach to analyze the country-level determinants of the preferred mode of entry into entrepreneurship. To this point, the literature has focused solely on individual-level determinants of the mode of entry (Bastié et al., *in press*; Parker & Van Praag, 2012). We argue and show that substantial between-country variation exists in the preferred mode of entry. This paper tests the importance of several country-level variables in the explanation of this country-level variation. First, the administrative steps (and the time) required to set up a new business differ across countries (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002; Grilo & Irigoyen, 2006; Nicoletti & Pryor, 2006). Therefore, in some countries more than in others, it is a rational choice to take over an existing business rather than to set up a new one. In addition to differences in administrative difficulties involved in setting up a business, a country's culture may also play a role. Some countries, such as Japan or South Korea, are known for their "no failure" culture (Begley & Tan, 2001), which discourages an individual from beginning a new business rather than taking over an existing business that has already proven its success. Individuals may be hesitant to become entrepreneurs by means of new venture start-ups because this entry mode constitutes a choice associated with risk and uncertainty and a perceived high likelihood of failure. Finally, country-level variation in the preferred mode of entry into entrepreneurship may also depend on either differences in venture financing (Jeng & Wells, 2000) or the level of innovation output (Furman, Porter, & Stern, 2002). We posit that a higher availability of venture capital (VC) and bank loans should facilitate the financing of business takeovers, which often require extensive financing. Regarding a country's level of innovation output, we argue that countries with high levels of innovation output are characterized by capital-, knowledge-, and technology-intensive sectors, which makes new venture start-ups difficult.

To analyze the determinants of the preferred entry mode, our study uses a large international data set covering all 27 Member States of the European Union (EU), Croatia, Iceland, Norway, Switzerland, Turkey, the United States, China, Japan, and South Korea. Hierarchical binomial and multinomial logistic regressions are performed to study the impacts of both individual-level variables and country-level variables on the preferred mode of entry. Our set of individual-level variables consists not only of psychological characteristics but certain socioeconomic characteristics (e.g., gender, age, education, occupational status) as well. Our sample includes both prospective and current business owners, i.e., individuals who are thinking about setting up a business, those who are actively taking steps to set up a business (nascent entrepreneurs), and existing business owners. The international focus distinguishes the present paper from existing studies on this under-researched but relevant topic.

The organization of this paper is as follows. The next section summarizes the existing literature regarding the determinants of the mode of entry into entrepreneurship. We observe a research gap and explain how the present paper contributes to filling this gap. The section also presents our arguments on how individual-level and country-level factors influence the preferred mode of entry. Subsequently, the data are discussed, followed by an overview of some basic descriptive statistics and a description of our multilevel analysis. The next section presents the regression results and robustness checks. In the final section, we discuss the results in light of the current literature, present limitations of this study, and suggest avenues for further research.

## **Literature Review and Theory Development**

### **Existing Studies**

Whereas investigations of new ventures (de novo entrants or ex nihilo creations) are primarily found in the entrepreneurship literature, studies of takeovers are primarily found in the family business literature related to firm succession in family firms (Bennedsen, Nielsen, Pérez-González, & Wolfenzon, 2007; Chua, Chrisman, & Sharma, 2003; Molly, Laveren, & Deloof, 2010). The successful transition of ownership and management within a family is central for conserving the family character of the business. However, in many cases, within-family succession is a desired, but not a feasible, option (Stavrou, 1999; Zellweger, Sieger, & Halter, 2011), and a successor outside the family must be found. Given that individuals capable of taking over a business may also be capable of starting their own businesses, knowledge about what drives them to prefer one option over the other is crucial. Surprisingly, we found only two single-country studies focusing on this topic: Bastié et al. (in press) and Parker and Van Praag (2012).

Parker and Van Praag (2012) investigate the decision takeover versus new venture start-up for a representative sample of 709 Dutch entrepreneurs who have either taken over a business (from a family or a nonfamily member) or started a business from scratch. These authors focus on human capital in terms of years of schooling and consider several measures of experience (managerial, labor market, industry, and previous business) and family background (whether an individual was born into a business-owning family). The results reveal that education increases the likelihood of new venture start-up versus business takeover, whereas a family business background and management experience are negatively associated with this likelihood. Parker and Van Praag argue that individuals with more education are better able to recognize entrepreneurial opportunities (Shane, 2000; Ucbasaran, Westhead, & Wright, 2007), and thus are more likely to choose new venture start-up as mode of entry. In addition, such individuals can cope better with the new and complex situation of developing a business from scratch. They are also in a better position to deal with the risk of starting a new business. In addition, Parker and Van Praag note the alternative employment options available to highly educated individuals in the labor market (Nickel, 1979). Therefore, if the business fails, they have alternatives to which they can turn. Concerning the effect of the family business background, it is documented that individuals born into a family business already have a high probability of taking over that family business because within-family succession is the preferred option for many family business owners (Chua et al., 2003; Miller, Steier, & Le Breton-Miller, 2003).

Using a representative sample of more than 20,000 young French firms, some results of Bastié et al. (in press) are in line with Parker and Van Praag (2012). For example, managerial experience is associated with a higher likelihood of takeover versus new venture start-up. In addition, education is positively associated with starting a new venture relative to taking over an existing business. However, according to Bastié et al., individuals with entrepreneurs in their families or in their immediate social network are less likely to take over existing businesses than are other entrepreneurs. Furthermore, Bastié et al. show that takeovers are more often financed by bank loans than are new start-ups.

### **Individual-Level Determinants of Mode of Entry Into Entrepreneurship**

The process of starting a business from scratch differs from taking over an existing business in two major aspects. First, starting a new business can be considered riskier, and

second, it can be considered more rewarding in terms of nonfinancial aspects of entrepreneurship. We will explain both aspects and how they relate to the individual determinants of the preferred mode of entry.

Starting a business from scratch can be regarded as a riskier and more uncertain endeavor than taking over an existing business. Hiring employees, creating an organizational structure, and finding customers are all uncertain in nature. When taking over an existing business, the uncertainty and risk are clearly lower because the business has already survived the early start-up phase in which the level of uncertainty and probability of failure are highest (Geroski, 1995). Prior research supports this argument. Bastié et al. (in press), for example, explain the higher prevalence of receiving bank loans among takeovers by a different risk assessment of each mode of entry. That is, takeovers are considered less risky by banks because they have longer track records and are less opaque than new start-ups. Parker and Van Praag (2012) analyze the variation in entrepreneurial income of either mode of entry. Their results show that, indeed, takeovers are associated with a lower variation in income relative to new venture start-ups, and can therefore be considered the less risky option of the two modes of entry. In this study, we will argue that risk-averse individuals will seek business takeover as a mode of entry, whereas self-confident and risk-tolerant individuals will prefer a new venture start-up. Existing research supports this suggestion. Bonin, Dohmen, Falk, Huffman, and Sunde (2007) find that risk-averse individuals choose occupations with low earning risks. A similar argument can be made for individuals with a more internal locus of control (Rotter, 1966). Individuals who perceive that they have a high level of control over aspects they can influence will feel more confident than other individuals in an uncertain situation. They are also better able to cope with the high uncertainty related to new venture start-up as a mode of entry into entrepreneurship: a high level of internal locus of control should be associated with a new venture start-up.

A new venture start-up can be more rewarding than a business takeover, particularly in terms of the nonfinancial aspects of entrepreneurship. By starting a new business from scratch, entrepreneurs can shape the venture exactly as they want it to be. For example, they can decide which markets to enter, the exact product specifications, and the composition of their venture teams. Additionally, entrepreneurs can design their own desired roles in the venture. For example, the entrepreneur may prefer to work part time (Folta, Delmar, & Wennberg, 2010) or to engage in invention and product development (Åstebro, 2003). In sum, we expect the new venture option to score high in a number of nonfinancial aspects of entrepreneurship. Individuals who seek these nonfinancial rewards of entrepreneurship will be more likely to favor new venture start-up over business takeover as an entry mode.

In addition to these psychological characteristics at the individual level, we will assess the influences of several socioeconomic characteristics. Some of these socioeconomic characteristics have been included in Bastié et al. (in press) and Parker and Van Praag (2012), including gender, age, years of schooling, and the parents' entrepreneurial background. Finally, occupational status and current business ownership are taken into account.

## **Country-Level Determinants of Mode of Entry Into Entrepreneurship**

In addition to individual-level determinants, we will use four country-level determinants: culture, regulation, finance, and innovation output. Cultural factors may have an influence on the mode of entry into entrepreneurship. Research has shown socio-cultural values to be an important part of the entrepreneurial environment, influencing

entrepreneurial activity and performance. Beugelsdijk (2007) and Shane (1993) show that a country with a more “entrepreneurial” culture that is more open to risk taking relative to other countries will be more successful in originating innovations. Uhlaner and Thurik (2007) conclude that postmaterialism as a cultural factor has an impact on a country’s entrepreneurial activity. Potential entrepreneurs will assess their entrepreneurial behavior and performance against the moral rules of the society in which they start their firm. This evaluation process should be more important in countries with a collectivist culture. Noorderhaven et al. (2004) prove that dissatisfaction at the level of societies has a positive and significant influence on self-employment levels. Drawing on research on cultural differences among countries (Hofstede, 2001; House, Hanges, Javidan, Dorfman, & Gupta, 2004), we suggest that potential entrepreneurs in East Asia are particularly sensitive to the judgment of the public regarding their success as entrepreneurs. Business failure will be associated with a far higher reputation loss in Japan and Korea than in other countries. Given the above arguments about the higher level of uncertainty associated with a new venture start-up versus a business takeover, we expect respondents in more risk-averse countries such as Japan and Korea to be more in favor of business takeover compared with those in other countries. To illustrate this point, Ray (1994) quotes from a government committee report on entrepreneurship, which states that business failure will mean “castigation and ruin” for the entrepreneur.

In addition to the different cultural factors, countries may also differ in their regulations and institutions (Audretsch, Grilo, & Thurik, 2007; Nicoletti & Pryor, 2006) and in the administrative steps required to set up a new venture (Djankov et al., 2002; Grilo & Irigoyen, 2006; Levie & Autio, 2011). Both the level of regulation and the administrative steps required to set up a business have an effect on entrepreneurship levels. Van Stel, Storey, and Thurik (2007) show that minimum capital requirements and labor market regulations affect entrepreneurship rates, whereas administrative considerations seem to be unrelated to the decision to start a business. Levie and Autio find that a lighter burden of regulation is associated with a higher number of strategic entrepreneurs and a higher relative prevalence of strategic entrepreneurial entry. Strategic entrepreneurs are defined as nascent or new entrepreneurs *“who expect to employ 20 or more employees within five years”* (Levie & Autio, p. 1403). Comparing data from Spain (a heavily regulated economy) and Britain (a lightly regulated economy), Capelleras, Mole, Greene, and Storey (2008) show that newly registered firms in Britain start at a smaller size and grow more quickly than those in Spain. Thus, even though administrative considerations may not have an effect on entrepreneurship rates, the level of regulation may still have a considerable influence on how individuals start their businesses. In line with this argument, we posit that the level of administrative complexity required to set up a business influences the mode of entry into entrepreneurship. If the time and effort needed to set up a business are high, the relative attractiveness of taking over an existing business compared with starting a new one should increase. Potential entrepreneurs in countries with high levels of administrative and regulatory complexity should thus have higher business-takeover preferences compared with potential entrepreneurs in countries with low levels of administrative and regulatory complexity.

Taking over an existing business is associated with a higher capital requirement than starting up a new venture. Businesses available for takeover are already at a later stage in the venture cycle; accordingly, they should have a higher firm value relative to new ventures. In contrast, the creation of new ventures allows entrepreneurs to start small, with lower capital investment, and then grow step by step. Hence, a higher availability of bank or VC financing on a country level should facilitate the financing of takeovers and should be positively associated with takeover preferences. Moreover, because monitoring and

selection costs are lower, many VC firms prefer later-stage to start-up investments (Amit, Brander, & Zott, 1998). Data from the annual yearbook of the European Private Equity and Venture Capital Association show that more than 90% of VC investment (by dollar value) is later stage (European Private Equity and Venture Capital Association, 2011). A significant portion of VC funding goes to established firms as growth capital (e.g., mezzanine finance). Research from the finance literature differentiates between countries that are more capital market oriented (e.g., the United States and Britain) and those that are more bank oriented (e.g., Germany, Japan, and France) (Antoniou, Guney, & Paudyal, 2008). Analyzing the determinants of VC availability for a sample of 21 countries, Jeng and Wells (2000) find that the importance of initial public offerings and private pension funds as well as labor market rigidities are significant determinants of VC availability. In line with Armour and Cumming (2006), Jeng and Wells also find that government policies can play an important role, in particular by establishing the regulatory environment and by initiating investments during economic downturns.

Considering a country's level of innovation output, research from industrial organizations suggests that market entry is more difficult in countries characterized by high technological standards relative to other countries (Acemoglu, Aghion, & Zilibotti, 2006; Yong & Ho, 2006). Barriers to entry differ significantly across industries and markets and are determined by technology acquisition costs, the effectiveness of intellectual property rights, learning-based cost advantages, the existence of network effects, and other factors (Baumol, 1982; Geroski, 1995). New ventures suffer from the liability of small size (Aldrich & Auster, 1986) and have difficulties entering markets characterized by high entry barriers. These difficulties discourage potential entrepreneurs from setting up their own venture and influence them toward business takeover. In summary, *ceteris paribus*, countries with more innovation output and higher technology standards should be associated with higher technology- and innovation-related entry barriers, and thus higher takeover preferences relative to other countries.

## Data and Method

### Data Set

We use the European Commission's Flash Eurobarometer Survey on Entrepreneurship (No. 283). The data set consists of 26,168 randomly selected respondents aged 15 years and older of which the majority was contacted through telephone interviews between December 10, 2009 and January 16, 2010.<sup>2</sup> The survey covers the 27 EU Member States;<sup>3</sup> five other European countries (Croatia, Iceland, Norway, Switzerland, and Turkey); the United States; and China, Japan, and South Korea. Three countries (Cyprus, Latvia, and Malta) were, however, excluded from the analysis due to missing data for some country-level variables.

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2. Face-to-face interviews were conducted in Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia (approximately 30% of the total number of 26,168 interviews). In most countries, the target sample size amounts to 500 respondents. In Belgium, China, the Czech Republic, Germany, Greece, France, Hungary, Italy, Japan, the Netherlands, Poland, Portugal, South Korea, Spain, the United Kingdom, and the United States, the target sample size is 1,000.

3. Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the UK.

The relevance of asking individuals about their preferred mode of entry into entrepreneurship may depend on the specific position of an individual in the entrepreneurial process. Our sample is a subset of the entire data set and includes 5,650 individuals who are thinking about starting a business (potential entrepreneurs), are taking steps to start a business (nascent entrepreneurs), or owning a business. These individuals have answered “yes” to one of the following four items in the questionnaire: “You are thinking about starting up a business” (potential entrepreneur), “You are currently taking steps to start a new business” (nascent entrepreneur), “You have started or taken over a business in the last three years which is still active today” (business owner), or “You have started or took over a business more than three years ago and it is still active” (business owner). After listwise deletion of missing values, our final sample consists of 4,210 individuals in 33 countries.

## Measures

**Dependent Variable.** An individual’s preferred mode of entry is captured by the following question: “If you currently had the means to start your own business, including sufficient funding, would you rather set up a new one or take over an existing one?” Respondents may answer “take over an existing business,” “set up a new one,” or “none of these, not interested.” From this question, we construct two dependent variables. The variable *preferred mode of entry (two categories)* equals 1 if the respondent prefers to take over an existing business and equals 0 if he/she prefers to set up a new one. Respondents who answered “none of these, not interested” are treated as missing values. This binary measure of preferred mode of entry is used in a hierarchical binomial logistic regression. The variable *preferred mode of entry (three categories)* adds a third category coded 2 for “none of these, not interested.” Using these three possibilities for answers enables us to perform a hierarchical multinomial logistic regression to assess the influences of the individual-level and country-level variables on the preferred mode of entry.

Table 1 shows a detailed distribution of individuals across the three different answer categories of the dependent variable. Of the 5,375 individuals who give a valid response

Table 1

### Percentages of Takeover Versus New Venture Across Groups of Respondents

Group of individuals	Takeover	New venture	None of these/ not interested	Total
Thinking about entrepreneurship	531 24%	1,568 72%	91 4%	2,190
Nascent entrepreneurs	215 22%	756 76%	20 2%	991
Current business owners	685 31%	1,235 56%	274 12%	2,194
Thinking + nascent + current business owners	1,431 27%	3,559 66%	385 7%	5,375

Data source: Flash Eurobarometer Survey on Entrepreneurship, No. 283.

Note: Cyprus, Latvia, and Malta are excluded.

(95% response rate), 1,431 (27%) prefer a business takeover, 3,559 individuals (66%) prefer a new venture start-up, and 385 individuals (7%) answer “none of these, not interested.”

**Individual Level: Socioeconomic Characteristics.** In addition to *gender* (male = 1; female = 0) and *age* (at least 15 years), we also take into account educational attainment, captured by *years of schooling*. The measure is constructed as the age when the respondent finished full-time education, as given by the respondent, minus the assumed age of starting education (6 years). For better comparison across countries, we constrain the minimum of *years of schooling* to 9 years and the maximum to 19 years. Using the raw data, however, yields the same pattern of results. To reflect occupational status, we create dummy variables for individuals in *white-collar* professions, *blue-collar* professions, and for *unemployed* individuals seeking a job, coded 1 if the particular occupation applies to the respondent and 0 otherwise. White-collar professions include civil servants, office clerks, managerial positions, and professionals (examples of this last category are employed lawyers, accountants, architects, and doctors). Blue-collar professions are categorized as skilled manual workers, unskilled manual workers, or supervisors/foremen. A further breakdown of these blue-collar professions is not available.

To consider possible role model effects, we create two variables, *self-employed mother* and *self-employed father*, coded 1 if s/he is or was self-employed and 0 otherwise.

Finally, we take into account the level of the individual’s entrepreneurial engagement: this variable takes a value of 1 if the individual is a *current business owner* and a value of 0 otherwise (if the individual is either thinking about or taking steps toward starting a business).

**Individual Level: Psychological Characteristics.** We consider seven aspects of an individual’s personality, each measured on a 4-point Likert scale (1 = “strongly disagree” to 4 = “strongly agree”): *risk-taking propensity* (“In general, I am willing to take risks”), *self-confidence* (“Generally, when facing difficult tasks, I am certain that I will accomplish them”), *internal locus of control* (“My life is determined by my own actions, not by others or by chance”), *proactiveness* (“If I see something I do not like, I change it”), *inventiveness* (“I am an inventive person who has ideas”), *optimism* (“I am optimistic about my future”), and *desire for competition* (“I like situations in which I compete with others”). Finally, the following question is used to obtain a measure of *growth aspiration*: “Imagine that a friend of yours just started a business. Which advice would you give him or her?” Answer possibilities are “try to expand the business quickly” (value 1) or “grow slowly if at all” (value 0). The psychological variables rely on single-item measures, which is a limitation regarding meaningfulness. Yet, single-item measures also have advantages over multiple-item measures, e.g., regarding reductions in respondents’ refusal rates or data collection costs (Bergkvist & Rossiter, 2007; Nagy, 2002).

**Country-Level Variables.** At the country level, we control for gross domestic product (GDP) per capita (in purchasing power parity and U.S. dollars). We expect that five variables on the dimensions of innovation, regulation, finance, and culture shape entry mode preferences. First, we take into account the level of innovation output in a country by means of the *number of patents* granted per million population in 2009. Information on GDP and patents is retrieved from the Global Competitiveness Report (World Economic

Forum, 2010).<sup>4</sup> We use a logarithmically transformed version of the innovation variable. Second, the administrative difficulty of *starting a business (time needed)* is measured in terms of the number of days required to set up a new business, as provided by the World Bank's (2011) Doing Business Database. A high value indicates that setting up a new business from scratch is administratively cumbersome, leading to higher takeover preferences in a country. Third, we suggest that the *availability of bank loans* impacts the preferred entry mode. This variable is again retrieved from the Global Competitiveness Report. It is based on experts' responses to the following question: "How easy is it to obtain a bank loan in your country with only a good business plan and no collateral?" Experts rate this question on a 7-point Likert scale (1 = "impossible" to 7 = "very easy"). Fourth, as another financial indicator, the *availability of venture capital* is pulled from the Global Competitiveness Report. The question "In your country, how easy is it for entrepreneurs with innovative but risky projects to find venture capital?" is assessed on the same 7-point Likert scale (1 = "impossible" to 7 = "very easy"). Fifth, a cultural aspect is taken into account. The variable *country risk tolerance* is obtained by extracting information from the present survey (Flash Eurobarometer Survey on Entrepreneurship, No. 283). The relevant statement is, "One should not start a business if there is a risk it might fail" (4-point Likert scale: 1 = "strongly agree" to 4 = "strongly disagree"). Averaging this variable across respondents in a country results in a cultural variable that contains information on how individuals perceive risk taking in uncertain situations. Higher values indicate that respondents in a particular country are more risk tolerant.

## Analysis

Given that our individual-level data are nested within country-level data, hierarchical linear modeling (HLM; Rabe-Hesketh & Skrondal, 2008; Raudenbush & Bryk, 2002) is used with restricted maximum likelihood estimates. HLM examines each variable at the appropriate level of analysis (individual level or country level) and considers the interdependence among individuals within the same country (Hofmann, 1997). This approach avoids critical biases caused by the more traditional approach of aggregating or disaggregating nested data. Because our models propose main effects of country-level variables on individual-level outcomes (preference for a takeover rather than a new venture start-up), we use the intercepts-as-outcomes model.

A necessary condition for such an analysis is sufficient between-country variation in the dependent variable. Table 2 presents the distribution of the preferred mode of entry across all countries. It reveals pronounced differences among Italy, Denmark, Spain, and Romania, where the takeover levels are below 20%, and South Korea, Austria, Bulgaria, and Japan, where the levels are in excess of 40%. An interesting distinction in Table 2 is the difference between Japan and South Korea, on one hand, and China, on the other hand. Whereas Japan and South Korea are among the countries in which starting from scratch is least attractive, Chinese respondents seem to prefer starting a new venture. A consistent pattern that describes the preferred entry mode among European countries is more difficult to unravel. Our multilevel analysis in the remainder of this paper is aimed at explaining these between-country differences.

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4. To be precise, we have the availability of the number of "utility patents." As Fleming, Mingo, and Chen (2007) observe: "Almost all U.S. patents are utility patents, while a small number are design patents, which protect a new, original and ornamental design for a manufactured item, or plant patents, which protect a distinct and new variety of plant. Most social science research that uses patents only uses utility patents."

Table 2

Percentages of Preferred Mode of Entry  
Across Countries

	% T	% N	% NI
Italy	16	68	16
Denmark	16	72	13
Spain	17	76	7
Romania	17	79	5
Hungary	20	69	12
Ireland	20	79	2
Croatia	21	74	5
United Kingdom	21	74	5
France	21	75	4
United States	21	76	3
Portugal	22	61	17
Iceland	22	69	9
Slovakia	23	72	5
Sweden	24	62	14
Slovenia	24	72	4
Poland	25	68	7
China	25	73	2
Netherlands	26	67	7
Luxembourg	26	71	3
Belgium	27	56	16
Estonia	27	57	16
Greece	27	69	4
Norway	28	66	6
Turkey	28	70	2
Czech Republic	29	56	15
Finland	31	63	6
Switzerland	34	56	10
Lithuania	36	59	5
Germany	36	59	5
South Korea	41	52	7
Austria	41	58	1
Bulgaria	47	47	6
Japan	48	44	8
Total	27	66	7

*Data source:* Flash Eurobarometer Survey on Entrepreneurship, No. 283.

*Notes:* T stands for “take over an existing business”; N stands for “set up a new business”; NI stands for “none of these/not interested.” Austria (83), Belgium (73), Croatia (73), Luxembourg (70), and Slovenia (82) are the only countries for which these percentages are based on less than 100 observations. Cyprus, Latvia, and Malta are excluded.

To reduce potential multicollinearity and to render the intercept more interpretable, all individual-level predictors were centered around their group mean. The intercept, therefore, reflects the takeover decision of a respondent with a group average score on all individual-level predictors (Hofmann, 1997). However, using uncentered data does not substantially alter our results.

Given the three outcomes of our dependent variable (“take over an existing business,” “set up a new one,” or “none of these, not interested”), we use hierarchical generalized

linear models (HGLMs), more specifically, hierarchical multinomial logistic models. As in standard multinomial logistic regression, one reference category is assigned, which in our case is “set up a new one.” Then, the individual-level coefficients for the two remaining categories (“take over an existing business” and “none of these/not interested”) have to be interpreted relative to this reference category. In the remainder of this paper, we will focus on the comparison between “take over an existing business” and “set up a new one.” Basically, positive coefficients imply that a higher value of a particular variable is associated with a higher likelihood that the preferred mode of entry is “take over an existing business” rather than “set up a new one.” The country-level estimates are interpreted in a way similar to normal regression because the intercepts and slopes from the individual-level model are continuous and normally distributed.

As a robustness check, we also perform a hierarchical binomial logistic regression. In this alternative regression, our dependent variable takes 0 value when “set up a new one” is the preferred mode of entry and value 1 when “take over an existing business” is preferred.

## Results

Table 3 presents the mean and standard deviations of all individual-level and country-level variables, together with a correlation matrix. Computations of the variance inflation factor (VIF) reveal no serious threat of multicollinearity (VIF < 3.04).

The results of our hierarchical multinomial logistic regression analysis are displayed in Models 1 through 4 in Table 4. These models focus on the comparison between “take over an existing business” and “set up a new one.” Regression results regarding the comparison between “none of these/not interested” and “set up a new one” are not given here but are available from the authors. Whereas Model 1 includes only the socioeconomic characteristics, Model 2 adds the psychological characteristics such that all individual-level variables are included in Model 2. Model 3 adds GDP per capita (the control variable at the country level), and Model 4 contains all individual-level and country-level variables.

### Individual-Level Determinants of the Preferred Mode of Entry

Focusing on the socioeconomic characteristics in Model 1, we do not find a significant relationship between gender and the preferred mode of entry ( $\beta = -0.01$ ;  $p > 0.10$ ). In other words, women and men do not differ in their preference for taking over a business versus starting a venture. Age, reflecting labor market experience to some extent, positively influences the preference for business takeover versus starting from scratch ( $\beta = 0.01$ ;  $p < 0.01$ ). We also included an age-squared term in Model 1. This approach, however, did not improve the explanatory power and leads to nonsignificant coefficients of both the linear ( $\beta = 0.01$ ;  $p > 0.10$ ) and quadratic terms ( $\beta = 0.00$ ;  $p > 0.10$ ). The number of years of schooling has a significant negative coefficient ( $\beta = -0.04$ ;  $p < 0.01$ ), implying that highly educated individuals prefer to start from scratch. This is in accordance with the findings of Parker and Van Praag (2012), who argue that formal education is more useful in new venture start-ups than in business takeovers.

Furthermore, occupational status has some influence in that unemployed individuals prefer starting a new business ( $\beta = -0.38$ ;  $p < 0.05$ ). However, we can find no significant difference between blue-collar and white-collar employees. The entrepreneurial background of the father seems to be more important in explaining the preferred mode of entry

Table 3

Means, SDs, and Correlations<sup>†</sup>

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
<i>Individual-level variables</i>																										
1. Preferred mode of entry <sup>‡</sup> (three categories)	.46	.78	—																							
2. Male	.54	.50	.01	—																						
3. Age	43.11	14.38	.16	.00	—																					
4. Years of schooling	14.16	3.31	<b>-.04</b>	-.01	<b>.04</b>	—																				
5. White-collar employee	.30	.46	<b>-.07</b>	<b>-.07</b>	-.13	<b>.22</b>	—																			
6. Unemployed	.07	.25	<b>-.07</b>	.02	-.16	<b>-.04</b>	<b>-.17</b>	—																		
7. Self-employed mother	.16	.37	.02	-.03	<b>-.03</b>	<b>-.05</b>	<b>-.07</b>	-.01	—																	
8. Self-employed father	.31	.46	.07	.03	.02	<b>-.05</b>	<b>-.10</b>	<b>-.02</b>	<b>.44</b>	—																
9. Current business owner	.26	.44	<b>.09</b>	<b>.11</b>	<b>-.11</b>	<b>.04</b>	<b>-.39</b>	<b>-.16</b>	<b>.06</b>	<b>.09</b>	—															
10. Risk-taking propensity	.293	.77	<b>-.04</b>	<b>.09</b>	<b>-.07</b>	<b>.07</b>	<b>.02</b>	<b>-.03</b>	<b>.02</b>	<b>.04</b>	<b>.06</b>	—														
11. Self-confidence	3.19	.65	<b>-.06</b>	<b>.06</b>	<b>-.02</b>	<b>.05</b>	<b>.02</b>	<b>-.04</b>	<b>.01</b>	<b>.01</b>	<b>.01</b>	<b>.06</b>	—													
12. Internal locus of control	3.25	.71	-.03	<b>.03</b>	<b>.02</b>	<b>.05</b>	<b>.03</b>	<b>-.05</b>	<b>.01</b>	<b>.01</b>	<b>.03</b>	<b>.18</b>	<b>.30</b>	—												
13. Proactiveness	3.14	.66	-.03	<b>.03</b>	<b>-.03</b>	<b>.04</b>	<b>.01</b>	<b>-.01</b>	<b>-.03</b>	<b>.00</b>	<b>.05</b>	<b>.19</b>	<b>.27</b>	<b>.24</b>	—											
14. Inventiveness	3.19	.66	<b>-.09</b>	<b>.04</b>	<b>-.02</b>	<b>.08</b>	<b>.04</b>	<b>.00</b>	<b>-.01</b>	<b>.01</b>	<b>.04</b>	<b>.24</b>	<b>.31</b>	<b>.22</b>	<b>.28</b>	—										
15. Optimism	3.13	.76	<b>-.04</b>	<b>.04</b>	<b>-.07</b>	<b>.08</b>	<b>.06</b>	<b>-.02</b>	<b>.02</b>	<b>.00</b>	<b>.02</b>	<b>.24</b>	<b>.27</b>	<b>.25</b>	<b>.20</b>	<b>.29</b>	—									
16. Desire for competition	2.80	.84	-.02	<b>.18</b>	<b>-.08</b>	<b>.00</b>	<b>.01</b>	<b>.00</b>	<b>.01</b>	<b>.03</b>	<b>-.01</b>	<b>.26</b>	<b>.21</b>	<b>.18</b>	<b>.19</b>	<b>.19</b>	<b>.21</b>	—								
17. Growth aspiration	.18	.39	-.02	<b>.00</b>	<b>-.09</b>	<b>-.01</b>	<b>.03</b>	<b>.00</b>	<b>.05</b>	<b>-.01</b>	<b>-.03</b>	<b>.03</b>	<b>-.01</b>	<b>.00</b>	<b>.00</b>	<b>.00</b>	<b>.00</b>	<b>.03</b>	—							
<i>Country-level variables</i>																										
18. GDP (ppp) per capita	29,474.53	13,407.32	.01	.00	<b>.21</b>	<b>.14</b>	<b>.06</b>	<b>-.07</b>	<b>.04</b>	<b>.03</b>	<b>.08</b>	<b>.04</b>	<b>.04</b>	<b>.14</b>	<b>.07</b>	<b>.08</b>	<b>-.02</b>	<b>-.13</b>	—							
19. Number of patents (log)	1.12	.94	<b>.03</b>	.01	<b>.22</b>	<b>.15</b>	<b>.03</b>	<b>-.10</b>	<b>.00</b>	<b>.07</b>	<b>.05</b>	<b>.03</b>	<b>.05</b>	<b>.06</b>	<b>.02</b>	<b>.09</b>	<b>-.05</b>	<b>-.14</b>	<b>.75</b>	—						
20. Starting a business (time needed)	17.15	11.70	<b>-.03</b>	<b>.03</b>	<b>-.22</b>	<b>-.11</b>	<b>-.02</b>	<b>.04</b>	<b>.17</b>	<b>.09</b>	<b>.03</b>	<b>-.03</b>	<b>-.07</b>	<b>-.06</b>	<b>-.01</b>	<b>.12</b>	<b>-.37</b>	<b>-.35</b>	—							
21. Availability of bank loans	3.33	.64	<b>-.06</b>	<b>.00</b>	<b>-.11</b>	<b>-.04</b>	<b>.02</b>	<b>.01</b>	<b>.05</b>	<b>.02</b>	<b>-.09</b>	<b>.02</b>	<b>.02</b>	<b>.03</b>	<b>.00</b>	<b>.05</b>	<b>-.01</b>	<b>.09</b>	<b>-.05</b>	<b>-.04</b>	<b>.04</b>	—				
22. Availability of venture capital	3.22	.58	-.03	.02	.10	.13	<b>.06</b>	<b>-.04</b>	.02	.01	<b>-.05</b>	.10	<b>.09</b>	<b>.07</b>	<b>.06</b>	<b>.15</b>	<b>.04</b>	<b>.00</b>	<b>.60</b>	<b>.52</b>	<b>-.14</b>	<b>.15</b>	—			
23. Country risk tolerance	2.45	.34	<b>-.11</b>	<b>.04</b>	<b>-.13</b>	<b>-.02</b>	<b>.03</b>	<b>.01</b>	<b>.12</b>	<b>.06</b>	<b>-.09</b>	<b>.08</b>	<b>.13</b>	<b>.11</b>	<b>.07</b>	<b>.10</b>	<b>.11</b>	<b>.13</b>	<b>.09</b>	<b>.06</b>	<b>.06</b>	<b>.22</b>	<b>.42</b>	<b>.51</b>		

<sup>†</sup>  $n = 4,210$  for evaluating pairwise correlations between individual-level variables or between individual- and country-level variables;  $n = 33$  for evaluating pairwise correlations between country-level variables. Bold numbers represent pairwise significance at the .05 level.

<sup>‡</sup> Coding: 2 = “none of these, not interested”; 1 = “take over an existing business”; 0 = “set up a new one.”

SD, standard deviation; GDP, gross domestic product.

Table 4

Regression Results Hierarchical Multinomial and Binomial Logistic Analysis<sup>†</sup>

Variables	Takeover vs. start-up (multinomial model)						Takeover vs. start-up (binomial model)																	
	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6			Model 7			Model 8		
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
<i>Individual level: socioeconomic characteristics</i>																								
Male	.07	.02	.07	.02	.07	.02	.07	.02	.07	.02	.07	.02	.07	.02	.07	.02	.07	.01	.07	.01	.07	.01	.07	
Age	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	.00	.01***	
Years of schooling	-.04**	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	.01	-.03*	
White-collar employee	-.13	.08	-.11	.10	-.10	.10	-.10	.10	-.10	.10	-.10	.10	-.10	.10	-.10	.10	-.10	.08	-.11	.08	-.11	.09	-.11	
Unemployed	-.39*	.15	-.39*	.17	-.39*	.17	-.39*	.17	-.39*	.17	-.36**	.13	-.36**	.13	-.37**	.13	-.37**	.13	-.37**	.13	-.37**	.13	-.37**	
Self-employed mother	.05	.12	.06	.11	.05	.11	.05	.11	.05	.11	.05	.12	.05	.12	.05	.12	.05	.12	.05	.12	.05	.12		
Self-employed father	.17*	.08	.19*	.09	.19*	.09	.19*	.09	.19*	.09	.16*	.09	.16*	.09	.18*	.08	.18*	.08	.19*	.08	.19*	.08	.19*	
Current business owner	.24*	.09	.30**	.09	.30**	.09	.29**	.09	.29**	.09	.22*	.09	.22*	.09	.28**	.08	.28**	.08	.28**	.08	.28**	.08	.28**	
<i>Individual level: psychological characteristics</i>																								
Risk-taking propensity	-.15**	.05	-.15**	.05	-.15**	.05	-.15**	.05	-.15**	.05	-.14**	.05	-.14**	.05	-.14**	.05	-.14**	.05	-.14**	.05	-.14**	.05	-.14**	
Self-confidence	-.09	.06	-.09	.06	-.09	.06	-.09	.06	-.09	.06	-.08	.05	-.08	.05	-.08	.05	-.08	.05	-.08	.05	-.08	.05	-.08	
Internal locus of control	.02	.06	.02	.06	.02	.06	.02	.06	.02	.06	.02	.05	.02	.05	.02	.05	.02	.05	.02	.05	.02	.05	.02	
Proactiveness	-.01	.06	-.01	.06	-.01	.06	-.01	.06	-.01	.06	-.01	.05	-.01	.05	-.01	.05	-.01	.05	-.01	.05	-.01	.05	-.01	
Inventiveness	-.26***	.06	-.26***	.06	-.26***	.06	-.26***	.06	-.26***	.06	-.25***	.04	-.25***	.04	-.25***	.04	-.25***	.04	-.25***	.04	-.25***	.04	-.25***	
Optimism	-.07	.05	-.07	.05	-.07	.05	-.07	.05	-.07	.05	-.07	.04	-.07	.04	-.07	.04	-.07	.04	-.07	.04	-.07	.04	-.07	
Desire for competition	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04		
Growth aspiration	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10		
<i>Country level</i>																								
GDP (ppp) per capita	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	.00	-.01	
Number of patents (log)																								
Starting a business (time needed)																								
Availability of bank loans																								
Availability of venture capital																								
Country risk tolerance																								
Deviance (-2 log likelihood)	12,897.88	12,846.28	12,823.55	12,800.99	12,794.79	12,783.33	12,773.68	12,763.66	12,753.65	12,743.65	12,733.65	12,723.65	12,713.65	12,703.65	12,693.65	12,683.65	12,673.65	12,663.65	12,653.65	12,643.65	12,633.65	12,623.65		
Deviance difference (chi-square)	116,99***	168,60***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***	191,33***	168,79***		

<sup>1</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$  (two-tailed test).<sup>†</sup> Models 1–4: individual level  $n = 4,210$ ; country level  $n = 33$ . Models 5–8: individual level  $n = 3,489$ ; country level  $n = 33$ . Robust standard errors are reported. The group of blue-collar employees is used as a reference group. GDP: gross domestic product; SE, standard error.

( $\beta = 0.17$ ;  $p < 0.05$ ) than the entrepreneurial background of the mother ( $\beta = 0.05$ ;  $p > 0.10$ ). Finally, business owners as a group prefer a takeover more strongly than do the two other groups ( $\beta = 0.24$ ;  $p < 0.01$ ; see also Table 1).

Regarding an individual's personality, which is investigated in Model 2, we find that two characteristics are associated with a higher preference for starting a new business: risk-taking propensity ( $\beta = -0.15$ ;  $p < 0.01$ ) and inventiveness ( $\beta = -0.26$ ;  $p < 0.001$ ). Contrary to our expectations, we find no significant impact from self-confidence, internal locus of control, proactiveness, optimism, desire for competition, or growth aspiration.

## Country-Level Determinants of the Preferred Mode of Entry

Model 3 adds GDP per capita ( $\beta = -0.01$ ;  $p > 0.10$ ), whereas Model 4 includes all country-level variables. The number of patents is positively associated with takeover preferences ( $\beta = 0.23$ ;  $p < 0.05$ ); in other words, countries with a high level of innovation output are characterized by higher takeover preferences. The administrative burden of setting up a business also influences the preferred mode of entry: the amount of time required to set up a business in a country is positively related to the preference for taking over a business relative to starting from scratch ( $\beta = 0.02$ ;  $p < 0.05$ ). Furthermore, the availability of bank loans has a significant positive relationship with the preferred mode of entry, albeit only weakly significant ( $\beta = 0.21$ ;  $p < 0.10$ ), whereas the availability of VC has an insignificant coefficient ( $\beta = 0.21$ ;  $p > 0.10$ ). Finally, there is a strong tendency to start from scratch rather than take over an existing business in risk-tolerant societies ( $\beta = -1.29$ ;  $p < 0.001$ ). A negative coefficient for country risk tolerance is consistent with our expectation that individuals in more risk-tolerant countries (i.e., countries with low risk aversion) are less likely to opt for takeover (thus are more likely to choose start-up).

## Robustness Checks and Further Analyses

We conducted tests to check the robustness of our results. First, we omitted the category “none of these/not interested” of our dependent variable by treating its values as missing values and performed a hierarchical binary logistic regression (Models 5 through 8 in Table 4). When comparing Models 5 through 8 with Models 1 through 4, we find almost no differences regarding the outcomes of the individual-level variables. With respect to the country-level variables, we observe some small changes in the  $p$ -values. However, the pattern of our results did not change substantially. Indeed, results of the Hausman test (Hausman & McFadden, 1984; detailed results available from the authors) show that the independence of irrelevant alternatives assumption is not violated in the multinomial logistic model. In other words, removing a particular category (in the case of Table 4, “none of these, not interested”) does not lead to radical changes in the coefficients of the resulting categories in a binomial logistic regression.

Second, we investigated whether our approach to treating missing values, listwise deletion, affected the results.<sup>5</sup> Tests confirmed that data were missing at random; that is, the distribution of “missingness” was significantly related to other independent variables

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5. Overall, the number of missing values for the independent variables at the individual level is within a reasonable range, with a maximum of 9.2% for growth aspiration and all other variables below 3%. This includes age (0.3%), years of schooling (2.9%), white-collar (0.1%), blue-collar (0.1%), unemployment (0.1%), self-employed mother (1.4%), self-employed father (2.2%), risk-taking propensity (1.3%), self-confidence (1.4%), internal locus of control (1.7%), proactiveness (2.3%), inventiveness (1.3%), optimism (1.4%), and desire for competition (1.6%).

but not to the dependent variable. Thus, listwise deletion might distort findings, and imputing missing values by means of multiple imputation is typically recommended (Schafer & Graham, 2002). We multiply imputed missing values 15 times, thereby increasing the individual-level sample size to 5,375 and 4,990 for the multinomial and binomial models, respectively. The combined results (available on request) do not substantially differ from our original results.

Third, we assessed the robustness of the coefficients of some individual-level and country-level determinants in Model 4 of Table 4. At the individual level, the positive impact of age could be partly attributed to a “wealth effect” because older people have higher incomes. An objective measure of income is not available. However, we add a perceived income variable, measured as individuals’ responses to the question: “Which of the following phrases describes best your feelings about your household’s income these days?” Our variable ranges from “find it very hard to manage on the present income” (value of 1) to “find it difficult to manage on the present income” (value is 2), “get by on the present income” (value is 3), and “live comfortably on the present income” (value is 4). The results show that age is again significant at 1% ( $\beta = 0.01$ ;  $p < 0.01$ ), whereas the income variable does not have a significant impact ( $\beta = 0.03$ ;  $p > 0.10$ ).

To rule out possible suppression effects between *self-employed mother* and *self-employed father*, we excluded *self-employed father* from the analysis. This results again in an insignificant coefficient for *self-employed mother* ( $\beta = 0.15$ ;  $p > 0.10$ ). We also considered different combinations of both variables. That is, we created dummy variables for four situations: neither father nor mother self-employed (our reference group), father only self-employed, mother only self-employed, or both father and mother self-employed. The findings are that “mother only self-employed” is again not significant ( $\beta = -0.04$ ;  $p > 0.10$ ) and “father only self-employed” is weakly significant ( $\beta = 0.16$ ;  $p < 0.10$ ), whereas “both father and mother self-employed” is significant ( $\beta = 0.26$ ;  $p < 0.05$ ). Thus, the effect is largest for those individuals with two self-employed parents.

Regarding the country level, our innovation output variable might be biased to large firms if these firms tend to patent more than smaller firms. We added a variable that controls for the industry structure in a country to Model 4 of Table 4, that is, the small and medium-sized enterprises (SME) sector’s share of formal employment in total employment when 250 employees are used as the cut-off point for the definition of SMEs (Ayyagari, Beck, & Demirguc-Kunt, 2003). The result is that the number of patents retains its significance ( $\beta = 0.22$ ;  $p < 0.01$ ), whereas the industry structure variable does not have any explanatory power ( $\beta = 0.01$ ;  $p > 0.10$ ). Furthermore, the relatively high correlation (.75) between *GDP per capita* and *number of patents* leads us to perform two additional analyses. In each analysis, one of the two variables is omitted from the regression. The results are similar to those in Model 4 of Table 4. The only noteworthy difference is that *starting a business* loses its significance when *number of patents* is omitted from the analysis.

## Discussion and Conclusions

Firm turbulence is a major driver of economic growth (Schumpeter, 1942). Hence, determinants of entry and exit are at the forefront of scholarly analysis, but studies of modes of entry and exit are surprisingly few. The present paper addresses the question of whether (prospective) entrepreneurs prefer taking over an existing firm or starting a new venture. This is the first study that analyzes the mode of entry into entrepreneurship from an international perspective using data from 33 countries.

We found two single-country studies that investigate the *actual* (i.e., not preferred) mode of entry into entrepreneurship (Bastié et al., *in press*; Parker & Van Praag, 2012). Earlier studies (Cooper & Dunkelberg, 1986; Dennis, 1997) are of a more descriptive nature. The studies of Parker and Van Praag and Bastié et al. consider the results of preferences leading to intentions and actual behavior, whereas our study examines preferences leading to intentions. Thus, any commonalities between our results and the results of Parker and Van Praag and Bastié et al. may be related to the link between preferences and intentions, whereas differences may be related to the link between intentions and actual behavior (see also Van Praag & Van Ophem [1995] and Grilo & Irigoyen [2006]). As an example, like the two earlier studies, our study points to a positive relationship between education and starting a new venture versus taking over an existing one. Thus, it seems that the positive relationship between education and (actual) new venture start-up can at least be explained by the link between preferences and the mode of entry intention. Beyond the effect of education, the present study finds that an individual's age increases takeover preferences, whereas psychological variables such as risk-taking propensity and inventiveness lower this preference. The influences of these psychological variables on mode of entry decisions have not previously been addressed.

Our study adds an important element to the literature explaining differences in country-level entrepreneurship behavior (Audretsch, Thurik, Verheul, & Wennekers, 2002; De Clercq et al., 2011; Djankov et al., 2002; Parker, 2009; Stam, Thurik, & van der Zwan, 2010; Stephan & Uhlaner, 2010; World Bank, 2011). To this point, the literature has only analyzed the influence of country characteristics on the level of entrepreneurship activity. The mode of entry decision (i.e., the way individuals enter entrepreneurship) has received little attention. We find that innovation output and the administrative burden of setting up a new business are positively related to the preference for taking over an existing business. Furthermore, a country's risk tolerance is positively associated with the preference for starting a new business. From earlier research, we know that these country-level variables explain cross-country differences in entrepreneurial engagement. The present study reveals that country-level variables on the dimensions of innovation, regulation, finance, and culture also influence the preferred mode of entry into entrepreneurship and, therefore, the distribution of new start-ups and takeovers in societies.

Policy documents stress the importance of the takeover option. For example, according to the European Commission (2003a), takeovers should be afforded the same importance as new venture start-ups in policy circles. Several proposals have been made to improve the business transfer environment, such as the reduction of taxes, measures to encourage timely preparation of those who want to sell their businesses, and financial support for those who want to take over those businesses (European Commission, 2003b, 2006). The extent of implementation of these measures differs among the EU member states (European Commission). The aging population and recent increases in the proportion of business owners to the working population, combined with the positive effects of both phenomena on the preference for takeover, suggests that taking over a firm will increase in importance in the future. There seems to be a general feeling that the productivity slowdown in modern economies is attributable to low propensities to take risks and to invent. The entrepreneurial society seems to have stalled (Audretsch & Thurik, 2001). If these propensities can be intensified by way of education or role models, higher proportions of new venture entries may be expected (given the negative influences of both individual-level risk taking and inventiveness on the preference for taking over an existing firm). Our results show that the result for risk tolerance can also be established at the aggregate level: individuals in societies with higher levels of risk tolerance (low risk

aversion) display lower preferences for taking over a business on average. Thus, the individual level and the country level reinforce each other, and therefore the negative impact of risk aversion on new venture start-up is further strengthened when the individual resides in a risk-averse society.

This study is not without limitations. Using data from the Flash Eurobarometer Survey on Entrepreneurship allows us to illuminate the effects of both individual- and country-level variables on the preferred entry mode. However, the survey relies on single-item measures to capture psychological characteristics, which limits the meaningfulness of self-reported responses. Future research could corroborate our findings by using multiple-item measurements. However, single-item measures have some advantages over multiple-item measures, such as reductions in respondents' refusal rates and a relatively low common methods bias (Bergkvist & Rossiter, 2007; Nagy, 2002). Moreover, the effect of being a nascent entrepreneur versus being a potential entrepreneur on entry mode may suffer from survival bias. As we argued above, takeover is less risky than starting a venture from scratch, which is why the proportion of nascent entrepreneurs preferring a takeover rather than a new venture start-up should be relatively high. It would be preferable to have longitudinal information concerning whether an individual was engaged in entrepreneurial activity in the past and whether this activity has been successful or not. Relatedly, it would be intriguing to learn more about firm survival and firm performance across both modes of entry. Again, a longitudinal design can help to answer these questions. The exact dynamics among preferences, intentions, and actual behavior regarding the mode of entry play an important role and deserve to be explored in more detail. More suggestions for further research lie in modifications of existing measurements or in collecting new variables to be included in the analysis. At the individual level, one may be interested in the effect of specific entrepreneurship education (Von Graevenitz, Harhoff, & Weber, 2010) on an individual's preferred mode of entry. The results can then help to modify the effectiveness of entrepreneurial education programs in terms of raising more awareness for the possibility of taking over an existing firm. It would also be important to learn more about whether the type of education (e.g., engineering- vs. business-related education) has an effect on mode of entry. At the country level, the current number of included countries implies a restriction on the number of variables that can be taken into account in the multilevel analysis. Many possibilities exist extending the cross-country analysis with further cultural variables, such as the collectivistic or individualistic nature of a society. Other dimensions of the regulatory regime regarding setting up a new business may also provide valuable insights to explain the large between-country variation in the preferred mode of entry. The present study takes into account only one dimension (time needed for setting up a business) originating from one source (World Bank, 2011). Finally, future research may also consider the ways in which investors are legally protected (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998) or how bankruptcies of firms are handled (Armour & Cumming, 2008).

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