

## DILEMMAS CONCERNING DEPENDENCIES BETWEEN DIRECT PAYMENTS AND FARM INVESTMENT

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**Abstract.** The main aim of this paper was discuss theoretical and methodological difficulties referring to measurement of dependencies between direct payments (including decoupled payments) and farm investment. The article presents the critical overview of research approaches concerning the aforesaid relationship. Moreover, this paper discusses dependencies, based on the empirical data (from European FADN): between investment rate (gross investment/depreciation) and decoupled payments with the assessment by means of correlation analysis. Implementation of the integrated research approach should be recommended. Although behavioural factors may be significant in analysis how direct payments affect, channels concerning agricultural policy should not be ignored. In the case of aggregated data from New Member States (NMS), dependencies were unequivocal. This may indicate the need to carry out detailed studies on uncertainty and farmers' expectations for the type and amount of future payments.

**Key words:** direct payments, investment, farms, FADN

### INTRODUCTION

From a theoretical point of view, investing can be defined as an economic activity with deferred effects. Investment processes in the agricultural sector<sup>1</sup> may be treated as a function consisting of fundamental compounds, namely: disposable income of farmers, their disposition to investment, supply for preferential

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<sup>1</sup> Soliwoda [2012, pp. 451–460] raised the issue of instruments for investment reporting (the example from dairy sector).

credits, as well as an interest rate on them. In addition, the access to EU funds should not be neglected [Sulewski 2005, pp. 233–238]. Although, general definitions of investment (or investment process) enumerate a great deal of financial and organisational consequences, terms referring to the agricultural sector put an emphasis on the linkage to the agricultural production. As Ziółkowska [2006, p. 8] underlined, from a theoretical point of view the agricultural production may be held, basing on only asset, circulation labour force and management. Czerwińska-Kayzer [2003, pp. 12–15] added that farmers' decisions on realising investment processes may be determined by the size of agricultural holding, farmers' educational background, their opinions concerning the future of farm, realising investment in the agricultural holding, as well as financing by means of the external capital. Moreover, that process is aimed at an improvement in business (general) performance, strengthening market positions and upswing in financial results both in the short and long term. Similarly, Julian and Seavart [2011, pp. 366–378] argued that effective farm management requires both long-term planning and deliberate decision making. As far the sustainable development of farm is concerned, major investments in new equipment and infrastructure with the environmental awareness should be prioritised.

According to Gallerani et al. [2008, p. 7], key factors affecting farm investment behaviour may be divided into three categories: technical and economic (mainly factor markets and policy) and, broadly speaking, farmer's attitudes. Particularly, the second group of factors has been more significant as a result of the impact of the agricultural policy in the US and European countries. The vast majority of developed countries experienced the shift from price support to income support of every description, mainly in form of direct payments. However, Viaggi et al. [2011, p. 7] stated that although the agricultural policy should strengthen invest process on rural areas, recent studies on the impact of the CAP reform process (i.a. decoupling), as well as on the structure of agricultural sector in New Member States (NMS)<sup>2</sup>, underlined the role of non-policy and non-farm variables associated with farm households (e.g. demography, ageing) has been more significant.

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<sup>2</sup> Kowalski [2006, pp. 6–7] mentioned that joining EU by Poland referred to opening the internal market and access to significantly higher than before 2004 a financial aid addressed to agricultural and rural development. Although the lower level of expenditures on realising national agricultural policy has been remarked since 2005, the level of budget disbursements on agricultural, followed by financing EU, funds has significantly grown. This may raise the question on the rational making use of EU subsidies and aids within the national agricultural policy.

## RESEARCH METHODS

The main aim of this paper was to discuss theoretical and methodological difficulties referring to measurement of dependencies between direct payments (including decoupled payments) and farm investment. The article presents the critical overview of research approaches concerning the aforesaid relationship. Moreover, this paper analyses dependencies, based on the empirical data (from European FADN): between investment rate (gross investment/depreciation) and decoupled payments<sup>3</sup>. There are following research methods used: critical literature overview, documentary methods, statistical analysis. The secondary data comes from the collection gathered by European FADN and covers the year 2007–2010. In order to analyse the aforesaid dependencies, Pearson correlation coefficients were respectively computed.

Direct payments versus farm investment – a critical overview of methodological approaches and findings

Unfortunately, there is a limited number of findings concerning a linkage between the direct payments and farmer investments, particularly in NMS. This indicates that an influence of direct payments may be multi-pronged and involve a lot of channels. Recently there has been interest in the literature on relationships between direct payments and investment decision of farmers. One of early studies [Whittaker, Morehart 1991, pp. 95–105] indicated that direct payments have a positive impact on farm productivity, when more productive farmers invest more aggressively. This corresponded with studies of Roche and McQuinn [2004, pp. 111–123] who stated that the risk reducing properties of direct payments would induce farmers to shift to a riskier crop portfolio. Lagerkvist [2005, pp.1–23] examined how policy reform uncertainty affects farmers' land investment decisions and the price of farmland. He stated that adjustments in investment incentives

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<sup>3</sup> According to European FADN, decoupled payments cover Single Farm Payment, Single Area Payment Scheme and Additional Aid. It should be noted that in accordance with 2003 CAP reform: "MS could opt for a historical model (payment entitlements based on individual historical reference amounts per farmer), a regional model (flat rate payment entitlements based on amounts received by farmers in a region in the reference period) or a hybrid model (mix of the two approaches, either in a static or in a dynamic manner). The new MS could choose to apply the single area payment scheme, a simplified area payment system, for a transitory period until end 2010 or to apply the same system as in the EU-15. In 2006 the DP were coupled in Slovenia and Malta. The remaining 8 MS who joined in 2004 applied SAPS. In the EU-15, no MS implemented a regional model. Denmark, Germany, Luxembourg, Finland, Sweden, England and Northern Ireland applied a hybrid model. The remaining MS implemented the historical model. In 2006, milk payments were still 100% coupled in the Netherlands, Greece, Portugal, and Austria and partly coupled in Sweden" [European Commission 2008, p. 2].



(connected with agricultural policy programs) can contribute to understanding of volatility in land rents. Previous findings show that direct payments may raise wealth and possibly reduce risk, which will lead to more risk-averse approach of farmers to increase production [Hennessy 1998, pp. 46–57; Antón, Le Mouél 2004, pp. 277–284]. Based on Hennessy's studies, in the case of direct payments that is fixed over time, the marginal impact of the payment on farm production is positive. On the other hand, according to OECD [2001, pp. 28–30], a binding credit constraint and farmer's anticipation that future payments will eventually based on the current level of production should be considered. Furthermore, farmers' investment decisions may be discussed under two different circumstances: a perfectly competitive capital market, an imperfect capital one on the other side. If the agricultural sector deals with the second aforementioned capital market, an income support will be partially reinvested in agriculture, which leads to generating additional production in next years. On the other hand, in the case of perfectly competitive markets, statically fully decoupled payments will not influence on investment decisions, whereas coupled payment affect investment decisions. Moreover, an effect of statically coupled payments carries over future years. Sckokai and Antón [2005, pp. 1220–1228] proved a positive relationship between farm investment and a direct payment was proved (on the basis of specialised arable crop data from the Italian Farm Accounting Data Network).

It is worth noting that the attitude of farmers to risk affect their willingness to make investment decisions. Studies of both Roche and McQuinn [2004, pp. 111–123], and Vercammen [2007, pp. 479–500] were based on a stochastic dynamic programming. This stems from the fact that an increase in investment typically leads to a higher farm production in both the short and long run. On the other hand, Roche and McQuinn [2004, pp. 111–123] exploited a portfolio theory that was adopted from corporate finance.

The interesting results from Vercammen's theoretical model farm investment [2007, pp. 479–500] refer to the linkage between a direct payment and farm investments in the context of farm bankruptcy risk:

- a direct payment may lead to higher investment by a farmer even if the farmer is presumed to be risk neutral rather than risk averse,
- the investment response is comparitevely large for farmers possessing a medium level of equity,
- the investment response depend on the farmer's time horizon: in the case of the larger this response the time horizon is longer.

As shown above, the analysis of the impact on direct payments on farm investment should include farmers' expectations. Sckokai and Antón [2005, pp. 1220–1228] underlined the fact that irreversible nature of agricultural investment may lead to delaying farm investment decisions. This raises the question on determining behavioural factors affecting farmers' approach to investing.



There is a limited number of Polish findings concerning the aforementioned research problem. This results from a relatively short period since joining EU by Poland. The majority of studies may be described as regional- or voivodeship-limited. Nevertheless, Smolarski [2013, pp. 35–49] found that during the period of receiving payments farmers in Silesian Voivodeship invested mainly in agricultural machinery and tools, whereas participated investment decisions in building, structures and agricultural machinery referred to repair and modernization purposes. Similarly, investment outlays of farms in Wielkopolskie region were addressed to machinery and tools, regardless of the farm area [Śmiglak-Krajewska, Just 2013, pp. 29–39]. Interesting conclusions concerning the regional differentiation of investment outlays in Polish agriculture were presented by both Kusz [2009, pp. 78–89], and also by Nowak and Kamińska [2013, pp. 17–27]<sup>4</sup>. On the other hand, Gołębiewska [2010, pp. 60–68] found that with respect to agricultural holdings there was a dependency between investment structure and the level of market relation.

The issue of impact on direct payments has been treated as an empirical problem. Given the problem of the impact of direct payments, the research contribution of remaining literature may be divided into survey-based analyses, econometric analysis on secondary data, and farm/regional level modelling. The Table 1 shows selected five studies on the impact of direct payments on investment processes. It should be mentioned that researchers preferred the survey-based method as the way of collecting economic data. Only findings of Guastella et al. [2013, pp. 1–14] were based on the secondary data from EU-FADN. It should be noted that conclusions stemming from a majority of European aforesaid studies are limited to selected countries, for example findings of Latruffe et al. [2007, pp.1–12, 2008, pp. 1–8].

In general, researchers preferred survey-based methods. Only one of five studies that were shown in Table 1 was based on entirely a qualitative analysis of secondary data. It should be noted that authors of the aforementioned studies referred to international comparative analysis (with the exception of Genius et al. [2008, pp. 1–16] and Guastella et al. [2013, pp. 1–14]). There was a wide range of data processing method: from simple descriptive statistics to the advanced set of equations. As for processing of primary data from questionnaires, logit analyses seemed to be preferable.

Studies of Genius et al. [2008, pp. 1–16] referred to the problem of uncertainty connected with agricultural policy and the impact of the level of information on investment decisions. Latruffe et al. [2007, pp. 1–12] indicated that expectations for future payments influenced on incentives for agricultural investing.

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<sup>4</sup> Nowak and Kamińska also concluded an increasing labour productivity affects positively a growth in investment outlays per capita. Hence, structural transitions in Polish agriculture foster investment activity in the agricultural sector.



**TABLE 1.** Recent studies on the impact of direct payments – methodological approaches and results

Authors	Data	Methods	Main results and conclusions
Genius et al. [2008, pp. 1–16]	Farms in three different regions of the EU, namely the regions of Anatoliki Makedonia, Thraki in Greece (160 objects), Flevoland in the Netherlands (80) and the Southern Great Plain in Hungary (153)	Survey-based descriptive method; econometric modelling (equations linking the “propensity towards a choice”)	The level of information may be very important to reduce farmers’ uncertainty about the future. The more informed a farmer is, the more willing he will be to change his crop mix in the case of the Netherlands and Greece. Therefore, policies increasing farmers’ level of information could be useful if farmers are prone to switching crops
Latruffe et al. [2007, pp. 1–12]	The sample of 152 corporate farms in Slovakia (101 cooperatives, 51 companies)	Survey-based method (face-to-face interviews with farm managers)	Farms that do not think the decoupled payments are credible are more likely to use their profit for investment. This means that they do not intend to change their behaviour as they think that the decoupled payments and GAEC are temporary policy instruments. The expectations for payments concerning production create incentives for investing
Latruffe et al. [2008, pp. 1–8]	The stratified FADN sub-sample of Lithuanian farms (a total number of 220 units), that were fairly representative in terms of Economic Size Unit (ESU)	Survey-based method (face-to-face interviews), the data analysis included an accelerator investment model	The introduction of the SAP had a significant, positive impact on farmers’ intentions to expand their farm area compared to a baseline scenario. Constrained farmers are even more likely to be willing to grow than less constrained farmers. Payments are thus likely to facilitate expansion, particularly among farmers whose expansion plans were previously constrained
Revoredo-Giha, Leat [2008, pp. 1–20]	Beef and sheep producers in Scotland (611 of 1,778 farms, i.e. a response rate of 34.4%)	Survey-based method (with a detailed statistical analysis, i.e. contingency coefficients and logit analysis)	The nature of adjustment is uncertain, underlined by the high numbers of farmers that do not know what strategy to follow, or that will maintain the same production levels despite the reform. Moreover, a significant share of farmers indicate their intention to concentrate on the production of high quality output. This may refer to targeted investment processes to expand production
Guastella et al. [2013, pp. 1–14]	FADN data covering period between 2001 and 2004 (only for Germany, France, Italy, the UK) and 2005–2008	Simulating percentage changes in average net investment levels of a sample of specialised arable crop farms drawn from those subject, every year, to the survey each country carries out	Investment in machinery and equipment in France and Italy respond positively to the widespread reduction in support levels induced by the policy scenarios. The other instance of positive reaction of investment levels to the reform scenario occurs for the UK

Source: Author’s studies.

It is worth noting that Genius et al. [2008, pp. 1–16] used the set of three equations concerning “propensity toward a choice”. The third equation described the decision “to abandon or not”, whereas the second one referred to the acreage (or livestock size) decision. The variables  $y$  informed whether farmers planned to continue or abandon. The main constraints resulted from the limited data and the regional approach, whereas the forte (strength) of the research methods figured on the combination of survey-based techniques with a substantial (solid) econometric modelling. The most detailed approach was presented by Guastella et al. [2013, pp. 1–14] who implemented elasticity of investment to agricultural support at the yearly and regime-specific means.

All in all, the overview of selected studies indicates that modelling the impact of direct payments on investment processes (outlays, decisions and correlated categories) should involve a combination of advanced qualitative method. It may be noted that there is a pronounced lack of studies exploiting an interdisciplinary approach to analyse how direct payments (including, decoupled transfers) translate into a increase in net investment.

## **DECOUPLED PAYMENTS VERSUS INVESTMENT RATES – A COMPARATIVE ANALYSIS**

Table 2 shows the amounts of decoupled payments in each of NMS of EU<sup>5</sup>. It is worth noting that, for example, Spain and Italy implemented a hybrid system of payments. Moreover, it should be noted that FADN data represents more than 95% of the EU-25 expenditure. Amounts of decoupled payments fluctuated over the period in the group of NMS: from 601 euro per farm (Romania) to 56,338 euro per farm (Slovakia). This resulted from the noticeable disparity in equipment in production factors in the agriculture sector of NMS. Generally speaking, in Slovakia and Czech Republic agricultural holdings in the form of the legal entities, based on assets of former state-owned agricultural enterprises, are dominant.

Decoupled payments referred to an averaged farm from FADN sample. This explains why the significant differences in amounts of decoupled payments existed. Firstly, it should be noted that in NMS decoupled payments increased in the most significant way: by over twice (Bulgaria) and three times (Romania).

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<sup>5</sup> “In 2006, in the EU-15, 18% of the EU payments were still coupled and a large share of the decoupled payments was granted based on historical references. Therefore, in the EU-15 the level of DP per farm was also strongly linked to the products the farmers were producing in 2006 (often the same as those they used to produce during the reference period used to calculate the single payment scheme (SPS) entitlements)” [European Commission 2010].



As for NMS decoupled payments amounted to 9,638 euro per farm (the average weighted by agricultural outputs was evidently lower and was 5,910 euro per farm), whereas in the group of EU-15 this agricultural subsidies amounted to 15,629 euro per farm (respectively, the weighted average was slightly higher by 600 euro). As shown in Table 2, in 2007–2010 there was an upward trend indicating that the role of decoupled paymesnts has been strengthened.

**TABLE 2.** Decoupled payments in EU countries in the period 2007–2010

Specification	2007	2008	2009	2010	Average from 2007–2010	d / a × 100 (%)
	a	b	c	d	e	f
	euro/farm					
Bulgaria	895	1 234	2 382	2 836	1 837	316.9
Cyprus	1 224	1 368	1 716	1 851	1 540	151.2
Czech Republic	22 102	27 440	31 575	36 169	29 322	163.6
Estonia	4 735	5 808	8 368	8 870	6 945	187.3
Hungary	4 804	6 055	6 714	7 766	6 335	161.7
Lithuania	2 501	3 119	3 824	4 628	3 518	185.0
Latvia	2 194	2 765	3 499	3 960	3 105	180.5
Malta	601	1 258	1 267	1 158	1 071	192.7
Poland	1 439	1 866	2 134	2 582	2 005	179.4
Romania	370	499	746	787	601	212.7
Slovakia	43 888	50 165	60 777	70 522	56 338	160.7
Slovenia	2 850	2 897	3 013	3 404	3 041	119.4
NMS*	7 300	8 706	10 501	12 044	9 638	165.0
NMS (weighted)**	4 788	5 629	6 176	7 047	5 910	147.2
EU-15	15 286	15 317	15 779	16 135	15 629	105.6
EU-15 (weighted)	15 514	15 698	16 173	17 531	16 229	113.0

\* NMS – New Member States (countries above); \*\* weighted averages by means of the agricultural output at producer price (source: Eurostat).

Source: European FADN and author's calculations.

Table 3 presents investment rates (as gross investment/depreciation, expressed in percent) in the agricultural sectors of EU countries. It should be noted that Romania as new member state, who with joined EU 1 January on 2007, was characterised by a low investment rate. Nevertheless, in 2008 the substantial depreciation dominated the investment process, and, as a result, the investment rate



was drastically negative (-472.8%). The most significant increase in investment rate was noted in Slovakia (25.4 percentage points over the period), whereas in Latvia there was the substantial weakness of investment process. This shows how strong discrepancy in investment rates was noted. On the other hand, as averaged investment rates in two analysed groups indicate, a specific process of convergence between EU-15 and NMS might be observed. The investment processes in the agricultural sectors in post-soviet countries who joined EU were connected with adaptation to new quality regimes, as well as seeking solutions optimizing productivity and efficiency of agricultural holding. In contrast, the investment process in EU-15 concerned innovation transfer and improvement in production factor utilisation.

**TABLE 3.** Investment rates in the agriculture sector in EU countries over the period 2007-2010

Specification	2007	2008	2009	2010	Average from 2007-2010	Change (d - a)
	a	b	c	d	e	f
	%					
Bulgaria	143.9	293.2	166.9	139.4	185.8	-4.4
Cyprus	29.5	13.1	209.1	36.3	72.0	6.8
Czech Republic	122.2	123.2	103.8	106.6	113.9	-15.6
Estonia	233.5	288.7	105.5	145.0	193.2	-88.5
Hungary	111.2	88.0	143.2	80.1	105.6	-31.1
Lithuania	251.7	274.9	208.3	181.4	229.1	-70.3
Latvia	240.9	241.2	84.5	80.5	161.8	-160.4
Malta	143.3	-472.8	160.8	293.9	31.3	150.6
Poland	118.6	89.1	90.0	90.7	97.1	-27.9
Romania	51.8	40.4	55.4	50.6	49.6	-1.2
Slovakia	48.5	132.5	102.4	74.0	89.4	25.4
Slovenia	133.3	111.8	133.9	106.9	121.5	-26.5
NMS*	135.7	101.9	130.3	115.4	120.9	-20.3
NMS (weighted)**	107.5	102.9	99.5	86.5	99.1	-21.0
EU-15	131.7	127.7	110.7	107.9	119.5	-23.8
EU-15 (weighted)	108.3	102.7	98.3	94.7	101.0	-13.6

Explanations the same as in Table 2.

Source: European FADN and author's calculations.

As shown in Table 4, NMS countries were divided into four groups according two criteria: (i) the amount of decouple payments and (ii) the level of investment rate. The basis of the abovementioned classification referred to medians of decoupled payments (3,073 euro per farm) and investment rate (109.8%) of period averages. Polish agriculture was characterised by low decoupled payments and investment rates between median. On the other hand, the group of “leaders” (with high investment rates and decouple payments above median) covered agricultural sectors with large agricultural holdings, mainly based on former state-owned entities. This indicates that dependencies between decoupled payments and investment rates may be intricate and inconsistent.

**TABLE 4.** Matrix “decoupled payments versus investment rates” in NMS

Specification	Low decoupled payments counties	High decoupled payments countries
Low investment rates	Cyprus Malta Poland Romania	Slovakia Hungary
High investment rates	Bulgaria Slovenia	Czech Republic Estonia Lithuania Latvia

Source: Author’s calculations.

Table 5 presents values of Pearson correlation coefficients. Analysing NMS, all correlation dependencies were not significant at 0.05 level and were heterogenic in terms of the direction. This results from the small sample and the strong heterogeneity of NMS in terms of production factor utilisation. In contrast, all dependencies between decoupled payments in 2007 and investment rates from 2007 to 2010 were statistically significant in EU-15. It should be noted the strongest relation referred to investment rates in 2008. This may indicate an existence of so-called a lead-lag effect. In addition, capitalisation of direct payments (including decouple payments) may affect at later times.

**TABLE 5.** Coeffients of correlation between decoupled payments (baseline = 2007) and investment rates (2007–2010)

Countries	2007	2008	2009	2010
NMS <sup>A</sup>	-0.324	0.105	-0.245	-0.203
EU-15 <sup>B</sup>	0.635*	0.701*	0.629*	0.584*

<sup>A</sup> a critical value for  $n = 12$  observations amounts to 0.576, whereas for  $n = 15$  (<sup>B</sup>) the critical value equals 0.514;  
\* significant at 0.05 level.

Source: Author’s computations.

## CONCLUSIONS

1. Seeking for dependencies between, in general, agricultural subsidies (including direct payments and decoupled payments) seems to be a very complex empirical dilemma. Several findings referred to the problem how direct payments affected the condition of agricultural holdings, mainly their attitude to investments. Adaption of portfolio theory (from corporate finance), as well as investigation into risk profiles of farm managers may lead to clarification aforementioned dilemma.
2. Given strengths and weaknesses of methodological approaches presented in previous studies concerning dependencies between direct payments and a scale of investment processes in agricultural holdings, we propose to implement integrated research approach. It should be noted that behavioural factors that were found in many survey-based studies, may reduce the strength of exogenous agents. However, it is not recommended to ignore channels connected with the agricultural policy (first of all, agricultural subsidies). Modern research approaches should evolve towards a deeper integration with behavioural methods and using both primary and secondary data.
3. Based on aggregated data, dependencies between decoupled payments (as the significant part of direct payments) and investments rate in the agricultural sectors were inconsistent with respect to NMS. This may indicate a subtle mechanism where uncertainty and farmer' expectations for future payments<sup>6</sup> affect. Additionally, underlining the substantial variability between agricultural sectors of NMS, more detailed studies should focus on separate models based on FADN data.
4. Insignificant dependencies between decoupled payments and investment rates in NMS may indicate that the issue of credit constraint may be more vivid in "emerging" European countries (Bulgaria, Romania). The role of decoupled payments seems to be very multidimensional, given the fact that even farmers operating under less favourable conditions may be prone to increase their production and realise investment processes<sup>7</sup>. This can be explained by the fact that farmers in NMS countries have to face stiffening market mechanism for agricultural products.

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<sup>6</sup> This problem was discussed by Bhaskar and Beghin [2009, pp. 130–153].

<sup>7</sup> See: Kropp and Whitaker [2011, pp. 25–40].



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### **DYLEMATY DOTYCZĄCE ZALEŻNOŚCI MIĘDZY PŁATNOŚCIAMI BEZPOŚREDNIMI A INWESTYCJAMI GOSPODARSTW ROLNICZYCH**

**Abstrakt.** Głównym celem opracowania było przedstawienie metodologicznych i teoretycznych trudności związanych z pomiarem zależności między płatnościami bezpośrednimi (w tym, odłączonymi) a inwestycjami gospodarstw rolniczych. Przedstawiono krytyczny przegląd podejść badawczych związanych ze wspomnianymi

nym związkiem. Na podstawie danych EU-FADN, w opracowaniu przedstawiono analizę wysokości płatności odłączonych i stóp inwestowania gospodarstw rolniczych w nowych państwach członkowskich UE. Oceniono zależności za pomocą analizy korelacyjnej. Stwierdzono, że niezbędne jest stosowanie podejścia integrującego kilka metod badawczych. Choć czynniki behawioralne mogą być istotne w analizie wpływu płatności bezpośrednich, to nie należy jednak lekceważyć kanałów oddziaływania polityki rolnej. W przypadku analizy dla zagregowanych danych dotyczących nowych państw członkowskich, zależności nie są tak jednoznaczne, jak dla EU-15. Może to wskazywać na potrzebę bardziej pogłębionych badań dotyczących niepewności i oczekiwań rolników co do rodzaju i wysokości przyszłych płatności.

**Słowa kluczowe:** płatności bezpośrednie, inwestycje, gospodarstwa rolne, FADN