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Financing innovations by venture capital funds as a determinant of innovativeness of economy

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Summary. The study attempts to define a role of venture capital funds in the aspect of creating innovativeness of economy. In the first place, the theoretical conditions of venture capital activity are discussed as well as their strong and weak points in the context of financing innovative enterprises. Then, the empirical data analysis concerning their investments in the European Union member states and the selected world economies is conducted. Further, on the basis of Kendall's Tau correlation coefficient, a positive correlation between broadly understood venture capital investments and innovativeness of economy is proved which was stronger in the Community countries than considered together – European Union member states and their global competitors.

Introduction

In the era of globalization and growing competition on the world markets, economic development is significantly determined by the enterprises being able to generate and implement innovations. They may be product, service, marketing and organisational innovations. The role of innovations in the aspect of creating new work places, improvement of quality of life or well-being of environment is invaluable. Innovations and innovativeness is a broad and internally complicated set of means to increase management efficiency, gain competitive advantages and economic benefits (Firlej, 2013, p. 219).

However, creation of innovative solutions is a difficult process, complex and involving many stages demanding proper financing. New companies struggle with the problem

of lack of sufficient capital necessary to execute innovative enterprises and they are forced to seek an outside source of financing. They have a concept for a new product or service that could be introduced into the market after developing them. High risk connected with a failure of the product, not sufficient knowledge about conducting business activity, lack of credit history or experience in contact with financial institutions significantly limit the chance to get traditional financing by incurring a bank loan. The chance for entrepreneurs having an innovative idea is the functioning of venture capital market thus venture capital funds. It is created by investors who entrusting their free capital expect above average profits, and at the same time agree for a high level of investment risk.

The issue of impact of venture capital funds activity on generating innovations has been dealt by various researchers so far. International publications on the subject in question include, among others, Gompers and Lerner (2001, p. 145–168), Lerner (2002, p. 25–39) or Dessi and Yin (2012, p. 668–685) who considered both positive and negative aspects of venture capital funds functioning. On the other hand, Ferrary and Granovetter (2009, p. 326–359) analysed an interesting case study concerning the role of venture capital funds in creation of comprehensive network of innovations in Silicon Valley in the USA. Among the Polish researchers the interesting articles were presented by among others Falat-Kilijańska (2016, p. 46–60), Szydłowski (2013, p. 89–108) and Włodarska-Zoła (2016, p. 278–286). The research on the subject can also be found in the studies by Czerniak (2013, p. 108–109) and Weresa (2014, p. 183) who apart from empirical research present the recommendations concerning innovative policy in supporting venture capital funds development.

The aim of the presented article is to identify the importance of venture capital investment for innovativeness of economy. The research hypothesis has been adopted that there is a positive correlative connection between venture capital investments and innovativeness of economy.

1. Materials and methods

Domestic and international publications on the subject in question were used in the article as well as empirical data from research conducted by the Organisation of Economic Cooperation and Development (*Entrepreneurship...*, 2013, p. 89; *Entrepreneurship...*, 2017, p. 125), the World Economic Forum (*The Global...*, 2014; *The Global...*, 2018) and the European Union (*European...*, 2017, p. 6–7, 29–33). The data relate to all the European Union member countries and its selected competitors on the global scale, and cover the years 2012 and 2016.

The article deals with theoretical conditions of financing innovative undertakings by venture capital funds as well as their impact on stimulating innovativeness of economy. Then, the analysis of empirical data was conducted concerning venture capital investments and the innovativeness of economies of the European Union countries and selected world countries. In order to conduct empirical verification of the research hypothesis proposed in

the Introduction, the Kendall's Tau correlation coefficient was calculated for the Synthetic Innovations Index and selected variables concerning venture capital investments.

Kendall's Tau correlation coefficient is based on a difference between the possibility that two variables pertain in the same order (for observed data) and probability that their order is different. The coefficient requires that the value of variables can be ordered (the variables must be measured at least in an ordinal scale). The coefficient is between $\langle -1, 1 \rangle$ where the value 1 is interpreted as a full compliance, value 0 as a lack of orders compliance and the value -1 means their full inconsistency. It should be emphasized that Kendall's Tau correlation coefficient allows to determine strength and the direction of correlation. It is a valuable tool for description of similarity of orderings of data set (Kendall, 1955).

2. Venture capital as a form of financing innovations and innovativeness of economy

One of the conditions facilitating innovations implementation is to gain an access to financing. Although the contemporary financial market offers a wide range of possibilities to obtain investment capital, the venture capital funds have a special importance in financing projects of high level of innovation. They are a source of capital in a phase of start-up of activities by a company, so at the stage when they need it the most and at the same time face difficulties in obtaining it from the traditional sources because of a lack of credibility (Włodarska-Zoła, 2016, p. 278–286). Two main kinds of venture capital may be distinguished (Smith, 2010, p. 210):

1. Informal venture capital funds that are provided by the so-called business angels for innovative enterprises most often in the initial, the most risky phase of innovative process.
2. Formal venture capital funds provided by specialized professional firms at a bit more advanced, but still risky, stage, although the amount of funds the company may obtain in that way is higher than in the case of financing by the business angels.

Business angels are wealthy entrepreneurs with extensive professional experience who want to invest their capital independently in innovative enterprises with significant profit potential (Dąbkowski, 2015). It is a form of allocating capital for business angels that they offer to initiators of ideas together with their personal managerial support, expertise and skills in return for shares in the company. Rate of return from the investment expected by a business angel fluctuates from 10 to 30%, which is realistic to obtain, especially in the companies functioning on the market of new technologies (Popielczak, 2012, p. 115).

Venture capital is a form of equity financing. It is provided beyond the capital market and thus dedicated for small and middle companies which are not listed on a stock exchange. An investment consists in acquisition of shares of a given company by an outside investor who intends to sell them in the future. The venture capital investor is usually not interested in current company management and the time of their investment lasts from

2 to 5 years. In most cases it is a minority shareholder although there are also cases of majority shareholders (Drobny, 2014, p. 113).

In the context of an impact of venture capital funds on innovativeness of economy there are a number of positive aspects of their activity. First of all, they optimize processes and increase effectiveness of co-financed companies even if it requires to dismiss persons participating in the innovative project since its beginning. Secondly, transfer of cash funds from venture capital funds to an innovative company is provided in tranches at successive stages in order to motivate managers to effective work and economic management of the funds entrusted by the fund. Thirdly, venture capital funds may decide on suspension of financing in case of unsatisfactory results, and redirect saved resources to new, promising innovative projects which have mastered the ability to search. Finally, they constantly monitor the market, search and evaluate a number of potential beneficiaries of their capital to select the most prospective ones and giving the best opportunities to succeed. On the other hand, some adverse effects caused by functioning of venture capital funds are as follows: cyclicity of the supply of venture capital causing risk, i.e. even the most innovative enterprises will not receive financing in case of economic recession; concentration only on a few selected technological areas; tendency to involve high funding and at the same time less tendency to take risky projects (Czerniak 2013, p. 108–109).

3. Results

The value of the capital invested by the venture capital funds is different across countries. The American venture capital market is recognized as the biggest and it was a pioneer of such type of financing and is much more developed than its European equivalent (Weresa, 2014). According to the data for 2016 the value of the American venture capital market amounted to USD 66 626 million and the European nearly USD 4 745 million. In terms of the amount of invested funding the European leaders are Germany, France and Great Britain with their investments amounted respectively to USD 1 051 million, USD 894 million and USD 761 million. At a global level highly developed venture capital markets are Canada (USD 2 377 million), Japan (USD 1 367 million), South Korea (USD 1 212 million) and Israel (USD 1 165 million). Compared to both European and world economies the Polish result is very modest (USD 23 million) (OECD, 2017, p. 125).

Table 1. Venture capital investments as % of GDP in the selected countries in the years 2012 and 2016

Country	2012	2016	Country	2012	2016
1	2	3	4	5	6
Austria	0.011	0.01446	Poland	0.002	0.00505
Belgium	0.024	0.02801	Portugal	0.01	0.00817
Bulgaria	l.d.	0.012	Romania	l.d.	0.001
Croatia	l.d.	l.d.	Slovakia	l.d.	0.01232
Cyprus	l.d.	l.d.	Slovenia	0.005	0.00746
the Czech Republic	0.003	0.00241	Sweden	0.054	0.0404

1	2	3	4	5	6
Denmark	0.032	0.03066	Great Britain	0.038	0.02906
Estonia	0.008336	0.03111	Hungary	0.066	0.0278
Finland	0.041	0.05053	Italy	0.005	0.00523
France	0.027	0.03633	Australia	0.021	0.00916
Greece	0.005	0	Israel	0.36	0.26557
Spain	0.011	0.03624	Japan	0.026	0.01938
the Netherlands	0.029	0.02648	Canada	0.08	0.08733
Ireland	0.054	0.07718	South Korea	0.054	I.d.
Lithuania	I.d.	I.d.	Norway	0.029	0.01463
Luxembourg	0.025	0.00133	Russia	0.014	I.d.
Latvia	I.d.	0.03153	the Republic of South Africa	0.0273	I.d.
Malta	I.d.	I.d.	the United States	0.171	0.13999
Germany	0.021	0.03034	Switzerland	0.033	0.029

I.d. – lack of data.

Source: own studies and partly own calculations based on: *Entrepreneurship...* (2013), p. 89; *Entrepreneurship...* (2017), p. 125; Invest Europe (2017), p. 47.

Table 2. Venture capital investments as a seed capital (investment value as % of GDP) in the selected countries in the years 2012 and 2016

Country	2012	2016	Country	2012	2016
Austria	0.009499	0.00899	Poland	0.001375	0.00394
Belgium	0.016	0.01119	Portugal	0.009327	0.0073
Bulgaria	I.d.	I.d.	Romania	I.d.	I.d.
Croatia	I.d.	I.d.	Slovakia	I.d.	0.01232
Cyprus	I.d.	I.d.	Slovenia	0.004984	0.00243
the Czech Republic	I.d.	0.00241	Sweden	0.02522	0.02135
Denmark	0.020578	0.02543	Great Britain	0.025179	0.01889
Estonia	0.008336	0.02451	Hungary	0.057279	0.02592
Finland	0.033589	0.03922	Italy	0.003597	0.00475
France	0.013483	0.01779	Australia	0.009046	0.00385
Greece	0.004577	0	Israel	0.300744	0.11173
Spain	0.006666	0.01828	Japan	0.017	0.00342
the Netherlands	0.01413	0.01343	Canada	0.02497	0.06814
Ireland	0.038985	0.0568	South Korea	I.d.	I.d.
Lithuania	I.d.	I.d.	Norway	0.016298	0.01317
Luxembourg	0.006763	0.00105	Russia	I.d.	I.d.
Latvia	I.d.	0.02983	the Republic of South Africa	I.d.	I.d.
Malta	I.d.	I.d.	the United States	0.055156	0.21881
Germany	0.01342	0.01472	Switzerland	0.017413	0.00784

I.d. – lack of data.

Source: own studies and partly own calculations based on: *Entrepreneurship...* (2013), p. 89; *Entrepreneurship...* (2017), p. 125; Invest Europe (2017), p. 47.

An investment activity of venture capital funds in a given economy can be identified by approximation of their value in relations to the amount of GDP. Within the countries included in the analysis large disparities are noticeable in the achieved results. The best results in 2016 had Israel (0.266%), the United States (0.14%) and Canada (0.087%). Nevertheless, it should be noticed that in case of leader and vice-leader a significant decrease was noticed compared to 2012. Among the UE member states the best results had Ireland (0.077%) and two Scandinavian countries – Finland (0.051%) and Sweden (0.04%). In this case both leader and vice-leader significantly improved the value of the index compared to 2012. A moderately high value of venture capital investments as % of GDP (about 0.030–0.036%) achieved in 2016 Spain, France, Latvia, Estonia, Denmark and Germany. Unfortunately Poland is not among these countries and with the result amounting to 0.005% it is among the weakest EU member states (tab. 1).

It may be found interesting what kind of enterprises venture capital funds are particularly interested in. The venture capital investments as a seed capital (the value of investment as % of GDP) in the years 2012 and 2016 are listed in table 2. The countries standing out (in relative terms in relation to GDP) in the aspect of financing the initial stages of undertakings from the venture capital funds in 2016 include the United States (0.218%), Israel (0.112%) and Canada (0.068%). Compared to 2012 in the case of the United States one can notice high growth (from the level 0.301%). Among the EU member states in the same year the best were Finland (0.039%), Hungary (0.026%) and Denmark (0.025%). In comparison with 2012 both Finland and Denmark improved their results, while Hungary received over two times worse results but – what is interesting – it allows this country to take the second place in the EU classification of the most willingly investing countries by venture capital in the initial stages of development of innovative companies. Unfortunately, the value of venture capital expenditure as a seed capital in relation to GDP in Poland in 2016 was low and amounted to nearly 0.004%. With this result Poland is placed in the lower part of the ranking of all countries taken into account (tab. 2).

Table 3. Venture capital investments other than seed funds (investment value as % of GDP) in the selected countries in the years 2012 and 2016

Country	2012	2016	Country	2012	2016
1	2	3	4	5	6
Austria	0.001381	0.00547	Poland	0.001008	0.00111
Belgium	0.007832	0.01682	Portugal	0.000272	0.00087
Bulgaria	l.d.	l.d.	Romania	l.d.	l.d.
Croatia	l.d.	l.d.	Slovakia	l.d.	0
Cyprus	l.d.	l.d.	Slovenia	l.d.	0.00503
the Czech Republic	0.003351	0	Sweden	0.029098	0.01905
Denmark	0.011785	0.00523	Great Britain	0.012977	0.01017
Estonia	l.d.	0.0066	Hungary	0.008503	0.00188
Finland	0.007083	0.01131	Italy	0.000963	0.00048
France	0.013728	0.01854	Australia	0.007365	0.01301

1	2	3	4	5	6
Greece	0.00014	0	Israel	0.058904	0.3773
Spain	0.004315	0.01796	Japan	0.009	0.0228
the Netherlands	0.015226	0.01305	Canada	0.055189	0.15547
Ireland	0.015028	0.02038	South Korea	l.d.	0.0862
Lithuania	l.d.	l.d.	Norway	0.012403	0.0278
Luxembourg	0.018132	0.00028	Russia	l.d.	0.00358
Latvia	l.d.	0.0017	the Republic of South Africa	l.d.	0.0442
Malta	l.d.	l.d.	the United States	0.115725	0.3588
Germany	0.007365	0.01562	Switzerland	0.015713	0.03684

l.d. – lack of data.

Source: own studies and partly own calculations based on: *Entrepreneurship...* (2013), p. 89; *Entrepreneurship...* (2017), p. 125; Invest Europe (2017), p. 47.

On the other hand, taking into account venture capital investments other than seed funds (investment value as % of GDP) in 2016 it can be noticed that in relation to global economy three countries stand out: Israel, the United States and Canada. The results achieved by them – respectively 0.377%, 0.358% and 0.155% allowed them to leave behind the leading EU member countries including Ireland (0.020%), Sweden (0.019%) and France (0.0185%). All mentioned countries improved their results in comparison with 2012. In Poland the relation of the value of other forms venture capital to GDP in 2016 was even worse than in case of a seed capital and amounted to 0.001% (tab. 3).

Table 4. Availability of financing from venture capital funds in the selected countries in the years 2012 and 2016

Country	2012	2016	Country	2012	2016
1	2	3	4	5	6
Austria	2.8	3.2	Poland	2.3	2.8
Belgium	3.3	3.9	Portugal	2.2	3.1
Bulgaria	2.7	3.2	Romania	2.4	2.1
Croatia	2.2	2.3	Romania	2.7	3.2
Cyprus	2.8	2.4	Slovenia	2	2.9
the Czech Republic	2.6	3.4	Sweden	4.3	4.5
Denmark	2.4	3.2	Great Britain	3.5	4.3
Estonia	3.3	3.8	Hungary	2.1	3.3
Finland	4	4.8	Italy	1.8	2
France	2.9	3.4	Australia	3.6	3.4
Greece	1.7	1.8	Israel	4.2	5.1
Spain	2.3	3.4	Japan	3.1	3.6
the Netherlands	3.5	3.9	Canada	3.4	3.7
Ireland	2.7	3.1	South Korea	2.1	2.9
Lithuania	2.5	3	Norway	4.3	4.1
Luxembourg	4	4.2	Russia	2.6	2.6

1	2	3	4	5	6
Latvia	2.8	2.5	the Republic of South Africa	3.3	2.9
Malta	3.2	3.2	the United States	4.3	5.2
Germany	3.2	4.6	Switzerland	3.4	4.2

Source: own studies based on: *The Global...* (2018); *The Global...* (2014).

An interesting source of information about the high risk capital market development in the most of the world countries is the study conducted for *The Global Competitiveness Report 2017–2018*. The entrepreneurs surveyed in the study express their opinions on the possibilities to acquire support from venture capital funds by giving ratings on a scale from 1 to 7. The bigger venture capital financing availability, according to the entrepreneurs, the higher the rating. In 2016 venture capital funds were the most easily available in the United States and Israel where the entrepreneurs assessed their availability respectively for 5.2 and 5.1, and they were the only countries in the ranking that obtained the rating higher than 5. The countries that obtained rating higher than 4 also should be mentioned: Finland (4.8), Germany (4.6), Sweden (4.5), Great Britain (4.3), Luxembourg (4.2), Switzerland (4.2) and Norway (4.1). It is worth emphasizing that in all mentioned countries, apart from Norway, there is an improvement compared to 2012. Poland received 2.8 and in only 7 countries from the 38 studied the venture capital funds availability was assessed lower. Comparing the results from all countries in the years 2012 and 2016, according to the entrepreneurs a larger availability of venture capital may be noticed. There is an improvement in 30 countries, deterioration in 6 countries (Cyprus, Latvia, Romania, Australia, Norway, the South African Republic), and in 2 countries nothing changed (Russia, Malta) (tab. 4).

Table 5. Summary Innovation Index in 2016 (SII 2016)

Country	SII 2016	Country	SII 2016	Country	SII 2016
Switzerland	0.812	Ireland	0.571	Malta	0.378
Sweden	0.708	Australia	0.568	Italy	0.371
Denmark	0.675	Japan	0.548	Cyprus	0.369
Finland	0.646	Israel	0.548	Slovakia	0.345
South Korea	0.644	France	0.539	Greece	0.337
the Netherlands	0.639	the United States	0.508	Hungary	0.332
Great Britain	0.618	EU28	0.503	Latvia	0.287
Canada	0.609	Slovenia	0.482	Poland	0.270
German	0.609	the Czech Republic	0.416	Croatia	0.270
Luxembourg	0.599	Portugal	0.409	Russia	0.264
Austria	0.599	Estonia	0.393	the Republic of South Africa	0.247
Belgium	0.597	Lithuania	0.391	Bulgaria	0.234
Norway	0.571	Spain	0.386	Romania	0.167

Source: *European...* (2017), p. 6–7.

The indexes discussed so far concerned financial innovations by venture capital. Taking into account the character of this study, it is necessary to give data on innovativeness of economies of the countries taken into consideration in the study. One of the most popular classifications of innovativeness is *Ranking Innovation Union Scoreboard (IUS)* published annually by the European Commission, where the results achieved by all the European Union member countries and selected world countries are presented. The ranking is prepared on the basis of *Summary Innovation Index (SII)* which is created according to three key criteria divided into innovative dimensions (European, 2017, p. 6–7). *Summary Innovation Index (SII)* takes values ranging from 0 to 1, where 1 means the highest level of innovativeness (Bal-Woźniak, 2012, p. 25). The results of the newest index are presented in table 5.

The world innovativeness leader is Switzerland that overtook Scandinavian countries – Sweden and Denmark which also achieved great results. The global competitors of the European Union, such as South Korea and Canada, can also boast a high innovativeness. In comparison to the average EU28 the United States achieved similar result and Israel or Japan nearly 9% higher (tab. 5).

In order to conduct quantitative verification of research hypothesis proposed in the introduction of the study Kendall's Tau correlation coefficient was calculated between the following variables :

1. Availability of financing from the venture capital funds and Summary Innovation Index.
2. Venture capital investments (value of investment as % of GDP) and Summary Innovation Index.
3. Venture capital investments as a seed capital (value of investment as % of GDP) and Summary Innovation Index.
4. Other than seed capitals venture capital investments (the value of investment as % of GDP) and Summary Innovation Index.

Selected results are studied on the basis of quantitative data of the individual variables. If these variables were not available number of pairs in observation was limited. The final number of studied pairs of variables, for selected relations, was given as N number.

Table 6. Kendall's Tau correlation for Summary Innovation Index and selected variables in the European Union member states

Year 2012	Year 2016	N	tau	p
Venture capital availability of financing from venture capital funds	Summary Innovation Index	28	0.45	0.00076
Venture capital investments (value of investment as % of GDP)		20	0.49	0.00242
Venture capital investments as a seed capital (value of investment as % of GDP)		19	0.49	0.00320
Other than seed capitals venture capital investments (the value of investment as % of GDP)		18	0.45	0.00976

Source: own studies and own calculations on the basis of data from tables 1, 2, 3 and 4.

As it is presented in the above table the highest correlation coefficient between variable Summary Innovation Index and studied variables in the European Union member countries was observed for the variable describing venture capital investments (value of investment as % of GDP). The tau value for this relation amounted to 0.49 with $p < 0.0024$ which indicated for relatively vital, positive dependence. However, the similar tau value (0.49) with the higher level amounted to $p < 0.0032$ was observed for variable venture capital investments as a seed capital (value of investment as % of GDP). The remaining variables also indicate for vital, positive dependence between studied variables. In case of variable financing availability from venture capital funds as well as variable describing other studies concerning Summary Innovation Index tau value amounted to 0.45 (tab. 6).

Table 7. Kendall's Tau correlation for Summary Innovation Index and the selected variables for the European Union member countries and their selected global competitors

Year 2012	Year 2016	N	tau	p
Venture capital availability of financing from venture capital funds	Summary Innovation Index	38	0.35	0.001854
Venture capital investments (value of investment as % of GDP)		30	0.36	0.005283
Venture capital investments as a seed capital (value of investment as % of GDP)		26	0.36	0.010756
Other than seed capitals venture capital investments (the value of investment as % of GDP)		25	0.34	0.017374

Source: own studies and own calculations on the basis of data from tables 1, 2, 3 and 4.

Similar distribution of dependences can be observed in all the countries in which the strongest relations indicate a connection between the studied variable of Summary Innovation Index and the variable describing venture capital investment (value of investment as % of GDP). The tau value for this relations amounts to 0.36 with $p < 0.005$. As with earlier study, variable describing venture capital investments as a seed capital (value of investment as % of GDP) indicates for the similar tau value but with the different level of $p < 0.01$ which may substantially influence a significance of the studied relations. The remaining variables also show positive dependence in relations to the value Summary Innovation Index. In case of variable describing other than seed funds venture capital investments (value of investment as % of GDP) we also notice $p < 0.017$ what indicates for higher (than in the remaining cases) risk of non-occurrence of significant relations between variables. It is worth noticing that tau values for all the studied relations are relatively lower with higher p values at the same time than in the case of studying the set of the European Union member states. It indicates for relatively weaker significance of dependences for variables describing European Union member countries and its selected global competitors (tab. 7).

Conclusions

On the basis of analysis conducted in the area of financing innovations by venture capital funds as a determinant of innovativeness of economy, the following final conclusions can be formulated:

1. Innovative enterprises on the early stages of their development had difficulties in the access to traditional financing sources which resulted among others from a lack of credibility or high level of risk of their undertakings. The chance to acquire financing are venture capital funds which give valuable knowledge, experience and access to business contacts. Functioning of venture capital market is also accompanied by some negative phenomena such as cyclicalities of capital supply, concentration on selected areas and recently growing aversion to risk. In spite of certain shortcomings, the functioning of venture capital funds is an important factor of innovativeness of economy development.
2. Taking into account the investment value as % of a given country GDP, the best results had Israel, the United States and Canada. These countries reached also the podium (on different places) of investments classification in a seed capital and statement other than seed funds investments. Except for a few countries, the European Union member countries, especially Poland, seem weaker than world economic competitors.
3. Statistical analysis conducted with the use of Kendall's Tau coefficient enabled a positive verification of the proposed study hypothesis. It indicated relatively vital, positive dependence between broadly understood venture capital investments and innovativeness of economy in the European Union member states. The analysis extended by selected global competitors showed less clear dependence, although positive and statistically significant. It may prove that in relation to a larger – going beyond the group of the European Union member countries – group of countries venture capital investments do not play such an important, driving role, in the context of an impact on innovativeness of economy, like in the Community countries.

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**FINANSOWANIE INNOWACJI PRZEZ FUNDUSZE VENTURE CAPITAL
JAKO DETERMINANTA INNOWACYJNOŚCI GOSPODARKI**

Streszczenie. W pracy podjęto próbę określenia roli jaką pełnią fundusze venture capital w aspekcie kreowania innowacyjności gospodarki. W pierwszej kolejności omówiono uwarunkowania teoretyczne działalności funduszy venture capital, jak również wskazano ich mocne i słabe strony w kontekście finansowania przedsięwzięć innowacyjnych. Następnie przeprowadzono analizę danych empirycznych dotyczących ich inwestycji w krajach członkowskich Unii Europejskiej oraz w wybranych gospodarkach świata. W dalszej kolejności, na podstawie współczynnika korelacji tau Kendalla, dowiedziono o dodatniej korelacji pomiędzy szeroko pojmowanymi inwestycjami venture capital a innowacyjnością gospodarki, która okazała się być silniejsza w krajach Wspólnoty niż w przypadku uwzględnionych łącznie krajów członkowskich Unii Europejskiej i jej globalnych konkurentów.

Słowa kluczowe: venture capital, innowacje, innowacyjność

Cytowanie

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