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VENTURE CAPITAL AND PRIVATE EQUITY INVESTMENT PREFERENCES IN SELECTED COUNTRIES

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Abstract

Sources of capital to finance companies in the SME sector is one of the basic conditions for the functioning and development of enterprises, especially in the early phase of their development. Increasingly popular is the use of capital market instruments, Private Equity, Venture Capital, Business Angels or Mezzanine. Funding of this kind can finance risky investments in return for a higher expected rate of return on capital. Access to financial resources and the conditions under which entrepreneurs can use them can determine the introduction of new technology, new products and services, expand distribution channels, implement changes that may lead to the growth in competitiveness and above all, innovation, thus the growth of the company. The paper presents results of statistical analysis of the venture capital and private equity funds investment strategies in selected countries. As a result investment profiles are created.

JEL classification: G23, G32, C1
Keywords: venture capital, private equity, correspondence analysis

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Introduction

The aim of private equity and venture capital is to help companies achieve growth by providing finance, strategic advice and information at critical stages of their development. Since the emergence of the venture capital industry in the US, it is today a global phenomenon that exhibits many regional variations (Wright, et al. 2004). Financing is a critical element in the entrepreneurship development process. Recently it has been observed that venture capital has become increasingly important to most advanced economies' innovation systems, as well as to a growing number of emerging economies (Bruton, Fried & Manigart, 2005; Ahlstrom & Bruton, 2006). Most venture capital comes from groups of wealthy investors, investment banks and other financial institutions that pool such investments or partnerships. This form of raising capital is popular among new companies, or ventures, with a limited operating history that cannot raise capital through a debt issue or equity offering. Often, venture firms will also provide start-ups with managerial or technical expertise. For entrepreneurs, venture capitalists are a vital source of financing, but the cash infusion often comes at a high price. Venture firms often take large equity positions in exchange for funding and may also require representation on the start-up's board.

Results of some research show that venture capital-backed firms are typically better in terms of job creation and revenue growth than comparable firms without venture capital support (Peneder, 2010; Davila, et al. 2003). The expectation of a positive impact of venture capital on firm performance originates in the idea that venture capitalists are active investors who provide not only finance, but additional services of value to entrepreneurs.

One of the major trends that have occurred in private equity venture capital is that funds are becoming more specialized. The economy has become more diverse, more specialized and less uniform. Therefore differences are seen in terms of investing objectives, criteria, strategy and focusing on particular stages, sizes or market niches (Norton & Tenenbaum, 1993).

Observing the growing presence of venture capital (VC) firms and private equity (PE) most researchers focus on the size of deals, sector, issues of profits and influence on enterprise growth. Little consideration is given to the assessment of VC/PE investing behavior. This study examines the investment stage preferences of venture capital firms and private equity in selected countries.

This study is comprised of three main sections. The first clarifies the context of venture capital and private equity. The second more specifically describes the position of venture capital and private equity funds in Poland. The third is devoted to the methodology that was used to collect the data, and presents the results of our analyses.

Venture capital and Private equity

Private equity is a provision of equity capital by financial investors to non-quoted companies with high growth potential. Private equity covers not only the financing required to create a business, but also includes financing in the subsequent stages of its life cycle. Venture capital is a subset of private equity and refers to the equity investments made for the launch, early development or expansion of the business. It has a particular emphasis on entrepreneurial activities rather than on mature businesses. Private equity and venture capital refer to different stages of investment (EVCA, 2007).

Venture capital and private equity funds differ in many ways. It seems that the most important is diversity in terms of (Mikita, 2009):

1) investment strategy and,
2) stage of business operations.

Private equity and venture capital are two separate clusters based on the life cycle of the firm. Venture capitalists provide the funding for start-up businesses and early stage companies, whereas private equity operators are involved in deals with older firms. Venture capital funds invest in companies with high growth potential and which have undeveloped or developing products or revenue. Sources of profitable investment activities are based on the growth prospects of companies in a certain time. Private equity funds are interested in medium and large investments in mature companies with high potential for earnings and cash flow. Private equity also engages in various types of other capital transactions, including: buyouts, mergers and acquisitions, turn-arounds, replacement capital, initial public offering, mezzanine and venture management (Piotrowski, 2011).

Venture capital represents a specific type of governance that takes an active part in start-up processes (Walicka, 2014). Experienced investors can provide a wide range of business services for new or growing companies

including: market research and strategy, management consulting, contacts with prospective customers or suppliers, assistance in negotiating, help in establishing management and accounting controls, help in employee recruitment, help in risk management, counseling and guidance in complying with legal regulations.

Private equity and venture capital agreements always define length and exit conditions for financial institutions. Even though funding institutions are active shareholders and engaged in company management, they are not interested in taking total control or transforming their temporary participation into long-term involvement. Venture capitalists and private equity operators, sooner or later, sell their position; this is the most important reason for defining this type of investment as " financial " and not " industrial". The presence of a predefined time horizon for the investment makes private equity and venture capital useful for firms wanting quick development, managerial change, financial stability, etc. (Caselli, 2010).

Venture capital and private equity funds have a lot of similarities and common characteristics.

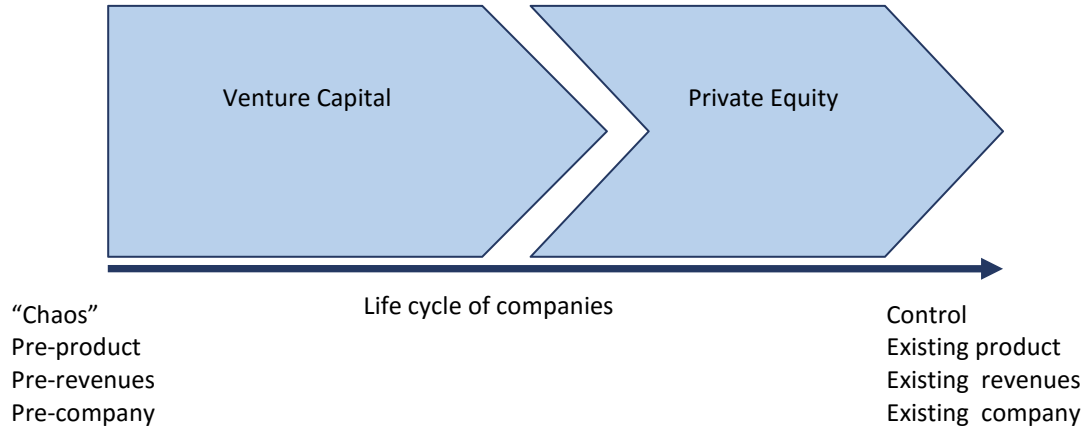
The subject of both types of investment are non-quoted companies. The investment strategy involves a significant risk diversification through its dispersion in various financial projects. To manage individual funds its own specialized management entity is appointed. Both the private equity and venture capital funds use similar legal forms for investment. The investment process consists of the same steps and proceeds in a similar way. The concept of private equity and venture capital's role on a financial market is presented in Figure 1.

Clearly, private equity and venture capital refer to different stages of investment. Schilit's (1987) review offers an understanding into the various stages of venture capital investing (Table 1).

At stage 1, seed stage, financing provided to research, assess and develop an initial concept before a business has reached the start-up phase. These early financings may be directed toward product development, market research, building a management team or developing a business plan.

Stage 2, early stage financing, can be either start-

Figure 1: The concept of private equity and venture capital's role on a financial market



Source: Based on Hwang, V.W. (2012). What's The Difference Between Private Equity And Venture Capital? Retrieved from http://www.forbes.com

Table 1: Stages of venture capital investing

Stage	VC role
Stage 1: Seed stage	A business idea is funded. This initial funding is used for product development and market research.
Stage 2: Start - up	Funding is provided for final development before commercial production and sales begin.
Stage 3: Later stage	Funding provided to build a strong organizational structure in order to reach the phase of growth and expansion. Funding provided for commercial operation and sales, additional investment activities of the company, entering new markets, increasing the volume of orders.

Source: Based on Schilit, W.K. (1987). How to Obtain Venture Capital. Business Horizons, Vol. 30, Issue 3, 76-81

up or first stage financing. Start-up financing provides funds to companies for product development and initial marketing. This type of financing is usually provided to companies just organized or to those that have been in business just a short time but have not yet sold their product on the market. First stage funding is provided for initial commercial production and sales. Most first-stage companies have a product or service in testing or pilot production.

At stage 3 funding, capital is provided for major expansion, for example, for aggressive marketing of its service for awareness and adoption or physical plant expansion.

Private equity investing is often divided into the four strategies: *growth, buyout, rescue and replacement capital*.

Growth capital is an investment in mature companies that are looking for capital to expand or restructure operations, enter new markets or finance a significant acquisition without a change of control of the business. These companies are likely to be more mature than venture capital funded companies, able to generate revenue and operating profits but unable to generate sufficient cash to fund major expansions, acquisitions or other investments. Growth capital can be defined as a strategy between late-stage venture and buyouts. (Russ, 2013).

A *buyout fund* typically targets the acquisition of a significant portion or majority control of businesses which cause a change of ownership. Buyout funds usually invest in more mature companies with established business plans to finance expansions, consolidations, turnarounds and sales, or spinouts of divisions or subsidiaries.

Rescue (or turnaround) financing is made available to an existing business that has experienced trading difficulties, with a view to re-establishing prosperity.

Replacement capital is a purchase of shares from another investor or to reduce gearing via the refinancing of debt.

Venture capital and Private equity in Poland

Poland is the largest market for private equity and venture capital in Central and Eastern Europe. In 2014, the value of investments in Poland accounted for 19.1% of the total value of investments in Central and Eastern Europe; in 2013 and 2012, it was 48.3% and 47.1% respectively. In Poland, the private equity market is becoming increasingly important in development financing. According to EVCA, 2014 was unfavorable for Poland in terms of the value of the investments. Funds have invested more than 250 million in 78 companies. In 2012 private equity and venture capital invested 473 million in 76 companies in 2011 - 678.5 million in 55 companies (EVCA, 2015). According to CE Deloitte Private Equity Confidence Survey research, investors' optimism will return in 2015 (43% of surveyed PE/VC funds 43%) (Jung & Sermanowicz-Giza, 2015).

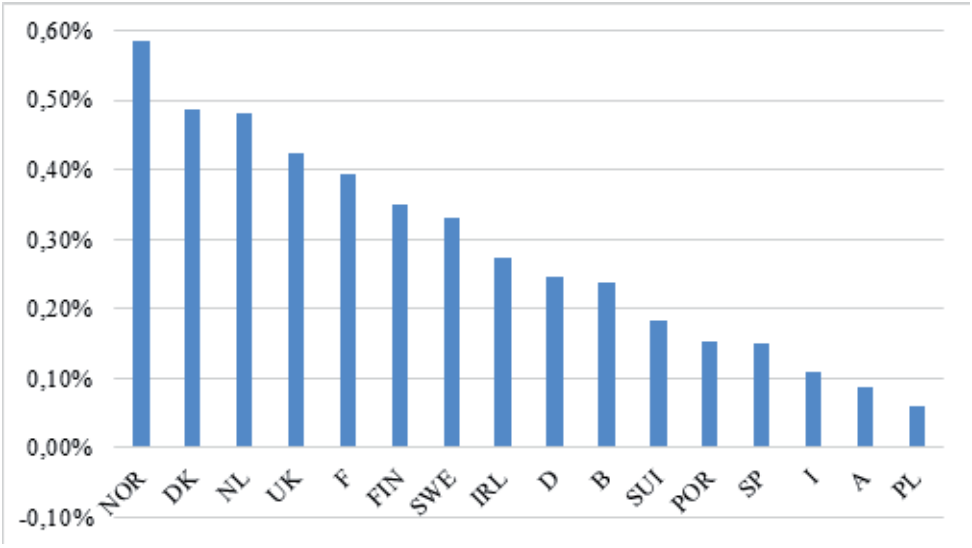
The major advantages are the Polish domestic market, rapid economic growth, mature capital market and modern banking sector and developed institutional framework to support the activities of investors. Concerning the ratio of investment to GDP, there is a large gap between Poland and European leaders, such as Norway, Denmark or Netherlands (Figure 2).

Prospects for development of PE investments in Poland are very good. Poland is a country that offers ideal conditions for VC/PE investors and offers (KPMG, 2014):

1) access to the market, which accounts for more than one-third of the total CEE market,
2) one of the fastest growing economies in the EU that is attracting investors from all over the world,
3) the most developed capital market in the region that is facilitating the exit from the investment through IPOs,
4) a stable, modern and competitive banking sector that allows companies to obtain debt financing,
5) fast, steadily growing consumption, giving many industries prospects of rapid development,
6) a culture of entrepreneurship and a large number of managers with international experience who are ready to cooperate actively with VE/PE funds,
7) full integration with the EU in terms of legal and political systems that guarantees investors safe operating conditions (procedures and regulations in accordance with international standards).

The Polish PE market still has great potential for development. The current level of private equity and venture capital investments (0.06% as compared to GDP) does not correspond to the opportunities which the Polish market offers. The increasing attractiveness of Poland is proven by the country's position in the ranking of the VC

Figure 2: The share of private equity and venture capital investment to GDP in selected European countries in 2014



Source: Own work based on EVCA (2007). Guide on Private Equity and Venture Capital for Entrepreneurs. An EVCA special paper. European Private Equity & Venture Capital Association. Retrieved from http://www.evca.eu

and PE Country Attractiveness Index. In 2015 Poland was in 28th place in a composite measure that benchmarks the attractiveness of 120 countries to receive institutional VC and PE allocations. (Groh et al, 2015). Poland has still a great potential for development and with growth in GDP increase in the value of PE/VC investments is expected.

Research Methodology

A tool to study the coexistence of two or more categories of attributes describing objects is correspondence analysis. Its advantage is the ability to graphically present coexistence of variables. Correspondence analysis is a multivariate statistical technique proposed by Hirschfeld (1935) and later developed by Jean-Paul Benzécri (1973). It is conceptually similar to principal component analysis, but applies to categorical rather than continuous data. In a similar manner to principal component analysis, it provides a means of displaying or summarizing a set of data in two-dimensional graphical form. Correspondence analysis is a statistical visualization method for picturing the associations between the levels of a two-way contingency table. The name is a translation of the French Analyses des Correspondances, where the term correspondence denotes a "system of associations" between the elements of data sets. We use correspondence analysis to classify VC/PE funds investment activity.

We analyzed data on size of investments in 2014 in the following countries: Austria (A), Belgium (B), Denmark (DK), Finland (FIN), France (F), Germany (D), Ireland (IRL), Italy (I), Netherlands (NL), Norway (NOR), Poland (PL), Portugal (POR), Spain (SP), Sweden (SWE), Switzerland (SUI), United Kingdom (UK). The source of a data was the European Private Equity Activity 2014 database (EVCA, 2015).

For each of the countries data were collected on the size of venture capital investments in the following stages: seed, start-up, and ater stage. In the case of private equity funds we analyzed the volume of investments related to the following investment strategies: growth, rescue, replacement capital and buy-out. Due to the fact that the correspondence analysis requires quantitative data for each data series the value of the lower and upper quartile of investment was calculated. The level of investment in the country was determined as small if the investment was below the lower quartile and large if the investment was above the upper quartile. Remaining values were determined as a median. For statistical analysis STATISTICA (data analysis software system) version 12 was used (StatSoft, 2014).

The results of correspondence analysis for venture capital funds are shown in Table 2.

To decide how many dimensions to retain, rules of thumb are applied. Commonly used rules recommend that the number of dimensions retained represent >70% of the inertia (Higgs, 1991) or correspond to the number right before the "elbow" in a plot of the eigenvalues by

Table 2: Inertia decomposition of venture capital funds and stage of investing

Number of dimensions	Eigenvalues	Percent of Inertia	Cumulative percent of inertia	Chi Squares
1	0,83303	15,86729	15,8673	95,67975
2	0,75809	14,4399	30,3072	87,07257
3	0,47858	9,11581	39,423	54,96833
4	0,36641	6,97934	46,4023	42,08542
5	0,31387	5,97862	52,381	36,05108
6	0,25	4,7619	57,1429	28,71429
7	0,25	4,7619	61,9048	28,71429
8	0,25	4,7619	66,6667	28,71429
9	0,25	4,7619	71,4286	28,71429
10	0,25	4,7619	76,1905	28,71429
11	0,25	4,7619	80,9524	28,71429
12	0,25	4,7619	85,7143	28,71429
13	0,25	4,7619	90,4762	28,71429
14	0,25	4,7619	95,2381	28,71429
15	0,25	4,7619	100	28,71429

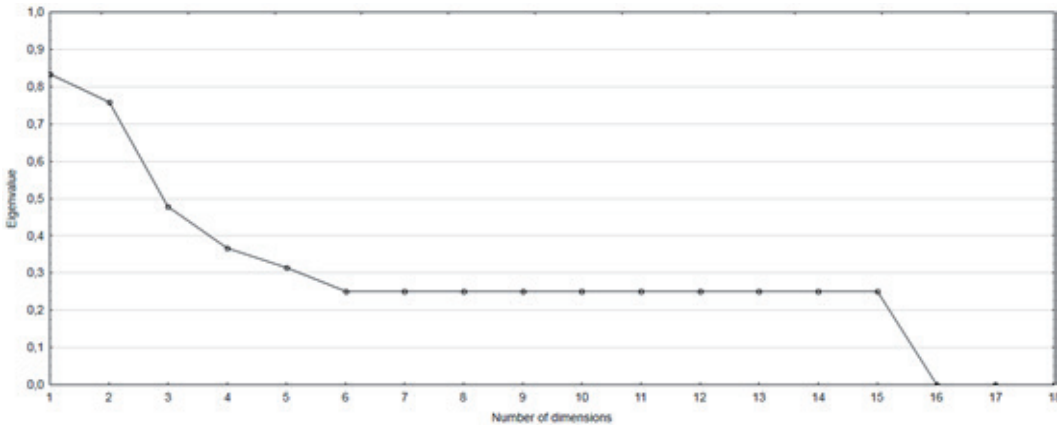
Source: Own work

dimension number ("Scree" plot) to visually assess which components or factors explain most of the variability in the data (Cattell, 1966). Scree plot for eigenvalues of venture capital funds and stage of investing is shown in Figure 3.

This scree plot shows that 6 dimensions explain most of the variability because the line starts to straighten after dimension 6. The remaining factors explain a very small proportion of the variability and are likely unimportant. Greenacre (2007) recommends that the number of dimensions to retain correspond to those with eigenvalues > 1/Q, where Q is the number of variables. In our example Q=4. Viewing table 2, we see that the first five dimensions have eigenvalues > 1/4. It would be best to adopt 9 dimensions, explaining 70% of inertia. However, in that case we would have major problems with the interpretation of geometric results. Therefore we decided to choose two dimensions explaining only 30 % of inertia.

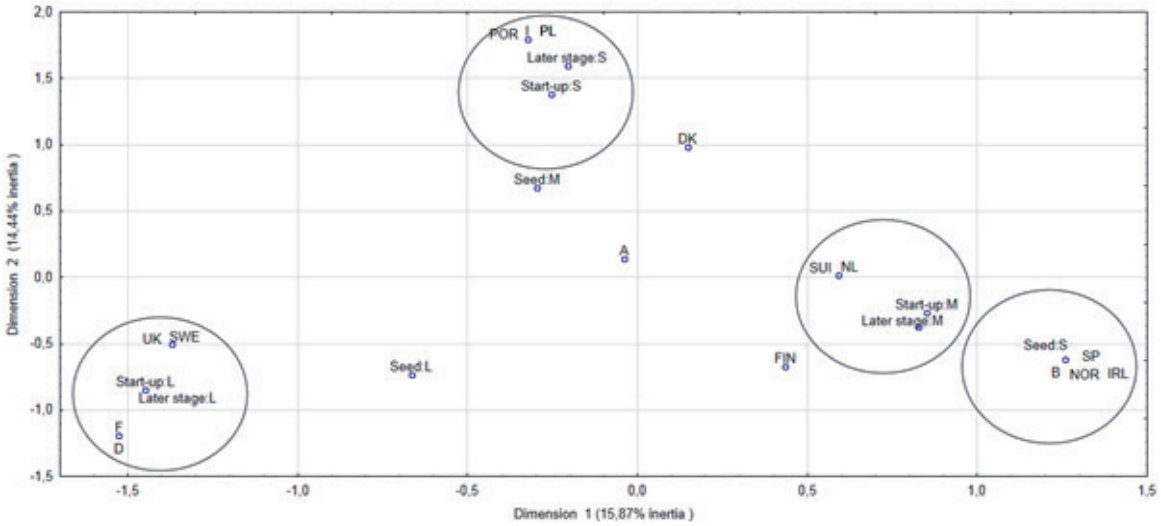
A multiple correspondence analysis map of a venture capital stage investment profile is shown in Figure 4. The results of the correspondence analysis illustrate a link between the amount of investment in the stage and the country in which the investment was made.

Figure 3: Scree plot for eigenvalues of venture capital funds and stage of investing



Source: Own work

Figure 4: Venture capital stage investment profile in selected countries in 2014



Source: Own work

Analysis of venture capital investments in 2014 reveal four clusters of countries and stages of investments that best describe their investments profile. The first is created by the United Kingdom, Sweden, France and Germany with large investments in later stage and start –up phases of investment. In some way, this group can also describe large investments in the Seed stage. On the other side of the investment profile are Portugal, Poland and Italy. In those countries venture capital investments were also done in the start-up and later stages, but the amount invested was small. Medium level of investments in a seed stage can also be used to describe this group. The third group is created by Switzerland and the Netherlands with dominant investments of a medium value in start-up and later stages. The last one with seed stage, as a best description of investment stage profile, is formed by Spain, Belgium, Norway and Ireland. Results of our analysis show the indeterminacy in the description of a

Table 3: Inertia decomposition of private equity funds and investment strategy

Number of dimensions	Eigenvalues	Percent of Inertia	Cumulative percent of inertia	Chi Squares
1	0,7216	15,6871	15,6871	112,0059
2	0,52806	11,47958	27,1667	81,9642
3	0,47826	10,39715	37,5638	74,2357
4	0,46219	10,04778	47,6116	71,7412
5	0,32435	7,05121	54,6628	50,3457
6	0,24337	5,29082	59,9537	37,7764
7	0,24213	5,26374	65,2174	37,5831
8	0,2	4,34783	69,5652	31,0435
9	0,2	4,34783	73,913	31,0435
10	0,2	4,34783	78,2609	31,0435
11	0,2	4,34783	82,6087	31,0435
12	0,2	4,34783	86,9565	31,0435
13	0,2	4,34783	91,3043	31,0435
14	0,2	4,34783	95,6522	31,0435
15	0,2	4,34783	100	31,0435

Source: Own work

profile for Austria, Finland and Denmark.

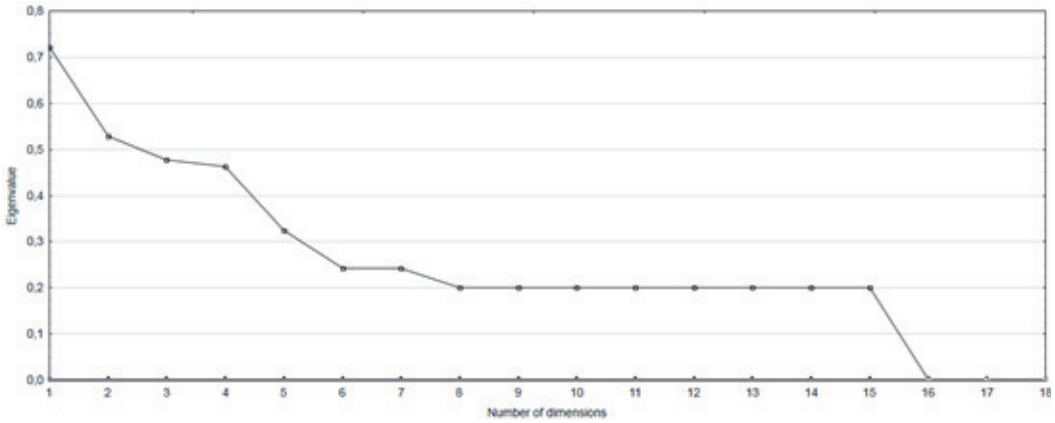
The largest investments in start-up can be observed in very well developed economies and capital markets (United Kingdom, Sweden, France and Germany). Start-up and first stage investing demands the greatest intensity of involvement by venture capital investors therefore the most experienced and skilful venture capitalists are able to find innovative ventures. Poland is still described by a small value of investments in a start-up and a later stage. However, it seems that investors perceive Poland as an attractive market and increase their involvement in high-risk projects. That demonstrates "proximity" of medium-sized financial investments for seed projects. We believe that this issue should be monitored and examined in the future. The results of correspondence analysis for private equity funds are shown in Table 3 and a scree plot in Figure 5.

The Scree plot shows that between 6 to 8 dimensions explain most of the variability. Greenacre's (2007) recommendation (Q=5) indicates 7 dimensions (Table 3). The best would be to adopt 9 dimensions, explaining 70% of inertia. However, as previously, we have chosen two dimensions explaining 27 % of inertia.

The multiple correspondence analysis map of the private equity investment strategy profile is shown in Figure 6. The results of the correspondence analysis illustrate a link between the amount invested in the chosen strategy and the country in which the investment was made.

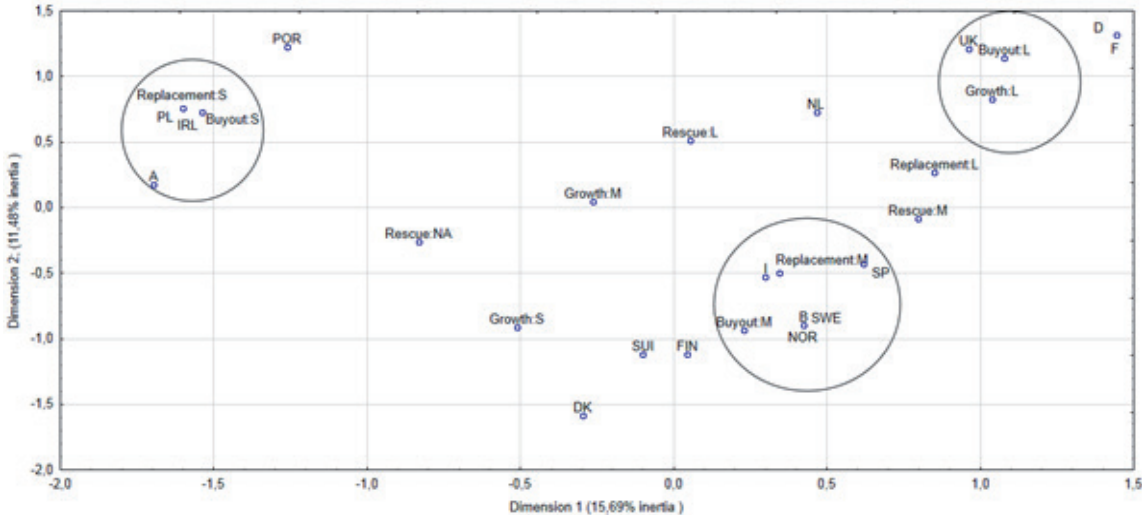
Private equity funds investment strategy analysis reveals three clusters that can clearly describe their investment profile. The first is illustrated by a large

Figure 5: Scree plot for eigenvalues of private equity funds and investment strategy



Source: Own work

Figure 6: Private equity funds strategy investment profile in selected countries in 2014



Source: Own work

amount invested in buyout and growth and that is mainly done in the United Kingdom with a possible inclusion of France and Germany in that profile. The second is created by Italy, Spain, Belgium, Sweden and Norway (with possible inclusion of Finland and Switzerland) and is the best described by medium level of investments in replacement and buyout. The third is characterized by small investments in replacement and buyout. That strategy is used in Poland, Ireland and to a lesser extent Austria. In the case of Poland particular attention is given to the size and valuation of enterprises and the current situation on the financial markets. In a period of recession quite attractive investment opportunities arise for private equity funds because they are an alternative to obtain financing. Company owners, despite the high risk, use these solutions more often. The possibility of acquiring assets of nonpublic entities with a high discount within an already downturned public market, gives the possibility of a future disinvestment with large profit. Therefore buyout and replacement were dominant strategies that have been adopted on the Polish market by private equity funds.

The investment profile of private equity funds on mature capital markets (United Kingdom, Germany and France) is best described by large buyout and growth investments. It seems that is due to a high proportion of private pension funds in private equity investments. Private pension funds usually invest in mature companies with a stable market situation and low market risk.

Conclusions

Lack of access to finance is a one of the main barriers restraining the development of companies. Venture capital and private equity funds can finance high-risk projects, support small-scale investments which would not be financed by banks, especially innovations, that can be seen as a source of uncertainty and risk. For funds, those investments can provide a high rate of return. Therefore venture capital funds can be a good source of finance for companies particularly those which are innovative, with the product or service that have not yet been verified by the market. In addition to capital, venture capital funds also offer their expertise in the field of management, financial management, and marketing thus contributing to improvement in the reliability the company.

The created profiles were aimed to apply statistical qualitative methods to the description of developments on the capital markets. A profile reflects the dominant aspects in country level and preferred investment stage/strategy. The results confirm the relationship between the maturity of the capital market, the condition of the economy and investment in high-risk projects.

The proposed method identifies certain trends and could serve in assessing the dynamics of changes in the market. As an example, the identified "proximity" of medium level investments at a seed stage in the Polish investment profile, should be monitored and examined in the future. The main limitation of our results is the low level of inertia explanation, therefore the results for some countries are ambiguous. Despite the limitations, the proposed method allows us to classify and identify relationships between entities on the European capital market.

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