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The role of human capital and gender parity in funding venture capital businesses

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Abstract

Which factors guide investors in the decision of investing in a new venture? The intangible determinants of venture capital investment have been studied scarcely by the literature, especially from a macro cross-country perspective. Very few studies have included education proxies of human capital in the analysis (Grilli et al., 2019). The present study explores whether including business education topics (i.e., how to create and manage an SME) in school programs benefits a country in attracting more venture capital investments and/or increasing the number of deals. Additionally, it compares the impacts of providing this specific business education at different educational levels against raising the general alphabetization level of a country, to generate a discussion on which of these two measures could be more effective to increase a country's competitive advantage. Finally, it studies whether the extent to which women are active in the labor force and completed different levels of education also has a role in attracting venture capital funding. The sample comprises 36 countries (32 OECD countries plus Bulgaria, Romania, Russia, and South Africa) over 20 years (2002-2021). The model used is a panel-corrected standard error (PCSE) model with time fixed effect. Results show that both task-related education and a reduced gender gap have a positive and significant effect on venture capital investment and on the number of deals, suggesting that future studies could include these variables to further test their role in promoting the economic growth of countries.

Keywords: human capital, business education, gender gap, venture capital funding

JEL Classification: G24, J24, L26, M13

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List of abbreviations

FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
HC	Human Capital
IC	Intellectual Capital
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares regression
PCSE	Panel-Corrected Standard Error
R&D	Research and Development
TSCS	Time-Series Cross-Section
VC	Venture Capital

1. Introduction

In the attempt of defining the determinants of venture capital, most of the literature has focused on tangible factors, while only a limited portion of the studies has included intangible variables, among them human capital proxies. Human capital, however, is one of the main drivers of growth not only firm-wise but also, as a result, country-wise (Lucas (1988); Schultz (1963); Choo and Bontis (2002); Zhu and Li (2017)), and its development can significantly favor the attainment of competitive advantage (Grant, 1996). Although the positive link between human capital and growth has been proved on several occasions in literature, not many studies have focused on the role it plays in attracting venture capital funds, especially from a macro perspective. Nonetheless, venture capital funds positively influence the growth of a country, and it is, therefore, worth understanding how a country can attract a higher amount of them, especially for policymakers.

Therefore, the belief, tested in the present study, that education is a factor considered by venture capital investors in their decision-making process, due to its ability to positively influence the success rate of a business (Colombo and Grilli, 2010) and, hence, its power to enhance the chances of getting positive returns from the investment. Furthermore, some literature has shown how task-related human capital – proxied, for instance, by business studies, specific training, and on-the-job experience – has a higher influence on the success and growth of a business than general human capital (Unger et al., 2011).

For the sake of simplicity, we can split the existing studies that have explored the relationship between venture capital and human capital, into two categories: those that have explored this relationship from a firm level and those that have done it from a country level perspective. The latter are the minority and have used either general proxies, among which school enrolment rates have been among the most popular ones, or non-education proxies, for instance, research and development. Only firm-specific studies have attempted the introduction of task-related proxies of education, however, they have mostly built them through surveys, a practice that would be hard to transfer to country-level studies. Hence, there is a clear gap in the literature of country-level studies researching the impact of task-related education on venture capital, which is precisely the first topic to be explored in this one. In particular, the effect of entrepreneurial education and training at different levels of school (i.e., primary, secondary, and tertiary) will

be analyzed and compared to the effect of general enrolment rates in the same levels of school for the countries in the sample, to understand whether task-related education is relevant to venture capital investors and whether its relevance may overcome the one of the general alphabetization level of a country. Furthermore, another aspect analyzed in the study is whether the impact of different levels of education is perceived differently by venture capital investors: are they more interested in countries with a high enrolment in primary school or do they look mostly at tertiary school education? Is task-related education more powerful in attracting investors when received during primary and secondary school, or further along the career path of individuals? All of these questions will be answered by looking at the amount invested but also at the number of deals made yearly in each country.

Then, the analysis will move to a new dimension and focus on another gap detected in the literature: the role played by gender equity in attracting venture capital investors. The studies from Busse and Nunnenkamp (2009) and Pantelopoulos (2022), in fact, enhance how countries with better gender parity attract higher foreign direct investment, improving the growth opportunities for its economy. The same phenomenon has not been analyzed yet by the literature related to venture capital, therefore some hypotheses are formulated to explore this issue. In particular, gender parity is analyzed through female inclusion in the workforce and the different levels of education, to understand whether investors favor those countries with fewer inequalities. Once again, results are analyzed in terms of the amount invested and, also, of the number of deals.

Regarding the structure of the study, Section 2 presents the literature review from which the hypotheses are derived. Section 3 details the methodology and includes a description of the sample, the dependent and independent variables, and the model. Section 4 is about descriptive statistics and the discussion of the results. In Section 5, the robustness checks are performed, by scaling the dependent variables by the working-age population instead of the labor force. Section 6 summarizes the main findings of the study and discusses some limitations of the study and future lines of research.

2. Literature review

This section will provide a brief background of the human capital definition and theory, then it will analyze the presence of human capital variables, in particular proxies for education, in the literature, and how human capital variables have been included in venture capital models. Finally, it will explore the literature regarding the gender gap and how it relates with business performance and economic growth.

2.1 Definition of human capital

The first one to consider the "acquired and useful abilities of all the inhabitants or members of the society" as part of the "fixed capital" is Adam Smith (1776), when he explains how education and training are assets not only for the person who owns them but for the society as a whole and, similarly to machinery, are a vehicle of profits. Although he does not call it human capital, it is clear how both education and experience are already recognized as their main sources (Spengler, 1977). However, as it will be explored in subsection 2.2, it is only two centuries after, in the 1960s, that economists retake and further develop the subject of human capital, as an attempt to explain the gap in the pace at which economic outputs and traditional production inputs grow (UNECE, 2016).

Human capital is part of the broader concept of intellectual capital. Intellectual capital is defined as the set of intangible assets owned by a firm (Edvinsson and Malone, 1997) and is mainly responsible for knowledge generation (Grant, 1996). Its intangibility is what differentiates it from the physical and the financial capitals, and it makes it harder to define and measure it. Intellectual capital is further classified into human capital, relational capital, and structural capital. Human capital is the product of the know-how, skills, and experience of the employees. As defined by the World Bank, it is "the knowledge, skills, and health that people accumulate throughout their lives, enabling them to realize their potential as productive members of society"[1]. It includes several dimensions: education and experience, as well as creativity, entrepreneurial spirit, emotional intelligence, know-how, and flexibility, to name a few. Relational capital is the value of the relationships and networks a business has, such as with

[1] Source: https://www.worldbank.org/en/publication/human-capital/brief/about-hcp

customers and suppliers, as well as partnerships, alliances, and franchises. Structural capital includes all the processes, the organizational culture, and the intellectual property necessary for the correct functioning of human and relational capital.

Of the three components of intellectual capital, the research has shown that human capital is the most important one (Choo & Bontis, 2002) since it is the knowledge owned and shared by people who drive growth in businesses from a micro and, especially, a macro perspective. According to Grant (1996), which summarizes the main literature on the knowledge-based theory of the firm, this knowledge presents a series of attributes. To be able of creating value within a firm, knowledge must be transferable. In this way, it will provide the firm that owns it with a competitive advantage and it will also guarantee that it is internally disposable, making it possible for the management to take advantage of it in several areas. The second characteristic valuable knowledge should present is additivity: to assimilate something new, it should be possible to build the new information on the existing knowledge. Furthermore, knowledge is not an appropriable good: if it is sold, the seller does not lose it, which makes it hard to define its economic value. Its creation requires specialization, since the human mind cannot retain an infinite amount of information. Finally, to be part of a knowledge-based theory of the firm, knowledge must create value, comparably to other tangible inputs of production.

Finally, Lucas (1988) refers to human capital as the general skill level of an individual and estimates it has an internal but also external effect. The internal effect is the increase in productivity that benefits a single individual, while the external effect is how that increase in productivity can produce a positive impact on the productivity of other means of production.

2.2 The human capital theory

The analysis of human capital begins, in literature, from an individual perspective, through establishing a link between personal lifelong earnings and intangible assets such as education and experience. Still, from a microeconomic point of view, the advantage of promoting human capital for a firm is to increase its productivity thanks to better-skilled personnel. Hence, there seem to be advantages on both sides: workers can further educate themselves as a strategy to

reduce their unemployment periods, increase their incomes, and advance in their profession, while companies can invest in the training of their employees to achieve better financial results.

Schultz (1961, 1963), Becker (1962), Mincer (1974), and Rosen (1976) were the first to develop the theory of human capital. Becker (1962) adopts quite an ample definition of human capital and of what it means to invest in human capital. He includes all the activities that might improve a person's physical and mental abilities, with a different economic impact on the individual's wealth. Therefore, not only education and training are included, but also "medical care, vitamin consumption, and acquiring information about the economic system". He continues by explaining how human capital, together with other forms of intangible capital, can help justify different income distributions among people. According to his theoretical analysis, in fact, the higher the investment in oneself through education and training, the higher the earnings, even if the effect is visible only after some time (i.e., right when the investment in education is made, earnings decrease). However, this positive effect is not unlimited: since education comes from direct cost and opportunity cost, an individual should seek the optimal level of education, meaning the one that let marginal cost and marginal benefit break even. On the other side, human capital increases productivity, benefitting companies, which then have an interest in providing on-job training to achieve better results.

Schultz (1963) adds to the debate that the investment in human capital made by countries is the main responsible for the difference in economic growth between them, bringing the discussion for the first time from the individual to the country level.

Mincer (1974) builds on the theoretical analysis of Becker (1964) by creating a quantitative model, the so-called "Mincer equation", which links an individual's earnings to the years of education (formal training) and work experience (informal training). Therefore, the years of training can explain differences in salaries among individuals. Moreover, informal training seems to be the most relevant one, and its relevance grows with time.

Similar to Becker (1962), also Rosen (1976) focuses on lifetime earnings, but his approach tackles the problem from a different perspective: he applies a structural approach to the theory of human capital, assuming that earnings derive from a series of variables among which the implicit rate of interest seems to be particularly affected by education. The effects of human

capital are examined through the variations they generate on the variables: for instance, the rate of interest of college graduates is higher than that of high school graduates, meaning the earnings are larger.

In Becker's vision, further detailed in the book "Human capital" (1964), human capital is seen as a factor of production, a point of view that has later been criticized in literature. Freeman (1976) argues that human capital has only a signal role and shouldn't be considered a means of production. Bowles and Gintis (1975) worry about the implications of the human capital theory, and of seeing workers as capital goods, on the rights of workers. In fact, they argue that the human capital theory does not consider the importance of the working class and class conflict, nor the sociopolitical dimension of the companies. Moreover, they accuse the human capital theory of excluding other essential factors such as race, ethnicity, age, and gender, ways to present oneself, and personality traits. A more recent critique comes from Fix (2018), claiming that human capital theory is simplistic, ambiguous, and based on circular reasoning, therefore it should not be included in studies of the income distribution.

However, even with its limitations, the human capital theory has contributed to the spread of the vision of education as an investment, instead of only as a vehicle of culture for its own sake. This has stimulated further conversations on how governmental investment in human capital can influence entire countries, for instance providing a competitive advantage and promoting overall growth.

2.3 The country-level role of human capital

A predictable consequence of having linked the concept of human capital to the personal lifelong earnings of the individual and to the performance of the firm is to look at its impact from a wider angle and start questioning whether variables such as education and experience, through benefitting single employees and companies, can then achieve the goal of making a country grow. In other words: is the competitive advantage reached by single companies, thanks to the investment in human capital, also reachable for a country as a whole, if its government invests in education?

It is the question posed by Lucas (1988), who is the first one in attempting the definition of a model that links human capital to the theory of development. He believes that human capital can impact the average income per capita of a nation and he uses the U.S. to test it, concluding that human capital has played a substantial role in the U.S. economic growth of the 20th century. Furthermore, he is confident that human capital is also responsible for differences in economic development between countries. In his model, human capital is proxied by two variables: schooling and learning by doing, the former is represented by the temporary decision to attend a school instead of working, and the latter is considered a specialized type of human capital gained in the job. Benhabib and Spiegel (1994) do not find a significant relationship between human capital and the average income per capita in their cross-country study, however, they add to the discussion a positive relationship between human capital and the growth rate of total factor productivity. Differently from Lucas (1988), they build an index of human capital using the average years of schooling in the labor force and the primary, secondary, and tertiary schooling enrollment ratio (Kyriacou, 1991, for full methodology).

Zhu and Li (2017) conduct a cross-country study as well, involving 210 countries, and show a positive and significant relationship between secondary and tertiary education and the economic growth of a country. Among those two proxies, secondary education is the one that has a stronger influence on both long- and short-term growth.

The role of human capital in fostering economic growth has also been shown in single-sector analyses. For instance, human capital is responsible for the business performance in the banking sector, as a survey conducted on 200 banks in Belgium and Luxembourg by Mention and Bontis (2013) shows. Their human capital proxies are mostly oriented at capturing the extent of the training on-job provided by the financial institution to its employees.

Given the evidence on the link between human capital and economic growth, is it possible to make reliable forecasts about economic growth without accounting for human capital? Temple and Johnson (1998) argue that if predictions of economic growth made in the 60s by economists have proven untrue in practice, it is because their models did not take into account components from the sociology discipline. They refer to events such as the unforeseen growth of South Korea, which was judged an unrealistic target, or to the development below the expectations of

countries in Africa. They prove that the Adelman-Morris index (1967) was an accurate measure of socioeconomic development, with some explanatory power: the countries characterized by a high index correspond to those that have been growing the most. These findings suggest that, when analyzing drivers of economic growth, it is necessary to include social development variables in the discussion.

Another study bringing interesting insights into how developing countries can grow and how human capital can foster that growth by impacting foreign direct investment, is the one of Noorbakhsh et al. (2001). Their study is interesting not only because of the findings regarding human capital variables, but also because it is one of the first to examine how they can attract foreign capital and insert them into a cross-country model, using country-level variables as proxies of education instead of relying on firm-based surveys. They use three proxies: the secondary school enrollment ratio, a measure of the flow of human capital, and the average number of accumulated years of secondary education, and of secondary and tertiary education, in the labor force, as stock measures of human capital. For a sample of 36 developing countries from Africa, Asia, and Latin America, they empirically test the influence of human capital on attracting foreign direct investment (FDI), finding that not only human capital is significant but is also among the most important drivers in attracting FDI and its relevance is increasing over time. Finally, again on the topic of FDI and developing countries, Bengoa and Sanchez-Robles (2003) also show a positive (although not for all regressions significant) effect of education, proxied by the primary and secondary school enrolment ratios, on the FDI, this time for a sample of 18 Latin American countries for 1970-1999.

2.4 Human capital and entrepreneurship

Venture capital investors are interested in human capital because, as largely supported by the literature, human capital has a positive and significant impact on the results of a firm, increasing the likelihood for angel investors to get positive returns. Moreover, learning is a crucial process for the entrepreneur and it is an essential contribution to finding new business opportunities (Franco & Haase, 2009) and formal education positively affects the chances of an entrepreneur to correctly evaluate business opportunities (Schultz, 1961). Besides, startups owned by

educated entrepreneurs present higher survival rates (Bates, 1995) and better performances (Gimeno et al., 1997). Also, according to Brush and Hisrich (1991), the years of formal education have an impact on the performance of women-owned businesses.

Gavious and Russ (2009) explore the link between human capital and performance considering the technological level of the firm for a large sample of U.S. non-financial companies for the years 1993-2006. While both high- and low-technology companies benefit from human capital, the former has a substantially higher return: $1.9 versus $0.4 increase per $1 of compensation expense, which is considered by the market a proxy for unrecognized intangible assets.

Davidsson and Honig (2003) find that while education plays a role in starting a new business, to be successful at it the network is what makes the difference, on a sample of 380 Swedish newly become entrepreneurs who agreed to be interviewed by phone. Moreover, formal education, a general measure of human capital, does not seem to have an impact on the decision to start a business nor on its performance, while task-related measures of human capital such as previous experience in start-ups and having attended business classes are instead important factors for both the decision to start a business and for effectively putting it into place, although they are not predictors of its profitability. However, their measure of task-related human capital is having attended any class or workshop on how to start a business, which does not provide sufficient information on their contents or quality.

Colombo and Grilli (2010) argue that there is a direct and an indirect effect of human capital on the growth of a new business. They find a significantly positive effect of university-level education and prior work experience on the success and growth of a sample of Italian tech startups (direct effect). Additionally, the level of education of the founder(s) appears to be positively correlated to obtaining venture capital that enhances growth (indirect effect).

Unger et al. (2011), in their meta-analysis integrating more than 30 years of study on human capital and entrepreneurship, find a positive and significant – although small – relationship between human capital and success, measured by size, growth, and profitability. Their findings show that the outcomes of human capital, proxied by knowledge and skills, as well as task-related proxies, have better explanatory power than education and experience.

As shown by Armington and Acs (2002), there is also an interesting link between human capital and the decision to start a new business for the U.S. market. They test two variables: the portion of adults without a high school degree and the portion of adults with a college degree, finding that the first is negatively correlated to the birth rate of new firms, while the second is positively correlated to it. These bring them to the conclusion that regions in which there are relatively more people awarded with a college degree are more likely to see the creation of new ventures.

Fourati and Affes (2011) agree with their findings and show that the number of years of education is positively and significantly correlated to the chances of creating a new business, while managerial and entrepreneurial experience reduce them.

In summary, most of the studies reviewed have shown a positive relationship between human capital, proxied in several ways, and several elements of entrepreneurship: the decision to start a business, the likelihood of succeeding at it, its performance and growth. The fact that education seems to have a positive impact on new ventures and on the country's economy (as seen in subsection 2.3) are supporting arguments to understand why investors are thought to prefer to allocate their capital to countries with higher human capital, as detailed in the hypotheses (see subsection 2.8).

2.5 Human capital to attract investors

The literature on venture capital investment has begun including human capital measures only in the last few decades. Among them, one proxy that has particularly captured the interest of Academia has been the investment in research and development, especially for country-level studies, and it belongs to the dimension of creativity. This choice is easily understood by thinking about the consequences such investment can generate, starting from an improvement in the technological level that can lead firms operating in that country to gain a competitive advantage over international competitors.

Gompers and Lerner (1999) provide us with empirical proof of this: the variable academic R&D expenditure is found to be positively related to venture capital investments, especially for industrial companies. In their analysis of both the demand and the supply side of venture capital commitments, they consider the aggregated investment in venture capital in the U.S. for the

years 1969-1994, therefore they are among the first not only to provide a study on macro variables influencing venture capital investments, but also to include a proxy of human capital.

Schertler (2003) explores the relationship between venture capital investment and two different types of human capital proxies related to R&D: the number of employees working in R&D in the business sector and the number of patent applications to the European Patent Office. His empirical analysis of a sample of 14 western European countries in the years 1988-2000 shows that the relationship is positive and significant for the early stages of the new ventures.

Also Félix et al. (2013) and Bedu and Montalban (2014) find a positive relationship between the investment in venture capital and the R&D expenditure over the GDP in their cross-country studies of European countries. The same positive relationship for a larger panel of 40 countries (i.e. OECD members plus Argentina, China, Romania, Russian Federation, Singapore and South Africa) has been encountered by Herrera-Echeverri (2017), especially for countries with the higher institutional quality and lower infrastructure.

However, investment in R&D is not the only human capital element that has been considered responsible for influencing the investor's decision: when looking at survey-based studies, it emerges how management skills and experience are among the most critical factors when estimating potential VC performance (included by 8 out of 8 survey-based studies analyzed by Zacharakis and Meyer, 2000). Hsu (2007) surveys 149 early-stage start-up entrepreneurs to prove how human capital accumulation has a positive and significant impact on the performance of their ventures. In particular, those who already have founding experience and those who hold a Ph.D. have more chances of receiving venture capital funds and having a better performance.

Similarly, Behrens et al. (2012) show how biopharmaceutical ventures whose management has a degree in management, law, medicine, or biosciences, attract higher financings from VC investors in the U.S. and in Europe. However, this effect is valid only for young ventures.

Using signaling theory, Ko and McKelvie (2018) study the impact of the founder's human capital on the funding received at different stages for a sample of 235 new ventures. They show how the prior founding experience, a dichotomous variable, and education, measured as the number of years of education, strongly influence the acquisition of first-round funds, while for later stages only the education is relevant. Shetty and Sundaram (2019) also use the signal theory

for a sample of 156 Indian ventures to show how at various stages of funding, the persistence of human capital signals influences the amounts raised, especially in the first round where top institution education, prior industry, and start-up experience, and the number of founders are all relevant signals. Founder coming from top schools appears to be the only HC variable to attract more investors not only in the first round but also in the followings. Zheng et al. (2021) conduct a similar study on the most relevant signals to obtain venture capital investment for 2388 Chinese new fintech businesses in the peer-to-peer lending industry, finding that the most relevant human capital proxies are the international experience and the status of the founder.

Another interesting factor considered by venture capital investors seems to be the specialization of the new venture: they are more likely to fund ventures operating in a sector in which they have had previous investing experience (Bottazzi, Da Rin, & Hellman, 2016).

These findings should not surprise: the educational level of the entrepreneur is not only a determinant in the decision of venture capital investors, but it is a characteristic analyzed also by banks before disbursing a loan to small businesses (Blanchflower et al., 2003). However, as proved by the literature review, there is a gap in cross-country studies using a macro measure of human capital different from the expense in R&D. The few studies that have analyzed the role played by human capital other than R&D in attracting venture capital have done it from a firm-based perspective, using surveys to build proxies of both general and task-related education. Therefore, the decision to fill the gap: the present study offers a cross-country analysis of the role of macro measures of human capital, not only general but especially task-related, on venture capital investment and deals.

2.6 Proxies of human capital education and experience

Before digging into this section, a few clarifications are needed. Firstly, there are three different approaches to measuring human capital: the cost-based, the income-based, and the education-based approaches (Le, Gibson, & Oxley, 2005). Of them, in this study, the focus is on the education-based approach, which happens to be also the closest one to the description Adam Smith made and that is reported in subsection 2.1. Secondly, for the purpose of this study, the focus will be on the human capital proxies related to education, experience, skills, and abilities,

while dimensions such as creativity (i.e., patents and R&D) - while have been mentioned in the previous sections - won't be investigated further.

The main difference between the education-based approach and the others is that while the cost and the income-based approaches aim at reaching a number using either the cost or the yield, the education-based approach is an indirect one, since it uses proxies like "literacy rates, enrolment rates, dropout rates, repetition rates, average years of schooling in the population, and test scores" (Le, Gibson, & Oxley, 2005).

Most of the proxies mentioned by Le et al. (2005) are general ones and, as they specify in their literature review, in many cases they fail the empirical test when used for cross-countries analyses. The adult literacy rate, for instance, is unable to account for advanced knowledge, skills, and abilities an individual might, or might not, have acquired during the studies. One of the contributions of the present study is to link a task-specific proxy of human capital, in addition to a general one, to the decision-making process of venture capital investors, and to explore this relationship from a cross-country perspective, using macro variables. In the literature, most of the studies have relied on a general proxy of human capital, represented mostly by the degree of education or the years of schooling received, while those studies that have attempted at using a task-specific variable have done it from a micro perspective, relying on surveys to obtain the data necessary to build the variable.

Among them, the study from Cooper et al. (1994) is particularly interesting because it offers a relatively ample selection of human capital variables, going beyond the traditional proxy of the educational background of the entrepreneur (which is nonetheless present and incorporates also gender and race), to predict the performance of new ventures. As a matter of fact, two proxies of human capital are considered in addition to the general one: the management know-how that, as the name suggests, refers to the entrepreneur's skills in managing a business, and that can also be compensated by third parties (i.e., advisors, partners); and the industry-specific know-how, which is the experience gained by the entrepreneur in a similar business. Information is collected using surveys and is limited to the U.S. The objective of the study is to understand whether there exists any type of relationship between the entrepreneur's skills and the outcome

of the venture (failure, marginal survival, or high growth). Findings are varied, with the different proxies of human capital having assorted effects on the performance of the ventures.

Lerner et al. (1997) conduct a survey-based study focused on women entrepreneurs in Israel and on the determinants of their business success. Task-specific human capital variables are included and tested, reaching the conclusion that education level and area of study do not impact performance, while previous experience in the same industry and possession of business skills have a direct and significant influence. Business skills, in particular, are measured through a built-in index that considers the ability in fundraising, budgeting, planning, and managing. Their findings add empirical evidence to the argument of the present study that what really matters is the task-specific human capital, as opposed to the generic one.

Davidsson and Honig (2003), alongside generic measures of human capital – years of schooling and years of experience – try to capture task-related effects by interviewing their sample of newly-become Swedish entrepreneurs on the attendance to classes or workshops on how to start a business. Although this variable has some limitations (i.e., it is impossible to measure the quality or to know the contents of those workshops), they found how it has a positive influence in starting a business and on moving the first steps as an entrepreneur, while the years of education only impact the creation.

Colombo and Grilli (2010), in their study of Italian tech startups, account for task-specific proxies of education and experience through the testing of the average number of years of economic, managerial, scientific, and technical education at university and of prior technical and commercial work experience in the same sector of the start-up and of managerial experience in a firm with more than 100 employees. Among them, they find that having university studies in economics and management has a positive and significant impact on start-up growth and on the probability of getting venture capital funds, while having technical work experience in a sector related to the one of the start-ups has a positive effect only on its growth. However, a drawback to using the average years of schooling, as highlighted by Le and Gibson (2005), is that it assumes that each year has the same impact in terms of the human capital increase, while the empirical evidence has shown that the increase in returns given by education follows a descending trend.

Another study supporting the hypothesis that task-specific and industry-specific human capital proxies are a better predictor of performance is the one of Zarutskie (2010), whose originality lays in analyzing the human capital of venture capital investors and how it affects the outcome of their investing decisions. Newly funded venture capital firms are more likely to succeed when they include in their management people with prior VC investing experience, and/or experience managing a start-up, and/or experience in management and strategy consulting, finance, or engineering. The area of study in which they have specialized does not seem to play a role, while having too many managers with an MBA can impact negatively the performance, a counterintuitive evidence presumably due to a lack of differentiation. Similarly, Milosevic (2018) finds that the proportion of VC top managers with prior experience in VC, investment banking, entrepreneurship, and R&D increase the chances of a successful exit in the French market.

However, while task-specific measures of human capital are introduced to firm-level studies, thanks to the use of surveys, country-level studies have relied only on generic measures. Noorbakhsh et al. (2001), in their study of determinants of FDI, use the school enrollment rate and the years of secondary and secondary and tertiary school attained by the working-age population as proxies of human capital. Similarly, Bengoa and Sanchez-Robles (2003) use the primary and secondary school enrolment rates. Armington and Acs (2002) choose to use the proportion of graduates from college over the total adult population as a measure of human capital, and the portion of adults with no high school degree as a measure of lack of it.

As studies such as Cooper et al. (1994), Lerner et al. (1997), Davidsson and Honig (2003), and Colombo and Grilli (2010) have proved, task-related human capital is important and has an impact on the success of a new venture, therefore it is a valuable input also for investors when they are deciding where to put their capital. However, if for firm-level studies it is still possible, although difficult, to gather data through surveys, capturing the same effect from a country-level perspective presents the complication of finding the right variable. As shown, most of the research has used enrollment rates to different levels of the education system, but that fails to capture what Cooper et al. (1994) define as management know-how. Hence, the decision of testing the basic school entrepreneurial education and training indicator, which consists of a grade assigned to each country, per each year of the sample, of to which extent a preparation in

how to create and manage small and medium enterprises is incorporated to the first levels of education, which are primary and secondary school. Moreover, the presence of education and training in tertiary schooling is also tested but, according to the results of Zhu and Li (2017), it is expected to have a smaller impact, since the earlier business and entrepreneurial topics are integrated into an individual's education, the better. The choice of these variables is aligned with Marvel et al. (2016), who argue that if the education or the experience earned relates to starting a business, then it should be classified as task-related human capital.

2.7 Gender gap and female participation in the labor force

Although there are no studies adopting a macro and cross-country perspective in investigating whether the extension of the women participation to the creation of new ventures has an impact on the investors' decision to fund a business, a few studies in literature have explored the influence that the gender of the entrepreneur has played on the firm performance, and, even more interestingly, how the female participation to the workforce can have an impact on the economic growth, also thanks to the attraction of foreign direct investments.

Among them, Cooper et al. (1994) is one of the first to include the gender in a study related to entrepreneurship and new ventures. They find that new companies founded by women stand a lower chance to grow, although the same probability of survival as those owned by men. These findings are not surprising considering they relate to startups founded in 1985. The hope is that in the seventeen years that have passed from the year of reference of their study to the first year of the sample of this study (i.e., 2002), the situation has evolved and become more inclusive, implying also attentive investors that choose to allocate their capital to those countries that include a larger portion of the female population to the labor force.

Contrasting results are the ones of Kalleberg and Leicht (1991), who present a study focused not necessarily on new ventures but on small businesses in general, showing how, in terms of survival and success, there are no differences between businesses created by women or men, for a longitudinal panel data of 411 companies of the U.S. state of Indiana in three industries (food and drink, computer sales and software, and health). However, they collect data manually through phone interviews and assume that a business no longer operates if it became unreachable

by phone (which might be a fair assumption for the years 1985-1987) and, of their final sample, only a bit less than 6% went out of business. Success, on the other hand, is proxied by the growth in earnings since the first year of the survey. Both variables show no gender effect.

Still on the topic of firm-level performance, Dolinksy et al. (1993) study the link between the educational level of female entrepreneurs and business persistence, finding that the higher their educational level, the higher the chances of entering, staying, and reentering the business. Moreover, the majority of the impact of education is visible at the entering phase, meaning that education plays a fundamental role in driving women to self-employment, evidence also confirmed by Bates (1995).

Lerner et al. (1997) investigate the drivers of performance in a group of Israeli firms founded by female entrepreneurs. They enhance how having developed business skills, having accumulated industry experience, being highly motivated toward achievements, and being able to count on a single strong network, are the most significant factors affecting their results.

However, the gender gap and lower educational opportunities for women do not only impact the results of their businesses but the growth of the whole nation, as shown by Klasen (2002). In fact, gender inequality is directly responsible for lowering the average human capital and that ultimately has a negative impact on long-term economic growth.

Further supporting evidence of the influence of gender on the economic growth of both high- and low-income countries is offered by Cabeza-Garcia et al. (2018). They include, in their study of 127 countries, four dimensions of gender inclusion: education, access to the labor market, fertility, and democracy. Contrary to common beliefs, high fertility in women is found to be negatively related to economic growth, while a larger inclusion of women in secondary education and in the job market has beneficial effects, as well as their participation in politics. Coherently, Yıldırım and Akinci (2021) find that the fertility rate has no influence on the female labor force and that education and total labor force level are positively related to the female participation in the labor force. Moreover, the study identifies the primary role of providing equal opportunities in terms of education in increasing women's participation in the job market.

Furthermore, Mujahid and Zafar (2012) find a positive relationship between female labor force participation and the economic development of Pakistan for the years 1980-2010, showing that

the integration of females into the labor force is desirable both in terms of equity and efficiency. Similar evidence is found by Tsani et al. (2013) for South Mediterranean countries: a larger inclusion of women in the labor force would significantly benefit the economy.

Regarding sources of funding, Bădulescu (2011) shows, through the analysis of a sample of startups based in the EU and in Romania, that there are no relevant gender differences in obtaining funds. Both males and females use their own funds and savings as the primary source of funding, followed by funds from family and friends, bank loans and, finally, venture capital. However, access to external sources is minimal: only 1 out of 6 entrepreneurs of both genders, had access to them at the time of the study (2005). Nevertheless, Guzman et al. (2019) reach different results for the states of California and Massachusetts in the U.S.: businesses owned by women are less likely to obtain venture capital funds than those owned by men, however, the gap reduces when women-led businesses send signals of growth or when the investors are more sophisticated (i.e., when they score higher in terms of reputation calculated according to the methodology from Krishnan and Masulis, 2012).

Although, to the best of my knowledge, the literature regarding venture capital investment has not investigated the gender gap effect so far, interesting insights come from the literature on foreign direct investment. Busse and Nunnenkamp (2009) show that foreign investors prefer countries in which gender disparities are smaller, at least in terms of education. They find evidence that gender disparity discourages FDI investments from developed countries to middle-income developing ones. However, due to the lack of data regarding wages, labor productivity, and worker qualification by gender, the study can only use the gender gap in education as a proxy of overall gender disparity from a country-level perspective. Moreover, gender disparity can have a negative influence on wages and productivity, threatening the growth of the country. They conclude that, to promote economic development, governments should consider decreasing the gender gap, since foreign funds can significantly impact the growth rate of less developed countries.

Pantelopoulos (2022) finds similar evidence to the ones of Busse and Nunnenkamp (2009), this time adding the labor dimension to the analysis: female participation in the labor force is a crucial factor in attracting foreign direct investment for the OECD countries in the years 1960-

2010. His empirical study also shows how all levels of education, but especially tertiary, attract FDI to the country.

Hence, given the evidence from the literature of a positive effect of the gender gap reduction on the economic growth of a country, and the consequential interest for investing in the country shown by foreign investors, one of the hypotheses of the present study is that a similar effect can be produced on venture capital investments, meaning that investors prefer to allocate their capital in those countries that are more successful in reducing the gender gap and, in particular, in promoting a higher inclusion of women to the labor force.

2.8 Hypotheses

Considering the review of the literature presented in all the subsections from 2.1 to 2.7, the following hypotheses are formulated:

Hypothesis 1. There is a positive and significant relationship between venture capital investments (and deals) in a country and entrepreneurial education and training in primary and secondary school.

Hypothesis 2. The impact of including entrepreneurial education and training in primary and secondary school is higher than including them in tertiary school. In other words: the relationship between venture capital investments (and deals) and entrepreneurial education and training is positive and of a higher magnitude in primary and secondary school than in tertiary.

Hypothesis 3. Task-related proxies of education have a larger impact in terms of magnitude on venture capital investments (and deals) than general ones. In other words: the relationship between venture capital investments (and deals) and school enrolment rates is smaller in magnitude than the one between venture capital investments (and deals) and entrepreneurial education and training at the same school level.

Hypothesis 4. The impact of general education is higher for lower levels of schooling. In other words: the relationship between venture capital investments (and deals) in a country and its primary and secondary schooling enrolment rates is positive and has a higher magnitude than the one with tertiary schooling.

Hypothesis 5. There is a positive and significant relationship between venture capital investments (and deals) in a country and female participation in the labor force.

Hypothesis 6. There is a positive and significant relationship between venture capital investments (and deals) in a country and female enrolment in primary and secondary education.

Hypothesis 7. The relationship between venture capital investment (and deals) in a country and female enrolment rate in primary and secondary school is positive and of a larger magnitude than the one in tertiary school.

3. Data and methodology

This section provides details on the sample used for the research paper, on the dependent and independent variables with the respective sources and a brief explanation of why they have been chosen, and on the empirical model.

3.1 Sample

The study investigates the determinants of venture capital investment and deals with a sample of 32 OECD countries and 4 non-OECD countries, for a total of 36. Six OECD countries have been excluded (namely: Chile, Colombia, Costa Rica, Iceland, Mexico, and Turkey) due to a lack of data for the dependent variable. The exclusion affects the composition of the sample in the sense that it becomes mostly focused on developed countries, with three-fourths of it made of European countries, no participation from Central and South American countries, and only one African country (which is also one of the wealthiest in terms of GDP). On the other side, the countries included are characterized by different education systems and labor markets, guaranteeing the necessary degree of variety to the analysis. The detailed list of the countries analyzed is in **Table 1**. Regarding the years, the sample comprises yearly observations for a total of 20 years, from 2002 to 2021.

Since the purpose of the study is to conduct country-level research (as opposed to firm-level, on which most of the studies have been focusing until today), all the data has been collected from publicly available databases owned by the following institutions: the OECD, the World Bank, the General Entrepreneurship Monitor, and the Heritage Foundation. The only exception is the data regarding the number of venture capital deals, which comes from Thomson Eikon.

Not all the independent variables are available for the totality of the years of the study, therefore the resulting sample is an unbalanced panel data.

3.2 Variables

This subsection provides detailed information on the variables present in the study, while a summary of the definition and the expected sign of each variable is in **Table 2**.

3.2.1 Dependent variables

The dependent variables tested in the study are the venture capital investments, *vc_inv*, and the venture capital deals, *vc_deal*. Following the methodology of Kortum and Lerner (2000), Bottazzi and Da Rin (2002), Da Rin et al. (2006), Popov and Roosenboom (2013), Herrera-Echeverri (2014), Herrera-Echeverri (2017), the venture capital investment is calculated as the natural logarithm of one plus the total investment made in year i by country j divided by the economically active population. The source of the amounts of the venture capital invested in each country is the OECD.

Similarly, the variable venture capital deals (*vc_deal*) is calculated as the natural logarithm of one plus the number of deals made in year i by country j divided by the economically active population, as in Sahaym et al. (2010), Cumming and Li (2016), Herrera-Echeverri (2017). The source of the number of deals is Thomson Eikon.

Normalizing the distribution of venture capital investment, using logarithmic transformation, is convenient since we are dealing with countries of different sizes. Bonini and Alkan (2011), Behrens et al. (2012) are among the ones that use the natural logarithm of venture capital investment in their studies.

Also scaling the variable is a practice already seen in literature, and, in addition to scaling it for the active population (Herrera-Echeverri, 2017), another option is to scale it for the GDP (Félix et al., 2013).

As one of the robustness checks, the hypotheses are also tested using the dependent variables, venture capital investments and venture capital deals, calculated using the same logarithmic transformation but scaled by the working-age population instead of the economically active population. The difference between the two is that the former includes the inactive population. This control has been done in order to avoid biases due to scaling by the same or a similar

variable, especially when regressing the dependent variables with the female labor force, and it is extended as a robustness check for the whole model.

3.2.2 Independent variables

3.2.2.1 Entrepreneurial education and training

Although human capital, in the form of education, has been previously explored by the literature in relation to entrepreneurship and venture capital, it has been either in the form of general education, with variables like the enrollment rate (Benhabib and Spiegel, 1994; Noorbakhsh et al., 2001; Bengoa and Sanchez-Robles, 2003; Zhu and Li, 2017), or from a firm-wise level, with the use of surveys to understand the background of its management (Cooper et al., 1994; Lerner et al., 1997; Davidsson and Honig, 2003; Colombo and Grilli, 2010). However, while surveys are not an option due to the macro-nature of the present study, a generic education variable, although tested, is also far from the specific objective of this research, which is to test whether a specific education in business, especially provided at the early years of schooling by a country, is a variable of interest for venture capital investors. Hence, the choice of using the basic school entrepreneurial education and training indicator (from this point onward: *entrepr_edu*), collected by the Global Entrepreneurship Monitor. It is an index, whose values range from 1 to 9, of the integration of training in creating and managing small and medium enterprises to the primary and secondary levels of the education system of a country[2]. Moreover, to further prove the importance of task-related education at earlier stages of education, the post-school entrepreneurial education and training indicator (from this point onward: *entrepr_adv*) is tested as well. This variable also comes from the Global Entrepreneurship Monitor and, similarly to *entrepr_edu* is an index ranging from 1 to 9 of how well a country has integrated training in creating and managing small and medium enterprises to higher levels of education than secondary, for instance, business schools, colleges, and vocational schools.

3.2.2.2 School enrolment rates

[2] The Global Entrepreneurship Monitor.

However, the objective of the study is not only to demonstrate the relevance of task-related human capital for venture capital investors but also to show how it is a better proxy than general education. Therefore, following Benhabib and Spiegel (1994), Noorbakhsh et al. (2001), Bengoa and Sanchez-Robles (2003), and Zhu and Li (2017), school enrolment rates are included in the study for all levels of education: primary (*school_prim*), secondary (*school_sec*) and tertiary (*school_tert*). Data comes from the World Bank and indicates the ratio of the population of school age that is enrolled in the corresponding level of school according to their age, for primary and secondary ratio, or regardless of the age, for tertiary education. This implies that in the case of primary and secondary school, underage and overage students are excluded from the calculation and that in the case of tertiary education, the ratio can reach values higher than 100%.

3.2.2.3 Female participation in the labor force

The second main variable of interest in this study is female participation in the labor force. A rate of the female labor force over the total labor force is provided by the World Bank and indicates to which extent women are active in the supply side of the labor curve, regarding goods and services production. To the best of my knowledge, the link between this variable and the funding of venture capital from a country perspective, therefore using a macro variable, has not been explored yet. However, Pantelopoulos (2022) has shown the impact of the same variables on attracting foreign direct investment, as detailed in the literature review.

3.2.2.4 Female school enrolment rates

According to Busse and Nunnenkamp (2009) and Pantelopoulos (2022), the gender disparity in education has an influence on foreign direct investment. Countries with a reduced gender gap in education, are able to attract more foreign investment than those with higher gaps. Hence, the decision to test whether this same scenario happens in the case of venture capital funds. In order to do so, three more variables from the World Bank are included: the female school enrolment rate in primary (*fem_prim*), secondary (*fem_sec*), and tertiary school (*fem_tert*). The way the ratios are calculated is exactly the same as the general school enrolment rates (subsection 3.2.2.2), with the only difference being that in this case the population and the number of students attending each degree of instruction are limited to females.

3.2.2.5 Control variables

Institutional quality (*inst_qual*) is a variable obtained from the mean of the yearly observations of six variables from the Worldwide Governance Indicators (Kaufmann et al., 2011), available in the World Bank database: mean of control of corruption, rule of law, regulatory quality, government effectiveness, political stability, voice and accountability. According to Herrera-Echeverri (2017), we expect this variable to be significantly related to venture capital investments and deals and to have a positive sign: the better the quality of the institutions of a country, the more investors should find it attractive. Cherif and Gazdar (2011), in their study focused on mapping the institutional determinants of venture capital investments for a sample of 21 European countries, also use a proxy of institutional quality, the index of economic freedom (i.e., an index built from the average of ten indicators of freedom published by the Heritage Foundation). However, the variable presents mixed effects: when tested on the total amount of funds raised, it is significant and positive, while, when tested on the early-stage funds, it loses its significance. Other possible measures of institutional quality found in the venture capital investment literature are: political stability, property right protection, freedom of press and speech, and quality of the legal system (Hain et al., 2015).

Market capitalization (*market_cap*) is the market value (i.e., share price multiplied by the number of shares outstanding) of listed domestic companies, expressed as a percentage of the GDP. To the computation are excluded those entities whose main purpose is to hold shares of other listed firms, for instance, investment funds. The data source is the World Bank. This variable is expected to be significantly and positively related to venture capital investments (Cherif and Gazdar (2011), Hain et al. (2015), Herrera-Echeverri (2017)) since it is an indicator of the wealthiness of the stock market, which is a common exit option for venture capital investments (Gompers et al., 2008).

Data on the gross domestic product (*lnGDP*) is obtained from the World Bank and is expressed in current U.S. dollars. The variable has been transformed into its logarithmic form to account for differences among countries. As detailed by the World Bank, “GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without

making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources"[3]. This variable is a macro indicator of the overall wealth of a country, hence a positive sign is expected (Herrera-Echeverri, 2017). Hain et al. (2015) test three proxies of GDP – GDP, GDP per capita, and GDP growth - and find a positive impact on venture capital flow propensity and on the number of annual deals for each of them. Cumming and Knill (2012) find a significant and positive relationship between GDP per capita and the supply of venture capital funds.

Trade (*trade_gdp*) is the total amount of imports and exports over the GDP of the country and is another macro variable used to assess the wealth and the growth of the economy (Lucas, 1988), therefore a positive sign is expected (Herrera-Echeverri, 2017). The data source is the World Bank. Hain et al. (2015) use a different measure of trade, the trade flow between two countries (the product of the previous year's exports between two countries by the product of their GDP) but it proves to be insignificantly related to the capital flow propensity. Also in the work of Herrera-Echeverri (2017) the significance of the variable is not always present.

Scientific and technical journal articles (*articles_pop*) is the number of articles published in "physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences"[4]. The source is the World Bank. Following Herrera-Echeverri (2017), the number is divided by the active population and a positive sign of the resulting variable is expected. This variable is included in the model as a proxy for innovation (Herrera-Echeverri, 2017). Herrera-Echeverri (2017) is not the first study to include a proxy for innovation in a venture capital model, and, although results in the literature have been varied[5], the majority of the studies agree on a positive relationship with venture capital investments. The expenditure in R&D (Félix et al, 2013), the number of patent applications (Engel & Keilbach, 2007), and the innovation index (Groh & Wallmeroth, 2016) are among the most common proxies for innovation. Félix et al. (2013) find evidence in support of Gompers

[3] The World Bank.
[4] The World Bank.
[5] Cumming and Li (2016) find a negative impact of the expense in science and engineering R&D on venture capital investments and on the number of deals, but also a positive impact of the number of patents. Bedu and Moltalban (2014) find a negative impact of fiscal incentives on R&D on venture capital investments, however, government expenditure on R&D is positively correlated to venture capital growth.

and Lerner (1999), Romain et al. (2003) and Bonini and Alkan (2011) of a positive and significant relationship between the expense in R&D and venture capital investments. Engel and Keilbach (2007) find that companies with a larger number of patent applications are more likely to be funded by venture capital investors. Groh and Wallmeroth (2016) highlight a positive and significant relationship between the innovation index and venture capital investments. As a conclusion of this brief literature review, a positive sign is expected also in the present study.

The unemployment rate (*unemploy_rate*) is the number of jobseekers divided by the total labor force of the country and, as explained by Félix (2013), it is "a proxy for expectations and labor market rigidity". The variable is extracted from the OECD database. Expectations are of a negative relationship with venture capital investments. Jeng and Wells (2000) test two proxies of labor turnover – the average job tenure of the labor force with tertiary education and the percentage of the labor force who has a job tenure of more than 10 years – finding that they exert a negative impact on capital investments only during their early stages. Similarly, Cherif and Gazdar (2011) find a significant and negative relationship between the unemployment rate and early-stage investments, but the variable is not significantly related to the funds raised. Félix et al. (2013) highlight the negative effect of the unemployment rate on the funding of venture capital. Groh and Wallmeroth (2016) find a negative impact of the unemployment rate on venture capital investments only in emerging markets.

Tax burden (*taxburden*) includes direct and indirect taxes imposed by the government and it is expressed as a percentage of GDP. The source is the Heritage Foundation. As the literature suggests, a negative sign is anticipated. Gompers and Lerner (1999) find that capital gains tax rates are negatively associated with the size of the venture capital funds. Coherently, Bedu and Moltalban (2014) show that lower taxation for managers can contribute positively to the rise in venture capital investments. Da Rin et al. (2006) show results of how corporate capital gains tax rates negatively affect high-tech and early-stage venture capital investment in the European market. However, Cumming and Li (2016) find no significant influence of tax burden on entrepreneurial activity in the U.S. venture market.

3.3 Empirical model

3.3.1 Brief literature review on the choice of the model

According to the literature review, most of the country-level studies on the determinants of venture capital investment or deals use panel data techniques.

Balboa and Martí (2001) use a fixed effect panel data model to study the determinants of venture capital and private equity fundraising for a set of 15 European countries over 9 years. They justify their choice by explaining how it allows controlling for individual heterogeneity. Similarly, Cherif and Gazdar (2011) use the same techniques for an analogous panel of 21 European countries over 9 years, tested additionally for early-stage investments and funds raised. Another study using a panel data model (random effects) to test the determinants of venture capital investments on a sample of 18 European countries for 5 years is Bedu and Montalban (2014). Félix et al. (2013) use both random and fixed effects panel data models with a country fixed effect to run tests on the venture capital markets of 23 European countries for a period of 6 years. Bonini and Alkan (2011) also use a fixed-effects panel data model to test the impact of political and legal factors on total and early-stage venture capital investments for a sample of 16 countries over 8 years. Cumming et al. (2016) model the effects of U.S. public policies on venture capital deals and investments through fixed effects panel regressions. Groh and Wallmeroth (2016) use a random effects panel model with the addition of a year dummy variable to consider their fixed effects, a choice they justify by the presence of several country-dependent variables (in addition to the Hausman test), for a panel of 118 countries and 14 years.

3.3.2 Discussion on the choice of the explanatory model

This subsection presents in detail the tests and diagnostics that have been conducted in order to determine the best model for the study.

With 36 countries and 20 years, the dataset built for the present study qualifies as panel data. Moreover, the literature review confirms the choice of a panel data model as detailed in subsection 3.3.1.

While all the tests are run for all the specifications of the model and for all the independent variables (including: venture capital investment scaled by working age population, and venture capital deals in both of its specifications, scaled by the labor force and scaled by the working

age population) and taking into account the variables tested for each hypothesis, for space and clarity reasons and unless otherwise specified, the results presented in the section are based on the basic model with only control variables included, which is:

$$vc\_inv_{tj} = a_j + \beta_1 inst\_qual_{t,j} + \beta_2 market\_cap_{t,j} + \beta_3 lnGDP_{t,j} + \beta_4 trade\_gdp_{t,j} + \beta_5 articles\_pop_{t,j} + \beta_6 unemploy\_rate_{t,j} + \beta_7 taxburden_{t,j} + u_{tj} \quad (1)$$

where j (j= 1, 2, 3…, N) indicates the cross-sections of the countries in the sample, and t (t = 1, 2, 3…, T) is the year of consideration.

Inst_qual, *market_cap*, *lnGDP*, *trade_gdp*, *articles_pop*, *unemploy_rate*, and *taxburden* are the control variables and further details about them can be found in **Table 2** of the annexes and in section 3.2 Variables.

3.3.2.1 Breusch-Pagan Lagrange multiplier (LM) test for random effects

The first test run is the Breusch-Pagan Lagrange multiplier (LM) for random effects. This test is the first indicator of whether a simple OLS regression model is not the best fit for the data analyzed.

The null hypothesis of the test is that the variance across entities is zero, meaning that there is no panel effect since there are no significant differences across units (in the case of this study, countries). Therefore, if the null hypothesis of zero variance is rejected, which is the case for p-values less than 0.05, there is a panel effect and OLS would not be a good model.

As shown by **Figure 1**, with a Prob > chibar2 = 0, the null hypothesis is rejected, therefore it is possible to exclude the suitability of a simple OLS model not accounting for panels for the present study.

Figure 1: Result of the Breusch-Pagan Lagrange multiplier (LM) test for random effects (source: Stata)

```
Breusch and Pagan Lagrangian multiplier test for random effects

        vc_inv_AP3[CountryCode,t] = Xb + u[CountryCode] + e[CountryCode,t]

        Estimated results:
                         |       Var     SD = sqrt(Var)
                ---------+-----------------------------
               vc_~v_AP3 |   2.202673       1.484141
                       e |   .2290366       .4785777
                       u |   1.204157       1.097341

        Test: Var(u) = 0
                                 chibar2(01) =   816.53
                              Prob > chibar2 =   0.0000
```

Now that it is clear that a simple OLS not accounting for differences in panels is not a good fit in our case, the next step is to conduct a Hausman test to understand which model between random and fixed effect is more appropriate.

3.3.2.2. Hausman Test

The Hausman test is run for each specification of the model, related to each of the hypotheses, suggesting the use of fixed effects in all cases. **Figure 2** shows the result for the base model with no human capital or gender specifications.

Figure 2: Result of the Hausman test (source: Stata)

```
Test of H0: Difference in coefficients not systematic

    chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
            =  40.81
Prob > chi2 = 0.0000
```

The Hausman test tests the null hypothesis of no difference in coefficients between the two estimators, random and fixed effect, meaning that both should produce the same results. Any value less than 0.05, as it is in our case, implies that there is a significant difference in the coefficients between the two sets of models and that, therefore, we should reject the null

hypothesis and accept fixed effects regression estimates over random effects regression estimates.

However, having identified that a fixed-effect panel data model is a better choice than a pooled OLS and than a random-effect panel data model is not enough: a series of diagnostic tests are run in the following subsections to further explore how the model should be characterized.

3.3.2.3 Test for time-fixed effects

A test for time-fixed effects is suggested in our case to understand whether we need to take them into account in the model. The test that will be run in Stata is a joint test that tells us whether the dummies for all years are not significant (meaning their coefficients are equal to zero). Rejecting the null hypothesis of coefficients jointly equal to zero, implies the need for time-fixed effects in the model. As shown in **Figure 3**, the Prob >F is less than 0.05, therefore we fail to reject the null and we can conclude that time-fixed effects are needed. As for the Hausman test, the presented result is for model (1), but the same test has been run with analogous results for all the specifications of the model based on the hypotheses tested.

Figure 3: Result of the time-fixed effects test (source: Stata)

```
( 1)  2003.Year = 0
( 2)  2004.Year = 0
( 3)  2005.Year = 0
( 4)  2006.Year = 0
( 5)  2007.Year = 0
( 6)  2008.Year = 0
( 7)  2009.Year = 0
( 8)  2010.Year = 0
( 9)  2011.Year = 0
(10)  2012.Year = 0
(11)  2013.Year = 0
(12)  2014.Year = 0
(13)  2015.Year = 0
(14)  2016.Year = 0
(15)  2017.Year = 0
(16)  2018.Year = 0

       F( 16,   244) =    2.87
            Prob > F =    0.0003
```

3.3.2.4 Pesaran CD test for cross-sectional dependence/contemporaneous correlation

One issue that can affect panel datasets, especially with a large time dimension (20 years or more), is cross-sectional dependence. Its presence can be tested through the Pesaran cross-sectional dependence (CD) test, whose null hypothesis is that residuals across entities are not correlated.

In the case of this test, the results shown refer to the basic model (1) with the addition of two independent variables: $entrepr_edu_{t,j}$and $female\_lf_{t,j}$. **Figure 4** shows the results of the test: the p-value is below 0.05, therefore we fail to reject the null hypothesis, meaning that there is evidence of cross-sectional dependence. If this consideration is not taken into account through the use of an appropriate model for this case, results would likely be biased.

Figure 4: Result of the Pesaran CD test for cross-sectional dependence (source: Stata)

```
Pesaran's test of cross sectional independence =     6.775, Pr = 0.0000

Average absolute value of the off-diagonal elements =     0.317
```

3.3.2.5 Modified Wald test for groupwise heteroskedasticity

Another issue that might affect the model is the presence of heteroskedasticity, a situation in which the standard error increases as the variance across independent variables increases, leading to less precise estimates.

The modified Wald test for groupwise heteroskedasticity is used as a test. The null hypothesis is that there is a constant variance of the errors, meaning that there is homoskedasticity. Therefore, if Prob>chi2 is below 0.05, we reject the null and conclude that there is heteroskedasticity in the model. This is the case of the present study, as shown in **Figure *5***.

Figure 5: Result of the modified Wald test for heteroskedasticity (source: Stata)

```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (27)  =    1131.52
Prob>chi2 =      0.0000
```

3.3.2.6 Wooldridge test for autocorrelation in panel data

Finally, a test for serial correlation is run. Serial correlation can result in higher R-squared and standard error coefficients smaller than in reality.

The Wooldridge test assumes as the null hypothesis that there is no serial correlation. Therefore, for values of Prob>F below 0.05, we reject the null, meaning there is autocorrelation. This is the case for the present study, as shown in **Figure 6**.

Figure 6: Result of the Wooldridge test for autocorrelation (source: Stata)

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      32) =     15.962
           Prob > F =      0.0004
```

3.3.3 Decision on the model

In the case of this study and as shown above in section 283.3.2 Discussion on the choice of the explanatory model**,** the Hausman Test suggests the use of a fixed effects model, however, the result of the Pesaran CD Test is to reject the null hypothesis of no cross-sectional, the result of the Modified Wald Test signals heteroskedasticity, the result of the Wooldridge Test indicates the presence of autocorrelation, and time fixed effects are needed in the regressions. Therefore, the model chosen to analyze the linear relationship between venture capital investments and the variables tested in the study is a panel-corrected standard error (PCSE), as developed by Beck and Katz (1995), and it will be tested with time-fixed effects. This model is considered a better choice when dealing with time-series cross-section (TSCS) data because it accounts for

correlation across units and unit-level heteroskedasticity, which commonly affects this type of data (Bailey & Katz, 2011). Beck and Katz (1995) argue that although ordinary least squares (OLS) estimates might not be ideal for TSCS, their execution is good in research conditions, therefore they propose to maintain the parameter estimates obtained through OLS, but to substitute the OLS standard errors, considered deeply inaccurate for TSCS, with panel-corrected standard errors. Greene (2000) expands on the subject, by noting that in cross-country studies the scales of the variable might vary significantly, and it can be expected the presence of different error variances for different cross-sections and cross-section contemporaneous correlation, with which OLS standard errors would be inconsistent. In situations in which macroeconomic variables could affect countries to different extents, Greene (2000) argues that correlation of the error across countries should be allowed. The generated covariance matrix estimate is the panel corrected standard errors introduced by Beck and Katz (2011), in a methodology that is similar to White's robust standard errors, but, thanks to the stronger assumptions on the structure of the panel, it is more efficient.

Hence, the model is the following:

$$vc\_inv_{tj} = a_j + \beta_1 inst\_qual_{t,j} + \beta_2 market\_cap_{t,j} + \beta_3 lnGDP_{t,j} + \beta_4 trade\_gdp_{t,j} + \beta_5 articles\_pop_{t,j} + \beta_6 unemploy\_rate_{t,j} + \beta_7 taxburden_{t,j} + \beta_8 entrepr\_edu_{t,j} + \beta_9 entrepr\_adv_{t,j} + \beta_{10} school\_prim_{t,j} + \beta_{11} school\_sec_{t,j} + \beta_{12} school\_tert_{t,j} + \beta_{13} female\_lf_{t,j} + \beta_{14} fem\_prim_{t,j} + \beta_{15} fem\_sec_{t,j} + \beta_{16} fem\_tert_{t,j} + u_{tj} \quad (2)$$

where j (j= 1, 2, 3…, N) indicates the cross-sections of the countries in the sample, and t (t = 1, 2, 3…, T) is the time period or the year of consideration.

Inst_qual, *market_cap*, *lnGDP*, *trade_gdp*, *articles_pop*, *unemploy_rate*, and *taxburden* are the control variables. *Entrepr_edu* is the proxy variable used to test for Hypothesis 1, e*ntrepr_adv* for Hypothesis 2, *school_prim* and *school_sec* for Hypothesis 3, *school_tert* for Hypothesis 4, *female_lf* for Hypothesis 5, *fem_prim* and *fem_sec* for Hypothesis 6, *fem_tert* for Hypothesis 7.

The same Hypotheses will also be tested for the dependent variable *vc_deal*, with the only difference being the change of the dependent variable.

3.3.4 Addressing reverse causality bias

However, as most studies in the social science field based on historical data, also the present one raises questions related to reverse causality. In particular, the debate is on how to interpret the causal order of the correlation that is possible to detect between the dependent and independent variables: are the independent variables really responsible for the values assumed by the dependent variable, or does the causal relationship work in the opposite direction? In addition, both groups of variables could influence each other, confusing even more the interpretation of the results. There is no full agreement in Academia on how exactly to address this issue, and several methodologies have been proposed to try to reduce biases provoked by reverse causality (Leszczensky & Wolbring, 2022).

According to Reed (2015) and Bellemare et al. (2017), one of the most chosen methodologies to try to overcome the issues raised by reverse causality, has been to lag all the independent variables of the model, which, in this study, would be represented by the following equation:

$$vc\_inv_{tj} = a_j + \beta_1 inst\_qual_{t-1,j} + \beta_2 market\_cap_{t-1,j} + \beta_3 lnGDP_{t-1,j} + \beta_4 trade\_gdp_{t-1,j} + \beta_5 articles\_pop_{t-1,j} + \beta_6 unemploy\_rate_{t-1,j} + \beta_7 taxburden_{t-1,j} + \beta_8 entrepr\_edu_{t-1,j} + \beta_9 entrepr\_adv_{t-1,j} + \beta_{10} school\_prim_{t-1,j} + \beta_{11} school\_sec_{t-1,j} + \beta_{12} school\_tert_{t-1,j} + \beta_{13} female\_lf_{t-1,j} + \beta_{14} fem\_prim_{t-1,j} + \beta_{15} fem\_sec_{t-1,j} + \beta_{16} fem\_tert_{t-1,j} + u_{tj} \quad (3)$$

The rationale behind the use of lags is that the cause and the effects of a phenomenon cannot happen at exactly the same moment on time (Leszczensky & Wolbring, 2022), therefore through testing the independent variables at their first order lag it is possible to understand whether it is

reasonable to hypothesize that they had any impact on the dependent variable at the present time. On the other hand, as Bellemare et al. (2017) detail, the possibility of endogeneity is not totally eliminated by using this approach. Specifically, from one side using lags of the independent variables discards any strict exogeneity assumption, but, from the other side, it introduces the assumption that unobserved variables can be serially uncorrelated. Therefore, endogeneity might still affect the final results and is therefore considered among the limitations of the study. Nevertheless, the use of time-fixed effects, as opposed to conventional panel models, has shown to be capable of protecting from biases due to reverse causality and also aids in avoiding the issue of incorrectly specified temporal lags (Leszczensky & Wolbring, 2022). Furthermore, fixed effects have also the benefit of being able to also mitigate or remove omitted variables bias (Dranove, 2012).

As a final remark, the empirical analysis has been performed using the software Stata.

4. Results and discussion

In this section, descriptive statistics on the most relevant variables tested and results from regressions regarding each of the hypotheses are shown and discussed.

4.1 Descriptive statistics

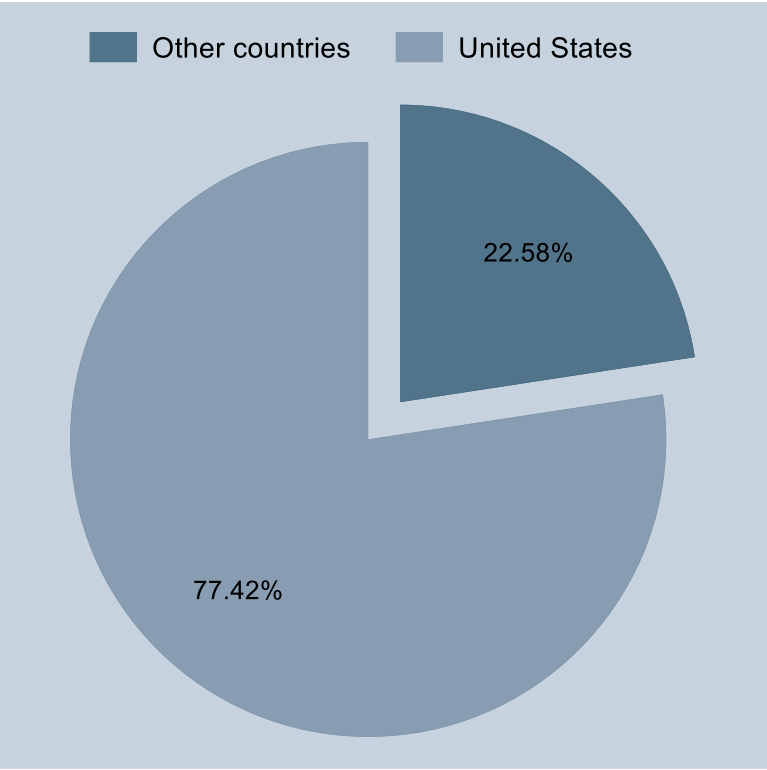
Table 3 in the annexes presents a first summary of the statistics regarding the panel dataset. The first part confirms that the number of countries considered is 36, and that the observations range from 2002 to 2021 and are collected with yearly frequency, for a total of 20 periods. Moreover, the same table provides us with information on the pattern of the panel data. The distribution of T_i indicates that 50% of the data is observed for 15 years or less and only 5% of the data is observed for the whole 20 years. This depends on the availability of observations for all the variables for all the years of the sample: as already stated, the final panel is unbalanced. Furthermore, 64% of the observations are concentrated in the last 15 years of the sample, meaning that most of the missing values are gathered in the years 2001-2005.

Table 4 presents the descriptive statistics for the whole sample, without taking into account differences among countries. Through them, a few interesting overall considerations can be drawn. On the other hand, **Table 5** provides extra details on the between and within variations for the analyzed variables.

4.1.1 Venture capital investments

One of the first and most visible considerations regarding the investment in venture capital firms - before its transformation in the logarithmic form – is that the United States overcome by far any other country in the sample. Considering the whole amount invested during the entire time span of the study, almost 80% has been invested in the US, as shown in **Figure 7**. To further understand the size of the venture capital investment in the US, the total amount invested between 2002 and 2021 has been US$ 875,205 MM, as opposed to US$ 255,315 MM invested in all the other countries of the sample.

Figure 7: Total venture capital investment distribution: percentage invested in the US vs other countries



Source: Own elaboration using Stata

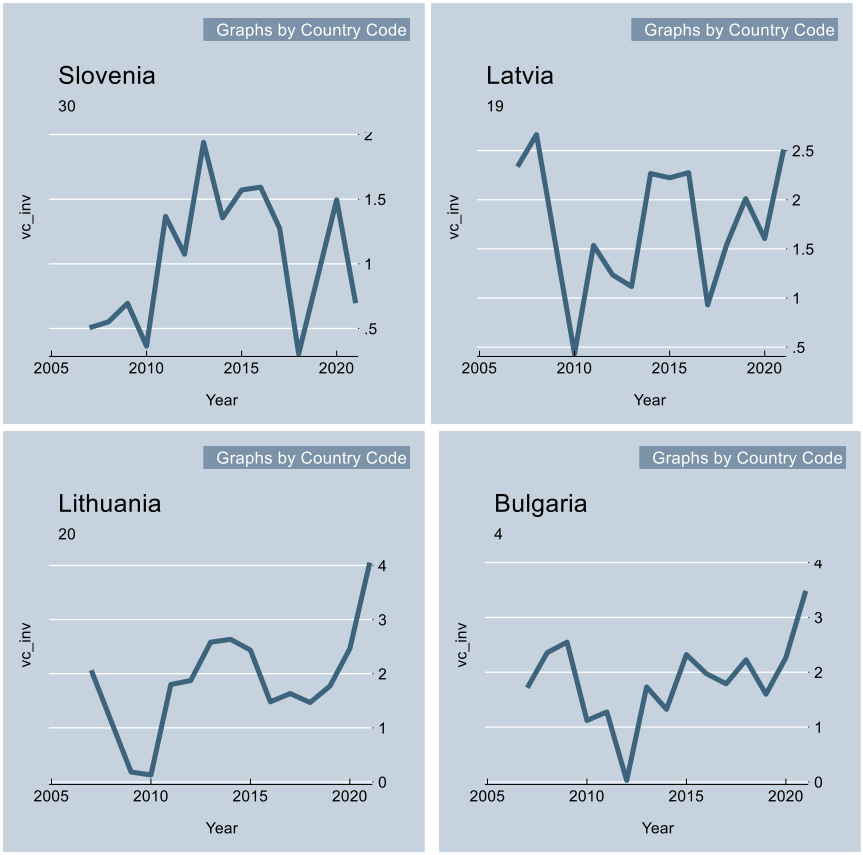
The investment in venture capital has progressively grown in the twenty years of the sample (2002-2021) not only for the countries characterized by higher levels of investments but also for those in our sample that present the lowest levels. Considering the 95th percentile, the only country above it and, therefore, with the highest average venture capital investment is the US. By expanding to the 90th percentile, also Israel and Canada are included. As shown in **Figure 8**, the trend is increasing for the three of them.

Figure 8: Logarithm of venture capital investment for the countries of the sample above the 90th percentile

Source: Own elaboration using Stata

On the other hand, below the 5th percentile of the mean venture capital investment observations, there is Slovenia, followed by Latvia, Lithuania, and Bulgaria below the 10th percentile. The same upward trend seen in **Figure 8**, although not as strong, is visible in their distributions, as shown in **Figure 9**.

Figure 9: Logarithm of venture capital investment for countries of the sample below the 10th percentile



Source: Own elaboration using Stata

4.1.2 Venture capital deals

Similar to the analysis done for *vc_inv*, also in this case it makes sense to analyze the behavior of the number of deals before the transformation in the logarithmic form.

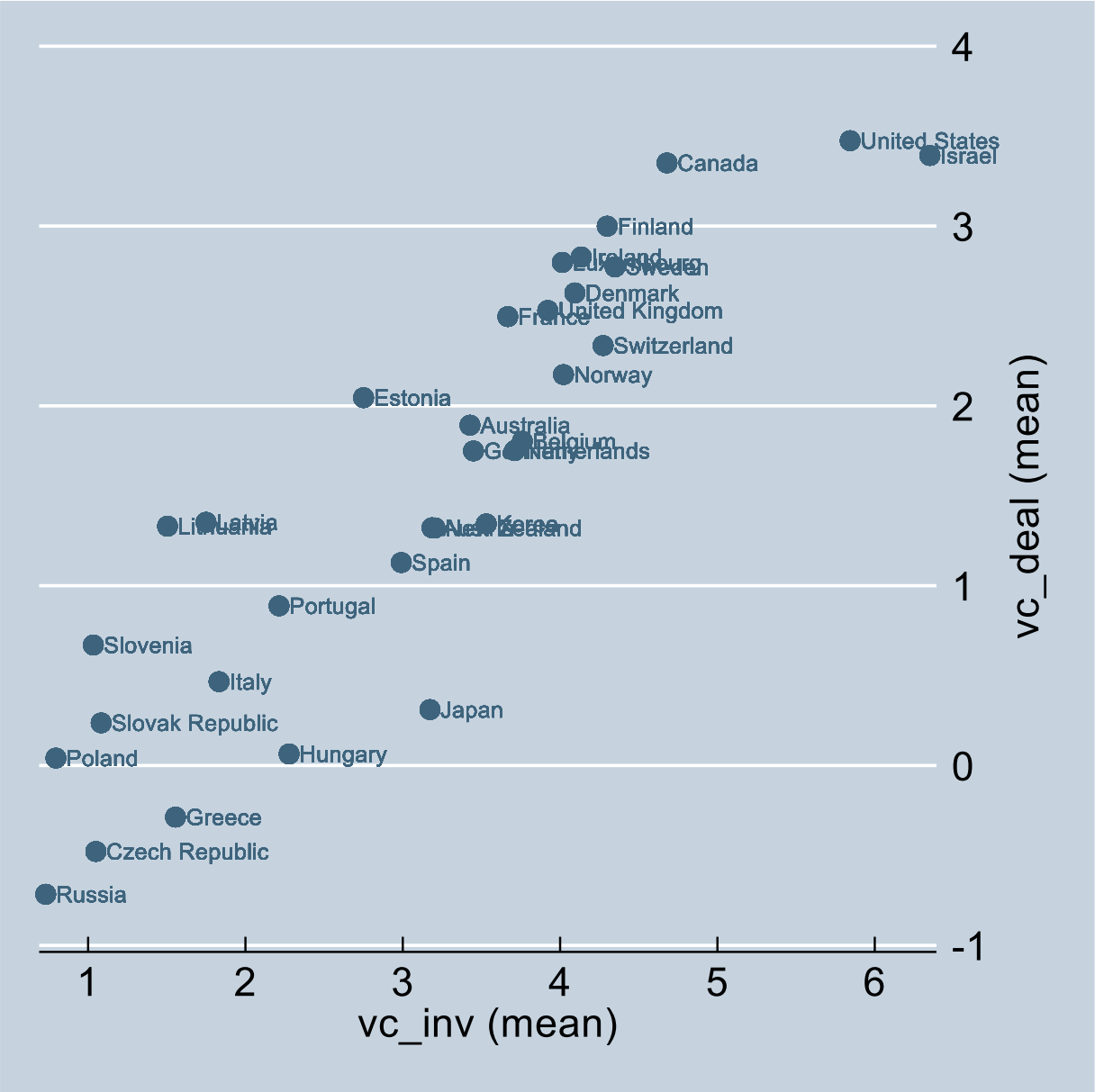
Figure 10 shows the descriptive statistics for the number of deals. The sample is diversified, with a minimum of 1 deal per year for Slovenia in most of the years to a maximum of 5,808 for the US in 2019. The mean value, however, is quite low, being equal to almost 210, with a high standard deviation of 816.

Figure 10: Descriptive statistics for the number of deals (source: Stata)

Variable		Mean	Std. dev.	Min	Max	Observations
nrdeals	overall	209.604	815.8217	1	5808	N = 528
	between		841.14	1	5067.385	n = 36
	within		81.10774	-703.7806	950.2194	T-bar = 14.6667

Figure 11 is a scatter plot of the mean values per country of both dependent variables tested in this study, *vc_inv* and *vc_deal*. Countries in the upper right, which are the United States, Israel, and Canada, have both a high number of deals and a high total amount of venture capital investment in the period 2002-2021. On the other hand, countries on the bottom left received the lowest amount of VC funds and have been involved in the least amount of deals during the analyzed period. They are Russia, the Czech Republic, and Greece.

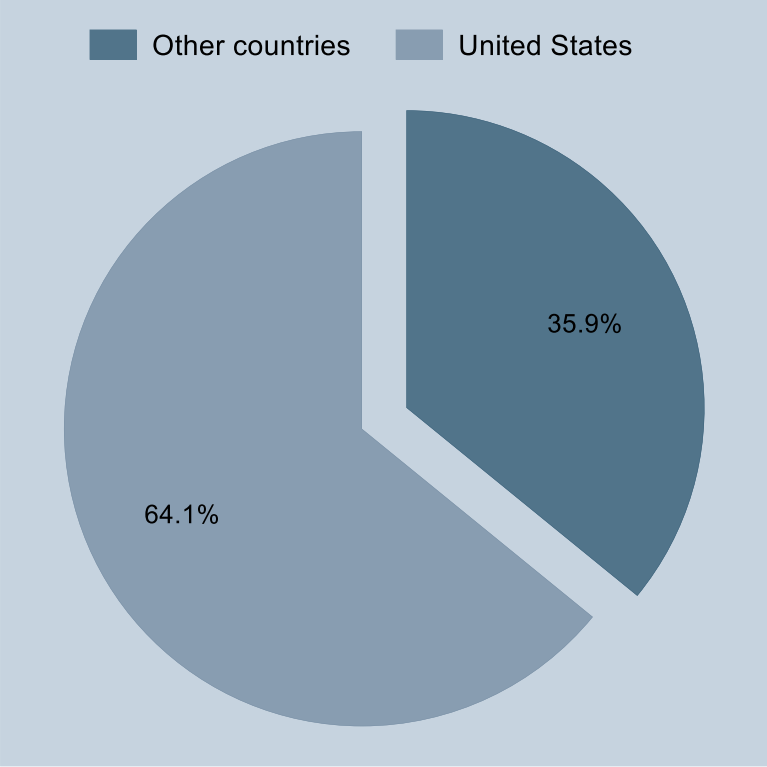
Figure 11: Scatter plot of the average values of the variables *vc_inv* and *vc_deal* by country



Source: Own elaboration using Stata

Similar to what happened for venture capital investment, also the majority of deals is concentrated in the US, which includes 64% of the total number in the analyzed sample, as shown in **Figure 12**. Hence, in terms of deals, the portion done in the US is lower than in terms of amount invested (which was 80%).

Figure 12: Total venture capital deals distribution: percentage of deals on US companies vs other countries



Source: Own elaboration using Stata

4.1.3 Education

Regarding the entrepreneurial education and training both in basic and post-school, as explained in section 3.2.2 Independent variables, it is measured by an index ranging from 1 to 9. For the countries of the sample, the minimum entrepreneurial education and training in primary and secondary education is 1.73, while in tertiary education is higher, reaching 2.86. Coherently, also the maximum and the average are higher in the case of tertiary education: 6.09 and 6.43 for the maximum, and 3.53 and 4.72 for the average. This is reasonable since generally entrepreneurial education and training are more commonly included in tertiary education than primary or secondary. Moreover, there is a higher standard deviation for entrepreneurial education and training during primary and secondary education than tertiary, also when considering the between and the within standard deviation values, suggesting that there are larger differences among countries at earlier levels of school.

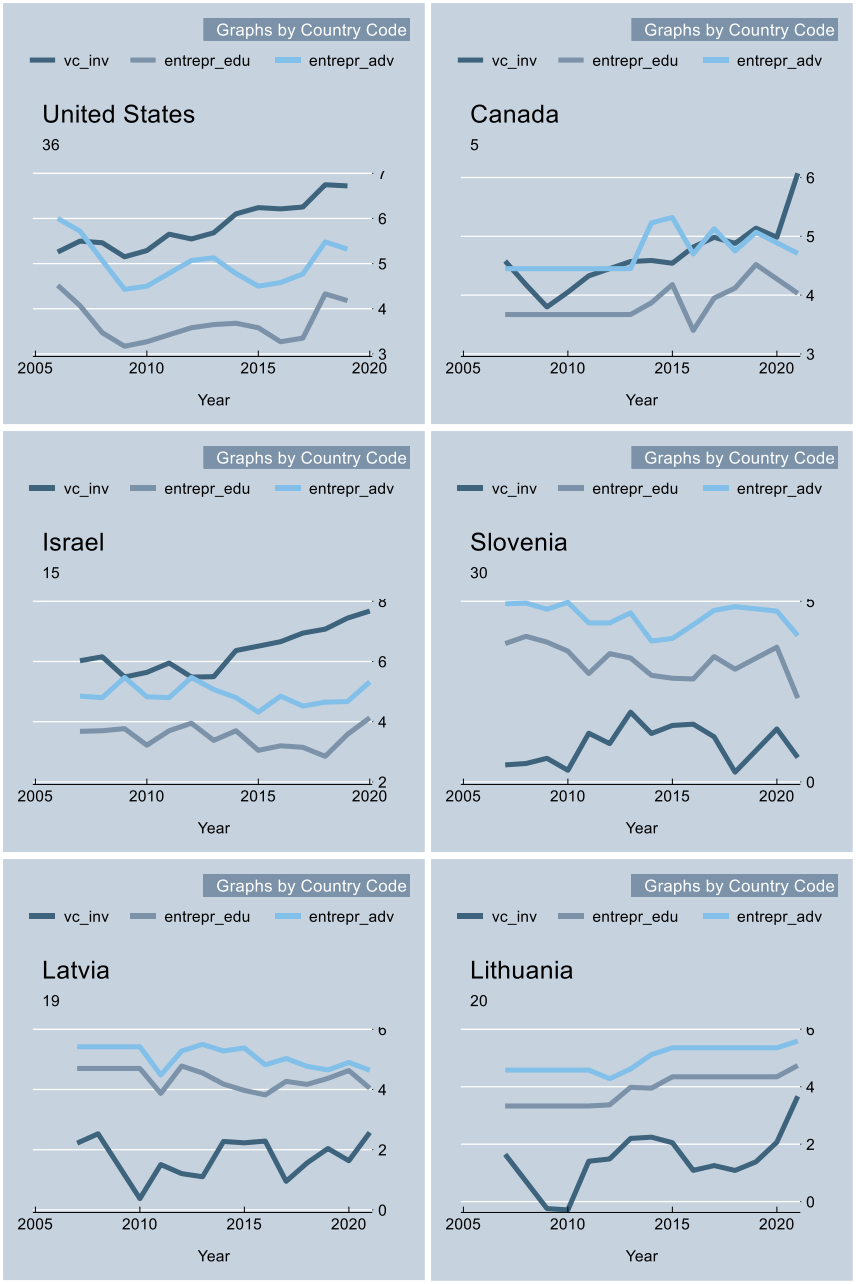
Considering the average values of the two indexes per each country for the whole period, Japan presents the lowest average value of *entrepr_edu* (2.66, although its *entrepr_adv* is higher at 4.35), followed by the Czech Republic, Hungary, and Austria (respectively at: 2.70, 2.75, and 2.77). The countries with the highest average values of *entrepr_edu* are, instead, the Netherlands (4.97) and Denmark (4.88). On the other hand, if we consider the minimum and the maximum values for the whole sample instead of the average, the country with the highest *entrepr_edu* is Finland in 2021(6.09), while the one with the lowest is Poland in 2021 (1.73).

Regarding *entrepr_adv*, the countries with the lowest average values are Poland (3.95), Czech Republic, and South Africa (both with 4.12), while the highest average values are the ones of Switzerland (5.66), the Netherlands (5.61), France (5.28), and Belgium (5.25). Considering the overall minimum and maximum values instead of the averages by country, Poland has the minimum value in 2021 (2.86), while Switzerland has the maximum in 2017 (6.43).

Hence, from the descriptive statistics, there is no visible pattern between the countries with the highest and lowest entrepreneurial education and the countries with the highest and lowest investment in venture capital. However, when we plot the observations for *vc_inv*, *entrepr_edu*, and *entrepr_adv* for the countries with the highest and lowest levels of *vc_inv*, a pattern seems to appear, as shown in **Figure 13**. Overall, it seems that when the trend is growing for

entrepr_edu and *entrepr_adv*, it does the same for *vc_inv*, although this pattern is more visible for certain countries such as the US. The correlation matrix in **Table 6** confirms that there is a positive and significant correlation of 0.305 between *vc_inv* and *entrepr_edu* and 0.294 between *vc_inv* and *etrepr_adv*.

Figure 13: Line graphs of the variables *vc_inv, entrepr_edu* and *entrepr_adv* for a sample of countries with the highest (United States, Canada, and Israel) and lowest (Slovenia, Latvia, Lithuania) *vc_inv*

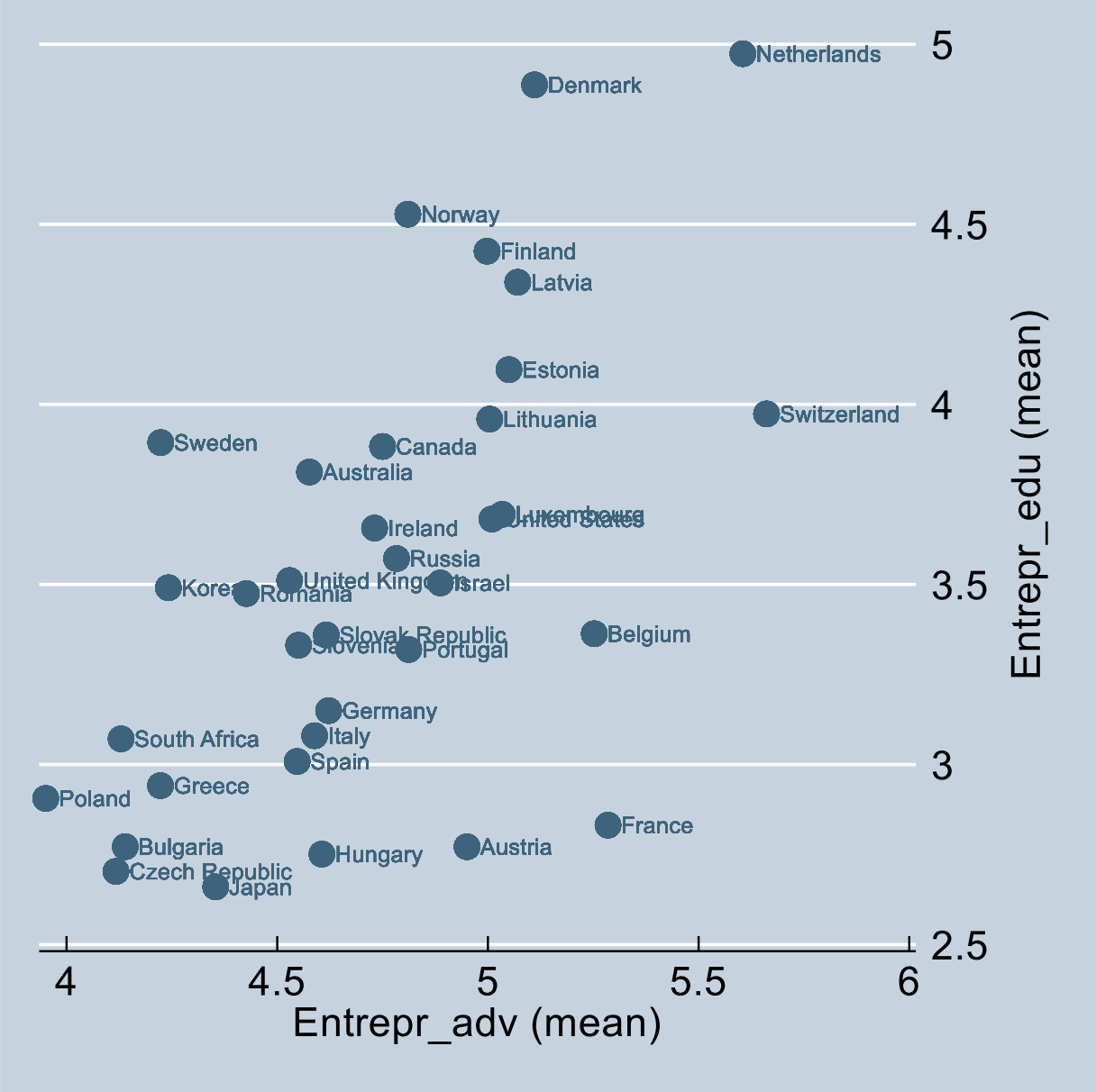


Source: Own elaboration using Stata

Figure 14 shows the positioning of each country in terms of both *entrepr_edu* and *entrepr_adv*, considering the average values of the two variables for the whole period. The countries with the highest values of both are in the top right of the graph (i.e., the Netherlands, Denmark), while the ones with the lowest are in the bottom left (i.e., Poland, Bulgaria, Czech Republic, Japan, Greece). Very few countries are in the bottom right or in the top left, meaning that normally the

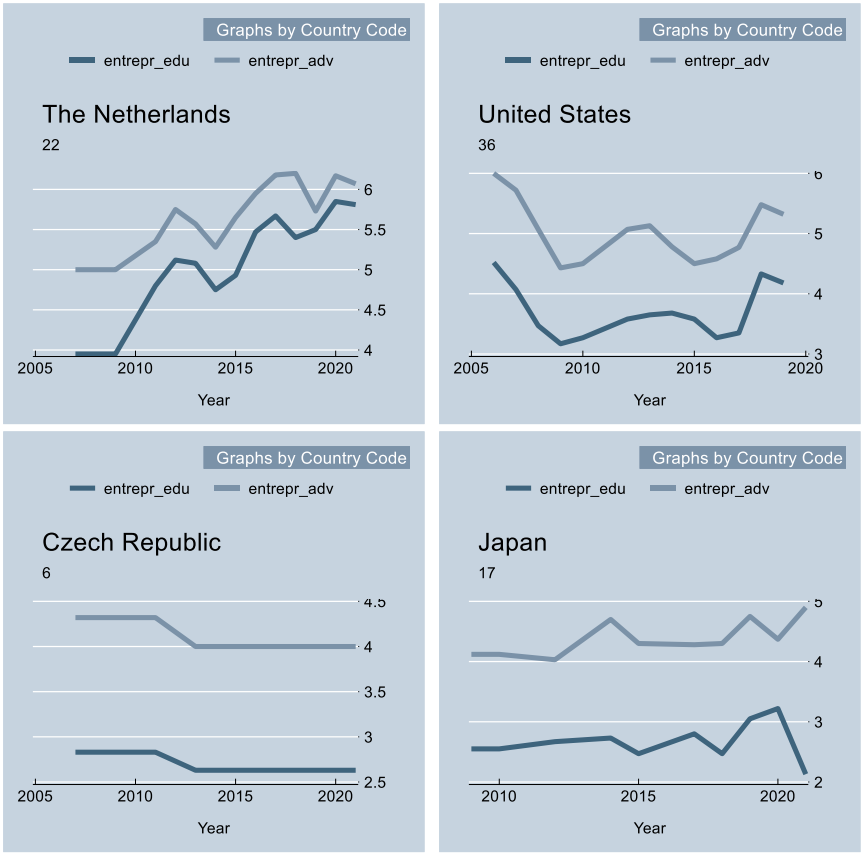
two indexes are aligned: to high values of *entrepr_edu* correspond high values of *entrepr_adv*, suggesting a linear relationship. The fact that the two variables tend to move together is also visible from the line charts of the single countries, as shown for a few of them in **Figure 15**. Moreover, the correlation matrix presented in **Table 6** of the Annexes indicates a correlation of 0.601 between the two variables, confirming the presence of a positive relationship.

Figure 14: Scatter plot of the average values of the variables *entrepr_edu* and *entrepr_adv* by country



Source: Own elaboration using Stata

Figure 15: Line graphs of the variables *entrepr_edu* and *entrepr_adv* for a sample of countries



Source: Own elaboration using Stata

A similar analysis can be conducted for the enrolment rate variables (*school_prim*, *school_sec*, and *school_tert*). By looking at the minimum and maximum for the overall sample, it is visible how there is a smaller gap between countries for the rate of enrolment in primary school (which ranges from 82.18 to 99.96), which increases for secondary school (71.93 and 99.81) and peaks in the case of tertiary school. Tertiary education, in fact, ranges from a very low value of 10.61 up to 148.53. However, in the case of tertiary education, it is important to recall that the index is calculated regardless of age, meaning that high ratios might reflect a substantial number of overage individuals enrolled or re-enrolled to tertiary education[6]. These numbers reflect how

[6] This is the reason why the index can be higher than 100. As explained by the World Bank: "Gross enrollment ratio for tertiary school is calculated by dividing the number of students enrolled in tertiary education regardless of age by the population of the age group which officially corresponds to tertiary education, and multiplying by 100". (source: https://data.worldbank.org/indicator/SE.TER.ENRR)

primary school is overall mandatory in the countries of the sample, and therefore presents the smallest standard deviation, while tertiary education, being by nature optional, presents the highest. In fact, the overall standard deviation for *school_prim* is 4, for *school_sec* is 4.32, while for *school_tert* the value jumps to 18.77. The difference is visible also in the between and within standard deviations, where the respective values for *school_tert* are 20.17 and 5.98, while for the other two variables they are around 4 and 1 respectively. The mean of *school_tert*, which is equal to 70.82, indicates, as expected, that fewer people enroll in tertiary education when compared to primary (95.49) and secondary (91.97).

Figure 16 shows the positioning of the countries of the sample in terms of primary and tertiary education, considering the average values for the period under analysis. Considering the average values, the lowest enrolment rates for primary school are recorded in Slovak Republic (84), South Africa (86), and Austria (88). South Africa also presents one of the lowest *school_tert* rates, equal to 21, together with Luxembourg (18), which also has the minimum value of the panel (10.6073 in 2008). School tertiary enrolment rate is also low for Slovak Republic (50) and Romania (54), although their values are significantly higher than the ones of South Africa and Luxembourg.

Regarding, instead, countries with the highest enrolment rates, Canada, Norway, and Spain are on top for *school_prim*, with rates very close to 100 (respectively: 99.65, 99.53, and 99.36), while for *school_tert* Greece (122), Australia (115), and South Korea (96) are on top. The highest value (148.5309) has been reached by Greece in 2019.

Data for secondary school enrolment rates are partially in line with the ones for primary school, in fact, the two variables are strongly correlated (0.602). The lowest rates are in South Africa (81), Romania (84), Switzerland (84), and Slovak Republic (85). However, the highest rates are in Israel (99), Lithuania (98), Ireland (97), and Sweden (97). The overall mean of 91.97 indicates how overall the coverage is high.

Coming back to **Figure *16***, it is noticeable how most of the countries are concentrated on the right side of the graph, indicating a high primary school enrolment, and, regarding tertiary education, the majority has a rate between 60 and 100. These values are coherent with the fact

that most of the countries included in the sample are developed. Moreover, the two variables present a positive significant correlation of 0.36.

Figure 16: Scatter plot of the average values of the variables *school_prim* and *school_tert* by country

Source: Own elaboration using Stata

NB: The variable school_tert can assume values larger than 100% when its numerator (number of students enrolled in tertiary education regardless of their age) is larger than its denominator (total population officially corresponding to tertiary education based on the age).

4.1.3 Gender

Regarding gender, for the overall sample, the female enrolment rates are aligned to the general enrolment rates in terms of minimum, maximum, mean, and standard deviation. Enrolment rates in secondary school are even slightly higher for the female than for the general sample, reaching a maximum of 100, and, in the case of tertiary education, the mean value for females is higher (79.44 against 70.82 for the general ratio).

Moving on to the worst and best performers, for primary education they are similar to the overall sample: South Africa (86), Slovak Republic (85), and Romania (88). On the other hand, Norway and Finland, with values close to 99, lead the best-performer categories, followed by Slovenia (98.5). For secondary education, Switzerland is once again last with 83, followed by Romania and South Africa with values around 84, all of them in line with their values for the total ratio, meaning there is not a real difference by gender in secondary education, as there wasn't in the primary. The same happens for the top-performer in this category: Israel (100), Ireland (97.55), Lithuania (97.56), and New Zealand (96.47). Regarding tertiary education, Luxembourg is last with almost 19 (one point higher than the overall ratio), followed by South Africa (25), Switzerland (56), and Slovak Republic (61). However, these values are slightly higher than those of the overall ratio (for instance, the value for the Slovak Republic was 50), meaning that the number of females enrolled in tertiary education is higher than the average. Looking at top performers, Australia has a ratio of 135 (higher than the one it had for *school_tert*) and Greece of 124. They are followed by the US with a ratio of 102.5, against 88.5 for *school_tert*, implying a significantly higher ratio of females pursuing tertiary education than males.

Figure 17 summarizes the results in a scatter plot. Also in this case, the concentration on the right suggests that a high primary education coverage is guaranteed in most countries, while regarding tertiary education, most of the countries are between 60 and 100, coherently with data for both genders. The correlation between the two variables if of 0.384.

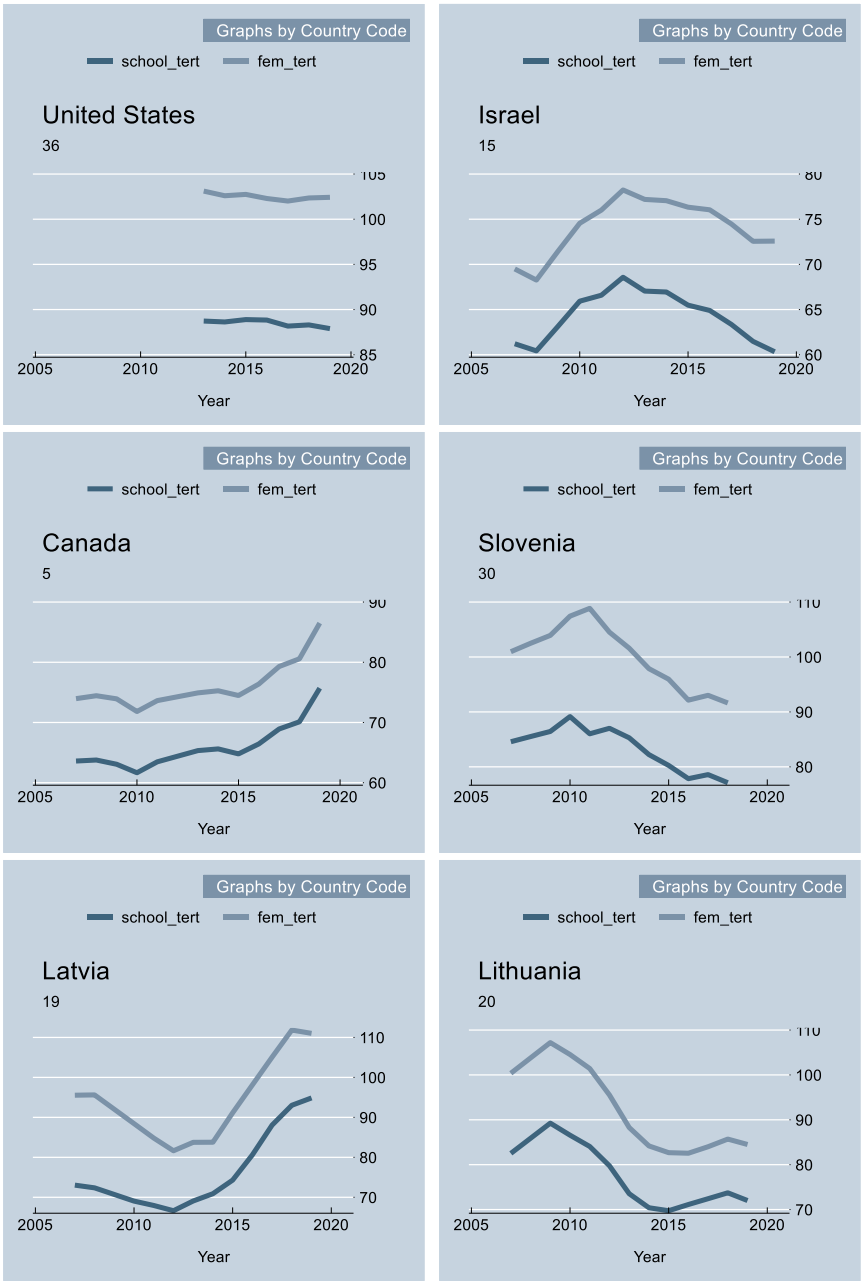
Figure 17: Scatter plot of the average values of the variables *fem_prim* and *fem_tert* by country

Source: Own elaboration using Stata

NB: The variable fem_tert can assume values larger than 100% when its numerator (number of female students enrolled in tertiary education regardless of their age) is larger than its denominator (total female population officially corresponding to tertiary education based on the age).

Countries with the highest investment in venture capital tend to have a female enrolment ratio to tertiary education higher than the overall ratio. However, the same relationship seems to be valid also for countries with the lowest venture capital investment (**Figure 18**).

Figure 18: Line graphs of the variables *school_tert* and *fem_tert* for a sample of countries with the highest (United States, Canada, and Israel) and lowest (Slovenia, Latvia, Lithuania) *vc_inv*

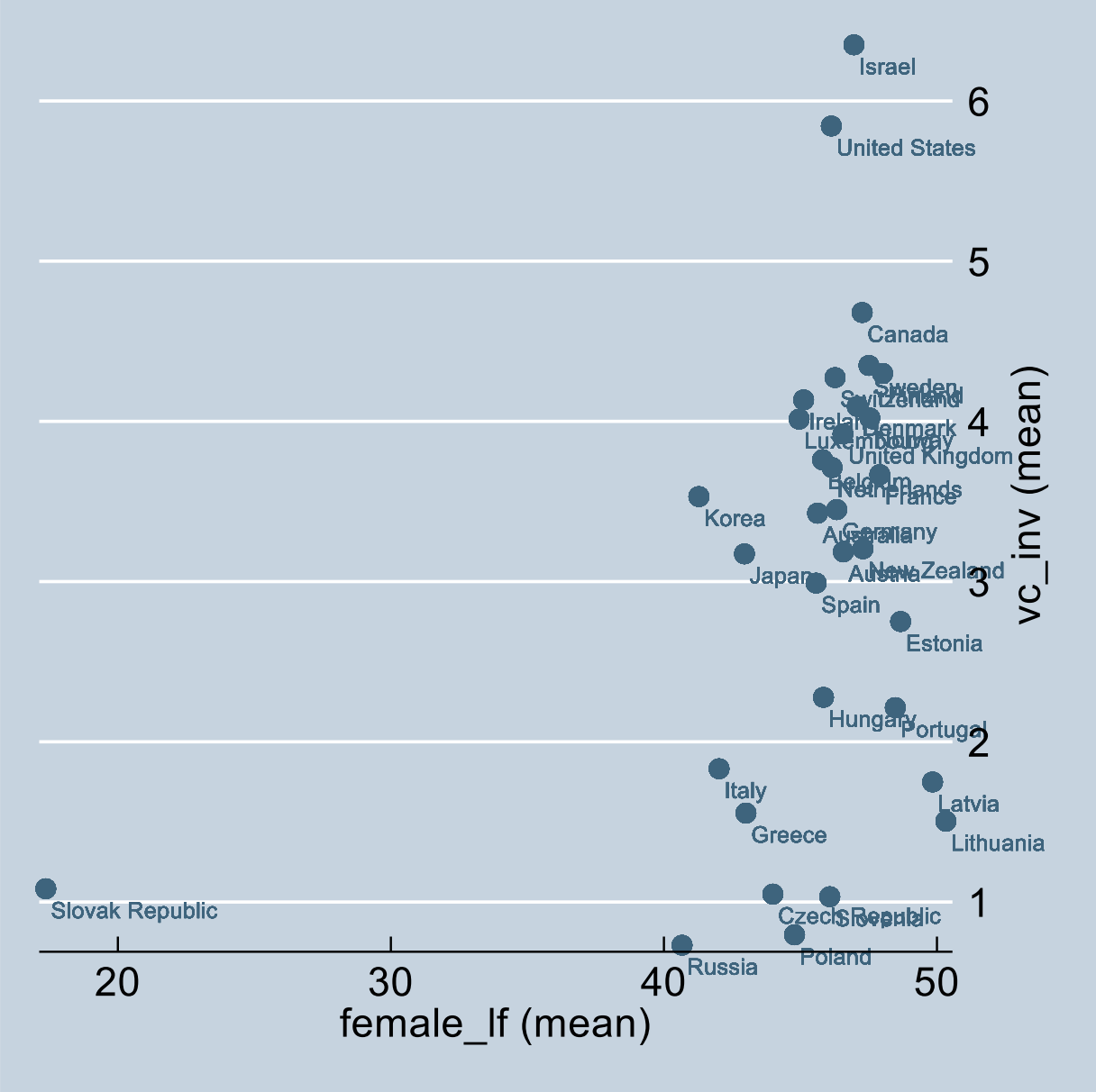


Source: Own elaboration using Stata

Finally, regarding female labor force participation, the overall mean is 45.29, with a minimum of 10.61 and a maximum of 50.75, suggesting that there is still significant work to do for the complete inclusion of females in the labor force. Even when considering only the most recent years of the sample, for instance considering observations from 2015 to 2019 to exclude the effect of the pandemic, the mean is around 45, which indicates that the ratio has not improved over time. The countries with the lowest female labor force ratio are Slovak Republic (17.36), South Korea (40.66), and Russia (41.28), while the ones with the highest are Lithuania (50.33), Latvia (49.84), Estonia (48.67), and Portugal (48.47).

From **Figure 19**, it appears that the countries with the highest female labor force participation are also the ones with the highest venture capital investment, as is the case for the United States, Israel, and Canada, and there seems to be a correspondence, although less clear, between those countries with the lowest female participation and those with the lowest venture capital investment, as it happens in the case of Slovak Republic.

Figure 19: Scatter plot of the average values of the variables *vc_inv* and *female_lf* by country



Source: Own elaboration using Stata

4.1.4 Correlation

The correlation matrix is offered in **Table 6** in the annexes. The only very high values are related to the correlation between the overall enrolment rates and the female enrolment rates for the respective level of education, which are all over 0.9 (i.e., 0.995, 0982, and 0.927). To avoid multicollinearity concerns, those variables are not tested together.

The correlations enhanced by **Table 6** are similar in signs and significance to the ones hypothesized in Section 2.8 Hypotheses. For instance, the correlation between task-related

human capital proxies and venture capital investment is higher than the one with enrolment rates in different education levels. Moreover, the correlation of the female enrolment in primary school rate with venture capital investment is not only positive and significant but also higher than the one with the same rate related to secondary and tertiary school, and the same situation happens when dealing with the non-gender specific ratio. Regarding the correlation between the variables and venture capital deals, signs, and significance, values are similar to those of *vc_inv* and are in **Table 7**.

4.2 Empirical results

Regression tables presenting the results of the study are all in the Annexes, from **Table 8** to **Table *29***. The tested explanatory variables are regressed with different combinations of control variables, to check their behavior under different conditions. All the regressions in this subsection are run controlling for time-fixed effects and using lagged independent variables, as specified in section 3.3 Empirical model.

Table 8 and **Table 9** present the results of the regressions for the lagged control variables alone, therefore they let us observe their effects on the dependent variable prior to the inclusion of the variables tested through the hypotheses. **Table 8** offers the results of the regressions having as a dependent variable the venture capital investments (*vc_inv*). The institutional quality is positive and significant in all the specifications of the model, except for when tested with all the control variables, in which it loses significance. This might be due to the correlation with the variable tax burden, which is the highest correlation that *inst_qual* presents with any of the variables of the sample, and it is equal to -0.503 with a significance at the 0.01 level. The market capitalization is positive and significant at the 0.01 level in all the specifications. Regarding the natural logarithm of the GDP, it is positive and significant at least at 0.05 in all specifications, including when tested with all the control variables. Trade over GDP is positive and significant, and the only case in which it loses its significance is when tested together with the unemployment rate; however, it keeps its sign and significance when tested with all the control variables. The number of scientific articles published is also positive and significant, while the unemployment rate and the tax burden are negative as expected. The unemployment rate is significant in all cases, while the tax burden loses its significance when tested together with the institutional quality, because of their correlation. Overall, it is possible to conclude that the signs and significance of the control variables are as expected from the literature review. **Table 9** shows analogous results for the dependent variable venture capital deals (*vc_deal*): the behavior of the control variables is the same as the one shown with venture capital investments as the dependent variable, except for the unemployment rate, which loses its significance although it keeps its negative sign. Institutional quality in this case is always significant, also when tested with all variables (including tax burden), while tax burden is significant in all cases except when tested together with all the variables. Regarding magnitudes, for both dependent variables the

largest impact is given by the institutional quality, followed by the number of scientific articles and the gross domestic product.

Since the model used is a linear regression with panel-corrected standard errors, the values of R-squared returned by the regressions are not as informative as usual. This is because they include the influence of the fixed-effect dummies, needed to account for the effect of unobserved variables and because the Stata function used (*xtpcse*) considers the whole system of equations for the calculation, making results useless for the individual equations (Lloyd Blackwell, 2005). Moreover, due to the asymptotic nature of the standard errors, the R-squared and the adjusted R-squared coincide. Wooldridge, in his book "Introductory Econometrics: A Modern Approach", agrees that in this type of model it is unclear what the calculated R-squared really measures (Wooldridge, 2012).

Table 10 offers the result for Hypothesis 1 for *vc_inv* and shows a positive significant relationship between venture capital investment and the lagged entrepreneurial education and training in primary and secondary school. The tested variable is positive for all the specifications, and significant for all of them, except for when it is tested with the number of scientific articles and publications. This proves how task-related human capital received at the early stage of education of an individual, from a country perspective, is related to the amount of venture capital invested in that country, confirming Hypothesis 1. **Table 11** offers even stronger evidence for venture capital deals: in this case, the lagged entrepreneurship education and training in primary and secondary school is still significant in all cases except when tested with the lagged *articles_pop*, keeping the positive sign, however, the coefficients are also larger than those related to *vc_inv*. This evidence suggests that introducing entrepreneurship education and training in early levels of school can have a positive impact on both the number of venture capital deals and their monetary amounts for a specific country.

Table *12* and **Table *13*** are analogous to **Table 10** and **Table 11**, with the only difference that the independent variable tested this time – in addition to the control variables - is the entrepreneurial education and training in tertiary school. The objective of testing the two variables – *entrepr_edu* and *entrepr_adv* - separately, is to isolate the effect of each one of them on the dependent variables, since they represent the same concept (i.e., entrepreneurial

education and training) at different levels of schooling. This choice is in line with the literature on general education, being the same rationale applicable to task-related education variables that relate to different schooling levels. In particular, Bengoa and Sanchez-Robles (2003), in their cross-country study on the foreign direct investment determinants, test primary and secondary enrolment rates in different regressions, as well as Shatz (2003) for the average number of years of primary, secondary, and tertiary school attended by the population of each country, also tested separately to show which of them impacts the FDI the most. Zhu and Li (2017), in their study on the impact of human capital and economic complexity on economic growth, also test separately the effect of secondary and tertiary education and reach the conclusion that the former plays a bigger role than the latter. As a last example in support of the chosen methodology, Busse and Nunnenkamp (2009), also in a cross-country study, test separately the impact of years of primary, secondary, and tertiary schooling of both males and females, to show their relationship with the foreign direct investment and the role played by the gender parity in attracting funds.

Coming back to **Table *12*** and **Table *13***, in both of them the lagged *entrepr_adv* is positive and significant, at least at 0.1 for the *vc_inv* and always at 0.01 for the *vc_deal*. The only case in which it is not significant is when it is regressed with the *articles_pop*, as it happened for the *entrepr_edu*. In terms of magnitudes, contrary to what was expected, the coefficients of *entrepr_adv* are larger than the ones of *entrepr_edu* in most of the regressions, though the difference in many cases is not that relevant. This means that, in contrast with what was supposed in Hypothesis 2, there is not a relevant difference between including task-related human capital in primary and secondary school or tertiary school, at least considering the results obtained so far in this study. Although, as previously explained, the present study follows the literature (Bengoa and Sanchez-Robles (2003), Shatz (2003), Zhu and Li (2017), Busse and Nunnenkamp (2009)) in testing the schooling variables separately, further evidence to prove the relevance of both *entrepr_edu* and *entrepr_adv* comes from **Table *14*** and **Table *15***, in which they are tested together for both dependent variables. Both variables present higher significance levels when tested with *vc_deal*, however, they are positively related to both dependent variables and the magnitude of the effect is generally higher for *entrepr_adv*, suggesting it plays a bigger

role in attracting new deals of larger amounts, in agreement with what already observed in **Table *12*** and **Table *13***.

Regarding Hypothesis 3, according to which task-related human capital should have a larger impact on venture capital investments and deals than the general one, *entrepr_edu* is compared to the enrolment rates in primary and secondary school, while *entrepr_adv* to the enrolment rate to tertiary school. The enrolment rate in primary school is not significant when regressed with *vc_inv* (**Table *16***), however, it is significant at least at 0.05 level when regressed with the *vc_deal* (**Table *17***, except for one case in which it is not significant). In both cases, its magnitude is significantly less than the one of *entrepr_edu*: in particular, a one-unit increase in *entrepr_edu*, which is an index ranging from 1 to 9, can, on average, provoke an increase of 26.58% of the amounts invested in a country (**Table 10**). On the other hand, a one percentage point increase in the enrolment rate in primary school corresponds to an increase in the amounts invested in a country close to 0%. Regarding the number of deals, a one-unit increase in *entrepr_edu* can result in, on average, an increase of 42.14% in the number of venture capital deals (**Table *11***), while a one percentage point increase in the enrolment rate in primary school could lead to an increase of 6.45% in the *vc_deal*. This evidence suggests not only that the impact of the task-related education variable for primary school is higher than the general one, but also that both variables have a bigger impact on the number of deals than on the amounts invested. Regarding enrolment in secondary school, the increase is larger, reaching 13.2% for *vc_inv* (**Table *18***) and 9.77% for *vc_deal* (**Table *19***), but still significantly less than the one of *entrepr_edu*. Although the magnitude of the increase corresponding to *entrepr_edu* is larger on both venture capital investments and deals, a reflection on whether it is easier to increase enrolment rates by one percentage point or *entrepr_edu* by one unit should be done by policymakers. All in all, both general and task-specific education at primary and secondary school levels, appears to be important.

Regarding higher levels of schooling, a similar analysis is conducted comparing results from regressions with the enrolment rates in tertiary school (**Table *20*** and **Table *21***) to the ones with *entrepr_adv* (**Table *12*** and **Table *13***) for both dependent variables. The enrolment rates in tertiary schools have a negative impact on both *vc_inv* and *vc_deal*, in contrast to the impact of *entrepr_adv,* which is positive on both variables. Concerning magnitudes, also in this case the

measure of task-related education overcomes by far the general one: the impact of one percentage point change in *school_tert* is around -1% on both *vc_inv* and *vc_deal*, while the impact of a one-unit change of *entrepr_adv* on the same variables is respectively of 27.9% and 40.22%. Therefore, Hypothesis 3 seems to be confirmed, although further analyses of the costs related to improving one unit of the task-related proxy of education versus one percentage point of the enrolment rate at the corresponding schooling level are highly suggested before taking any decision.

Tables 16 to 21 are also useful evidence of which level of general education plays the biggest impact on the two dependent variables, as required to test by Hypothesis 4. By comparing signs and magnitudes of the three levels of schooling, it is clear how enrolment rates in secondary school have the biggest impact on both *vc_inv* and *vc_deal*, followed by the ones related to primary school, confirming the validity of Hypothesis 4.

Moreover, this evidence seems to suggest that the enrolment in tertiary school has a negative impact on attracting investors, however, it is mitigated by the enrolment in secondary school and, to a lesser extent, in primary school and by including task-specific education in tertiary school. Why would countries with higher enrolment rates in tertiary schools hold venture capital investors from financing them? It could be because high enrolment rates in tertiary schools are typical of most developed countries, and while they are safer choices for investors, they normally guarantee fewer returns. Investors might, therefore, prefer to choose countries in which there is a basic level of education, favoring those with task-specific education, but that are not among the most developed ones, in the attempt of targeting countries with high growth and, therefore, a high return on the investment.

Let's now shift the discussion to the role played by gender in attracting venture capital investments from a country perspective. **Table 22** and **Table 23** show a positive and significant - at least at the 0.05 level – the impact of female participation in the labor force on the dependent variables, *vc_inv* and *vc_deal*, in support of Hypothesis 5. In terms of coefficients, there are no big differences between *vc_inv* and *vc_deal*: in both cases, a one percentage point increase in the participation of women in the workforce can increase the number of new deals and their amounts by slightly more than 5%. Venture capital investors might therefore be more inclined

to invest in countries that seek a gender balance in the workforce, similar to the findings of Pantelopoulos (2022) for foreign direct investment.

Table *24* to **Table *29*** shift the discussion back toward the education dimension, this time looking at the interaction with gender. Similar to what happened with the general variable *school_prim*, also the female enrolment rate in primary school is not significantly related to the *vc_inv* (**Table *24***), while it is positive and significant in three out of six regressions when the dependent variable is the *vc_deal* (**Table *25***). Regarding the female enrolment rate in secondary school, also in this case the pattern is similar to the one of *school_sec* and the variable is positive and significant at 0.01 when tested with both dependent variables (**Table *26*** and **Table *27***). Results support Hypothesis 6, according to which investors are positively influenced in their decision-making process by the gender balance in education at the primary and secondary school levels.

On the other hand, and in agreement with Hypothesis 7, the positive influence exercised by the primary and secondary school is higher in terms of magnitude than the one of the tertiary schools also when only the female enrolment rates are considered. This is coherent with the results obtained when testing the general, not gender-specific, ratios, and suggests the validity of Hypothesis 7. Moreover, also in this case the sign of the variable *fem_tert* is negative, analogously to what happened in the case of *school_tert*.

Results are summarized, together with the robustness checks, in **Table *52***.

5. Robustness checks

5.1 Working-age population as denominator of dependent variables

To make sure that scaling *vc_inv* and *vc_deal* by the active population does not bias the results, the same regressions seen from **Table 8** to **Table 29** are run once again with the only dissimilarity that the dependent variables are now scaled by the working-age population, whose difference with the active population is that it includes also the inactive population. This variation of the dependent variables is indicated as *vc_inv_wp* and *vc_deal_wp*.

Specular to subsection 4.2, **Table 30** and **Table 31** show the behavior of the control variables when regressed without the variables object of the hypotheses of the present study. The behavior of the institutional quality is the same as the one seen with *vc_inv* and *vc_deal*. In the case of *vc_inv_wp*, the *inst_qual*, while being positive and significant in almost all cases, it loses its significance when tested together with all the control variables, probably due to the presence of the tax burden. In the case of *vc_deal_wp*, *inst_qual* is significant in all the variations tested, but the magnitude of the coefficients is lower in almost all cases when compared to *vc_inv_wp*. Also in the case of *vc_inv_wp*, the tax burden loses significance when tested together with the institutional quality, while with *vc_deal_wp* the tax burden is significant in all regressions. The sign of the variable is negative in all cases, as expected. Another variable that is negatively correlated to both venture capital investments and deals is the unemployment rate, which keeps being significant only when tested with venture capital investments, as seen already in section 4.2 Empirical results. The logarithm of the GDP, the market capitalization, and the number of scientific articles and publications keep being positive and significant in all the specifications in which they have been included. The trade over GDP, while still significant in all cases when tested with the *vc_deal_wp*, also in this case is only significant with the *vc_inv_wp* when tested without the unemployment rate and the number of scientific articles and publications. Overall, it is possible to reinforce the validity of our hypotheses regarding the signs of the control variables, as they all present the expected behavior both when tested with the dependent variables scaled by the active population and by the working-age population.

Regarding Hypothesis 1, the behavior of *entrepr_edu* is basically the same as when it is tested with *vc_inv* and *vc_deal*, with only small variations in significance in some cases. In particular, **Table 32** shows results for *vc_inv_wp*, where *entrepr_edu* is positive and significant in all cases

except when regressed with scientific articles and publications, similar to what happened with *vc_inv* in **Table 10**. Regarding *vc_deal_wp*, results are shown in **Table 33** and *entrepr_edu* is positive and significant in all specifications. In conclusion, the results are in accordance with those analyzed in subsection 4.2, and with the formulation of Hypothesis 1. The same is valid for entrepreneurial education and training in tertiary school, as shown by **Table *34*** and **Table *35***: *entrepr_adv* is positive and significant at least at 0.01 with both *vc_inv_wp* and *vc_deal_wp* as the dependent variable. However, coefficients are higher than the ones of *entrepr_edu*, another evidence in contrast to Hypothesis 2. Also in this case and in addition to the evidence so far collected, *entrepr_edu* and *entrepr_adv* are regressed together in **Table *36*** and **Table *37***, which both confirm that the coefficients of *entrepr_adv* are larger than the ones of *entrepr_edu*, suggesting a larger the impact of its variations on the dependent variables.

Table *38* to **Table *43*** show the robustness checks related to Hypothesis 3 and the impact of general measures of education as opposed to task-related ones. The enrolment rate in primary school this time is positively related also when tested with the *vc_inv_wp* (**Table *38***), while it loses significance in some of the specifications when regressed with the *vc_deal_wp* (**Table *39***). Its coefficients are still smaller than the ones of *entrepr_edu*: while one unit change in *entrepr_edu* can lead to an average 24.42% change in the *vc_inv_wp* and 8.77% in the *vc_deal_wp* (a drop from the 42.14% for the *vc_deal*), a one percentage point variation in *school_prim* will lead to a change in the *vc_inv_wp* of only 3.45%, and 2.95% in the *vc_deal_wp*, in support of Hypothesis 3. Also, the coefficients of *school_sec* are smaller than the ones of *entrepr_edu*: 13.95% change in the *vc_inv_wp* (**Table *40***) and 1.63% in the *vc_deal_wp* (**Table *41***). Regarding signs and significance, *school_sec* also in this case is positively related to both dependent variables, and while it is significant at 0.01 when tested with the *vc_inv_wp*, its significance disappears in almost all cases when regressed with *vc_deal_wp*.

Regarding higher levels of education, the enrolment rate in tertiary education is still negatively related to both *vc_inv_wp* (**Table *42***) and *vc_deal_wp* (**Table *43***). Its coefficients are significantly smaller than the ones of the corresponding task-related education variable: 0.13% and -1.33%, as opposed to 43.72% and 45.18% for the *entrepr_adv*. Therefore, evidence regarding all three levels of schooling confirms Hypothesis 3.

Furthermore, from the comparison of the coefficients related to the enrolment rates at each level of schooling, it is clear how the biggest impact is played, also in this case, by the secondary education, followed by the primary, validating once again Hypothesis 4.

Regarding Hypothesis 5 and the role played by female participation in the labor force, it positively affects the amounts of venture capital investments (**Table *44***), although it does not seem to have a significant impact on the number of deals (**Table *45***). On the other hand, female enrolment rates keep being significant with both *vc_inv_wp* and *vc_deal_wp*: they are positive in the case of primary and secondary school (**Table *46***, **Table *47***, **Table *48***, and **Table *49***), negative in the case of tertiary school (**Table *50*** and **Table *51***), exactly as seen in section 4.2 Empirical results and confirming Hypotheses 6 and 7. However, regarding the negative sign of *fem_tert*, further considerations than the ones done regarding the negative sign of *school_tert* can be made. If we think about the strongly significant and positive role played by female participation in the labor force, it might just indicate a preference shown by investors for countries in which females are entering the job market relatively soon. In fact, we need to recall the fact that *school_tert* includes not only those that are attending tertiary school at the "corresponding" age (i.e., indicatively right after secondary school), but also those who might decide to keep pursuing further studies due to lack of opportunities in the job market. Therefore, investors might be more inclined to fund healthier markets with a higher number of job opportunities available for women.

A summary of the results and the robustness checks is in **Table *52***.

6. Conclusion

The study contributes to the existing literature by reaching some interesting findings related to the role played by education and by gender in attracting venture capital investment (both in terms of amounts and the number of deals) to a country. It shows how task-related human capital is more impactful than general one, that task-related education is relevant at all levels of schooling, and that, while general education is positively correlated to venture capital investments and deals for both primary and secondary school, the magnitude of the impact of secondary school is predominant (coherently with Zhu and Li (2017)). This evidence suggests that investors not only look at countries with higher enrolment in education rates - at least for primary and secondary schooling -, but also seek business-related education, specifically on how to start and maintain a business. Although to a lesser extent, regarding the basic levels of school, represented by primary and secondary school, they are interested in also the overall alphabetization level of the country. Differently than what was expected, task-specific human capital does not exercise a higher influence when received during primary and secondary school, than during tertiary, suggesting that the inclusion of entrepreneurial topics in education programs is always beneficial and that it is never too late to improve one's entrepreneurial education (country-wise at least). On the other hand, the importance of the education received in the early years is confirmed when analyzing the enrolment rates: also in this case, high enrolment rates in primary and especially secondary school are responsible for a larger influence on venture capital investment than the rate of enrolment in tertiary school. Moreover, results show that the enrolment rate in tertiary schools has a negative impact on venture capital, suggesting that investors might be looking at countries with a pervasive alphabetization level but that are still not excessively specialized. This might be because those are generally developing countries, and returns from investing in them are overall higher (although naturally riskier) for investors. However, it might also be that investors have a preference for those countries in which a larger portion of the population is employed (as also suggested by the negative correlation of both the amounts and the number of deals with the unemployment rate), as opposed to enrolled into tertiary education, especially outside the typical range of years dedicated to that. Let's remember, in fact, that the rate of enrolment in tertiary education takes into account also those who are enrolling later in life or who are pursuing several degrees, and it compares them to the number of people that – at least according to their age – should pursue

a tertiary level of education. As a result, very developed countries present an enrolment rate in tertiary schools higher than 100%, which might partially discourage investors by giving the signal that the population keeps specializing because of a lack of suitable opportunities in the job market.

However, the negative effect played by the enrolment rate in tertiary education is largely mitigated by positive effects played by the enrolment rates in primary and secondary education and by the task-specific human capital, explaining why countries such as the US still attract the biggest part of venture capital funding.

Furthermore, tertiary school does play an important role when task-related education is considered, and improving advanced education and training related to entrepreneurship could be further investigated to understand if governments could use it as leverage to earn a competitive advantage. Regarding improving task-related education in primary and, especially, secondary school, the analysis is more complex: although the impact of entrepreneurial education and training at those levels of schooling is higher than the one played by the general enrolment rates, policymakers should perform a cost-benefit analysis to understand which of these indicators is more convenient to increase.

Results regarding gender are also quite interesting and innovative for the literature regarding venture capital. Gender parity pays off both in terms of the number of deals and amount invested and should be promoted at an educational level, by ensuring a high female enrolment rate, especially in primary and secondary school, and most of all at a professional level, by creating sufficient job opportunities and guaranteeing equal access to them. This is aligned with the works of Busse and Nunnenkamp (2009) and Pantelopoulos (2022), according to which foreign direct investors prefer countries with less gender imbalance. Also, when analyzing the enrolment rate in tertiary education isolating only the data related to females, its impact on venture capital is negative, leading to similar considerations of the ones drawn for the general rate: investors might prefer those countries in which women are not only more educated but that makes sure to guarantee them a sufficient occupational outlook after, a supposition further supported by the positive impact played by the female portion of the labor force.

Finally, the main contribution of the study is to bring task-related education and gender to the discussion related to venture capital determinants from a country perspective, instead of a firm perspective, in an attempt of filling the gap in the literature. However, there are many things that could be improved in future studies, starting from improvement to the initial database: the several gaps in the data, due to lack of variables for certain countries or for certain years, has a negative impact on the number of observations of the regressions, which also tends to reduce when more variables are regressed together. This implies, for instance, that in those cases in which we have fewer data available, we are regressing observations from 25 countries instead of the 36 originally included in the sample. Moreover, our sample is biased toward developed countries, and it would be valuable for future research to conduct a similar study including a more varied panel. For instance, it would be interesting to test whether the interpretation regarding the sign of the enrolment rate in tertiary school holds true when the sample includes both developed and developing countries. In terms of variables, on the other hand, further research could also choose to expand the panel of explanatory variables in order to include other intellectual capital proxies and analyze whether they also have an impact on the decision-making process of the investors. Finally, regarding the econometrical methodologies, while the risk of reverse causality has been mitigated by using lagged independent variables and time-fixed effects for all specifications of the model, more complex models could be built for instance by relying on dynamic panel data models and instrumental variables estimations (Leszczensky & Wolbring, 2022).

7. References

Adelman, I., & Morris, C. (1967). Society, Politics and Economic Development. *Johns Hopkins University Press, Baltimore*.

Armington, C., & Acs, Z. (2002). The determinants of regional variation in new firm formation. *Regional Studies, 36*(1), 33-45. doi:https://doi.org/10.1080/00343400120099843

Bădulescu, A. (2011). Start-Up Financing Sources: Does Gender Matter? Some Evidence For Eu And Romania. *Annals of Faculty of Economics, University of Oradea, Faculty of Economics, 1 (special)*, 207-213.

Bailey, D., & Katz, J. N. (2011). Implementing Panel-Corrected Standard Errors in R: The pcse Package. *Journal of Statistical Software, 42*(1), 1–11. doi:https://doi.org/10.18637/jss.v042.c01

Balboa, M., & Martí, J. (2001). The Determinants of Private Equity Fundraising in Western Europe. *Instituto Valenciano de Investigaciones Económicas*, Working Papers. Serie AD. doi:https://doi.org/10.2139/ssrn.269789

Bates, T. (1995). Self-employment entry across industry groups. *Journal of Business Venturing, 10*(2), 143-156. doi:https://doi.org/10.1016/0883-9026(94)00018-P

Beck, N., & Katz, J. N. (1995). What to do (and not to do) with Time-Series Cross-Section Data. *The American Political Science Review, 89*(3), 634-647. doi:https://doi.org/10.2307/2082979

Becker, G. S. (1962). Investment in Human Capital: A Theoretical Analysis. *Journal of Political Economy, 70*(5), 9-49. doi:https://doi.org/10.1086/258724

Becker, G. S. (1964). Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*. Retrieved from https://ssrn.com/abstract=1496221

Bedu, N., & Montalban, M. (2014). Analysing the Uneven Development of Private Equity in Europe: Legal Origins and Diversity of Capitalism. *Socio-Economic Review, 12*(1), 33-70. doi:https://doi.org/10.1093/ser/mwt011

Behrens, J., Patzelt, H., Schweizer, L., & Bürger, R. (2012). Specific managerial human capital, firm age, and venture capital financing of biopharmaceutical ventures: A contingency approach. *Journal of High Technology Management Research*(23), 112-121. doi:https://doi.org/10.1016/j.hitech.2012.06.003

Bellemare, M. F., Pepinsky, T. B., & Masaki, T. (2017). Lagged Explanatory Variables and the Estimation of Causal Effects. *Journal of Politics, 79*(3), 949–963. doi:http://dx.doi.org/10.1086/690946

Bengoa, M., & Sanchez-Robles, B. (2003). Foreign direct investment, economic freedom and growth: new evidence from Latin America. *European Journal of Political Economy, 19*, 529-545. doi:https://doi.org/10.1016/s0176-2680(03)00011-9

Benhabib, J., & Spiegel, M. M. (1994). The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary Economics, 34*, 143-173. doi:https://doi.org/10.1016/0304-3932(94)90047-7

Blanchflower, D., & Levine, P. (2003). Discrimination in the Small-Business Credit Market. *The Review of Economics and Statistics, 84*(5), 930–943. doi:https://doi.org/10.1162/003465303772815835

Bonini, S., & Alkan, S. (2011). The political and legal determinants of venture capital investments around the world. *Small Bus Econ, 39*, 997–1016. doi:https://doi.org/10.1007/s11187-011-9323-x

Bottazzi, L., & Da Rin, M. (2002). Venture Capital in Europe and the Financing of Innovative Companies. *Economic Policy, 17*, 229–269. doi:https://doi.org/10.1111/1468-0327.00088

Bottazzi, L., Da Rin, M., & Hellman, T. (2016). The Importance of Trust for Investment: Evidence from Venture Capital. *The Review of Financial Studies, 29*(9), 2283–2318. doi:https://doi.org/10.1093/rfs/hhw023

Bowles, S., & Gintis, H. (1975). The problem with human capital theory—a Marxian critique. *The American Economic Review, 65*(2), 74-82.

Brush, C. G., & Hisrich, R. D. (1991). Antecedent influences on womenowned businesses. *Journal of Managerial Psychology, 6*(2), 9-16. doi:https://doi.org/10.1108/02683949110144846

Busse, M., & Nunnenkamp, P. (2009). Gender Disparity in Education and the International Competition for Foreign Direct Investment. *15*(3), 61-9. doi:https://doi.org/10.1080/13545700802528315

Cabeza-García, L., Del Brio , E. B., & Oscanoa-Victorio, M. (2018). Gender Factors and Inclusive Economic Growth: The Silent Revolution. *Sustainability, 10*(1), 121. doi:https://doi.org/10.3390/su10010121

Cherif, M., & Gazdar, K. (2011). What Drives Venture Capital Investments in Europe? New Results from a Panel Data Analysis. *Journal of Applied Business and Economics, 12*(3). Retrieved from http://digitalcommons.www.na-businesspress.com/JABE/CherifWeb.pdf

Choo, C., & Bontis, N. (2002). *The Strategic Management of Intellectual Capital and Organizational Knowledge.* Cary: Oxford University Press, Incorporated.

Colombo, M. G., & Grilli, L. (2010). On growth drivers of high-tech start-ups: Exploring the role of founders' human capital and venture capital. *Journal of Business Venturing, 25*(6), 610-626. doi:https://doi.org/10.1016/j.jbusvent.2009.01.005

Cooper, A., Gimeno-Gascon, J., & Woo, C. (1994). Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing, 9*(5), 371-395. doi:https://doi.org/10.1016/0883-9026(94)90013-2

Cumming, D., & Knill, A. (2012). Disclosure, venture capital and entrepreneurial spawning. *Journal of International Business Studies, 43*(6), 563-590. doi:https://doi.org/10.1057/jibs.2012.9

Cumming, D., & Li, D. (2016). Public, policy, entrepreneurship, and venture capital in the United States. *Journal of Corporate Finance, 23*, 345-367. doi:https://doi.org/10.1016/j.jcorpfin.2013.09.005

Da Rin, M., Nicodano, G., & Sembenelli, A. (2006). Public policy and the creation of active venture capital markets. *Journal of Public Economics, 90*(8-9), 1699-1723. doi:https://doi.org/10.1016/j.jpubeco.2005.09.013

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 18*(3), 301-331. doi:https://doi.org/10.1016/s0883-9026(02)00097-6

Dolinsky, A. L., Caputo, R., Pasumarty, K., & Quazi, H. (1993). The Effects of Education on Business Ownership: A Longitudinal Study of Women. *Entrepreneurship: Theory and Practice, 18*(1), 43-53. doi:https://doi.org/10.1177/104225879301800104

Dranove, D. (2012). Practical Regression: Introduction to Endogeneity: Omitted Variable Bias. *Technical note - Kellogg School of Management*, Reference no. K7-112-004.

Edvinsson, L., & Malone , M. S. (1997). *Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower.* Harper Business. doi:https://doi.org/10.1016/s0024-6301(98)90251-5

Engel, D., & Keilbach, M. (2007). Firm-level implications of early stage venture capital investment — An empirical investigation. *Journal of Empirical Finance, 14*(2), 150-167. doi:https://doi.org/10.1016/j.jempfin.2006.03.004

Félix, E. G., Cesaltina, P. P., & Gulamhussen, M. A. (2013). The Determinants of Venture Capital in Europe —Evidence Across Countries. *Journal of Financial Services Research, 44*(3), 259-279. doi:https://doi.org/10.1007/s10693-012-0146-y

Fix, B. (2018). The trouble with human capital theory. *Working Papers on Capital as Power, Capital As Power - Toward a New Cosmology of Capitalism*, No 2018/07.

Fourati, H., & Affes, H. (2011). Financial constraints, human and social capital, and risk-taking attitude in the foundation of new firms. *Strategic Change, 20*(10). doi:https://doi.org/10.1002/jsc.897

Franco, M., & Haase, H. (2009). Entrepreneurship: An organisational learning approach. *Journal of Small Business and Enterprise Development, 16*, 624-641. doi:https://doi.org/10.1108/14626000911000965

Freeman, R. (1976). *The Overeducated American.* Academic Press.

Gavious, I., & Russ, M. (2009). The valuation implications of human capital in transactions on and outside the exchange. *Advances in Accounting, 25*(2), 165-173. doi:https://doi.org/10.1016/j.adiac.2009.09.004

Gimeno, J., Folta, T., Cooper, A., & Woo, C. (1997). Survival of the Fittest? Entrepreneurial Human Capital and the Persistence of Underperforming Firms. *Administrative Science Quarterly, 42*(4), 750-783. doi:http://dx.doi.org/10.2307/2393656

Gompers, P. A., Lerner, J., Blair, M. M., & Hellman, T. (1999). What Drives Venture Capital Fundraising? *Brookings Papers on Economic Activity. Microeconomics,* 149-204. doi:https://doi.org/10.2307/2534802

Gompers, P., Kovner, A., Lerner, J., & Scharfstein, D. (2008). Venture capital investment cycles: The impact of public markets. *Journal of Financial Economics, 87*(1), 1-23. doi:https://doi.org/10.1016/j.jfineco.2006.12.002

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal, 17*(S2), 109-122. doi:https://doi.org/10.1002/smj.4250171110

Greene, W. (2000). *Econometric Analysis* (4th ed.). Englewood Cliffs: Prentice Hall.

Grilli, L., Latifi, G., & Mrkajic, B. (2019). Institutional determinants of venture capital activity: an empirically driven literature review and research agenda. *Journal of Economic Surveys, 33*(4), 1094-1122. doi:https://doi.org/10.1111/joes.12319

Groh, A. P., & Wallmeroth, J. (2016). Determinants of venture capital investments in emerging markets. *Emerging Markets Review, 29*, 104-132. doi:https://doi.org/10.1016/j.ememar.2016.08.020

Guzman, J., & Kacperczyk, A. (2019). Gender gap in entrepreneurship. *Research Policy, 48*, 1666-1680. doi:https://doi.org/10.1016/j.respol.2019.03.012

Hain, D., Johan, S., & Wang, D. (2016). Determinants of Cross-Border Venture Capital Investments in Emerging and Developed Economies: The Effects of Relational and Institutional Trust. *Journal of Business Ethics volume, 138*, 743–764. doi:https://doi.org/10.1007/s10551-015-2772-4

Herrera-Echeverri, H. (2017). Public Expenditure in Research and Development and Venture Capital Commitments. *Inzinerine Ekonomika-Engineering Economics, 28*(3), 240-252. doi:https://doi.org/10.1016/j.jbusres.2013.11.020

Herrera-Echeverri, H., Haar, J., & Benavides, J. (2014). Foreign direct investment, institutional quality, economic freedom and entrepreneurship in emerging markets. *Journal of Business Research, 67*, 1921–1932. doi:https://doi.org/10.5755/j01.ee.28.3.13216

Hsu, D. (2007). Experienced entrepreneurial founders, organizational capital, and venture capital funding. *Research Policy, 36*(5), 722-741. doi:https://doi.org/10.1016/j.respol.2007.02.022

Jeng, L. A., & Wells, P. C. (2000). The determinants of venture capital funding: evidence across countries. *Journal of Corporate Finance, 6*(3), 241-289. doi:https://doi.org/10.1016/S0929-1199(00)00003-1

Kalleberg, A. L., & Leicht, K. T. (1991). Gender and Organizational Performance: Determinants of Small Business Survival and Success. *The Academy of Management Journal, 34*(1), 136-161. doi:https://doi.org/10.2307/256305

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The Worldwide Governance Indicators: Methodology and Analytical Issues. *Hague Journal on the Rule of Law volume, 3*, 220–246. doi:https://doi.org/10.1017/s1876404511200046

Klasen, S. (2002). Low Schooling for Girls, Slower Growth for All? Cross-Country Evidence on the Effect of Gender Inequality in Education on Economic Development. *The World Bank Economic Review, 16*(3), 345-373. doi:https://doi.org/10.1093/wber/lhf004

Ko, E.-J., & McKelvie, A. (2018). Signaling for more money: The roles of founders' human capital and investor prominence in resource acquisition across different stages of firm development. *Journal of Business Venturing, 33*, 438-454. doi:https://doi.org/10.1016/j.jbusvent.2018.03.001

Kortum, S., & Lerner, J. (2000). Assessing the Contribution of Venture Capital to Innovation. *The Rand Journal of Economics, 31*(4), 674-692. doi:https://doi.org/10.2307/2696354

Krishnan, C. N., & Masulis, R. W. (2012). Venture capital reputation: a survey. In D. Cummings, *Handbook of Entrepreneurial Finance, Venture Capital and Private Equity* (pp. 61-129). Oxford: Oxford University Press.

Kyriacou, G. (1991). Level and growth effects of human capital. *Working paper 91-26 (C.V. Starr Center, New York, NY)*.

Le, T., Gibson, J., & Oxley, L. (2005). Measures of human capital: A review of the literature. *Treasury Working Paper Series 05/10, New Zealand Treasury.*

Lerner, M., Brush, C., & Hisrich, R. (1997). Israeli women entrepreneurs: An examination of factors affecting performance. *Journal of Business Venturing, 12*(4), 315-339. doi:https://doi.org/10.1016/s0883-9026(96)00061-4

Leszczensky, L., & Wolbring, T. (2022). How to Deal With Reverse Causality Using Panel Data? Recommendations for Researchers Based on a Simulation Study. *Sociological Methods & Research, 51*(2), 837–865. doi:https://doi.org/10.1177/0049124119882473

Lloyd Blackwell, J. (2005). Estimation and testing of fixed-effect panel-data systems. *The Stata Journal, 5*(2), 202-207.

Lucas, R. (1988). On the mechanism of economic development. *Journal of Monetary Economics, 22*, 3-42. doi:https://doi.org/10.1016/0304-3932(88)90168-7

Marvel, M., Davis, J., & Sproul, C. (2016). Human Capital and Entrepreneurship Research: A Critical Review and Future Directions. *Entrepreneurship Theory and Practice, 40*, 599-626. doi:https://doi.org/10.1111/etap.12136

Mention, A.-L., & Bontis, N. (2013). Intellectual capital and performance within the banking sector of Luxembourg and Belgium. *Journal of Intellectual Capital, 14*(2). doi:https://doi.org/10.1108/14691931311323896

Milosevic, M. (2018). Skills or networks? Success and fundraising determinants in a low performing venture capital market. *Research Policy, 47*(1), 49-60. doi:https://doi.org/10.1016/j.respol.2017.09.009

Mincer, J. (1974). Schooling, Experience, and Earnings. *National Bureau of Economic Research*.

Mujahid, N., & Zafar, N. (2012). Economic Growth-Female Labour Force Participation Nexus: An Empirical Evidence for Pakistan. *The Pakistan Development Review, 51*(4), 565-585. doi:https://doi.org/10.30541/v51i4iipp.565-586

Noorbakhsh, F., Paloni, A., & Youssef, A. (2001). Human Capital and FDI Inflows to Developing Countries: New Empirical Evidence. *World Development, 29*(9), 1593-1610. doi:https://doi.org/10.1016/s0305-750x(01)00054-7

Pantelopoulos, G. (2022). Higher education, gender, and foreign direct investment: Evidence from OECD countries. *Industry and Higher Education, 36*(1), 86-93. doi:https://doi.org/10.1177/0950422221997274

Popov, A., & Roosenboom, P. (2013). Venture Capital and New Business Creation. *Journal of Banking and Finance, 37*, 4965–4710. doi:https://doi.org/10.1016/j.jbankfin.2013.08.010

Reed, W. R. (2015). On the Practice of Lagging Variables to Avoid Simultaneity. *Oxford Bulletin of Economics and Statistics, 77*(6), 897–905. doi:https://doi.org/10.1111/obes.12088

Romain, A., & Van Pottelsberghe de la Potterie, B. (2003). The determinants of venture capital: A panel Data Analysis of 16 OECD Countries. *Working Papers CEB 04-015.RS, ULB -- Universite Libre de Bruxelles*. doi:https://doi.org/10.2139/ssrn.2785064

Rosen, S. (1976). A Theory of Life Earnings. *Journal of Political Economy, 84*(4), S45-S67. doi:https://doi.org/10.1086/260532

Sahayam, A., Steensma, H. Q., & Bardeen, J. (2010). The Influence of R&D Investment on the Use of Corporate Venture. *Journal of Business Venturing, 25*, 376–388. doi:https://doi.org/10.1016/

Schertler, A. (2003). Driving Forces of Venture Capital Investments in Europe: A Dynamic Panel Data Analysis. *Kiel Working Papers 1172, Kiel Institute for the World Economy (IfW)*.

Schultz, T. W. (1961). Investment in Human Capital. *The American Economic Review, 51*(1), 1-17.

Schultz, T. W. (1963). *Economic value of education.* New York: Columbia University Press.

Shatz, H. (2003). Gravity, education, and economic development in a multinational affiliate location. *The Journal of International Trade & Economic Development, 12*(2), 117-150. doi:https://doi.org/10.1080/0963819032000084368

Shetty, S., & Sundaram, R. (2019). Funding acquisition drivers for new venture firms: Diminishing value of human capital signals in early rounds of funding. *Problems and Perspectives in Management, 17*(1), 78-94. doi:https://doi.org/10.21511/ppm.17(1).2019.08

Smith, A. (1776). *The Wealth of Nations.* Scotland, Great Britain: W. Strahan and T. Cadell, London.

Spengler, J. J. (1977). Adam Smith on Human Capital. *The American Economic Review, 67*(1), 32-36.

Temple, J., & Johnson, P. A. (1998). Social Capability and Economic Growth. *The Quarterly Journal of Economics, 113*(3), 965–990. doi:https://doi.org/10.1162/003355398555711

Tsani, S., Paroussos, L., Fragiadakis, C., Charalambidis, I., & Capros, P. (2013). Female labour force participation and economic growth in the South Mediterranean countries. *Economics Letters, 120*, 323-328. doi:https://doi.org/10.1016/j.econlet.2013.04.043

UNECE. (2016). *Guide on Measuring Human Capital.* New York and Geneva: United Nations.

Unger, J., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing, 26*, 341-358. doi:https://doi.org/10.1016/j.jbusvent.2009.09.004

Wooldridge, J. M. (2012). *Introductory Econometrics: A Modern Approach* (5° edition ed.). South-Western Pub.

Yıldırım, D. Ç., & Akinci, H. (2021). The dynamic relationships between the female labour force and the economic growth. *Journal of Economic Studies, 48*(8), 1512-1527. doi:https://doi.org/10.1108/JES-05-2020-0227

Zacharakis, A., & Meyer, D. (2000). The potential of actuarial decision models: Can they improve the venture capital investment decision? *Journal of Business Venturing, 15*(4), 323-346. doi:https://doi.org/10.1016/s0883-9026(98)00016-0

Zarutskie, R. (2010). The role of top management team human capital in venture capital markets: Evidence from first-time funds. *Journal of Business Venturing*(25), 155-172. doi:https://doi.org/10.1016/j.jbusvent.2008.05.008

Zheng, H., Piao, X., & Park, S. (2021). The Role of Founder-CEO, Human Capital and Legitimacy in Venture Capital Financing in China's P2P Lending Industry. *Sustainability, 13*(4), 1625. doi:https://doi.org/10.3390/su13041625

Zhu, S., & Li, R. (2017). Economic complexity, human capital and economic growth: empirical research based on cross-country panel data. *Applied Economics, 49*(38). doi:https://doi.org/10.1080/00036846.2016.1270413

8. Annexes

Table 1: List of countries included in the study

1	Australia	OECD
2	Austria	OECD
3	Belgium	OECD
4	Bulgaria	Non-OECD
5	Canada	OECD
6	Czech Republic	OECD
7	Denmark	OECD
8	Estonia	OECD
9	Finland	OECD
10	France	OECD
11	Germany	OECD
12	Greece	OECD
13	Hungary	OECD
14	Ireland	OECD
15	Israel	OECD
16	Italy	OECD
17	Japan	OECD
18	Korea, South	OECD
19	Latvia	OECD
20	Lithuania	OECD
21	Luxemburg	OECD
22	Netherlands	OECD
23	New Zealand	OECD
24	Norway	OECD
25	Poland	OECD
26	Portugal	OECD
27	Romania	Non-OECD
28	Russian Federation	Non-OECD
29	Slovak Republic	OECD
30	Slovenia	OECD
31	South Africa	Non-OECD
32	Spain	OECD
33	Sweden	OECD
34	Switzerland	OECD
35	United Kingdom	OECD
36	United States	OECD

Table 2: List of variables included in the study

ID	Name	Description	Source	Availability	Expected sign
vc_inv	Venture capital investment	Natural logarithm of 1+venture capital investments over active population.	OECD	2002-2021	Dependent variable
vc_deal	Venture capital deals	Natural logarithm of 1+venture capital deal over active population.	Thomson Eikon	2002-2021	Dependent variable
inst_qual	Institutional quality	Constructed variable: mean of control of corruption, rule of law, regulatory quality, government effectiveness, political stability, voice and accountability for each year.	The World Bank	1996-2021	+
market_cap	Market capitalization (% of GDP)	Market capitalization of listed domestic companies (% of GDP).	The World Bank	1975-2020	+
lnGDP	Gross domestic product	Natural logarithm of 1 + GDP, with GDP expressed in current $US.	The World Bank	1960-2021	+
trade_gdp	Trade (% of GDP)	Sum of exports and imports of goods and services measured as a share of gross domestic product.	The World Bank	1960-2021	+
entrepr_edu	Basic school entrepreneurial education and training	The extent to which training in creating or managing SMEs is incorporated within the education and training system at primary and secondary levels.	GEM	2001-2021	+

entrepr_adv	Post School Entrepreneurial Education And Training	The extent to which training in creating or managing SMEs is incorporated within the education and training system in higher education (i.e., college, vocational school, business school, among others)	GEM	2001-2021	+
school_prim	School enrollment, primary (% net)	The ratio of children of official primary school age who are enrolled in it to the population of the corresponding official primary school age.	The World Bank	1974-2019	+
school_sec	School enrollment, secondary (% net)	The ratio of children of official secondary school age who are enrolled in it to the population of the corresponding official secondary school age.	The World Bank	1976-2019	+
school_tert	School enrollment, tertiary (% gross)	The ratio of students enrolled in tertiary school, regardless of age, to the population of the age group officially corresponding to tertiary school.	The World Bank	1975-2020	+
articles_pop	Scientific and technical journal articles (% of active population)	The number of scientific and engineering articles published in: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and	The World Bank	2000-2018	+

		technology, and earth and space sciences. The number has been divided by the active population.			
unemploy_rate	Rate of unemployment (% of labor force)	The share of the labor force that is without work but available for and seeking employment. It is calculated as a percentage of labor force.	OECD	1955-2021	-
taxburden	Tax burden (% of GDP)	Direct and indirect taxes imposed by the government, as a percentage of GDP.	The Heritage Foundation	1995-2021	-
female_lf	Female participation to the labor force (% of total labor force)	The extent to which women are active in the labor force (working people aged 15-64)	The World Bank	1990-2021	+
fem_prim	School enrollment, primary, female (% net)	The ratio of female children of official primary school age who are enrolled in it to the female population of the corresponding official primary school age.	The World Bank	1974-2019	+
fem_sec	School enrollment, secondary, female (% net)	The ratio of female children of official secondary school age who are enrolled in it to the female population of the corresponding official secondary school age.	The World Bank	1976-2019	+
fem_tert	School enrollment, tertiary, female (% gross)	The ratio of female students enrolled in tertiary school, regardless of age, to the female	The World Bank	1975-2020	+

	population of the age group officially corresponding to tertiary school.

Table 3: Pattern of the panel data

```
CountryCode:  1, 2, ..., 36                                    n =         36
    Year:  2002, 2003, ..., 2021                               T =         20
           Delta(Year) = 1 year
           Span(Year)  = 20 periods
           (CountryCode*Year uniquely identifies each observation)

Distribution of T_i:   min      5%     25%       50%       75%     95%     max
                        11      13      14        15        15      15      20
```

Freq.	Percent	Cum.	Pattern
23	63.89	63.89	111111111111111
2	5.56	69.44	.....11111.111111111
2	5.56	75.00	.....11111111111111.
2	5.56	80.56	....11111111111111..
1	2.78	83.33	1111111111111
1	2.78	86.11	.....1..1..111111111
1	2.78	88.89	.....1.1111111111111
1	2.78	91.67	.....11.111111111111
1	2.78	94.44	.....111111111111.11
2	5.56	100.00	(other patterns)
36	100.00		XXXXXXXXXXXXXXXXXXXX

Own elaboration.

The interpretation of the table is in subsection 4.1 Descriptive statistics.

Table 4: Descriptive statistics of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
vc_inv	484	3.14	1.52	-1.89	7.68
vc deal	484	1.59	1.23	-2.73	3.98
inst_qual	528	1.08	0.58	-0.84	1.89
market_cap	365	74.8	63.45	4.59	352.29
lnGDP	528	26.79	1.49	23.69	30.69
trade_gdp	526	101.77	59.13	24.39	388.85
articles_pop	393	0.27	0.09	0.04	0.49
unemploy_rate	481	7.37	4.09	2.01	27.47
taxburden	523	66.11	13.45	32.7	94.3
entrepr_edu	513	3.53	0.72	1.73	6.09
entrepr_adv	513	4.72	.55	2.86	6.43
school_prim	347	95.49	4	82.18	6.43
school_sec	313	91.97	4.32	71.93	99.96
school_tert	397	70.82	18.77	10.61	99.81
female_lf	528	45.29	5.38	13.71	50.75
fem_prim	214	94.72	4.17	82.03	99.79
fem_sec	300	92.18	4.34	78.52	100
fem_tert	401	79.44	19.8	10.41	150.05

Own elaboration.

Descriptive statistics – The table shows the descriptive statistics for the period from 2002 to 2021 for the 36 countries of the sample. The variables are, in order of appearance: venture capital investment, venture capital deal, institutional quality, market capital, natural logarithm of the gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), unemployment rate, tax burden, basic entrepreneurial education and training in primary and secondary school, post-school entrepreneurial education and training in tertiary school, enrolment in primary school, enrolment in secondary school, enrolment in tertiary school, female labor force participation (as a percentage of the total labor force), female enrolment in primary school, female enrolment in secondary school, female enrolment in tertiary school. A detailed description of the variables is in section 3.2 Variables.

Table 5: Panel data descriptive statistics

Variable		Mean	Std. dev.	Min	Max	Observations
vc_inv	overall	3.138722	1.516056	-1.891272	7.675899	N = 484
	between		1.418345	.7304494	6.350224	n = 33
	within		.6490989	.4466149	5.693479	T-bar = 14.6667
inst_q~l	overall	1.083043	.5801123	-.8362923	1.889047	N = 528
	between		.5914338	-.7270204	1.805991	n = 36
	within		.0717046	.8626756	1.400986	T-bar = 14.6667
market~p	overall	74.80045	63.44804	4.589026	352.2922	N = 365
	between		58.56888	5.897153	257.6386	n = 30
	within		23.69431	-14.70854	272.748	T-bar = 12.1667
lnGDP	overall	26.79228	1.485545	23.69488	30.69313	N = 528
	between		1.51507	23.95728	30.4512	n = 36
	within		.1427844	26.13599	27.31006	T-bar = 14.6667
trade_~p	overall	101.7725	59.12583	24.39017	388.8477	N = 526
	between		59.10496	28.2116	332.6739	n = 36
	within		11.00008	32.63124	157.9463	T-bar = 14.6111
unempl~e	overall	7.366252	4.091012	2.01395	27.46758	N = 481
	between		3.366283	3.54375	18.16702	n = 33
	within		2.384806	-2.581682	17.12497	T-bar = 14.5758
taxbur~n	overall	66.11358	13.4481	32.7	94.3	N = 523
	between		13.3475	39.2	89.44667	n = 36
	within		2.678512	55.90024	74.39539	T-bar = 14.5278
entrep~u	overall	3.527739	.724034	1.73	6.09	N = 513
	between		.6154787	2.660385	4.973667	n = 35
	within		.3915261	2.351739	5.928405	T-bar = 14.6571
entrep~v	overall	4.71923	.551993	2.86	6.43	N = 513
	between		.4147796	3.950667	5.661333	n = 35
	within		.3655041	3.288563	6.231897	T-bar = 14.6571
school~m	overall	95.49487	4.001099	82.18406	99.95587	N = 347
	between		4.201208	83.90177	99.65018	n = 35
	within		1.282889	87.74179	100.3505	T = 9.91429
school~c	overall	91.96869	4.321437	71.92661	99.80968	N = 313
	between		4.277185	81.23531	98.68217	n = 35
	within		1.687998	82.65999	101.2774	T = 8.94286
school~t	overall	70.82328	18.77404	10.60734	148.5309	N = 397
	between		20.17073	17.97715	122.0729	n = 34
	within		5.980431	36.14546	97.2813	T-bar = 11.6765
female~f	overall	45.2885	5.376481	13.71	50.75116	N = 528
	between		5.234074	17.35998	50.32573	n = 36
	within		2.751105	18.33452	74.85832	T-bar = 14.6667
fem_prim	overall	94.71776	4.166767	82.0348	99.79021	N = 214
	between		4.063524	84.78137	99.40009	n = 32
	within		1.24332	88.31337	99.87087	T = 6.6875
fem_sec	overall	92.1809	4.341619	78.52272	100	N = 300
	between		4.278144	82.76931	100	n = 35
	within		1.559944	86.50541	97.85639	T = 8.57143
fem_tert	overall	79.43592	19.79533	10.40831	150.0461	N = 401
	between		22.13419	18.96887	135.1201	n = 35
	within		6.59371	45.80465	105.3592	T-bar = 11.4571

Own elaboration.

The interpretation of the table is in subsection 4.1 Descriptive statistics. Statistics for the variable venture capital deals are in subsection 4.1.2 Venture capital deals.

Table 6: Correlation matrix of the variables

Variables	vc_inv	inst_qual	market_cap	lnGDP	trade_gdp	articles_pop	unemploy_rate	taxburden	entrepr_edu
vc_inv	1								
inst_qual	0.536***	1							
market_cap	0.532***	0.185***	1						
lnGDP	0.359***	0.138***	0.257***	1					
trade_gdp	-0.085*	0.159***	-0.06	-0.571***	1				
articles_pop	0.510***	0.700***	0.356***	0.090*	-0.02	1			
unemploy_rate	-0.312***	-0.297***	-0.234***	-0.168***	-0.04	-0.166***	1		
taxburden	-0.362***	-0.503***	-0.05	-0.364***	0.134***	-0.562***	0.03	1	
entrepr_edu	0.305***	0.414***	0.225***	-0.118***	0.090**	0.363***	-0.170***	-0.151***	1
entrepr_adv	0.294***	0.346***	0.178***	-0.01	0.182***	0.206***	-0.125***	-0.193***	0.601***
school_prim	0.269***	0.209***	0.08	0.124**	-0.247***	0.268***	0.108*	-0.357***	0.283***
school_sec	0.147**	-0.01	-0.246***	0.05	-0.289***	0.04	0.03	-0.118**	0.146**
school_tert	-0.06	0.06	-0.327***	0.152***	-0.352***	0.04	0.202***	-0.133***	0.118**
female_lf	0.262***	0.261***	0.091*	-0.04	-0.089**	0.203***	-0.03	-0.145***	0.175***
fem_prim	0.269***	0.295***	0.183**	0.121*	-0.207***	0.373***	0.03	-0.428***	0.322***
fem_sec	0.07	0.01	-0.234***	0.05	-0.293***	-0.01	0.05	-0.150***	0.183***
fem_tert	-0.123**	0.06	-0.339***	0.01	-0.356***	0.08	0.218***	-0.116**	0.183***

Variables	entrepr_adv	school_prim	school_sec	school_tert	female_lf	fem_prim	fem_sec	fem_tert
entrepr_adv	1							
school_prim	0.03	1						
school_sec	-0.116**	0.602***	1					
school_tert	-0.04	0.360***	0.433***	1				
female_lf	0.172***	0.410***	0.255***	0.117**	1			
fem_prim	0.08	0.995***	0.718***	0.432***	0.463***	1		
fem_sec	-0.124**	0.618***	0.982***	0.426***	0.240***	0.745***	1	
fem_tert	-0.06	0.310***	0.446***	0.927***	0.166***	0.384***	0.452***	1

Correlation matrix – The table shows the correlation coefficients between variables for the period from 2002 to 2021 for the 36 countries of the sample. The variables are, in order of appearance: venture capital investment, institutional quality, market capital, natural logarithm of the gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), unemployment rate, tax burden, basic entrepreneurial education and training in primary and secondary school, post-school entrepreneurial education and training in tertiary school, enrolment in primary school, enrolment in secondary school, enrolment in tertiary school, female labor force participation (as a percentage of the total labor force), female enrolment in primary school, female enrolment in secondary school, female enrolment in tertiary school. A detailed description of the variables is in subsection 3.2 Variables.

Table 7: Correlation matrix of the variables with *vc_deal*

Variables	vc_deal
vc_deal	1.00
inst_qual	0.617***
market_cap	0.500***
lnGDP	0.138***
trade_gdp	0.04
articles_pop	0.527***
unemploy_rate	-0.157***
taxburden	-0.298***
entrepr_edu	0.418***
entrepr_adv	0.326***
school_prim	0.318***
school_sec	0.145**
school_tert	-0.100*
female_lf	0.302***
fem_prim	0.323***
fem_sec	0.105*
fem_tert	-0.114**

**** p<0.01, ** p<0.05, * p<0.1*

Correlation matrix – The table shows the correlation coefficients between venture capital deals and control and independent variables for the period from 2002 to 2021 for the 36 countries of the sample. The variables are, in order of appearance: venture capital deals, institutional quality, market capital, natural logarithm of the gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), unemployment rate, tax burden, basic entrepreneurial education and training in primary and secondary school, post-school entrepreneurial education and training in tertiary school, enrolment in primary school, enrolment in secondary school, enrolment in tertiary school, female labor force participation (as a percentage of the total labor force), female enrolment in primary school, female enrolment in secondary school, female enrolment in tertiary school. A detailed description of the variables is in subsection 3.2 Variables.

Table 8: PCSE with time-fixed effects regression with only control variables (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv	(7) vc_inv	(8) vc_inv	(9) vc_inv
L.inst_qual	0.802***		0.378*	0.736***		0.729***		0.620***	0.207
	(0.121)		(0.202)	(0.137)		(0.151)		(0.179)	(0.239)
L.market_cap	0.010***	0.013***	0.009***	0.011***	0.013***	0.010***	0.013***	0.011***	0.009***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)
L.lnGDP	0.215***	0.218***	0.313***	0.189**	0.184**	0.212***	0.212***	0.185**	0.292***
	(0.078)	(0.078)	(0.069)	(0.081)	(0.079)	(0.079)	(0.080)	(0.082)	(0.072)
L.trade_gdp	0.001*	0.003*	0.002**	0.001	0.002	0.001*	0.002*	0.001	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.452***						0.489***
			(0.127)						(0.128)
L.unemploy_rate				-0.029**	-0.049***			-0.034**	-0.039***
				(0.013)	(0.012)			(0.015)	(0.014)
L.taxburden						-0.008	-0.022***	-0.011	-0.002
						(0.007)	(0.006)	(0.007)	(0.006)
Constant	-4.356*	-3.884*	-7.823***	-3.369	-2.537	-3.714	-2.318	-2.400	-6.738***
	(2.274)	(2.226)	(1.941)	(2.398)	(2.262)	(2.590)	(2.414)	(2.805)	(2.323)
Observations	322	322	293	319	319	319	319	316	289
R-squared	0.379	0.308	0.433	0.390	0.333	0.376	0.327	0.388	0.445
# of Countries	27	27	27	27	27	27	27	27	27
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investment. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 9: PCSE with time-fixed effects regression with only control variables (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal	(7) vc_deal	(8) vc_deal	(9) vc_deal
L.inst_qual	0.963***		0.581***	0.991***		0.854***		0.879***	0.561***
	(0.101)		(0.159)	(0.110)		(0.122)		(0.140)	(0.182)
L.market_cap	0.006***	0.010***	0.005***	0.007***	0.011***	0.007***	0.011***	0.008***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.161***	0.164***	0.245***	0.154**	0.147**	0.155***	0.155***	0.147**	0.226***
	(0.060)	(0.059)	(0.054)	(0.062)	(0.060)	(0.060)	(0.059)	(0.062)	(0.057)
L.trade_gdp	0.002**	0.004***	0.004***	0.002**	0.004***	0.002**	0.004***	0.002**	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.382***						0.370***
			(0.103)						(0.107)
L.unemploy_rate				0.015	-0.012			0.009	0.002
				(0.011)	(0.012)			(0.013)	(0.013)
L.taxburden						-0.014**	-0.030***	-0.013**	-0.004
						(0.006)	(0.006)	(0.006)	(0.006)
Constant	-4.630***	-4.064**	-7.532***	-4.625***	-3.505**	-3.519*	-1.885	-3.481*	-6.797***
	(1.709)	(1.657)	(1.527)	(1.794)	(1.668)	(1.931)	(1.807)	(2.078)	(1.874)
Observations	322	322	293	319	319	319	319	316	289
R-squared	0.414	0.271	0.446	0.420	0.276	0.420	0.327	0.424	0.447
# of Countries	27	27	27	27	27	27	27	27	27
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 10: PCSE with time-fixed effects regression to test Hypothesis 1 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.791***		0.223		0.562***	
	(0.123)		(0.230)		(0.161)	
L.market_cap	0.009***	0.012***	0.008***	0.012***	0.011***	0.013***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
L.lnGDP	0.210**	0.280***	0.385***	0.243***	0.225***	0.272***
	(0.087)	(0.088)	(0.080)	(0.094)	(0.084)	(0.088)
L.trade_gdp	0.000	0.003*	0.004**	0.002	0.001	0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.609***			
			(0.159)			
L.entrepr_edu	0.199**	0.350***	-0.040	0.296***	0.199**	0.285***
	(0.094)	(0.099)	(0.105)	(0.101)	(0.096)	(0.099)
L.unemploy_rate				-0.032**		
				(0.013)		
L.taxburden					-0.019***	-0.030***
					(0.007)	(0.006)
Constant	-4.312*	-6.383**	-8.618***	-5.095*	-3.325	-3.878
	(2.473)	(2.497)	(2.273)	(2.717)	(2.615)	(2.660)
Observations	308	308	281	305	305	305
R-squared	0.438	0.383	0.484	0.391	0.445	0.424
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investment. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 11: PCSE with time-fixed effects regression to test Hypothesis 1 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	0.930***		0.339*		0.799***	
	(0.108)		(0.176)		(0.143)	
L.market_cap	0.006***	0.009***	0.004***	0.009***	0.006***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.143**	0.225***	0.327***	0.220***	0.151**	0.218***
	(0.065)	(0.065)	(0.061)	(0.068)	(0.063)	(0.065)
L.trade_gdp	0.002*	0.005***	0.006***	0.005***	0.002**	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.601***			
			(0.115)			
L.entrepr_edu	0.325***	0.504***	0.066	0.503***	0.326***	0.449***
	(0.094)	(0.096)	(0.098)	(0.099)	(0.096)	(0.099)
L.unemploy_rate				0.010		
				(0.012)		
L.taxburden					-0.012**	-0.029***
					(0.006)	(0.006)
Constant	-3.637*	-6.072***	-8.115***	-5.974***	-2.954	-3.739*
	(1.984)	(2.092)	(1.899)	(2.201)	(2.099)	(2.195)
Observations	308	308	281	305	305	305
R-squared	0.506	0.403	0.555	0.409	0.509	0.452
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 12: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.794***		0.245		0.644***	
	(0.132)		(0.234)		(0.161)	
L.market_cap	0.009***	0.012***	0.008***	0.012***	0.010***	0.013***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
L.lnGDP	0.207**	0.268***	0.373***	0.231**	0.218**	0.266***
	(0.091)	(0.091)	(0.083)	(0.096)	(0.088)	(0.091)
L.trade_gdp	0.000	0.003	0.004**	0.002	0.001	0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.537***			
			(0.148)			
L.entrepr_adv	0.288**	0.406***	0.102	0.397***	0.240*	0.241*
	(0.137)	(0.135)	(0.137)	(0.136)	(0.138)	(0.145)
L.unemploy_rate				-0.031**		
				(0.013)		
L.taxburden					-0.011*	-0.025***
					(0.007)	(0.007)
Constant	-4.630*	-6.448***	-8.666***	-5.291**	-3.920	-4.083
	(2.496)	(2.491)	(2.288)	(2.640)	(2.720)	(2.727)
Observations	308	308	281	305	305	305
R-squared	0.436	0.380	0.475	0.391	0.435	0.407
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 13: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	0.964***		0.355**		0.899***	
	(0.108)		(0.174)		(0.138)	
L.market_cap	0.006***	0.009***	0.004***	0.010***	0.006***	0.010***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.119*	0.193***	0.314***	0.175**	0.123*	0.191***
	(0.065)	(0.065)	(0.063)	(0.068)	(0.063)	(0.064)
L.trade_gdp	0.001	0.004***	0.005***	0.004***	0.002	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.580***			
			(0.108)			
L.entrepr_adv	0.399***	0.542***	0.179	0.561***	0.365***	0.367***
	(0.108)	(0.111)	(0.112)	(0.112)	(0.111)	(0.123)
L.unemploy_rate				0.002		
				(0.012)		
L.taxburden					-0.007	-0.026***
					(0.006)	(0.007)
Constant	-3.522*	-5.729***	-8.213***	-5.350***	-3.026	-3.253
	(1.867)	(1.941)	(1.860)	(2.017)	(2.055)	(2.154)
Observations	308	308	281	305	305	305
R-squared	0.507	0.393	0.558	0.403	0.505	0.429
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 14: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_inv* as dependent variable) – *entrepr_edu* and *entrepr_adv* tested together

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.783***		0.236		0.622***	
	(0.136)		(0.235)		(0.167)	
L.market_cap	0.009***	0.011***	0.008***	0.012***	0.010***	0.012***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
L.lnGDP	0.211**	0.279***	0.375***	0.241**	0.223**	0.277***
	(0.092)	(0.092)	(0.083)	(0.099)	(0.088)	(0.092)
L.trade_gdp	0.000	0.003	0.004**	0.002	0.001	0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.573***			
			(0.159)			
L.entrepr_edu	0.050	0.184*	-0.137	0.121	0.070	0.183*
	(0.094)	(0.105)	(0.107)	(0.108)	(0.098)	(0.101)
L.entrepr_adv	0.265*	0.315**	0.151	0.338**	0.204	0.147
	(0.140)	(0.143)	(0.141)	(0.146)	(0.144)	(0.152)
L.unemploy_rate				-0.029**		
				(0.013)		
L.taxburden					-0.012*	-0.025***
					(0.007)	(0.007)
Constant	-4.789*	-6.937***	-8.513***	-5.703**	-4.099	-4.537
	(2.536)	(2.542)	(2.308)	(2.750)	(2.724)	(2.769)
Observations	308	308	281	305	305	305
R-squared	0.436	0.384	0.477	0.393	0.436	0.411
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investment. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 15: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_deal* as dependent variable) – *entrepr_edu* and *entrepr_adv* tested together

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	0.913***		0.356**		0.823***	
	(0.112)		(0.175)		(0.143)	
L.market_cap	0.005***	0.008***	0.004***	0.009***	0.006***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.136**	0.216***	0.314***	0.206***	0.143**	0.215***
	(0.065)	(0.065)	(0.062)	(0.069)	(0.064)	(0.064)
L.trade_gdp	0.001	0.004***	0.005***	0.004***	0.002	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.575***			
			(0.115)			
L.entrepr_edu	0.230**	0.386***	0.019	0.373***	0.248**	0.398***
	(0.095)	(0.103)	(0.102)	(0.107)	(0.098)	(0.100)
L.entrepr_adv	0.293***	0.351***	0.172	0.378***	0.238**	0.163
	(0.109)	(0.118)	(0.116)	(0.120)	(0.112)	(0.123)
L.unemploy_rate				0.009		
				(0.012)		
L.taxburden					-0.009	-0.026***
					(0.006)	(0.007)
Constant	-4.250**	-6.754***	-8.235***	-6.621***	-3.658*	-4.236*
	(1.924)	(2.008)	(1.879)	(2.113)	(2.077)	(2.207)
Observations	308	308	281	305	305	305
R-squared	0.516	0.417	0.558	0.424	0.515	0.454
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 16: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.861***		0.326		0.744***	
	(0.134)		(0.292)		(0.181)	
L.market_cap	0.011***	0.014***	0.008***	0.014***	0.011***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.177*	0.191*	0.303***	0.164	0.159	0.143
	(0.103)	(0.101)	(0.084)	(0.103)	(0.109)	(0.106)
L.trade_gdp	-0.000	0.002	0.003*	0.001	-0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.511**			
			(0.200)			
L.school_prim	0.009	0.004	-0.008	0.012	-0.001	-0.018
	(0.013)	(0.015)	(0.016)	(0.016)	(0.015)	(0.015)
L.unemploy_rate				-0.049***		
				(0.013)		
L.taxburden					-0.013	-0.031***
					(0.009)	(0.007)
Constant	-3.676	-3.252	-5.537*	-3.072	-1.296	2.381
	(3.442)	(3.452)	(3.149)	(3.545)	(4.470)	(3.953)
Observations	239	239	239	236	239	239
R-squared	0.418	0.339	0.447	0.363	0.423	0.377
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 17: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	1.006***		0.521**		0.939***	
	(0.120)		(0.209)		(0.153)	
L.market_cap	0.006***	0.011***	0.004***	0.011***	0.007***	0.011***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)
L.lnGDP	0.209***	0.225***	0.323***	0.200***	0.199**	0.178**
	(0.076)	(0.074)	(0.061)	(0.075)	(0.081)	(0.078)
L.trade_gdp	0.003**	0.005***	0.005***	0.005***	0.003**	0.004***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.464***			
			(0.135)			
L.school_prim	0.046***	0.040***	0.030**	0.041***	0.040***	0.019
	(0.012)	(0.015)	(0.014)	(0.016)	(0.014)	(0.016)
L.unemploy_rate				-0.024*		
				(0.014)		
L.taxburden					-0.007	-0.030***
					(0.007)	(0.008)
Constant	-9.052***	-8.557***	-10.740***	-7.894**	-7.678**	-3.040
	(2.891)	(3.074)	(2.663)	(3.214)	(3.711)	(3.595)
Observations	239	239	239	236	239	239
R-squared	0.509	0.355	0.543	0.368	0.511	0.407
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 18: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.916***		0.645***		0.852***	
	(0.140)		(0.238)		(0.153)	
L.market_cap	0.013***	0.016***	0.012***	0.016***	0.014***	0.017***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.249***	0.285***	0.319***	0.259***	0.241***	0.256***
	(0.083)	(0.086)	(0.081)	(0.087)	(0.086)	(0.091)
L.trade_gdp	0.003**	0.005***	0.004***	0.004**	0.003**	0.005***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.267*			
			(0.161)			
L.school_sec	0.141***	0.130***	0.130***	0.126***	0.139***	0.126***
	(0.021)	(0.022)	(0.018)	(0.021)	(0.020)	(0.021)
L.unemploy_rate				-0.053***		
				(0.012)		
L.taxburden					-0.008	-0.021***
					(0.007)	(0.007)
Constant	-18.222***	-17.728***	-19.164***	-16.400***	-17.234***	-15.045***
	(2.392)	(2.809)	(2.558)	(2.954)	(2.528)	(3.001)
Observations	219	219	219	216	219	219
R-squared	0.509	0.442	0.516	0.467	0.511	0.461
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 19: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	1.014***		0.683***		0.959***	
	(0.122)		(0.171)		(0.132)	
L.market_cap	0.009***	0.012***	0.007***	0.012***	0.009***	0.013***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.220***	0.259***	0.305***	0.232***	0.213***	0.229***
	(0.059)	(0.060)	(0.057)	(0.061)	(0.061)	(0.065)
L.trade_gdp	0.004***	0.006***	0.006***	0.005***	0.004***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.329***			
			(0.111)			
L.school_sec	0.108***	0.096***	0.095***	0.090***	0.106***	0.091***
	(0.016)	(0.018)	(0.016)	(0.018)	(0.016)	(0.019)
L.unemploy_rate				-0.027**		
				(0.012)		
L.taxburden					-0.007	-0.022***
					(0.006)	(0.006)
Constant	-15.103***	-14.556***	-16.256***	-13.180***	-14.251***	-11.788***
	(2.374)	(2.948)	(2.342)	(3.054)	(2.603)	(3.237)
Observations	219	219	219	216	219	219
R-squared	0.571	0.445	0.588	0.458	0.573	0.476
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 20: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.822***		0.225		0.580***	
	(0.142)		(0.286)		(0.188)	
L.market_cap	0.011***	0.015***	0.006***	0.015***	0.012***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.112	0.085	0.292***	0.044	0.097	0.075
	(0.110)	(0.106)	(0.094)	(0.109)	(0.111)	(0.105)
L.trade_gdp	-0.002	-0.001	0.000	-0.001	-0.002	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.662***			
			(0.208)			
L.school_tert	-0.010**	-0.012**	-0.013**	-0.009*	-0.013**	-0.014***
	(0.005)	(0.005)	(0.006)	(0.004)	(0.005)	(0.005)
L.unemploy_rate				-0.044***		
				(0.012)		
L.taxburden					-0.022***	-0.034***
					(0.008)	(0.007)
Constant	-0.026	1.146	-4.844*	2.117	2.205	4.037
	(3.378)	(3.142)	(2.851)	(3.182)	(3.853)	(3.388)
Observations	246	246	232	243	244	244
R-squared	0.417	0.350	0.464	0.370	0.430	0.404
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 21: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	0.999***		0.376**		0.906***	
	(0.112)		(0.186)		(0.150)	
L.market_cap	0.007***	0.013***	0.003	0.014***	0.008***	0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.090	0.057	0.265***	0.021	0.082	0.048
	(0.077)	(0.074)	(0.068)	(0.075)	(0.078)	(0.073)
L.trade_gdp	-0.001	0.001	0.002	0.001	-0.001	0.001
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.654***			
			(0.131)			
L.school_tert	-0.009**	-0.011***	-0.013***	-0.010**	-0.010**	-0.013***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
L.unemploy_rate				-0.012		
				(0.012)		
L.taxburden					-0.010	-0.029***
					(0.007)	(0.006)
Constant	-0.460	0.963	-4.951**	1.912	0.579	3.439
	(2.479)	(2.379)	(2.124)	(2.418)	(2.843)	(2.542)
Observations	246	246	232	243	244	244
R-squared	0.515	0.364	0.576	0.383	0.515	0.418
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 22: PCSE with time-fixed effects regression to test Hypothesis 5 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.727***		0.285		0.657***	
	(0.136)		(0.219)		(0.155)	
L.market_cap	0.010***	0.013***	0.008***	0.013***	0.010***	0.013***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
L.lnGDP	0.225***	0.234***	0.343***	0.207***	0.217***	0.215***
	(0.077)	(0.076)	(0.067)	(0.078)	(0.079)	(0.079)
L.trade_gdp	0.001	0.003**	0.003***	0.002	0.001	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.495***			
			(0.139)			
L.female_lf	0.046***	0.074***	0.038***	0.071***	0.041**	0.055**
	(0.015)	(0.024)	(0.014)	(0.025)	(0.016)	(0.023)
L.unemploy_rate				-0.038***		
				(0.011)		
L.taxburden					-0.010	-0.022***
					(0.006)	(0.007)
Constant	-5.941***	-6.982***	-8.972***	-6.007**	-4.738*	-4.183
	(2.148)	(2.407)	(1.962)	(2.482)	(2.611)	(2.751)
Observations	322	322	293	319	319	319
R-squared	0.443	0.391	0.480	0.405	0.438	0.400
# of Countries	27	27	27	27	27	27
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female participation to the labor force, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 23: PCSE with time-fixed effects regression to test Hypothesis 5 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	0.849***		0.294*		0.786***	
	(0.120)		(0.161)		(0.132)	
L.market_cap	0.007***	0.010***	0.004***	0.011***	0.007***	0.011***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.171***	0.181***	0.330***	0.164***	0.164***	0.162***
	(0.057)	(0.056)	(0.051)	(0.056)	(0.058)	(0.058)
L.trade_gdp	0.003***	0.005***	0.006***	0.005***	0.003***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.598***			
			(0.099)			
L.female_lf	0.041***	0.073***	0.032**	0.072***	0.044**	0.060**
	(0.016)	(0.025)	(0.015)	(0.025)	(0.019)	(0.027)
L.unemploy_rate				-0.005		
				(0.011)		
L.taxburden					-0.011*	-0.025***
					(0.006)	(0.007)
Constant	-5.131***	-6.347***	-9.285***	-5.849***	-4.300**	-3.636
	(1.801)	(2.148)	(1.733)	(2.176)	(2.191)	(2.508)
Observations	322	322	293	319	319	319
R-squared	0.498	0.399	0.564	0.407	0.503	0.428
# of Countries	27	27	27	27	27	27
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female participation to the labor force, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 24: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	1.204***		1.090***		1.124***	
	(0.124)		(0.199)		(0.155)	
L.market_cap	0.008***	0.013***	0.008***	0.013***	0.009***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.472***	0.511***	0.488***	0.456***	0.451***	0.357***
	(0.063)	(0.078)	(0.072)	(0.084)	(0.070)	(0.089)
L.trade_gdp	0.004***	0.006***	0.004***	0.005**	0.004**	0.003
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.102			
			(0.165)			
L.fem_prim	0.006	0.001	0.001	0.002	-0.002	-0.046**
	(0.017)	(0.020)	(0.019)	(0.021)	(0.019)	(0.019)
L.unemploy_rate				-0.045**		
				(0.019)		
L.taxburden					-0.006	-0.040***
					(0.009)	(0.009)
Constant	-11.795***	-11.806***	-11.705***	-10.168***	-9.956***	-0.118
	(2.610)	(3.218)	(2.663)	(3.461)	(3.569)	(3.767)
Observations	146	146	146	143	146	146
R-squared	0.687	0.545	0.688	0.561	0.688	0.611
# of Countries	23	23	23	23	23	23
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 25: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	1.347***		1.244***		1.162***	
	(0.123)		(0.152)		(0.132)	
L.market_cap	0.003**	0.008***	0.003**	0.009***	0.004***	0.011***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
L.lnGDP	0.457***	0.500***	0.470***	0.457***	0.406***	0.310***
	(0.051)	(0.063)	(0.052)	(0.069)	(0.058)	(0.076)
L.trade_gdp	0.006***	0.008***	0.007***	0.007***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.092			
			(0.090)			
L.fem_prim	0.041***	0.035**	0.036**	0.030	0.023	-0.023
	(0.013)	(0.017)	(0.014)	(0.018)	(0.015)	(0.017)
L.unemploy_rate				-0.013		
				(0.019)		
L.taxburden					-0.015**	-0.050***
					(0.006)	(0.008)
Constant	-15.554***	-15.566***	-15.473***	-13.860***	-11.290***	-1.119
	(2.342)	(3.028)	(2.391)	(3.298)	(3.062)	(3.589)
Observations	146	146	146	143	146	146
R-squared	0.778	0.543	0.779	0.546	0.785	0.676
# of Countries	23	23	23	23	23	23
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 26: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	1.063***		0.928***		1.043***	
	(0.131)		(0.220)		(0.142)	
L.market_cap	0.012***	0.015***	0.011***	0.015***	0.012***	0.016***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.322***	0.342***	0.356***	0.321***	0.318***	0.301***
	(0.079)	(0.083)	(0.078)	(0.083)	(0.083)	(0.088)
L.trade_gdp	0.003***	0.005***	0.004***	0.004***	0.003**	0.004***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.130			
			(0.152)			
L.fem_sec	0.106***	0.096***	0.103***	0.094***	0.105***	0.089***
	(0.020)	(0.021)	(0.018)	(0.020)	(0.019)	(0.020)
L.unemploy_rate				-0.049***		
				(0.012)		
L.taxburden					-0.002	-0.021***
					(0.007)	(0.007)
Constant	-17.023***	-16.131***	-17.682***	-15.143***	-16.667***	-12.903***
	(2.231)	(2.641)	(2.493)	(2.814)	(2.411)	(2.976)
Observations	208	208	208	205	208	208
R-squared	0.567	0.468	0.569	0.492	0.567	0.487
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 27: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	1.111***		0.878***		1.082***	
	(0.122)		(0.168)		(0.133)	
L.market_cap	0.008***	0.012***	0.007***	0.012***	0.008***	0.013***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.266***	0.287***	0.325***	0.260***	0.261***	0.243***
	(0.057)	(0.059)	(0.056)	(0.060)	(0.060)	(0.064)
L.trade_gdp	0.004***	0.006***	0.005***	0.005***	0.004***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.226**			
			(0.101)			
L.fem_sec	0.090***	0.079***	0.085***	0.074***	0.089***	0.072***
	(0.015)	(0.017)	(0.015)	(0.017)	(0.015)	(0.018)
L.unemploy_rate				-0.026**		
				(0.012)		
L.taxburden					-0.003	-0.023***
					(0.006)	(0.007)
Constant	-14.769***	-13.836***	-15.911***	-12.494***	-14.250***	-10.345***
	(2.166)	(2.754)	(2.215)	(2.889)	(2.491)	(3.172)
Observations	208	208	208	205	208	208
R-squared	0.629	0.473	0.637	0.484	0.629	0.506
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 28: PCSE with time-fixed effects regression to test Hypothesis 7 (*vc_inv* as dependent variable)

	(1) vc_inv	(2) vc_inv	(3) vc_inv	(4) vc_inv	(5) vc_inv	(6) vc_inv
L.inst_qual	0.847***		0.179		0.635***	
	(0.136)		(0.285)		(0.172)	
L.market_cap	0.010***	0.015***	0.005**	0.015***	0.011***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.076	0.061	0.268***	0.030	0.049	0.024
	(0.117)	(0.112)	(0.096)	(0.114)	(0.122)	(0.115)
L.trade_gdp	-0.003	-0.001	-0.001	-0.001	-0.003	-0.002
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
L.articles_pop			0.734***			
			(0.215)			
L.fem_tert	-0.012**	-0.011**	-0.017***	-0.009*	-0.014***	-0.014***
	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
L.unemploy_rate				-0.041***		
				(0.012)		
L.taxburden					-0.019**	-0.031***
					(0.008)	(0.007)
Constant	0.915	1.521	-4.103	2.388	3.180	4.884
	(3.554)	(3.351)	(2.931)	(3.377)	(4.096)	(3.718)
Observations	252	252	238	249	250	250
R-squared	0.425	0.356	0.479	0.376	0.435	0.403
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 29: PCSE with time-fixed effects regression to test Hypothesis 7 (*vc_deal* as dependent variable)

	(1) vc_deal	(2) vc_deal	(3) vc_deal	(4) vc_deal	(5) vc_deal	(6) vc_deal
L.inst_qual	1.061***		0.460**		0.943***	
	(0.113)		(0.193)		(0.144)	
L.market_cap	0.007***	0.013***	0.002	0.014***	0.008***	0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.116	0.097	0.278***	0.061	0.095	0.059
	(0.083)	(0.078)	(0.069)	(0.079)	(0.086)	(0.079)
L.trade_gdp	-0.001	0.002	0.001	0.002	-0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.636***			
			(0.140)			
L.fem_tert	-0.007*	-0.005	-0.012***	-0.005	-0.008**	-0.008*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
L.unemploy_rate				-0.011		
				(0.013)		
L.taxburden					-0.014**	-0.031***
					(0.006)	(0.006)
Constant	-1.476	-0.716	-5.586**	0.279	0.127	2.656
	(2.620)	(2.537)	(2.202)	(2.584)	(2.993)	(2.767)
Observations	252	252	238	249	250	250
R-squared	0.511	0.352	0.566	0.371	0.516	0.414
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 30: PCSE with time-fixed effects regression with only control variables (*vc_inv_wp* as dependent variable)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	vc_inv_wp	vc_inv_wp	vc_inv_wp	vc_inv_wp	vc_inv_wp	vc_inv_wp	vc_inv_wp	vc_inv_wp	vc_inv_wp
L.inst_qual	1.278***		0.447**	0.806***		1.197***		0.714***	0.283
	(0.080)		(0.200)	(0.133)		(0.107)		(0.177)	(0.236)
L.market_cap	0.006***	0.007***	0.009***	0.011***	0.014***	0.006***	0.007***	0.011***	0.009***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
L.lnGDP	0.377***	0.564***	0.308***	0.184**	0.178**	0.365***	0.492***	0.180**	0.290***
	(0.060)	(0.074)	(0.069)	(0.080)	(0.079)	(0.062)	(0.077)	(0.082)	(0.072)
L.trade_gdp	0.003**	0.008***	0.002	0.000	0.001	0.003**	0.007***	0.000	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.459***						0.508***
			(0.127)						(0.128)
L.unemploy_rate				-0.033**	-0.054***			-0.037**	-0.041***
				(0.013)	(0.013)			(0.015)	(0.014)
L.taxburden						-0.010	-0.036***	-0.009	0.000
						(0.007)	(0.006)	(0.007)	(0.006)
Constant	-9.536***	-13.858***	-8.068***	-3.527	-2.615	-8.494***	-9.463***	-2.739	-7.222***
	(1.724)	(2.105)	(1.945)	(2.382)	(2.256)	(2.082)	(2.356)	(2.793)	(2.315)
Observations	355	355	293	319	319	352	352	316	289
R-squared	0.460	0.285	0.451	0.409	0.344	0.461	0.338	0.406	0.464
# of Countries	30	30	27	27	27	30	30	27	27
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 31: PCSE with time-fixed effects regression with only control variables (*vc_deal_wp* as dependent variable)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp
L.inst_qual	0.035*		0.483***	0.012*		0.016*		0.019*	0.426***
	(0.083)		(0.121)	(0.085)		(0.094)		(0.100)	(0.127)
L.market_cap	0.008***	0.008***	0.011***	0.009***	0.009***	0.008***	0.008***	0.009***	0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.099*	0.098*	0.234***	0.122**	0.122**	0.101*	0.101*	0.125**	0.280***
	(0.053)	(0.053)	(0.067)	(0.054)	(0.054)	(0.053)	(0.053)	(0.054)	(0.070)
L.trade_gdp	0.015***	0.015***	0.013***	0.015***	0.015***	0.015***	0.015***	0.015***	0.012***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.510***						0.564***
			(0.128)						(0.136)
L.unemploy_rate				-0.009	-0.009			-0.011	-0.007
				(0.007)	(0.006)			(0.007)	(0.008)
L.taxburden						-0.004*	-0.004*	-0.005*	-0.014**
						(0.005)	(0.005)	(0.005)	(0.006)
Constant	1.096	1.117	5.652***	1.799	1.813	1.438	1.468	2.232	7.959***
	(1.487)	(1.478)	(1.971)	(1.525)	(1.498)	(1.516)	(1.474)	(1.566)	(2.241)
Observations	322	322	293	319	319	319	319	316	289
R-squared	0.615	0.615	0.645	0.625	0.625	0.616	0.616	0.627	0.664
# of Countries	27	27	27	27	27	27	27	27	27
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 32: PCSE with time-fixed effects regression to test Hypothesis 1 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.258***		0.304		1.055***	
	(0.088)		(0.236)		(0.119)	
L.market_cap	0.005***	0.006***	0.008***	0.013***	0.005***	0.006***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
L.lnGDP	0.378***	0.644***	0.375***	0.253***	0.384***	0.564***
	(0.070)	(0.075)	(0.081)	(0.096)	(0.069)	(0.078)
L.trade_gdp	0.002*	0.009***	0.003**	0.002	0.003**	0.008***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
L.articles_pop			0.578***			
			(0.161)			
L.entrepr_edu	0.159*	0.493***	-0.065	0.265***	0.181*	0.432***
	(0.094)	(0.107)	(0.103)	(0.100)	(0.098)	(0.103)
L.unemploy_rate				-0.033**		
				(0.013)		
L.taxburden					-0.017***	-0.039***
					(0.006)	(0.006)
Constant	-9.311***	-17.102***	-8.614***	-5.593**	-8.255***	-11.978***
	(1.986)	(2.084)	(2.300)	(2.785)	(2.208)	(2.434)
Observations	341	341	281	305	338	338
R-squared	0.514	0.392	0.494	0.402	0.518	0.454
# of Countries	29	29	26	26	29	29
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investment over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 33: PCSE with time-fixed effects regression to test Hypothesis 1 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	0.542***		0.622***		0.374***	
	(0.148)		(0.211)		(0.118)	
L.market_cap	0.001**	0.002**	0.002*	0.003	0.002**	0.003**
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.011*	0.034**	0.033*	0.087*	0.085*	0.038**
	(0.092)	(0.065)	(0.107)	(0.095)	(0.093)	(0.056)
L.trade_gdp	0.018***	0.019***	0.021***	0.020***	0.019***	0.019***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
L.articles_pop			0.335			
			(0.228)			
L.entrepr_edu	0.071**	0.097**	0.087**	0.098**	0.073**	0.100***
	(0.033)	(0.038)	(0.039)	(0.039)	(0.035)	(0.039)
L.unemploy_rate				-0.012		
				(0.016)		
L.taxburden					-0.003	-0.003*
					(0.003)	(0.003)
Constant	-1.466	-2.304	-2.484	-3.858	-4.181	-2.271
	(2.729)	(2.021)	(3.131)	(2.874)	(2.808)	(1.817)
Observations	308	308	281	305	305	305
R-squared	0.454	0.424	0.541	0.449	0.452	0.424
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 34: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.207***		0.327		1.066***	
	(0.092)		(0.232)		(0.113)	
L.market_cap	0.005***	0.006***	0.008***	0.013***	0.005***	0.007***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
L.lnGDP	0.353***	0.585***	0.362***	0.229**	0.359***	0.535***
	(0.073)	(0.077)	(0.083)	(0.095)	(0.071)	(0.079)
L.trade_gdp	0.001	0.007***	0.003*	0.001	0.002	0.007***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.526***			
			(0.148)			
L.entrepr_adv	0.414***	0.756***	0.118	0.413***	0.376***	0.546***
	(0.144)	(0.143)	(0.137)	(0.137)	(0.139)	(0.144)
L.unemploy_rate				-0.036***		
				(0.013)		
L.taxburden					-0.013**	-0.033***
					(0.006)	(0.006)
Constant	-9.686***	-16.867***	-8.841***	-5.670**	-8.765***	-12.344***
	(1.972)	(2.064)	(2.284)	(2.613)	(2.195)	(2.439)
Observations	341	341	281	305	338	338
R-squared	0.523	0.409	0.495	0.408	0.524	0.454
# of Countries	29	29	26	26	29	29
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 35: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	0.109		0.329**		0.273**	
	(0.096)		(0.142)		(0.120)	
L.market_cap	0.010***	0.010***	0.014***	0.011***	0.012***	0.011***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.027	0.035	0.206***	-0.059	0.016	0.037
	(0.055)	(0.055)	(0.079)	(0.057)	(0.055)	(0.055)
L.trade_gdp	0.018***	0.018***	0.014***	0.017***	0.019***	0.018***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.456***			
			(0.133)			
L.entrepr_adv	0.428***	0.444***	0.329***	0.424***	0.543***	0.543***
	(0.112)	(0.114)	(0.105)	(0.114)	(0.124)	(0.127)
L.unemploy_rate				-0.003		
				(0.008)		
L.taxburden					-0.019***	-0.013**
					(0.006)	(0.006)
Constant	1.061	1.309	5.720**	1.876	2.577	2.646
	(1.715)	(1.726)	(2.284)	(1.790)	(1.748)	(1.775)
Observations	308	308	281	305	305	305
R-squared	0.663	0.662	0.680	0.673	0.674	0.669
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 36: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_inv_wp* as dependent variable) – *entrepr_edu* and *entrepr_adv* tested together

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.204***		0.320		1.049***	
	(0.095)		(0.234)		(0.119)	
L.market_cap	0.005***	0.006***	0.008***	0.012***	0.005***	0.006***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
L.lnGDP	0.354***	0.591***	0.363***	0.241**	0.363***	0.541***
	(0.073)	(0.077)	(0.082)	(0.097)	(0.071)	(0.078)
L.trade_gdp	0.001	0.007***	0.003*	0.002	0.002	0.007***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.554***			
			(0.159)			
L.entrepr_edu	0.013	0.253**	-0.106	0.148	0.049	0.291***
	(0.093)	(0.115)	(0.107)	(0.109)	(0.098)	(0.108)
L.entrepr_adv	0.408***	0.608***	0.156	0.340**	0.349**	0.368**
	(0.148)	(0.152)	(0.141)	(0.147)	(0.143)	(0.151)
L.unemploy_rate				-0.033**		
				(0.013)		
L.taxburden					-0.013**	-0.035***
					(0.006)	(0.006)
Constant	-9.721***	-17.215***	-8.722***	-6.176**	-8.862***	-12.595***
	(1.989)	(2.051)	(2.300)	(2.722)	(2.183)	(2.410)
Observations	341	341	281	305	338	338
R-squared	0.523	0.415	0.496	0.410	0.524	0.461
# of Countries	29	29	26	26	29	29
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investment over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 37: PCSE with time-fixed effects regression to test Hypothesis 2 (*vc_deal_wp* as dependent variable) – *entrepr_edu* and *entrepr_adv* tested together

	(1)	(2)	(3)	(4)	(5)	(6)
	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp	vc_deal_wp
L.inst_qual	-0.112		0.336**		0.292**	
	(0.092)		(0.143)		(0.119)	
L.market_cap	0.010***	0.010***	0.013***	0.011***	0.012***	0.011***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.026	0.035	0.207***	0.063	0.011	0.037
	(0.057)	(0.057)	(0.079)	(0.061)	(0.058)	(0.057)
L.trade_gdp	0.018***	0.018***	0.014***	0.017***	0.019***	0.018***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.482***			
			(0.140)			
L.entrepr_edu	0.014	-0.005	0.096	-0.048	0.062	0.009
	(0.095)	(0.096)	(0.095)	(0.100)	(0.098)	(0.095)
L.entrepr_adv	0.434***	0.441***	0.363***	0.401***	0.574***	0.548***
	(0.113)	(0.113)	(0.109)	(0.113)	(0.127)	(0.126)
L.unemploy_rate				-0.004		
				(0.008)		
L.taxburden					-0.020***	-0.013**
					(0.006)	(0.006)
Constant	1.016	1.323	5.614**	2.039	2.418	2.624
	(1.820)	(1.825)	(2.280)	(1.934)	(1.834)	(1.864)
Observations	308	308	281	305	305	305
R-squared	0.664	0.662	0.681	0.673	0.675	0.669
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), entrepreneurial education and training in primary and secondary school, entrepreneurial education and training in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 38: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.159***		0.390		1.042***	
	(0.100)		(0.290)		(0.154)	
L.market_cap	0.008***	0.012***	0.009***	0.015***	0.009***	0.012***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.308***	0.440***	0.290***	0.150	0.287***	0.334***
	(0.084)	(0.101)	(0.085)	(0.102)	(0.094)	(0.112)
L.trade_gdp	0.002	0.006***	0.002	0.001	0.002	0.005**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.522***			
			(0.200)			
L.school_prim	0.053***	0.071***	-0.011	0.011	0.044***	0.039*
	(0.014)	(0.021)	(0.016)	(0.016)	(0.014)	(0.021)
L.unemploy_rate				-0.054***		
				(0.014)		
L.taxburden					-0.012	-0.037***
					(0.008)	(0.007)
Constant	-12.135***	-17.129***	-5.379*	-2.992	-9.819***	-8.407*
	(2.656)	(3.894)	(3.148)	(3.549)	(3.731)	(4.733)
Observations	254	254	239	236	254	254
R-squared	0.509	0.382	0.468	0.374	0.513	0.435
# of Countries	29	29	26	26	29	29
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 39: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	-0.094		0.537***		-0.142	
	(0.102)		(0.169)		(0.123)	
L.market_cap	0.009***	0.008***	0.012***	0.010***	0.009***	0.008***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)
L.lnGDP	-0.083	-0.085	-0.232***	-0.121*	-0.091	-0.088
	(0.067)	(0.067)	(0.083)	(0.071)	(0.066)	(0.066)
L.trade_gdp	0.016***	0.016***	0.013***	0.015***	0.016***	0.016***
	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
L.articles_pop			-0.603***			
			(0.171)			
L.school_prim	0.028*	0.028*	0.048***	0.022	0.024	0.027*
	(0.017)	(0.016)	(0.016)	(0.018)	(0.016)	(0.015)
L.unemploy_rate				-0.007		
				(0.009)		
L.taxburden					-0.005	-0.002
					(0.006)	(0.005)
Constant	-1.614	-1.660	0.582	-0.042	-0.637	-1.341
	(3.169)	(3.154)	(3.133)	(3.388)	(3.034)	(2.970)
Observations	239	239	239	236	239	239
R-squared	0.626	0.625	0.666	0.640	0.627	0.626
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 40: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.119***		0.729***		1.075***	
	(0.128)		(0.238)		(0.147)	
L.market_cap	0.012***	0.015***	0.012***	0.016***	0.013***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.257***	0.397***	0.308***	0.247***	0.250***	0.337***
	(0.078)	(0.091)	(0.081)	(0.088)	(0.082)	(0.098)
L.trade_gdp	0.003**	0.007***	0.004***	0.003**	0.003**	0.006***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.292*			
			(0.163)			
L.school_sec	0.145***	0.157***	0.127***	0.123***	0.143***	0.142***
	(0.021)	(0.022)	(0.018)	(0.022)	(0.020)	(0.022)
L.unemploy_rate				-0.058***		
				(0.012)		
L.taxburden					-0.005	-0.024***
					(0.006)	(0.007)
Constant	-19.269***	-23.744***	-19.028***	-16.100***	-18.494***	-19.038***
	(2.158)	(3.014)	(2.586)	(3.048)	(2.459)	(3.439)
Observations	230	230	219	216	230	230
R-squared	0.587	0.494	0.531	0.471	0.587	0.516
# of Countries	28	28	25	25	28	28
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 41: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	-0.011		0.624***		-0.072	
	(0.134)		(0.196)		(0.146)	
L.market_cap	0.009***	0.009***	0.013***	0.011***	0.009***	0.009***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
L.lnGDP	-0.096	-0.097	-0.260***	-0.138*	-0.104	-0.105
	(0.066)	(0.066)	(0.089)	(0.072)	(0.065)	(0.065)
L.trade_gdp	0.016***	0.016***	0.013***	0.016***	0.016***	0.016***
	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
L.articles_pop			-0.630***			
			(0.190)			
L.school_sec	0.014	0.014	0.040**	0.005	0.012	0.013
	(0.017)	(0.016)	(0.018)	(0.017)	(0.016)	(0.016)
L.unemploy_rate				0.001		
				(0.008)		
L.taxburden					-0.007	-0.006
					(0.006)	(0.006)
Constant	0.033	0.028	2.243	2.050	0.967	0.783
	(2.804)	(2.791)	(2.752)	(3.092)	(2.598)	(2.588)
Observations	219	219	219	216	219	219
R-squared	0.632	0.632	0.671	0.648	0.634	0.633
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 42: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.337***		0.295		1.161***	
	(0.080)		(0.284)		(0.113)	
L.market_cap	0.007***	0.010***	0.007***	0.016***	0.007***	0.009***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.lnGDP	0.325***	0.487***	0.276***	0.027	0.315***	0.422***
	(0.074)	(0.089)	(0.095)	(0.108)	(0.078)	(0.095)
L.trade_gdp	0.002	0.009***	-0.000	-0.001	0.002	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			0.661***			
			(0.209)			
L.school_tert	0.005	0.014***	-0.013**	-0.009**	0.003	0.008
	(0.004)	(0.005)	(0.006)	(0.004)	(0.004)	(0.005)
L.unemploy_rate				-0.048***		
				(0.012)		
L.taxburden					-0.019**	-0.043***
					(0.007)	(0.007)
Constant	-7.944***	-12.734***	-4.812*	2.228	-6.076**	-7.224**
	(2.139)	(2.539)	(2.850)	(3.143)	(2.652)	(2.998)
Observations	274	274	232	243	272	272
R-squared	0.488	0.318	0.485	0.386	0.495	0.393
# of Countries	28	28	25	25	28	28
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 43: PCSE with time-fixed effects regression to test Hypothesis 3 and Hypothesis 4 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	-0.045		0.213		-0.127	
	(0.083)		(0.132)		(0.096)	
L.market_cap	0.005***	0.005***	0.008***	0.006***	0.006***	0.005***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
L.lnGDP	-0.123**	-0.122**	-0.217***	-0.142***	-0.132**	-0.127**
	(0.051)	(0.051)	(0.078)	(0.054)	(0.051)	(0.051)
L.trade_gdp	0.011***	0.011***	0.009***	0.010***	0.011***	0.010***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			-0-297*			
			(0.154)			
L.school_tert	-0.013***	-0.013***	-0.012***	-0.014***	-0.014***	-0.014***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
L.unemploy_rate				0.008		
				(0.008)		
L.taxburden					-0.010**	-0.008*
					(0.005)	(0.004)
Constant	3.699**	3.635**	6.226***	4.210***	4.753***	4.352***
	(1.462)	(1.436)	(2.124)	(1.503)	(1.410)	(1.399)
Observations	246	246	232	243	244	244
R-squared	0.578	0.578	0.577	0.590	0.583	0.581
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 44: PCSE with time-fixed effects regression to test Hypothesis 5 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.218***		0.374*		1.123***	
	(0.086)		(0.217)		(0.105)	
L.market_cap	0.005***	0.006***	0.008***	0.013***	0.005***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.lnGDP	0.390***	0.579***	0.330***	0.198**	0.374***	0.502***
	(0.057)	(0.069)	(0.067)	(0.077)	(0.061)	(0.075)
L.trade_gdp	0.003***	0.008***	0.002**	0.002	0.003***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
L.articles_pop			0.485***			
			(0.139)			
L.female_lf	0.044***	0.101***	0.037***	0.073***	0.045**	0.077***
	(0.014)	(0.029)	(0.014)	(0.025)	(0.018)	(0.030)
L.unemploy_rate				-0.044***		
				(0.011)		
L.taxburden					-0.013**	-0.035***
					(0.006)	(0.006)
Constant	-10.969***	-17.918***	-8.999***	-6.196**	-9.618***	-12.393***
	(1.717)	(2.355)	(1.943)	(2.479)	(2.182)	(2.825)
Observations	355	355	293	319	352	352
R-squared	0.521	0.380	0.498	0.420	0.522	0.419
# of Countries	30	30	27	27	30	30
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female participation to the labor force, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 45: PCSE with time-fixed effects regression to test Hypothesis 5 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	-0.012		0.486***		-0.022	
	(0.091)		(0.126)		(0.097)	
L.market_cap	0.009***	0.009***	0.013***	0.010***	0.009***	0.009***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	-0.105*	-0.105*	-0.285***	-0.131**	-0.106*	-0.106*
	(0.054)	(0.055)	(0.070)	(0.056)	(0.054)	(0.054)
L.trade_gdp	0.016***	0.016***	0.012***	0.015***	0.016***	0.016***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			-0.589***			
			(0.135)			
L.female_lf	0.005	0.005	0.009	0.004	0.010	0.009
	(0.013)	(0.013)	(0.014)	(0.012)	(0.014)	(0.014)
L.unemploy_rate				-0.008		
				(0.007)		
L.taxburden					-0.003	-0.002
					(0.005)	(0.005)
Constant	1.461	1.478	6.387***	2.221	1.477	1.458
	(1.764)	(1.773)	(2.134)	(1.813)	(1.822)	(1.822)
Observations	322	322	293	319	319	319
R-squared	0.632	0.632	0.668	0.645	0.633	0.633
# of Countries	27	27	27	27	27	27
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female participation to the labor force, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 46: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.382***		1.130***		1.393***	
	(0.116)		(0.204)		(0.139)	
L.market_cap	0.006***	0.009***	0.008***	0.013***	0.006***	0.010***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.003)
L.lnGDP	0.550***	0.725***	0.472***	0.436***	0.552***	0.576***
	(0.062)	(0.091)	(0.072)	(0.085)	(0.066)	(0.122)
L.trade_gdp	0.005***	0.010***	0.004**	0.004**	0.005***	0.007***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.003)
L.articles_pop			0.143			
			(0.169)			
L.fem_prim	0.040***	0.067***	-0.005	-0.000	0.041**	0.019
	(0.015)	(0.022)	(0.019)	(0.021)	(0.017)	(0.026)
L.unemploy_rate				-0.053***		
				(0.020)		
L.taxburden					0.001	-0.038***
					(0.008)	(0.009)
Constant	-17.708***	-24.530***	-11.165***	-9.791***	-17.931***	-13.042**
	(2.308)	(3.724)	(2.659)	(3.502)	(3.114)	(5.646)
Observations	155	155	146	143	155	155
R-squared	0.733	0.571	0.698	0.559	0.733	0.624
# of Countries	25	25	23	23	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 47: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	0.098		1.251***		0.385*	
	(0.168)		(0.254)		(0.214)	
L.market_cap	0.010***	0.010***	0.013***	0.016***	0.008*	0.010***
	(0.004)	(0.003)	(0.003)	(0.005)	(0.004)	(0.003)
L.lnGDP	-0.021	-0.018	-0.176*	-0.148	0.057	0.025
	(0.112)	(0.114)	(0.099)	(0.132)	(0.117)	(0.112)
L.trade_gdp	0.020***	0.020***	0.015***	0.017***	0.021***	0.021***
	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)
L.articles_pop			-1.036***			
			(0.219)			
L.fem_prim	0.033	0.032	0.088***	0.004	0.061**	0.045*
	(0.026)	(0.026)	(0.022)	(0.029)	(0.029)	(0.025)
L.unemploy_rate				0.009		
				(0.015)		
L.taxburden					0.023**	0.011
					(0.010)	(0.007)
Constant	-4.199	-4.200	-5.110	2.036	-10.834*	-7.469
	(5.286)	(5.293)	(3.931)	(6.080)	(6.157)	(5.286)
Observations	146	146	146	143	146	146
R-squared	0.695	0.695	0.761	0.724	0.704	0.698
# of Countries	23	23	23	23	23	23
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in primary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 48: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.259***		1.006***		1.264***	
	(0.121)		(0.222)		(0.134)	
L.market_cap	0.011***	0.014***	0.011***	0.015***	0.011***	0.014***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
L.lnGDP	0.326***	0.472***	0.343***	0.302***	0.327***	0.402***
	(0.075)	(0.092)	(0.078)	(0.084)	(0.079)	(0.101)
L.trade_gdp	0.003**	0.008***	0.003**	0.003**	0.003**	0.006***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
L.articles_pop			0.155			
			(0.154)			
L.fem_sec	0.107***	0.121***	0.099***	0.090***	0.107***	0.104***
	(0.020)	(0.021)	(0.018)	(0.021)	(0.019)	(0.021)
L.unemploy_rate				-0.054***		
				(0.012)		
L.taxburden					0.001	-0.024***
					(0.006)	(0.007)
Constant	-17.700***	-22.503***	-17.446***	-14.639***	-17.804***	-17.283***
	(2.072)	(2.906)	(2.525)	(2.899)	(2.369)	(3.492)
Observations	219	219	208	205	219	219
R-squared	0.633	0.504	0.582	0.493	0.633	0.526
# of Countries	28	28	25	25	28	28
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 49: PCSE with time-fixed effects regression to test Hypothesis 6 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	0.068		0.763***		0.076	
	(0.141)		(0.196)		(0.150)	
L.market_cap	0.008***	0.009***	0.012***	0.010***	0.008***	0.009***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.lnGDP	-0.012	-0.011	-0.186**	-0.047	-0.011	-0.012
	(0.072)	(0.072)	(0.090)	(0.079)	(0.070)	(0.070)
L.trade_gdp	0.019***	0.019***	0.015***	0.018***	0.019***	0.019***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
L.articles_pop			-0.671***			
			(0.179)			
L.fem_sec	0.047***	0.047***	0.063***	0.037**	0.048***	0.047***
	(0.016)	(0.015)	(0.015)	(0.017)	(0.015)	(0.015)
L.unemploy_rate				0.006		
				(0.009)		
L.taxburden					0.001	-0.000
					(0.007)	(0.006)
Constant	-5.558*	-5.501*	-2.160	-3.625	-5.701**	-5.427*
	(2.955)	(2.934)	(2.934)	(3.308)	(2.890)	(2.799)
Observations	208	208	208	205	208	208
R-squared	0.662	0.662	0.705	0.671	0.662	0.662
# of Countries	25	25	25	25	25	25
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in secondary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 50: PCSE with time-fixed effects regression to test Hypothesis 7 (*vc_inv_wp* as dependent variable)

	(1) vc_inv_wp	(2) vc_inv_wp	(3) vc_inv_wp	(4) vc_inv_wp	(5) vc_inv_wp	(6) vc_inv_wp
L.inst_qual	1.313***		0.242		1.146***	
	(0.086)		(0.282)		(0.117)	
L.market_cap	0.007***	0.012***	0.006**	0.016***	0.007***	0.011***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
L.lnGDP	0.317***	0.485***	0.248**	0.009	0.289***	0.386***
	(0.076)	(0.091)	(0.097)	(0.113)	(0.085)	(0.101)
L.trade_gdp	0.002	0.009***	-0.002	-0.002	0.002	0.007***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
L.articles_pop			0.737***			
			(0.215)			
L.fem_tert	0.003	0.014***	-0.018***	-0.009**	0.001	0.008*
	(0.004)	(0.005)	(0.006)	(0.005)	(0.004)	(0.005)
L.unemploy_rate				-0.045***		
				(0.013)		
L.taxburden					-0.019**	-0.039***
					(0.007)	(0.007)
Constant	-7.464***	-12.439***	-3.945	2.583	-5.174*	-6.433*
	(2.283)	(2.654)	(2.925)	(3.336)	(2.948)	(3.307)
Observations	277	277	238	249	275	275
R-squared	0.489	0.339	0.500	0.392	0.496	0.402
# of Countries	29	29	26	26	29	29
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital investments over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 51: PCSE with time-fixed effects regression to test Hypothesis 7 (*vc_deal_wp* as dependent variable)

	(1) vc_deal_wp	(2) vc_deal_wp	(3) vc_deal_wp	(4) vc_deal_wp	(5) vc_deal_wp	(6) vc_deal_wp
L.inst_qual	0.002		0.262*		-0.071	
	(0.084)		(0.145)		(0.096)	
L.market_cap	0.005***	0.005***	0.008***	0.006***	0.005***	0.005***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
L.lnGDP	-0.134**	-0.134**	-0.225***	-0.160***	-0.149***	-0.146***
	(0.054)	(0.054)	(0.078)	(0.057)	(0.053)	(0.053)
L.trade_gdp	0.010***	0.010***	0.009***	0.010***	0.010***	0.010***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
L.articles_pop			-0.304*			
			(0.163)			
L.fem_tert	-0.011***	-0.011***	-0.009**	-0.012***	-0.012***	-0.012***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
L.unemploy_rate				0.005		
				(0.008)		
L.taxburden					-0.010**	-0.009**
					(0.004)	(0.004)
Constant	3.573**	3.575**	5.952***	4.292***	4.740***	4.548***
	(1.577)	(1.566)	(2.155)	(1.637)	(1.542)	(1.532)
Observations	252	252	238	249	250	250
R-squared	0.569	0.569	0.566	0.582	0.575	0.574
# of Countries	26	26	26	26	26	26
Year FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Own elaboration.

Results - Panel-corrected standard error regressions with time-fixed effects for the dependent variable venture capital deals over working-age population of 15-65 years old. The independent variables are in order of appearance: institutional quality, market capitalization, natural logarithm of gross domestic product (current, US$), trade (as a percentage of the GDP), scientific and technical journal articles (as a percentage of the active population), female enrolment rate in tertiary school, unemployment rate, tax burden. A detailed description of the variables is in subsection 3.2 Variables. All independent variables are lagged at t-1.

Table 52: Summary of results and robustness checks

ID	Hypothesis	Results	Robustness check
1	There is a positive and significant relationship between venture capital investments (and deals) in a country and entrepreneurial education and training in primary and secondary school.	TRUE	TRUE
2	The impact of including entrepreneurial education and training in primary and secondary school is higher than including them in tertiary school. In other words: the relationship between venture capital investments (and deals) and entrepreneurial education and training is positive and of a higher magnitude in primary and secondary school than in tertiary.	FALSE	FALSE
3	Task-related proxies of education have a larger impact in terms of magnitude on venture capital investments (and deals) than general ones. In other words: the relationship between venture capital investments (and deals) and school enrolment rates is smaller in magnitude than the one between venture capital investments (and deals) and entrepreneurial education and training at the same school level.	TRUE	TRUE
4	The impact of general education is higher for lower levels of schooling. In other words: the relationship between venture capital investments (and deals) in a country and its primary and secondary schooling enrolment rates is positive and has a higher magnitude than the one with tertiary schooling.	TRUE	TRUE
5	There is a positive and significant relationship between venture capital investments (and deals) in a country and female participation in the labor force.	TRUE	TRUE
6	There is a positive and significant relationship between venture capital investments (and deals) in a country and female enrolment in primary and secondary education.	TRUE	TRUE
7	The relationship between venture capital investment (and deals) in a country and female enrolment rate in primary and secondary school is positive and of a larger magnitude than the one in tertiary school.	TRUE	TRUE