

## A COMPARATIVE STUDY OF THE DIVERGENCE IN RATES OF RETURN FROM FOREIGN DIRECT INVESTMENTS – EVIDENCE FROM THE POLISH ECONOMY

Serhiy Zabolotnyy

Department of Economics and Organization of Enterprises  
Warsaw University of Life Sciences – SGGW

**Abstract.** The goal of the research is to present the divergence in rates of return on inward foreign direct investments (FDI) and outward foreign direct investments (FDIA) of emerging market economy on the example of Poland. The comparison between the efficiency of foreign direct investments and low risk financial instruments was also conducted. The evidence of higher rates of return on inward foreign direct investment in Poland (FDI) than on Polish outward foreign direct investments (FDIA) in the countries with developed economies was received.

**Key words:** foreign direct investment, rate of return, efficiency, Poland

### INTRODUCTION

According to the theory of financial management a measure of risk is the extent to which the future portfolio values are likely to diverge from the expected or predicted value [Modigliani and Pogue 1974]. Hence the risk of investing in financial market can be expressed by volatility of various financial instruments. Increased volatility, associated with a higher risk, can lead to extraordinary deviations in returns on investments while stable low-risk financial instruments as a rule generate considerably lower but sure profits for investors. This concept can be also applied to a company or a global market. In a company the contradiction between the goals of maximizing profits and maintaining the liquidity exists [Wędzki 2003]. To maximize the value and ensure growth of a business the manager will seek for projects with higher rates of return that leads to a higher financial risk [Titman et

al. 2010]. Less profitable projects can be accepted if the company aims for minimizing risk and providing continuity of its business. Hence the rational manager will look for an optimal relation between the profit and the risk of the projects' portfolio [Gitman 2007]. In case of a global market different macroeconomic risk factors influence the forming of rates and therefore determine the direction of cash flows. Some dependencies in their distribution can be noticed. During the periods of economic prosperity investors seek for greater profits accepting more risky projects with higher rates of return. In short term this stimulates investing in emerging markets that are associated with higher risk premium [Harvey 1995]. It is also widely argued that long-run stock returns in emerging markets are to exceed those of developed markets [Makliel and Mei 1998]. Moreover a low correlation between returns in developing and developed markets should provide investors with an opportunity to diversify their portfolio [Henry and Kannan 2008]. Contrary to this crises typically lead to an increase in the number of risk averse investors locating capital according to their defensive strategies in developed markets and safer instruments which ensure relatively low returns [Guo 2002]. In the years after financial crisis of 2007–2008, as the perception of global risks faltered, one of the most attractive places for capital allocation, including foreign direct investments, became the countries of Central and Eastern Europe. In this region the processes of a fundamental political and economic transformation brought the dominant catalyst for rapid global capital inflow [Zabolotnyy 2015]. This was largely achieved by mergers and acquisitions as well as selling of distressed corporate assets [Working Group... 2003]. Traditionally economies of these countries are defined as emerging markets implying high rates of return on investment projects as well as increased level of financial risk. However some studies show that investments in emerging markets under some circumstances can be less efficient than those in more developed markets [Henry and Kannan 2008]. It is also noticed that direct investments from developed countries can lead to a number of negative effects in host countries such as increase in income inequality, worsening of situation of local companies and decrease of productivity [Mayer-Foulkes and Nunnenkamp 2005]. Considering these arguments it is important to find an evidence of whether the investing in emerging economies such as Poland is efficient for investor in terms of risk-return concept [Kinnunen 2013].

## GOAL AND METHODS OF THE RESEARCH

The goal of the research is to present the divergence in rates of return on inward foreign direct investments (FDI) and outward foreign direct investments (FDIA) in emerging market economy on the example of Poland. The comparison between the efficiency of foreign direct investments and low risk financial instruments was



also conducted. In the article the efficiency is defined by the rate of return on foreign direct investments. The hypothesis of the research claims that rates of return on inward foreign direct investment in Poland (FDI) are higher than rates of return on Polish outward foreign direct investments (FDIA) in the countries with developed economies<sup>1</sup>. According to the theoretical assumptions returns in developing countries should be higher than in developed markets due to a higher risk premium required by investors. Poland is perceived as a developing market according to a wide range of professional sources ([www.bloomberg.com](http://www.bloomberg.com)). For example, the credit rating of Poland is BBB+ for long-term liabilities in foreign currencies, comparing to higher credit ratings of Germany (AAA) and the USA (AA+) ([www.standardpoors.com](http://www.standardpoors.com)).

A foreign direct investor is defined as an entity (an institutional unit) resident in one economy that has acquired, either directly or indirectly, at least 10% of the voting power of a corporation (enterprise), or equivalent for an unincorporated enterprise, resident in another economy [OECD 2008]. To determine the efficiency of Polish FDI and FDIA the return on investment ratio was used [Zabolotnyy 2014]:

$$RI = \frac{I}{R}$$

where:

*RI* – return on investment in current year;

*I* – income from investment in current year;

*R* – position of investment in the end of the year (receivables or liabilities).

The material for the research was collected from the reports of the National Bank of Poland [NBP 2014]. The period of the research includes years 2010–2012.

## RESULTS

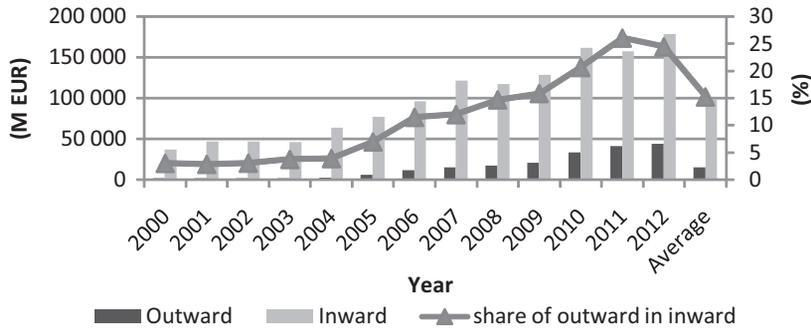
An inward position of FDI in Poland was characterized by much higher volume than an outward position of Polish FDIA (Figure 1). In 2000–2012 the average value of FDI inward position was 98,051 M EUR while the FDIA outward position amounted to only 14,906 M EUR, or 15.2% of FDI. An outward position of FDIA rose from 1,095 to 43,492 M EUR corresponding to the growth of FDI inward position from 36,792 to 178,257 M EUR in the analyzed period.

Such a rapid growth came from a number of economic factors such as the overall high pace of the development of the economy, an increasing demand on new investments, and comparatively higher yields on the Polish market. The surge of

---

<sup>1</sup> Definitions of FDI and FDIA were presented in earlier studies [OECD 2008].





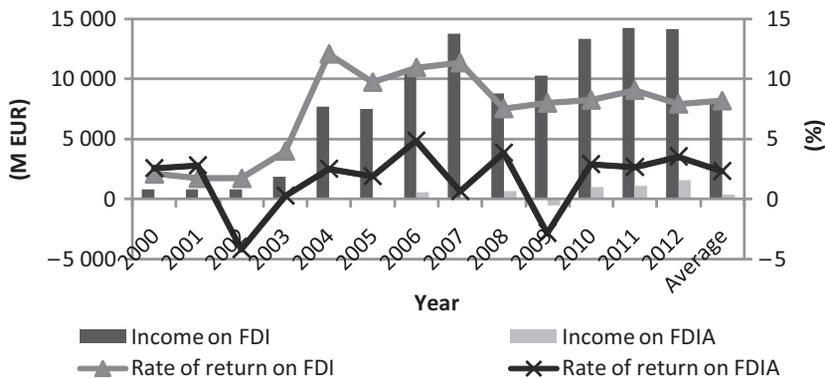
**FIGURE 1.** Inward position of Polish FDI versus outward position of Polish FDIA

Source: Own research based on National Central Bank of Poland data [NBP 2014].

the share of outward position of FDIA in inward position of FDI from 3% in 2000 to 24.4% in 2012 illustrated the raising role of FDIA flows in Polish economy.

Figure 2 illustrates the relation between the volume of an income and rates of return from Polish foreign direct investments. The income from Polish FDI was substantially higher than the income from FDIA. In 2000–2012 an average income from FDI came to 8,032 M EUR and from FDIA to 346 M EUR, or 4.3% of FDI. It should be mentioned that the share of an income from FDIA in an income from FDI rose from 3.6% in 2000 to 10.9% in 2012 that was a result of rapid growth of Polish investments' outward position.

Rates of return on FDI were relatively higher and more volatile than on FDIA. An average return on FDI accounted for 8.4% and was 5.9 p.p. higher than similar rate on FDIA. The spread between the highest and lowest rate of return on FDI was 10.3 p.p. while for FDIA this parameter achieved 9 p.p. This gave a strong

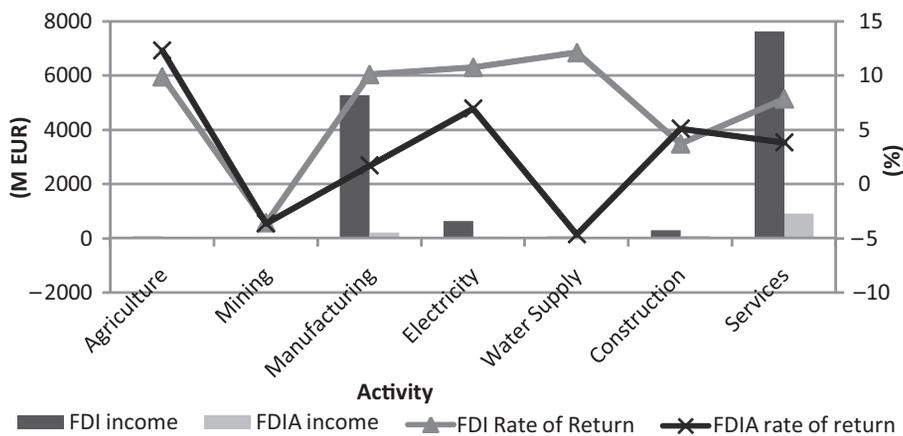


**FIGURE 2.** The volume of income versus rate of return from FDI and FDIA

Source: Own research based on National Central Bank of Poland data [NBP 2014].

evidence of a risk-return concept. Nevertheless all years of analyzed period were characterized by positive rates of return on FDI, while FDIA generated losses in 2002 (-4.2%) and 2009 (-2.8%).

To focus on some factors influencing the divergence between rates of return on FDI and FDIA the analysis of income and rates of return according to economic activity of direct investment enterprise in 2010–2012 was conducted (Figure 3). The vast part of income from FDI and FDIA was received from services and manufacturing sectors. The largest average share in total income from foreign direct investments came from services sector amounting to 54.8% for FDI and to 74.5% for FDIA. Comparatively high rates of return (average 7.9% for FDI and 3.8% for FDIA) characterized this sector as one of the most attractive for investing. The average share of manufacturing sector in total income from foreign direct investments equaled to 37.9% for FDI and 17.7% for FDIA. In this sector the rates of return presented a substantial divergence averaging out 10.1% for FDI and 1.7% for FDIA. Returns in both sectors gave an evidence of comparatively higher efficiency of Polish FDI than FDIA. Nevertheless volatility of rates of return measured as a spread between the highest and the lowest levels of values was substantially high ranging from 15.7 p.p. for FDI to 17 p.p. for FDIA. This gave a moderate evidence of a risk-return concept. Besides the lowest divergence between FDI and FDIA in rates of return was noticed in agriculture, forestry and fishing sector (3 p.p.), mining and quarrying sector (0 p.p.) and construction sector (1.4 p.p.). The highest divergence was in water supply sector (16.8 p.p.).



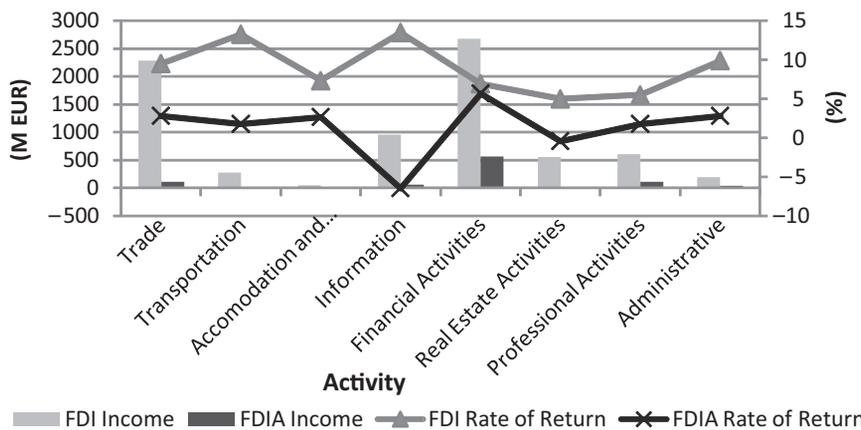
**FIGURE 3.** Average income and rate of return on FDI and FDIA by the economic activity of the direct investment enterprise in 2010–2012

Source: Own research based on National Central Bank of Poland data [NBP 2014].



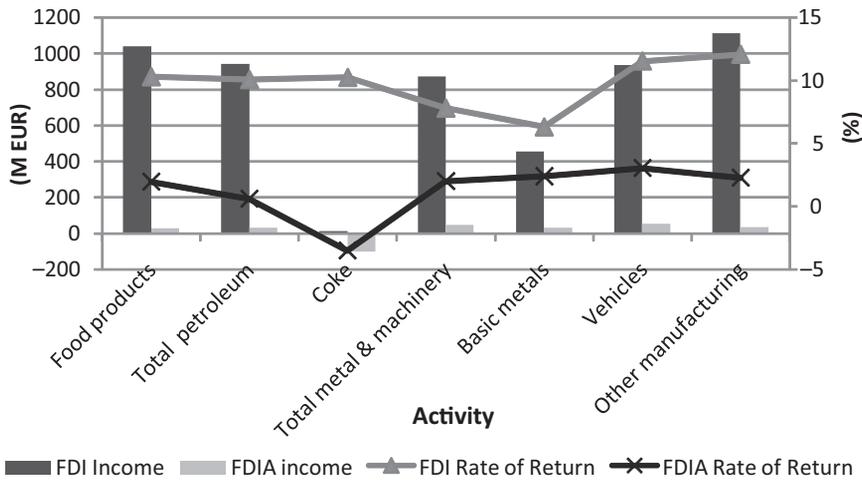
In 2010–2012 there was a significant disproportion in volume of income and rates of return among the particular branches of service sector (Figure 4). Generally in the analyzed branches rates of return were higher and less volatile on FDI than on FDIA. This gave a moderate evidence for a risk-return concept. In Service sector the highest share of income from FDI was noted in such branches as financial and insurance (35%), wholesale and retail trade (29.9%) and information and communication (12.5%). The highest average rates of return on FDI were noticed in information and communication (13.5%) and transportation and storage (13.2%), while the lowest in real estate activities (5.0%). Moderate rates of return were noticed in financial and insurance (6.9%) and wholesale and retail trade (9.5%). In FDIA the largest share in total income had financial and insurance (63.1%) and wholesale and retail trade (12.5%) branches. The highest rate of return on FDIA was formed in financial and insurance (5.7%), while negative rates were noticed in real estate activities (-0.4%) and information and communication (-6.4%). Other branches demonstrated very similar rates of returns ranging from 1.8 to 2.8%. The lowest divergence between rates of return on FDIA and FDI was noticed in financial and insurance (1.2 p.p.), while the highest in information and communication (19.9 p.p.).

In FDI and FDIA the volume of income and rates of return were on comparable levels in the main branches of manufacturing sector (Figure 5). Rates of return on FDI were higher and less volatile than on FDIA. This gave a moderate evidence of a risk-return concept. The highest average rates of return in FDI were noticed in such branches as total vehicles and other transport equipment (11.6%) and total of other manufacturing (12.1%), while the lowest rate appeared in basic metals



**FIGURE 4.** Average income and rate of return from FDI and FDIA in main branches of service sector in 2010–2012

Source: Own research based on National Central Bank of Poland data [NBP 2014].

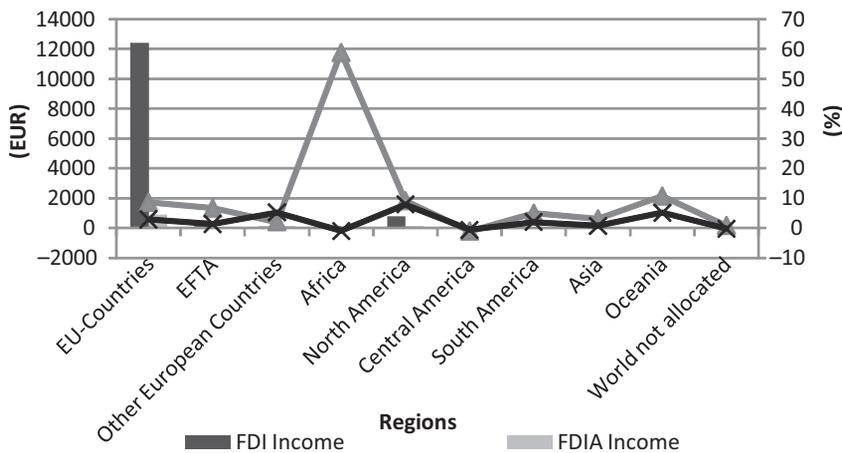


**FIGURE 5.** Average income and rate of return from FDI and FDIA in main branches of manufacturing sector in 2010-2012

Source: Own research based on National Central Bank of Poland data [NBP 2014].

and fabricated metal products (6.3%). Average rate of returns on FDIA balanced on the level of 1.7-3.0% in all branches except of coke and refined petroleum products where the negative rate was noticed (-3.5%).

Additional factor that could influence the divergence in the rates of return was the geographical distribution of foreign direct investments according to the country of residence of investing party and the investee (Figure 6).



**FIGURE 6.** Average income and rate of return from FDI and FDIA by geographic regions in 2010-2012

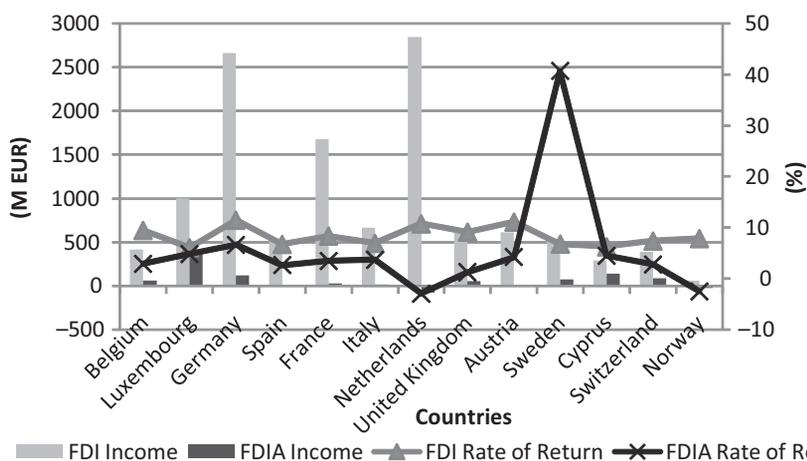
Source: Own research based on National Central Bank of Poland data [NBP 2014].



The vast majority of foreign investment flows was concentrated in Europe amounting to 89.1% of average total income from FDI and 73.4% from FDIA. The rates of return on FDI were higher and more volatile than on FDIA. Higher volatility of income and rates of return could be also explained by the use of capital in transition presented as a part of FDI [Zabolotnyy 2015]. The highest average rates of return on FDI were noticed for North America (9.2%) and Oceania (10.7) in spite of their insignificant role in the structure of direct investments in Poland. The lowest returns on FDI received investors from Asia (3.1%) and Other European countries including Russia (2.1%) while investments from Central America generated losses (-1%). FDI from European Union countries in average brought 8.6% return while from EFTA countries 6.7% return. On FDIA the highest rates of return appeared in North America (8%), Other European Countries (5.4%) and Oceania (5.2%). European Union and EFTA countries showed moderate average rates of return on FDIA (respectively 3.0% and 1.5%) that was lower by 0.1 and by 1.6 p.p. than in the whole world. This was consistent with theoretical assumption that investment projects in well developed countries were less profitable than in emerging markets such as Poland.

A breakdown of income and rates of return by particular European countries explains the specifics of investment activities and reasons for locating of Polish direct investments (Figure 7).

The main income from FDI was received by investors from such countries as the Netherland (22.1% of total income of European countries), Germany (20.6%) and France (13%). An income from FDIA to higher extent came from Luxembourg



**FIGURE 7.** Average income and rate of return from FDI and FDIA by the main European countries in 2010-2012

Source: Own research based on National Central Bank of Poland data [NBP 2014].

(38.1%), Cyprus (12.9%), Germany (10.9%), Switzerland (8.1%) and Belgium (5.5%) that corresponded to a relatively high volume of investing in financial sector of these countries. Generally the rates of return on FDI were higher than on FDIA<sup>2</sup> in Europe that gave an evidence of comparatively higher efficiency of investing in emerging markets such as Poland.

To extent the scope of a research the efficiency of FDI and FDIA was compared to other investment low-risk instruments such as government bonds (Table).

**TABLE.** Return on Polish FDI and FDIA versus long-term Polish and US government bond yields (10-year bond yields – 10-Y)

Description	Rate of Return (%)				Growth 2012/2010 (p.p.)
	2010	2011	2012	average	
Return on Polish FDI	8.26	9.07	7.93	8.42	-0.32
Return on Polish FDIA	2.90	2.68	3.55	3.04	0.65
Polish 10-Y bond yields	5.80	5.98	4.94	5.57	-0.23
US 10-Y bond yields	3.13	2.73	1.76	2.54	-1.37

Source: Own research base on 10-Year Poland and US Bond Yield ([www.stooq.pl](http://www.stooq.pl)).

In the analyzed period higher rates of return were achieved on Polish FDI and Polish 10-Y bonds in comparison to Polish FDIA and US 10-Y bonds. This gave an evidence of a risk return concept: investing in the markets with higher risk provided a higher rate of return both in terms of foreign direct investments and government debt instruments. Nevertheless the rate of return on Polish FDIA rose from 2.90% in 2010 to 3.55% in 2012 while the US 10-Y bond yields went down from 3.13% in 2010 to 1.76% in 2012. This proved the growing efficiency of Polish investments abroad along with the decreasing attractiveness of investing in debt instruments with low risk.

## CONCLUSIONS

Based on the conducted research the results were as follows:

1. The rates of return on Polish FDI were relatively higher and more volatile than on FDIA. An average return on FDI accounted for 8.4% and was 5.9 p.p. higher than similar rate on FDIA. In the analyzed period the spread between the highest and lowest rate of return on FDI was 10.3 p.p. while for FDIA this parameter achieved 9.0 p.p. This gave a strong support to a risk-return principle.

<sup>2</sup> Sweden was eliminated due to a great deviation from the rest of the countries.



2. The vast part of income from FDI and FDIA was received from services and manufacturing sectors. Returns in both sectors gave an evidence of comparatively higher efficiency of Polish FDI than FDIA. This demonstrated that generally investment projects in well-developed countries were less profitable than in Polish markets.
3. In the analyzed period higher rates of return were achieved on Polish FDI and Polish 10-Y bonds comparing to Polish FDIA and US 10-Y bonds. This gave an evidence of a risk-return principle: investing in the markets with higher risk provided a higher rate of return both in terms of foreign direct investments and government debt instruments.

## References

- GITMAN L.J. 2007: Principles of Managerial Finance, Prentice Hall, New York.
- GUO H. 2002: Understanding the Risk-Return Tradeoff in the Stock Market, Federal Reserve Bank of St. Louis Working Paper 2002-001A.
- HARVEY C.R. 1995: Predictable Risk and Returns in Emerging Markets, *The Review of Financial Studies* 8, 3, pp. 773-816.
- HENRY P.B., KANNAN P. 2008: Growth and Returns in Emerging Markets (in:) *International Financial Issues in the Pacific Rim: Global Imbalances, Financial Liberalization, and Exchange Rate Policy (NBER-EASE 17)*, The University of Chicago Press, Chicago, pp. 241-265.
- KINNUNEN J. 2012: Risk-Return Trade-off and autocorrelation, *Acta Universitatis Lappeenrantaensis* 551.
- MALKIEL B., MEI J.P. 1998. *Global Bargain Hunting: The Investor's Guide to Profits in Emerging Markets*, Simon Schuster, New York.
- MAYER-FOULKES D., NUNNENKAMP P. 2005: Do Multinational Enterprises Contribute to Convergence or Divergence? A Disaggregated Analysis of US FDI, Kiel Institute for World Economics Working Paper 1242.
- MODIGLIANI F., POGUE G.A. 1974: Introduction to Risk and Return: Concepts and Evidence, *Financial Analysts Journal* 30, 2, pp. 68-80.
- TITMAN S., KEOWN A.J., MARTIN J.D. 2010: *Financial Management. Principles and Applications*, Prentice Hall, New York.
- Narodowy Bank Polski (NBP) 2014: *Polskie i zagraniczne inwestycje bezpośrednie w 2012 r.*, Warszawa.
- OECD 2008: *Benchmark Definition of Foreign Direct Investment*, The Organisation for Economic Co-operation and Development, Fourth Edition.
- WĘDZKI D. 2003: *Strategie płynności finansowej przedsiębiorstwa*, Oficyna Ekonomiczna, Kraków.
- Working Group of the Capital Markets Consultative Group 2003: *Foreign Direct Investment in Emerging Market Countries*.



ZABOLOTNYY S. 2014: Polish Direct Investments Abroad as an Instrument of Value Creation For Investors, *Stowarzyszenie Ekonomistów Rolnictwa i Agrobiznesu, Roczniki Naukowe SERiA* 16, 6, pp. 551–558.

ZABOLOTNYY S. 2015: The efficiency of Foreign Direct Investments in Poland – Does the Risk of Investing in Emerging Market Country Lead to a High Rate of Return?, *Roczniki Naukowe SERiA* 17, 6, pp. 320–326.

### **STUDIUM PORÓWNAWCZE ZRÓŻNICOWANIA STÓP ZWROTU Z BEZPOŚREDNICH INWESTYCJI ZAGRANICZNYCH NA PRZYKŁADZIE POLSKIEJ GOSPODARKI**

**Abstrakt.** Celem opracowania jest przedstawienie poziomu zróżnicowania między stopami zwrotu z przyjmowanych i wysyłanych bezpośrednich inwestycji zagranicznych kraju z rozwijającą się gospodarką na przykładzie Polski. Przeprowadzono także porównanie między efektywnością bezpośrednich inwestycji zagranicznych a instrumentami finansowymi o niskim poziomie ryzyka. Stwierdzono, że bezpośrednie inwestycje zagraniczne w Polsce charakteryzowały się wyższymi stopami zwrotu niż polskie inwestycje zagraniczne w krajach o gospodarkach rozwiniętych.

**Słowa kluczowe:** bezpośrednie inwestycje zagraniczne, stopa zwrotu, efektywność, Polska

