Effects of 2013 CAP reform on land market: Regionalized Farm Payments and Changes in Farmers' Intended Behaviour

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INTRODUCTION

Common Agricultural Policy → **Direct Payments**

have recently evolved from production oriented policy to a policy decoupled from production (2003 Fischler reform; 2009 Health Check reform)

SFP: Entitlements system

Entitlement

right to claim a payment

value and number connected to an historical reference period

each must be connected with a hectare of eligible area

- Surface farmed (except vegetables and permanent crops)
- Respect cross compliance (good agricultural-environmental condition)

2013 reform: (regionalized payments)

- From 2015 new rules to determine entitlements numbers and values
- eligibility of all areas in which an agricultural activity is carried out (in 2015)
- harmonization of entitlements value among farms within the same region
- harmonization of payments value across member states: reduction for Italy
- payments given only to active farmers (excluding airports, sports facilities, etc)

Introduction of other measures *(beyond the scope of this study):*
greening, capping, young farmer and small farm schemes and LFA

Literature review

Connection between policy, other context variables and land markets is at the policy debate core

- The agricultural economic literature has highlighted the effects of the CAP on factor markets *(Parsch et al. 1998; Latruffe et al., 2006; Ciaian et al. 2006)*
- The policy context and policy change have been identified as important drivers of structural change *(Floyd, 1965; Harrington and Reinsel, 1995)*

Particularly, several works aim to estimate the effect of policy payments on land value or land rental prices *(Swinnen et al., 2007; Ciaian et al., 2007; Kilian et al., 2008; Latruffe et al., 2009; Viaggi et al., 2010)*

Mathematical programming models *(Viaggi et al., 2011; Galko and Jayet, 2011)*

- To simulate changes on farm size/land use under different price/policy/cost scenarios
  - used to identify changes in land allocation between heterogeneous farm/agents, driven by the change in the marginal value of land

Econometric models *(Deininger et al., 2008; Bougherara and Latruffe, 2010; Bartolini et al., 2011)*

- Regression or choice models
  - used to identify set of variables which explain a specific farm's behaviour in terms of land use /land market assuming different policy scenarios

OBJECTIVES

To contribute to the understanding of relation between the CAP reform and farmers' behaviour

- to investigate the potential impact of regionalized payments on the land market
- to analyse operators' stated intentions to adjust to the policy change in Bologna province
- to identify determinants of intended changes in farm size

METHODOLOGY

Theoretical analysis → Economic model

Theoretical analysis → Graphical analysis

Formulation of hypothesis

Empirical analysis → **Econometrical models** → analyse the determinants of changes in the farmland size in two CAP policy scenarios

Theoretical analysis

Economic model

According to the literature, land demand is affected by:

- the marginal productivity of land
- farmers' subjective characteristics *(risk attitude, life cycle, etc…)*

→ CAP

- These elements allow diversifying preferences with respect to farmed area expansion or reduction
- These preferences are captured by the values of the WTP or WTA *(how much is willing to pay to rent/buy land)*
- WTP or WTA= *f (geographical, household, farm, farmer…|CAP)*

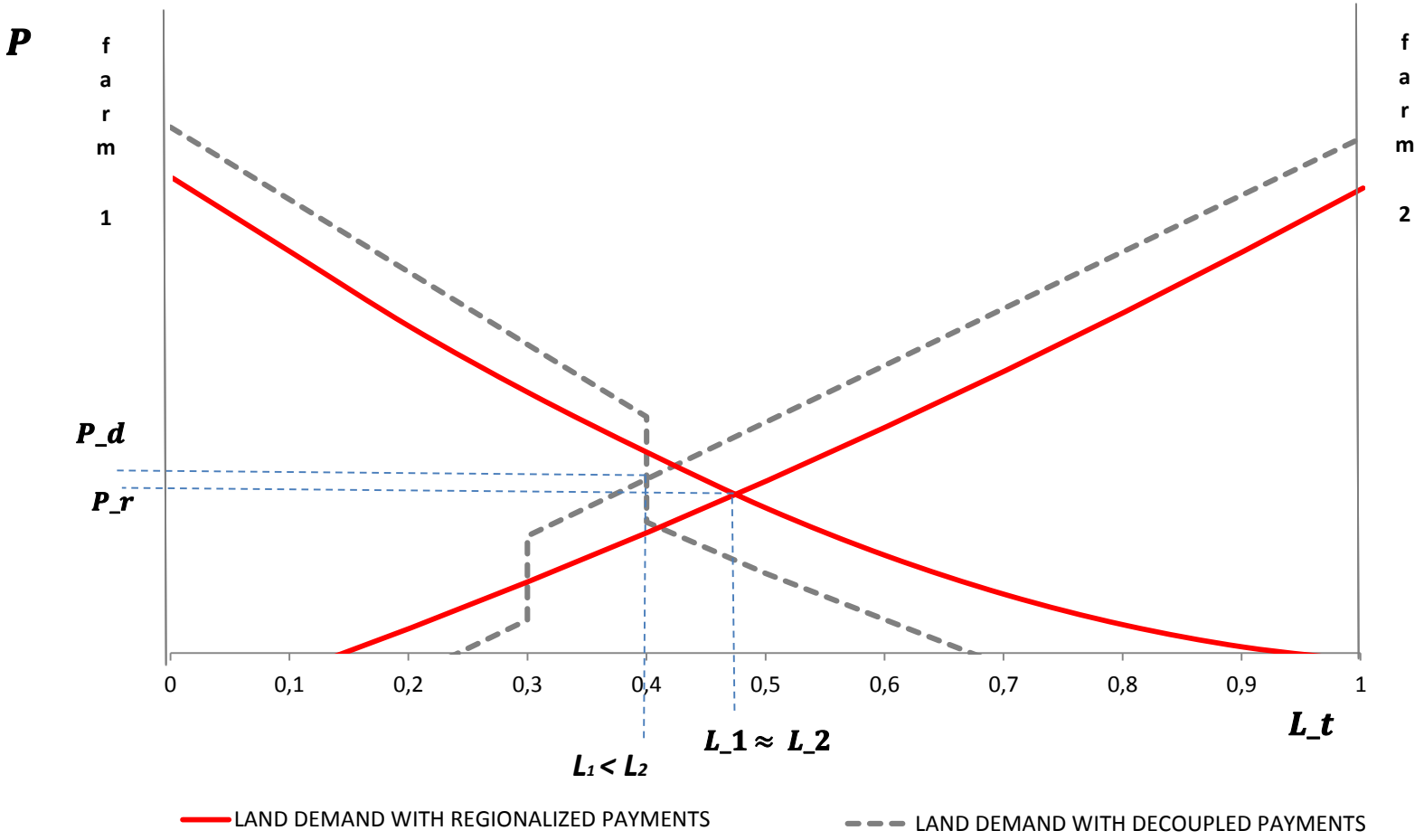
Based on economic theory, it can be assumed that:
Expansion: If WTP to rent-in > cost of rent + tc
Reduction: If WTA to rent-out < rent received - tc
No change: If WTA > rent received, WTP < rent paid

- Hence, decisions on farmed area are driven by the relations between WTP and WTA and the expected land value or rental price

- CAP influence land demand according to how payment systems are implemented

Theoretical analysis

Graphical analysis



Formulation of hypothesis

H1: Decision to change farmland area will be affected by the change in policy

H2: Under the regionalized payments compared to the historical one, farm growth is likely to be higher on farms producing previously no supported crops (fruit, and vegetables)

H3: Under the regionalized payments compared to the historical one, farm growth is likely to be higher on farms located in zone previously supported with a low payment (mountain)

H4: The ratio between amount of entitlements in possession and the eligible area is expected to affect the farmers reaction to the reform

H5: Differences in the determinants of intended changes in farmland size among different policy scenario are expected

Estimation strategy

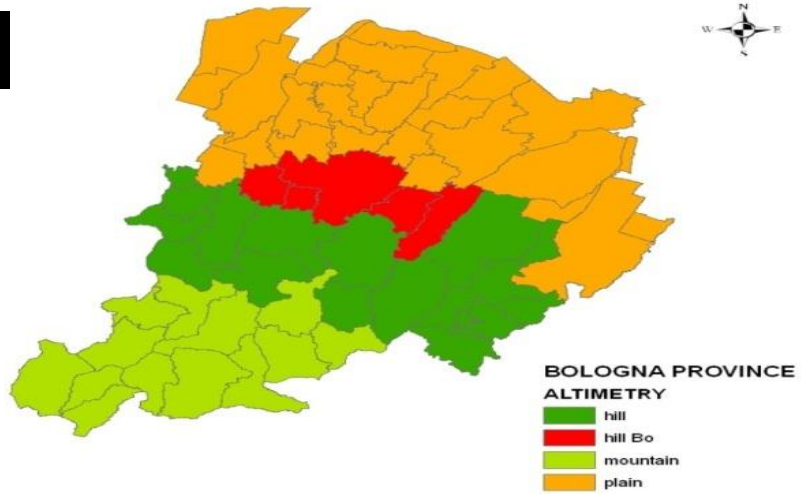
Data collected through a questionnaire (survey)

Analysis of stated intention on changes in land operated in different policy scenarios

Implementation of different econometric models

- To find the determinants of changes in farmland size
- To compare these between policy scenarios

The survey



- **Survey during year 2012**
  - **Telephone interview** *(response rate 23%)*
  - **350 farm households out of 7379 CAP beneficiaries in Bologna province**
  - **proportionally stratified by:**
    - Altitude location (mountain, hill, Bologna hill, plain)
    - amount of CAP payments received in 2011 (below and above the mean)
  - **Info on farm structure, farmer characteristics, payments received and intention about operated land strategy under alternative policy scenarios**
    - Current CAP (baseline)
    - CAP post 2013 scenario (regionalisation)

Stated intention

	Baseline scenario	
	Freq.	%
No change	232	77.85
Increase	31	10.40
Decrease	35	11.74
Total	298	100.00

Number of farmers that would increase or decrease the farmed area under continuance of the current cap next years.

Q. example: Assuming the continuance of the current CAP, what are your intentions regarding the land in property?

	Regionalized scenario *(With respect the baseline)*	
	Freq.	%
No change	228	76.51
Increase more	43	14.43
Decrease more	27	9.06
Total	298	100.00

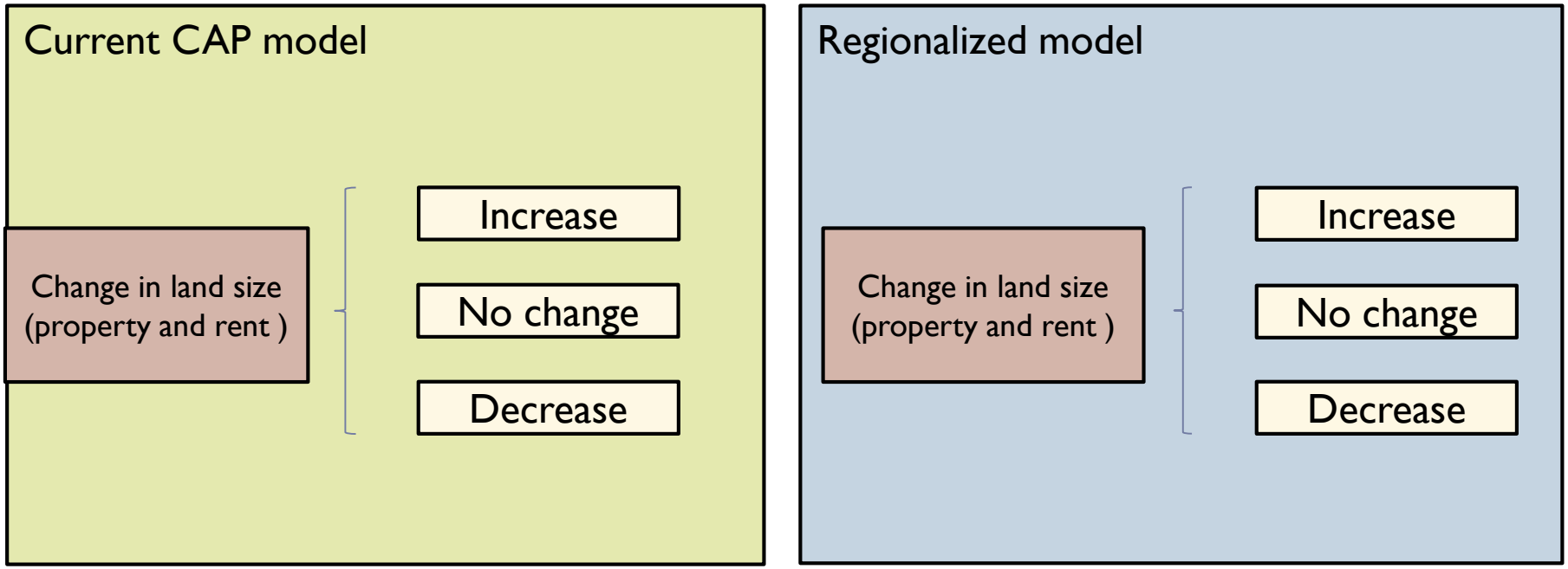
Number of farmers that would increase or decrease more, the farmed area, than in the baseline (comparison inside the question)

Q. example: Assuming the introduction of regionalized payments, your intention is to buy more land than you would make with the current payment system?

Change farmland size assuming all other variables remain constant to 2011 condition.

Models

- Farmers could state intention to: increase/reduce/no-change the farmed area
- The determinants of change in farmed area were estimated using a Multinomial logit model (MNL)
- This model expresses and explains the probability of farm household choices with respect to the farmed area being in a specific category.
- Dependent variables structure:



RESULTS

Category	Var. description	Current Cap	
		Increase	Decrease
Farm characteristics:	Livestock specialization	1.462*	-1.153
	Fruit specialization	0.407	1.134
	Cereals specialization	0.445	0.409
	Farm dimension	-0.022*	0.009
	Land rented in	2.044***	1.960***
	Sales contract ownership	0.966*	-1.103**
	Innovation	1.939***	-2.515**
Household characteristics:	Nº family worker full time	0.336	0.514*
	Nº family worker part time	-0.929	0.641*
	Over 65 in family	-1.678**	0.537
Farmer characteristics:	Age of the farm owner	0.009	0.015
	High education level	1.381**	0.587
	Live at the farm	-2.118***	-0.085
Geographical characteristics:	Farm located in mountain	-1.068	-16.614
Constant:		-3.459*	-4.691**
Observation		284	
Pseudo R2		0.3570	

* significance at 10%: **significance at 5%; *** significance at 1%

RESULTS

Category	Var. description	Regionalized scenario	
		Increase	Decrease
Farm characteristics:	Livestock specialization	0.289	1.753
	Fruit specialization	1.388 *	1.209
	Cereals specialization	0.745	3.179 ***
	Farm dimension	0.002	0.003
	Land rented in	1.900 ***	1.662 ***
	Sales contract ownership	0.353	-0.951
	Innovation	0.274	0.720
Household characteristics:	Nº family worker full time	0.117	0.346
	Nº family worker part time	0.502	0.752 *
	Over 65 in family	0.282	1.211 **
Farmer characteristics:	Age of the farm owner	-0.037 *	-0.004
	High education level	0.049	0.472
	Live at the farm	-0.394	0.472
Geographical characteristics:	Farm located in mountain	2.672 ***	-14.385
Constant:		-1.089	-5.852***
Observation		233	
Pseudo R2		0.2829	

* significance at 10%; **significance at 5%; *** significance at 1%

Hypothesis arising from theoretical analysis has been corroborated by empirical results

- H1) Decisions to change the farmed area have been affected by the change in policy
  - H2-3) Specialization and location are significant to expand farmed area
    - H4) Due to lack of data on entitlements owned we can't verify empirically this hypothesis coming from theoretical analysis
      - ratio between entitlements owned and eligible area before the reform
      - So, particularly for farms with less entitlements than area, the reform can be expected to translate in a higher marginal value of land and hence in an increase in land demand.
    - H5) Differences in the determinants among scenarios have been detected

DISCUSSION

Data collected during the phase of CAP reform negotiation (2012)

- High level of uncertainty that characterizes this phase of the reform
- Farmers' lack of knowledge

More information is needed to better specify the model

- could be included:
  - new policy instrument (Greening, Capping)
  - others variables (entitlements endowment, payments value, distance from the city, credit access)

Measure the impact of DP on land markets is often difficult

- Land prices are influenced by other factors
  - Other types of farm subsidies
  - Agricultural prices
  - Economic situation
  - Local regulations

CONCLUSIONS

- Survey information show a reaction of the land demand to the policy change
- Increase intentions to change in all directions
  - general slight increase of land exchanges: better reallocation and more efficient land market

- Heterogeneous effects at farm level has been detected depending on:
  - Location
  - Specialization
  - Historical system of payments (entitlements vs eligible area, changes in entitlements unitary value)

CONCLUSIONS

Several decisions will be taken at national level during 2014

→ Results suggest to pay attention protecting farmers more negatively affected by the reform

through

- Soft convergence
- Other policy instruments

A careful selection of areas for uniform payments:

- administrative regions
- agrarian regions
- altitude

Future opportunity: repeat the survey when the reform will be implemented and the specific decisions at national level will be taken

Thank you

	Baseline scenario	
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	Regionalized scenario	
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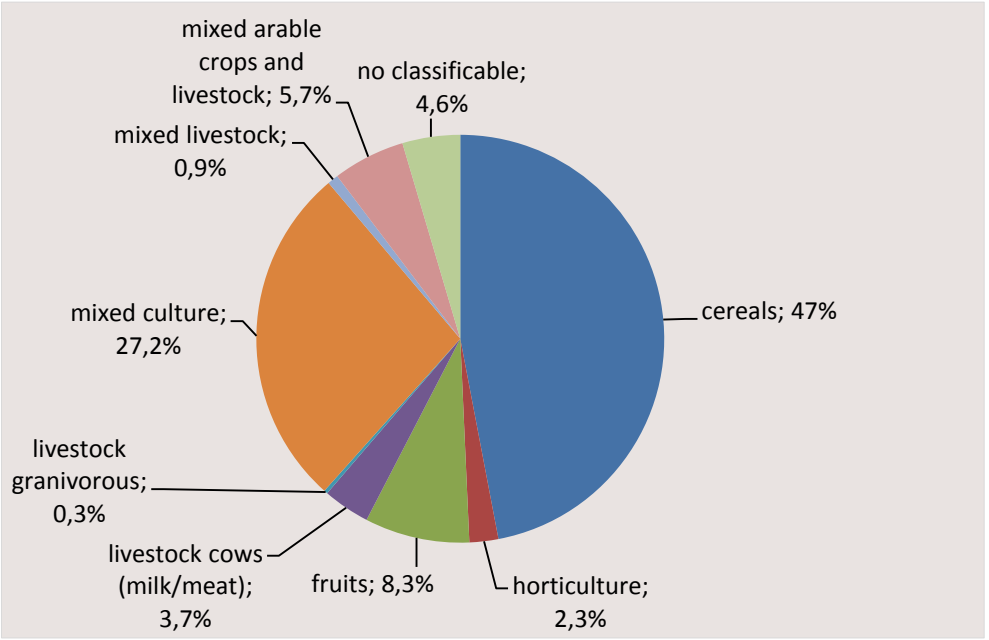
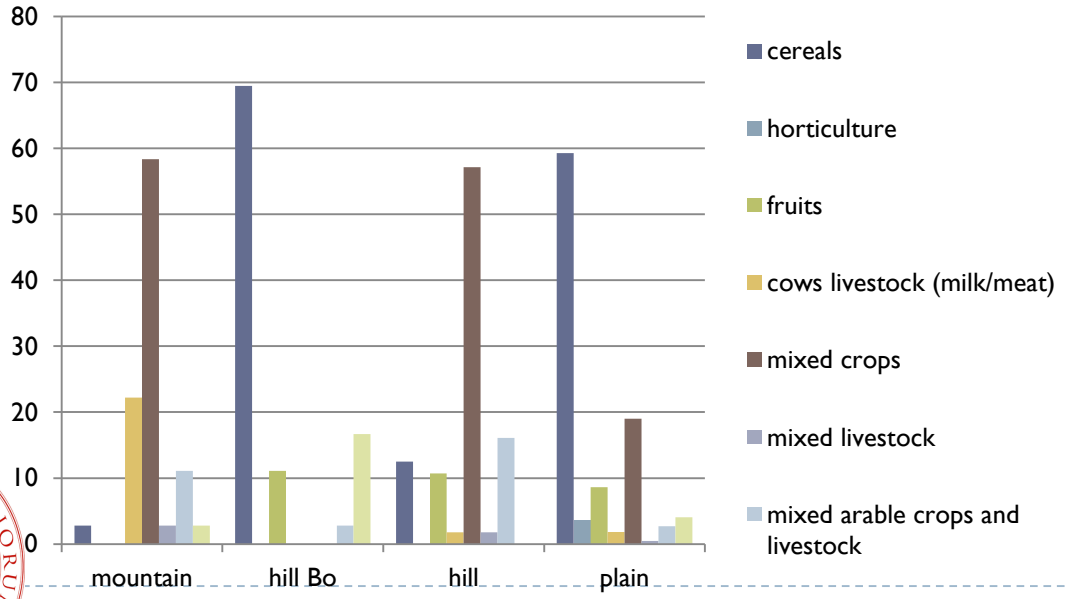
		Regionalized			
		No change	Increase	Decrease	Total
BASELINE	No change	192	28	12	232
	Increase	18	11	2	31
	Decrease	18	4	13	35
	Total	228	43	27	298

Baseline	Regionalized
Out of 232 no change	192 would no change their intentions 28 would like to increase more 12 would like to decrease more
Out of 31 increase	18 would no change their intentions 11 would like to increase more 2 would like to decrease more
Out of 35 decrease	18 would no change their intentions 4 would like to increase more 13 would like to decrease more

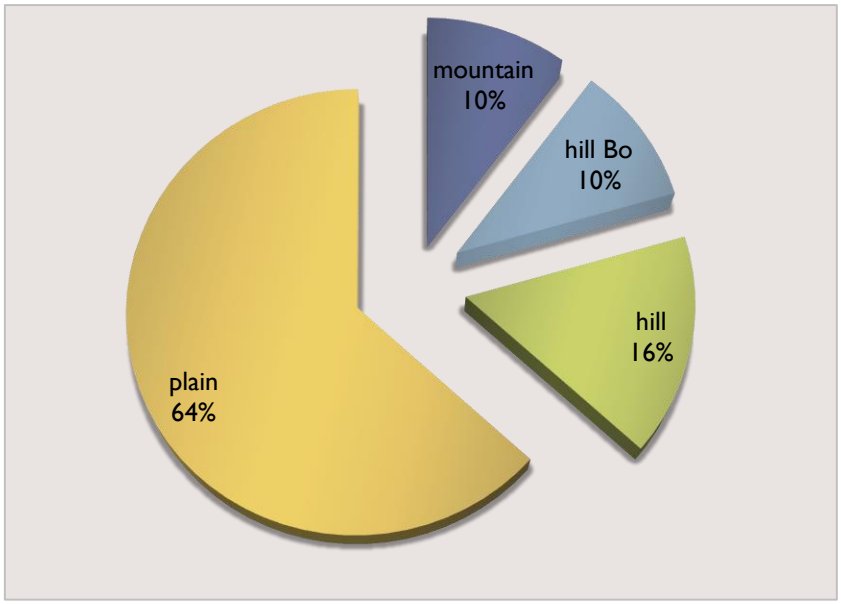
Farms specialization

- Main specialization: Cereals, mixed crops and fruits





Mean of farms specialization by altitude (%)

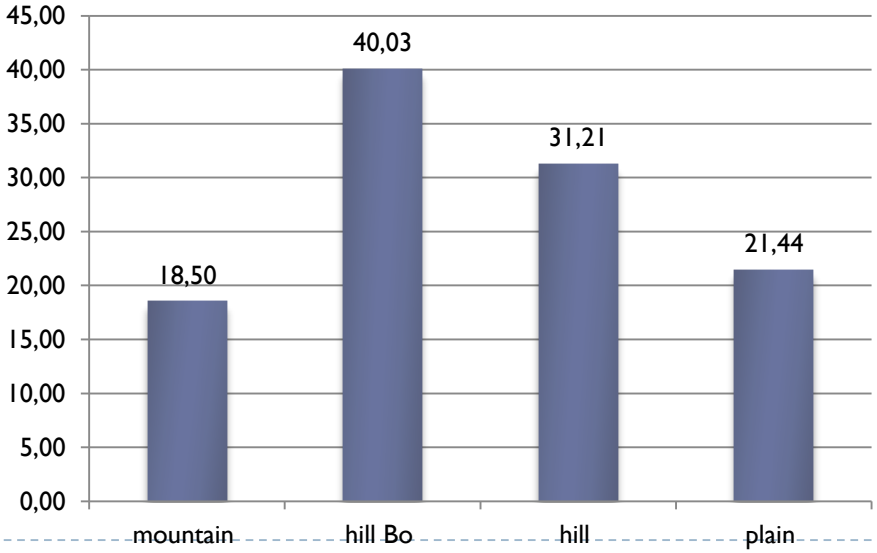


Altitude distribution of sample

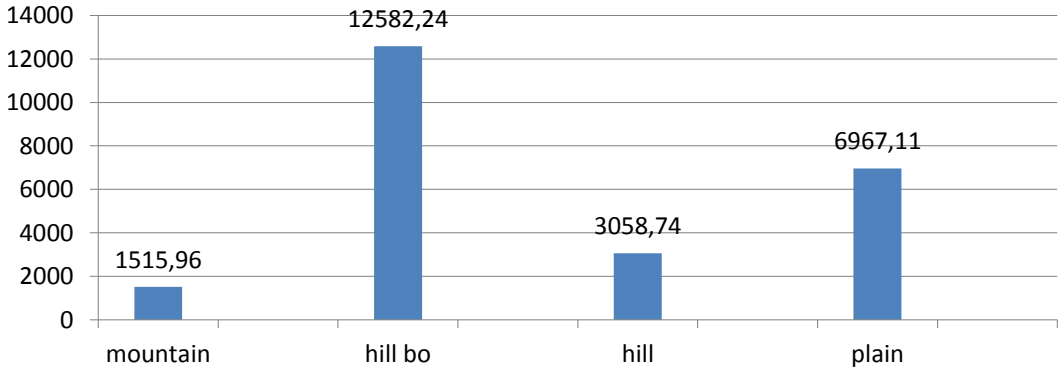
- The 64% of sample is localized in plain

Mean of farmland size (Ha) per altitude

- The biggest farmland size occur in to the hills of Bologna area

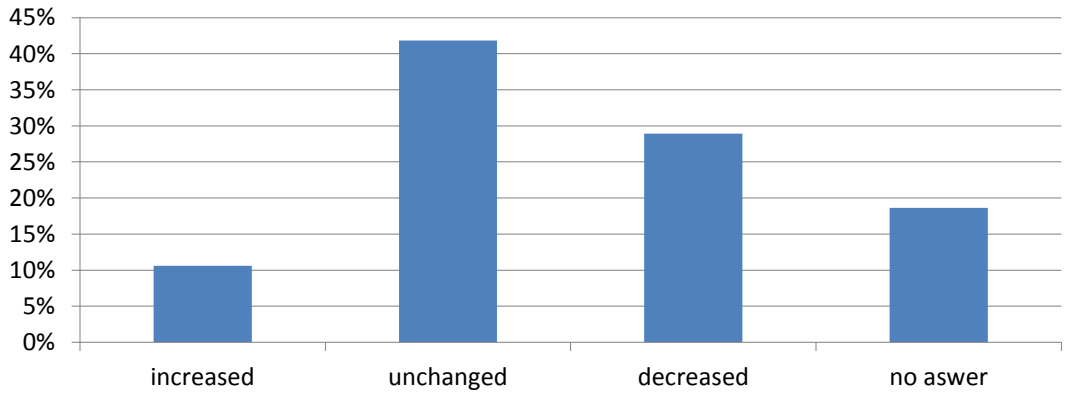


Mean of payments per altitude (€/farm)

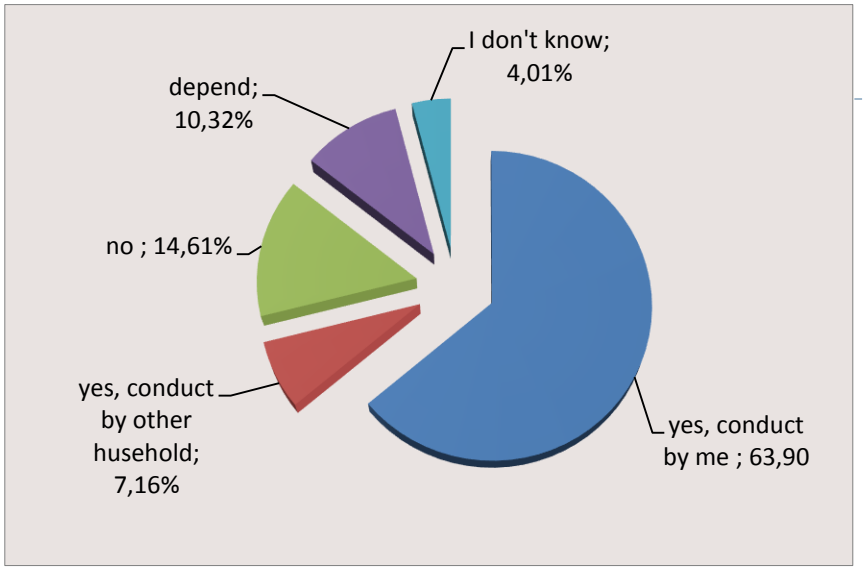


- Hill of Bologna show the highest mean of payments

Payments compared with 2005



About 30% of sample had a decrease of payments



Intention to exit from farming in the next 5 years

- 14.6% of respondents stated intention to exit from farming in the next 5 years

Exit from farming by altitude (%)