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Facing decoupling: use of payments and investment reaction to decoupling in the EU

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Abstract

The main objective of this paper is to evaluate ex-post the effects of the 2003 reform, in particular decoupling, of the Common Agricultural Policy (CAP) in the European Union (EU), with a specific focus on farm investment behaviour. In the past years a number of studies have addressed the issue of the impact of EU policy reforms. However, long-term effects of policy changes and related impacts on structural and investment behaviour received relatively little attention. This study is based on a survey of farm households in a number of EU Member States. In the majority of cases, farmers stated they were indifferent to decoupling. Where any change occurred, the impact of decoupling was highly differentiated. Numerous reactions are better explained by various individual household/farm characteristics, rather than by association with a specific agricultural system.

Keywords: decoupling, empirical survey, investment, CAP reform.

1 Introduction and objectives

Decoupling of direct payments from production, started in 2003, set a major step in the reform of the Common Agricultural Policy (CAP) of the European Union (EU). In the past years a number of studies have addressed the issue of the impact of CAP reforms. These studies concern different territorial levels and in many cases focus on the effects of reforms on the market of agricultural products. On the contrary, long-term effects of policy changes and related impacts on structural and investment behaviour at farm level have received relatively little attention up to now.

The main objective of this paper is to evaluate the effects of 2003 decoupling, with a specific focus on farm investment behaviour.

This paper is based on a survey of about 250 farm households in 8 EU Member States. The survey collected a wide range of information about household and farm characteristics, as well as ex- post

information about household reaction to decoupling. In this paper we focus on the analysis of the use of payments provided by the EU and on the effects of decoupling on investment behaviour.

The remainder of the paper is organised as follows. Section 2 briefly illustrates the background and literature. Section 3 illustrates the survey methodology and data treatment. Section 4 reports the descriptive statistics concerning the sample. Section 5 illustrates the results, while section 6 provides a discussion.

2 Background and literature

The literature on farm investment behaviour includes a variety of contributions, focusing on the determinants of investment behaviour, the effects of policy on investment behaviour and the tools for analysing farm investment behaviour.

Contributions on this issue have been relatively less numerous than for other fields of agricultural economics research, despite its evident importance for the representation of farm behaviour. The analysis of investment at firm level became an important issue in the general economic literature during the 1950s and 1960s, and burgeoned in the agricultural economic literature during the 1990s. Early approaches, based on the neoclassical theory of the firm, were subsequently discussed and improved.

During the last two decades the literature focused on a number of investment-related topics such as asset fixity and adjustment costs, uncertainty and information, risk and other objectives, household characteristics, on-farm vs. off-farm investment, investment and labour allocation, investment and farm structure, investment and technical change, investment and contracts and investment and credit constraints (Thijssen, 1996; Andersson *et al.*, 2005; Gardebroeck and Oude Lansik, 2004; Elhorst, 1993; Ahituv and Kimhi, 2002; Gardebroeck, 2004; Serra *et al.*, 2004).

Despite the variety of themes and approaches, the present understanding of farm investment behaviour is considered to be, to a large extent, unsatisfactory. The main research gaps include the need for: a) more adequate instruments for ex-ante analysis; b) model adaptation to incorporate empirical information about farm preferences and expectations; c) closer attention to the connection between investment, technical change and learning; and d) a more empirically relevant treatment of the decision maker's (farm household or firm) objectives.

The amount of literature and the-state-of-the-art appear particularly unsatisfactory as far as policy analysis is concerned. Although a few recent studies tackled this issue, focusing to a large extent on decoupling, the analysis of policy impact on investment behaviour still appears to be a particularly challenging task. This may be attributed to the fact that policy scenarios interact with all other (numerous) determinants, particularly whole household/firm management, risk perception, asset liquidity and output prices.

Focusing in particular on decoupling and investment, OECD (2001a, 2005b) policies may produce dynamic effects because:

- investment decisions taken in one period (on the basis of existing policies) continue to affect production in later years as long as production is a function of existing capital stock;
- farmers have expectations concerning government behaviour that influence their decision making; expectations particularly affect investment behaviour, as the results of investment will be determined by the long-term context of the policy.

Hence, the effects of policy on production, where investments are affected, will lag in time and be strongly related to expectations.

In his review of the literature on decoupling, Andersson (2004) identifies at least three potential effects of decoupling:

- a higher propensity to investment due to the relaxing of financial constraints, particularly in the presence of credit restrictions and imperfect credit markets;
- a higher propensity to consumption that may be motivated by greater risk-free earnings;
- a lower propensity to technological innovation because of lower coupled incentives.

The impact of decoupling on investment also largely depends on the degree of imperfection in the credit market (OECD, 2001a, 2005b).

Empirical studies on policy impact of decoupling found a significant investment effect on machinery, buildings and equipment. However, effects of decoupling from the literature appear somehow contradictory. For example, while Sckokai and Moro (2006) predict a reduction of investment by 14%, OECD (2005c) predicts an increase of investments by 22% due to the GRIP program in Manitoba.

3 Survey method

This study is based on a survey of about 250 farm households. Farms were selected in case study areas in Italy, Germany, Poland, Spain, Greece, The Netherlands, France and Hungary.

Data treatment is based on descriptive statistics and the analysis of correlation of the main policy effects with candidate explanatory variables.

The study covers the following combinations of areas, types of farming and farming systems defined ex-ante:

- (i) plain continental regions, (ii) plain Mediterranean regions, (iii) hilly/mountainous continental regions, and (iv) hilly/mountainous Mediterranean regions;

- for each area, the types of farming are: (i) predominantly crop farming systems, (ii) predominantly livestock farming systems, and (iii) predominantly orchard/vineyard/forest (tree) farming systems;
- for each area and types of farming, both conventional and emerging farming systems are considered.

A questionnaire was designed to collect data about the farm and household, their perspectives and intended investment behaviour and their reaction to policy changes. It was also aimed at collecting technical and economic information on production processes. The structure of the questionnaire included the following chapters: location and contact details; farm structure; household structure and labour management; farm activities and production; farm organisation, constraints and connections; policy and decoupling; farm household assets and past investments/disinvestments; vision of the future and expectations; household status and objectives; foreseen farm-household and farm developments; activity-related details.

The section on policy and decoupling collected in particular straight information about the household's reaction to decoupling such as: single farm payment received; use of money from the Single farm payment; other payments received (e.g. axis 1 RDP, etc.); use of money from other payments received; what are or are expected to be the changes in the farm/household as a reaction to the introduction of the single farm payment.

The timing of the survey (second half of 2006) and the different conditions of the areas where the survey was carried out encourage caution in the interpretation of the data collected. In Italy the survey was carried out at the end of the second year after the decoupling occurred and the stated behaviour seems to correspond in most cases to the actual behaviour. This is true at least as far as the effects on farm activities are concerned. Decisions in terms of investments may take longer, but most respondents

gave answers detailed enough to justify the expected reliability. The opposite happened in Poland and Hungary, where the question was submitted in a totally hypothetical way. In such cases, the effect of the decoupled SFP could be more realistically interpreted as the total effect of the CAP support.

4 Case study areas

A summary of the case studies analysed in the study with the number of questionnaires is shown in Table 1.

Table 1 – Summary of case studies and farms surveyed (number of questionnaires)

Technology	Area	Specialisation	DE	ES	FR	GR	HU	IT	NL	PL	Total
Conventional	Mountain	Arable	4				1	6		1	12
		Livestock	5					4		12	21
		Trees	7	2				7		9	25
	Plain	Arable	3	1	6	6	3	14		5	38
		Livestock	5				3	7	6	17	38
		Trees	3	14				11		4	32
Emerging	Mountain	Arable	7				3	7			17
		Livestock	3					6		7	16
		Trees	5					5			10
	Plain	Arable	4				2	6		1	13
		Livestock	4					3	6	3	16
		Trees						6		4	10
Total			50	17	6	12	6	82	12	63	248

Out of 248, 195 farms were surveyed in Italy, Germany and Poland, distributed into 33 case studies. Questionnaires were asymmetrically distributed among conventional and emerging farming systems, with a higher number for the former compared to the latter. Sample composition in Italy, Germany and Poland was designed to cover all the production specialisations that were chosen ex-ante. However, for some of them, namely emerging mountain arable and trees in Poland as well as emerging plain trees in

Germany, it was not possible to identify relevant examples (with the exception of very peculiar cases that were excluded).

Basic sample statistics are given in Table 2.

Table 2 – Sample descriptive statistics

Sample descriptive statistics					
	Minimum	Maximum	Mean	Std. Deviation	% of farms with positive value
Family farms (%)	-	-	83	-	-
Age of farm head (years)	21	82	49	12	98%
Successor (% of yes)	-	-	50%	-	-
Household head labour on farm (hours/year)	0	2200	1895	624	95%
Household head labour off farm (hours/year)	0	2200	151	508	7%
Household labour on farm (hours/year)	0	14400	4246	2826	78%
Household labour off farm (hours/year)	0	8800	1144	1921	28%
Total external labour purchased (hours/year)	0	62496	2475	6365	48%
Owned land (ha)	0	3830	56	249	96%
Land rented in (ha)	0	2954	42	197	64%
Land rented in (% of total farm area)	-	-	32	-	-
Land rented out (ha)	0	13	0	1	4%
Total land (ha)	1.3	4260	98	336	100%
Share of organic products (%)	0	100	28	44	31%
Debt/asset ratio	0	1	0.13	0.22	56%
SFP amount in 2005 (euro/farm)	0	500000	12092	37587	77%
SFP amount in 2006 (euro/farm)	0	160000	9847	18640	74%

The legal status of the farms was normally individual/family farms. The age of the farm head/manager covered a very wide range, though in the majority of cases this was found to be between the mid-forties and mid-fifties, making the sample younger than the national average in most countries. About 50% of the farm heads have a successor to maintain farming.

The average labour availability per household was rather varied across countries. The share of off-farm labour was even more varied across cases. Livestock and fruit farming tend to require greater participation of household labour on the farm.

The farms in the sample were rather large compared with the respective national averages. Renting plays a major role in land availability, particularly for annual crops and livestock. In most case studies, rented land accounted for a share of the farm area equal to or higher than owned land.

The amount of CAP payments received by farms varies substantially across systems (Table 3).

Table 3 – SFP payments received (euro/farm)

Technology	Area	Specialisation	DE	ES	FR	GR	HU	IT	NL	PL
CONVENTIONAL	Mountain	Crop	21798	-	-	11626	-	2508	-	960
		Livestock	23200	-	-	-	-	8631	-	1895
		Orchard/vineyard/forest	1600	7800	-	-	-	-	189	-	421
	Plain	Crop	16500	22000	47298	8595	-	25664	-	11145
		Livestock	48500	-	-	-	-	15357	13983	5573
		Orchard/vineyard/forest	1166	4004	-	-	-	-	281	-	901
EMERGING	Mountain	Crop	36174	-	-	1343	-	4100	-	-
		Livestock	15000	-	-	-	-	2667	-	1231
		Orchard/vineyard/forest	2733	-	-	-	-	0	-	-
	Plain	Crop	26000	-	-	9750	-	5867	-	1131
		Livestock	13933	-	-	-	-	11500	15343	4581
		Orchard/vineyard/forest	-	-	-	-	-	-	198	-

Arable crop systems and livestock receive much higher revenues from CAP payments, both as an average per number of hectares and as a total amount per farm. It is relevant to point out that in some systems the CAP payment does not reach an amount high enough to justify any relevant effects on household/farm decision-making. In Italy, for example, payments are limited to a few hundred euros for tree cultivation and there are never large sums of payment in mountain areas, except for livestock.

5 Results: use of CAP money and effects of decoupling

We first examine the use of CAP payments and the effects of decoupling in detail in Germany, Italy and Poland. In Germany, on-farm use of SFP is widespread, reaching in many circumstances 100% of the SFP received, while off-farm use is almost irrelevant, with a few small exceptions (Table 4).

Table 4 – Stated use of SFP (% of money received) - Germany

			Stated use of SFP					
Technology	Area	Specialisation	On farm current expenditure	On farm investment	Off farm productive current expenditure	Off farm productive investment	Off farm non-productive intermediate consumption	Off farm non-productive durable goods
CONVENTIONAL	Mountain	Crop	0.60	0.00	0.40	0.00	0.00	0.00
		Livestock	0.53	0.00	0.48	0.00	0.00	0.00
		Orchard/vineyard/forest	1.00	0.00	0.00	0.00	0.00	0.00
	Plain	Crop	0.30	0.00	0.70	0.00	0.00	0.00
		Livestock	0.65	0.00	0.23	0.13	0.00	0.00
		Orchard/vineyard/forest	1.00	0.00	0.00	0.00	0.00	0.00
EMERGING	Mountain	Crop	0.33	0.00	0.35	0.20	0.13	0.00
		Livestock	0.40	0.25	0.10	0.25	0.00	0.00
		Orchard/vineyard/forest	0.47	0.10	0.00	0.00	0.43	0.00
	Plain	Crop	0.50	0.00	0.18	0.00	0.25	0.08
		Livestock	0.48	0.00	0.45	0.00	0.08	0.00
		Orchard/vineyard/forest	.	.	.	.	.	.
Average			0.57	0.03	0.26	0.05	0.08	0.01

Among on-farm uses, covering current expenditure is the main use of SFP money. Basically, use for investment mainly occurs for emerging livestock households. Off-farm production activities represent another important destination of money.

The situation is rather different for Italy, where more than 2/3 of the money is used for current expenditure on-farm (Table 5).

Table 5 – Stated use of SFP (% of money received) - Italy

			Stated use of SFP					
Technology	Area	Specialisation	On farm current expenditure	On farm investment	Off farm productive current expenditure	Off farm productive investment	Off farm non-productive intermediate consumption	Off farm non-productive durable goods
CONVENTIONAL	Mountain	Crop	0.88	0.13	0.00	0.00	0.00	0.00
		Livestock	1.00	0.00	0.00	0.00	0.00	0.00
		Orchard/vineyard/forest	1.00	0.00	0.00	0.00	0.00	0.00
	Plain	Crop	0.63	0.23	0.00	0.00	0.07	0.00
		Livestock	0.80	0.20	0.00	0.00	0.00	0.00
		Orchard/vineyard/forest	0.50	0.00	0.50	0.00	0.00	0.00
EMERGING	Mountain	Crop	0.64	0.29	0.00	0.00	0.07	0.00
		Livestock	0.25	0.75	0.00	0.00	0.00	0.00
		Orchard/vineyard/forest	.	.	.	.	.	.
	Plain	Crop	0.63	0.03	0.00	0.00	0.11	0.05
		Livestock	0.67	0.33	0.00	0.00	0.00	0.00
		Orchard/vineyard/forest	1.00	0.00	0.00	0.00	0.00	0.00
Average			0.73	0.18	0.05	0.00	0.02	0.00

The concentration of money use on farm is even higher in Poland (Table 6).

Table 6 – Stated use of SFP (% of money received) - Poland

			Stated use of SFP						
Technology	Area	Specialisation	On farm current expenditure	On farm investment	Off farm productive current expenditure	Off farm productive investment	Off farm non-productive intermediate consumption	Off farm non-productive durable goods	
CONVENTIONAL	Mountain	Crop	1.00	0.00	0.00	0.00	0.00	0.00	
		Livestock	0.57	0.26	0.03	0.07	0.04	0.03	
		Orchard/vineyard/forest	1.00	0.00	0.00	0.00	0.00	0.00	
	Plain	Crop	0.72	0.05	0.00	0.00	0.01	0.02	
		Livestock	0.51	0.32	0.00	0.01	0.13	0.03	
		Orchard/vineyard/forest	0.94	0.06	0.00	0.00	0.00	0.00	
EMERGING	Mountain	Crop	-	-	-	-	-	-	
		Livestock	0.15	0.85	0.00	0.00	0.00	0.00	
		Orchard/vineyard/forest	-	-	-	-	-	-	
	Plain	Crop	1.00	0.00	0.00	0.00	0.00	0.00	
		Livestock	0.70	0.30	0.00	0.00	0.00	0.00	
		Orchard/vineyard/forest	-	-	-	-	-	-	
Average			0.73	0.20	0.00	0.01	0.02	0.01	

Anyway, the use of SFP does not provide direct information about “additional” effects solely due to the policy change. For this reason a further question about the impact of the introduction of the SFP (i.e. decoupling) has been asked. For the majority of respondents in Germany, the shift to SFP has had no relevant effects on farm choices (54% of the total) (Table 7).

Table 7 - Stated effects of SFP (%) –Germany

			Stated effects of SFP									
Technology	Area	Specialisation	Increase investment			Decrease investment			Changes in crop mix	Changes in other activities	None	
			On farm	Off farm productive	Off farm non-productive	On farm	Off farm productive	Off farm non-productive				
CONVENTIONAL	Mountain	Crop	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.00	0.60
		Livestock	0.33	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.50
		Orchard/vineyard/forest	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75
	Plain	Crop	0.33	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.33
		Livestock	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
EMERGING	Mountain	Crop	0.14	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.71
		Livestock	0.00	0.00	0.00	0.20	0.20	0.20	0.00	0.00	0.00	0.40
		Orchard/vineyard/forest	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
	Plain	Crop	0.20	0.00	0.00	0.20	0.00	0.00	0.20	0.00	0.20	0.20
		Livestock	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.75
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average			0.15	0.02	0.00	0.07	0.02	0.09	0.02	0.02	0.54	

This share increases to 78% in Italy (

Table 8).

Table 8 - Stated effects of SFP (%) –Italy

			Stated effects of SFP								
Technology	Area	Specialisation	Increase investment			Decrease investment			Changes in crop mix	Changes in other activities	None
			On farm	Off farm productive	Off farm non-productive	On farm	Off farm productive	Off farm non-productive			
CONVENTIONAL	Mountain	Crop	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
		Livestock	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.50
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
	Plain	Crop	0.12	0.00	0.00	0.00	0.00	0.12	0.24	0.06	0.47
		Livestock	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.18	0.73
EMERGING	Mountain	Crop	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
		Livestock	0.14	0.00	0.00	0.00	0.00	0.43	0.14	0.00	0.29
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
	Plain	Crop	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.83
		Livestock	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.80
Average			0.05	0.00	0.00	0.00	0.00	0.10	0.05	0.02	0.78

The effects are rather different in Poland, where the effect of the SFP is mainly to increase on-farm investment (Table 9).

Table 9 - Stated effects of SFP (%) –Poland

			Stated effects of SFP								
Technology	Area	Specialisation	Increase investment			Decrease investment			Changes in crop mix	Changes in other activities	None
			On farm	Off farm productive	Off farm non-productive	On farm	Off farm productive	Off farm non-productive			
CONVENTIONAL	Mountain	Crop	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Livestock	0.43	0.07	0.00	0.00	0.00	0.00	0.14	0.00	0.36
		Orchard/vineyard/forest	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
	Plain	Crop	0.40	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.40
		Livestock	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
		Orchard/vineyard/forest	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
EMERGING	Mountain	Crop	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Livestock	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Plain	Crop	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
		Livestock	0.50	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.17
		Orchard/vineyard/forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average			0.37	0.02	0.00	0.00	0.00	0.00	0.12	0.00	0.23

This occurs in particular for systems where the absolute values of the payments per farm are lower.

This is consistent with the expectation that farmers are not sensitive to small changes in payments or to changes in the way small payments are related to production.

Among farmers reporting changes, most of the respondents (27%) reported an increase in on-farm investment. This behaviour was concentrated in livestock farms and, to some extent, in trees. It was

more frequent on plains. However, a small cluster of farms (6%) also stated the opposite, by reporting disinvestment. This was more frequent among livestock farms in mountain areas.

About 8% reported a change in crop mix. This group mainly belongs to livestock and crop producers.

Minor changes (which are difficult to interpret) were reported in off-farm activities.

Table 10 illustrates the relationships between the use of SFP and selected variables.

Table 10 – Correlation between the use of SFP and selected explanatory variables*

Variable	On farm current expenditure	On farm investment	Off farm productive current expenditure	Off farm productive investment	Off farm non- productive intermediate consumption	Off farm non- productive durable
SFP amount in 2005				+		
Total external labour purchased	+					
Household head labour on farm				-		-
SFP/revenue		+		+	+	+
Household head labour off farm			+			
Number of production contracts						
Successor						
Age of farm head						
Number of partial workers						
Land rented in % of total farm area		+				
Household labour off farm						
Household labour on farm						
Total land						

* + = positive significant correlation; - = negative significant correlation; no sign = no significant correlation; significance at 5%.

Use for current expenditure was correlated mainly to employment of external labour. On-farm investment was positively correlated to the SFP/revenue ratio and the share of rented land to the total farm area. Use for off-farm current production expenditure was correlated to farm heads labouring off-farm. Off-farm productive investment was positively correlated to SFP amount and the SFP/revenue ratio and negatively correlated to farm heads labouring on-farm. Off-farm non-productive consumption was only correlated to the SFP/revenue ratio, while non-farming and non-productive durable goods

investments were negatively correlated to farm heads labouring on-farm, and positively correlated the SFP/revenue ratio.

These results confirm the consistency of farm responses with most of the literature on investment, particularly: the joint choices of labour and investment directions, the interest of farms in joint residential and labour choices and the importance thresholds of the absolute and relative values of SFP as a prerequisite to any effect on farm choices.

The same kind of exercise is performed in Table 11, where ‘explained variables’ are those related to the stated effect of decoupling.

Table 11 – Relationship between the stated effect of decoupling and selected explanatory variables

Variable	Increase investment			Decrease investment			Changes in crop mix	Changes in other activities	None
	On farm	Off farm productive	Off farm non-productive	On farm	Off farm productive	Off farm non-productive			
SFP amount in 2005	+					+			
Total external labour purchased									
Household head labour on farm SFP/revenue		-							
Household head labour off farm									
Number of production contracts	-								+
Successor	+		+						-
Age of farm head	-								+
Number of partial workers	-								
Land rented in % of total farm area						+		+	
Household labour off farm							+		
Household labour on farm								-	+
Total land	+								

* + = positive significant correlation; - = negative significant correlation; no sign = no significant correlation; significance at 5%.

An increase in on-farm investments is positively associated with SFP amount, successor, and total land, while it is negatively correlated with production contracts, farm head age and part-time working. An increase in off-farm productive investment is negatively correlated with on-farm labour. Increase in off-farm productive investments is negatively correlated with household head labour on farm. These results are consistent with theory, and indicate that larger farms, with younger farmers and a higher

share of labour allocated to farming see decoupling as an opportunity to expand through on-farm investment. The fact that an increase in off-farm non-productive investment is positively correlated with the successor is more difficult to explain, though it may be caused by the fact that households with a successor are more willing to invest in non-farm assets on the farm (typically a new house). Decreases are more difficult to explain, also because the number of positive answers was far lower than to the previous question. Only off-farm non-productive investments are positively correlated to SFP amount and percentage of rent on total available land, which may identify a strategy based on exploitation of farming activity as a source of income to be used for consumption or rent seeking activities outside the farm. Changes in crop mix are positively correlated with total labour off-farm. No changes are positively correlated with production contracts, farm head age or total labour on-farm, but negatively correlated to the availability of a successor. This is consistent with the expectation that there will be no reaction by specialised fruit farmers (typically based on high amount of labour), by farms more strongly constrained by relationships with the other stages of the crop chain (contracts), and by oldest farmers without successor.

The results confirm that the SFP tends to contribute to and is consistent with the general strategy of the farm, i.e. increasing investment in farms that already have a positive attitude to investment and enlargement.

6 Discussion

The results of this work emphasise the diversity of farming systems and the complexity of policy effects on investment. The use of money from SFP is largely diversified, but the larger share is devoted to cover current costs on farm.

In the majority of cases, farmers stated they were indifferent to decoupling. Where any change occurred, the impact of decoupling was highly differentiated. Differences in reaction are better explained by different individual household/farm characteristics, rather than by association with a specific agricultural system. In the more efficient and expansion-oriented farms, decoupling is perceived as an opportunity for investment, while in small, poorer performing farms the introduction of the Single Farm Payment (SFP) is viewed rather as an opportunity for extensification, i.e. shifting to less input intensive production techniques. The results also confirm the role of household-related characteristics in reacting to policy and, in particular, in affecting investment.

These results are consistent with the rationale behind SFP, i.e. to leave economic activities to be driven by market forces. However they also emphasise the need, in the new policy setting, to pay increased attention to the specific interaction between socio-economic factors and economic activities. For a large majority of farms in the EU this means, in particular, studying in more detail the relationship between farm- (rural-) households, agricultural activities and policy change in the context of the wider scenarios of change.

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