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The contractual relationships in the Italian  
Durum Wheat Chain: empirical evidences from  
a survey

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# Background

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- ◆ The product supply to big “pasta” companies is guaranteed not only by major producers, traders and wholesalers, but also by a myriad of small producers on a local scale.
- ◆ Contracts can be used by pasta producers as an alternative to spot market



- ▶ Interviews with relevant pasta producers
- ▶ These pasta producers:
  - ▶ “promote“ the underwriting of cultivation/sale contracts to ensure a supply basin of durum wheat with specific qualities
  - ▶ **but ...**
  - ▶ adopt these instruments only for a percentage of their production (around 10%)

# Objectives

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Analyse the use/effectiveness of these contractual instruments for the durum wheat producers:

- 1) How farms regulate the production and sale of durum wheat
- 2) The reasons why farms choose to underwrite or not a cultivation/sale contract
- 3) The degree of satisfaction of contracts:
  - product quality/innovation
  - income/price stability

# Methodologies

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## ▶ Survey

- ▶ Questionnaire was organized in four sections:
  - i. general information about the farms;
  - ii. their forms of horizontal and vertical organization;
  - iii. relevant contractual aspects about the product;
  - iv. satisfaction/dissatisfaction elements regarding contractual relations with downstream operators.
  
- ▶ ... and submitted to a sample of 261 durum wheat farms belonging to Italian FADN database

## ▶ Logistic model

- ▶ A logistic model was applied to FADN data in order to better understand which factors influence the choice of having (or not) a written contract for durum wheat.

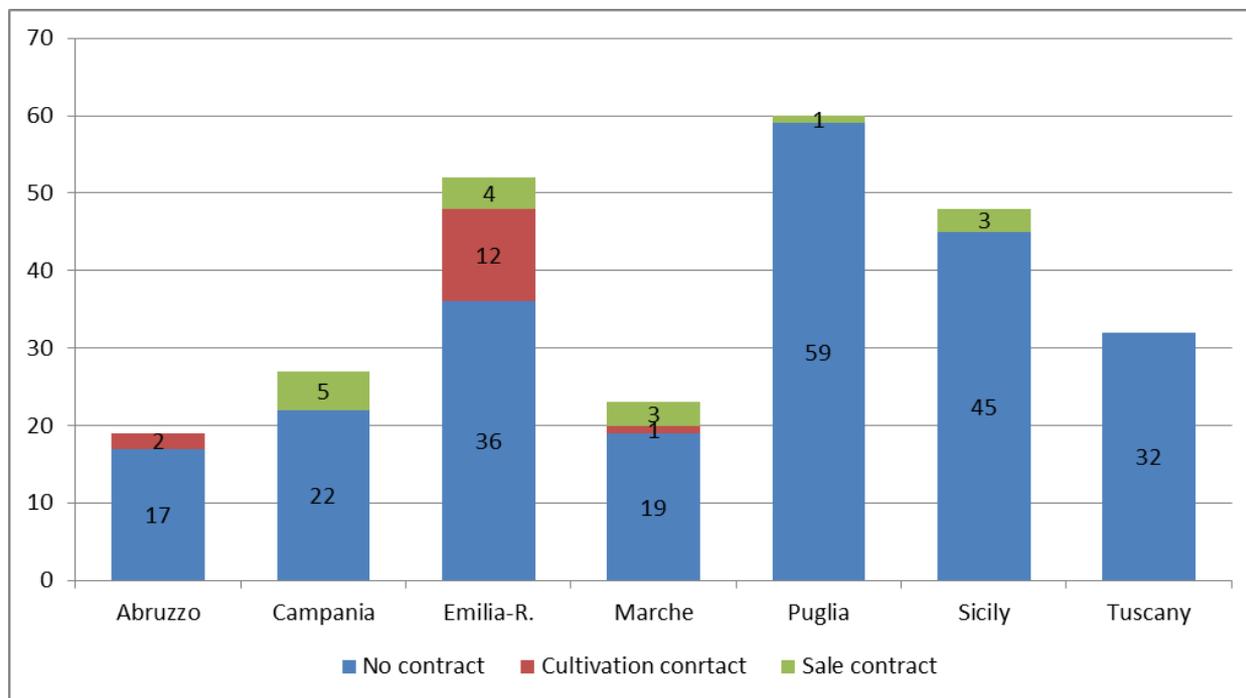
# Durum wheat farms in the survey

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Durum wheat area (ha)	Abruzzo	Campania	Emilia-R.	Marche	Puglia	Sicily	Tuscany	Total
<2	1	3	7		2	2	1	16
5-10	6	9	11	3	11	10	7	57
2-5	2	5	10	4	6	11	1	39
10-30	5	8	16	5	22	18	14	88
30-100	5	2	8	9	17	7	7	55
>100				2	2		2	6
Total	19	27	52	23	60	48	32	261

- ▶ **Wide territorial/dimension coverage of the sample:**
  - ▶ respondents are located in 7 Italian region, which produces more than 75% of the Italian production: Emilia-Romagna, Tuscany, Marche, Abruzzo, Campania, Puglia, Sicily;
  - ▶ farm sizes are between 2 Ha to more than 100 hectares.

# How many farms underwrite contracts?



- ▶ Few farmers underwrite contracts with pasta producers (less than 12% of the analysed sample);
- ▶ equally distributed between sales (16) and cultivation (15) contracts
- ▶ highest concentration in Emilia Romagna

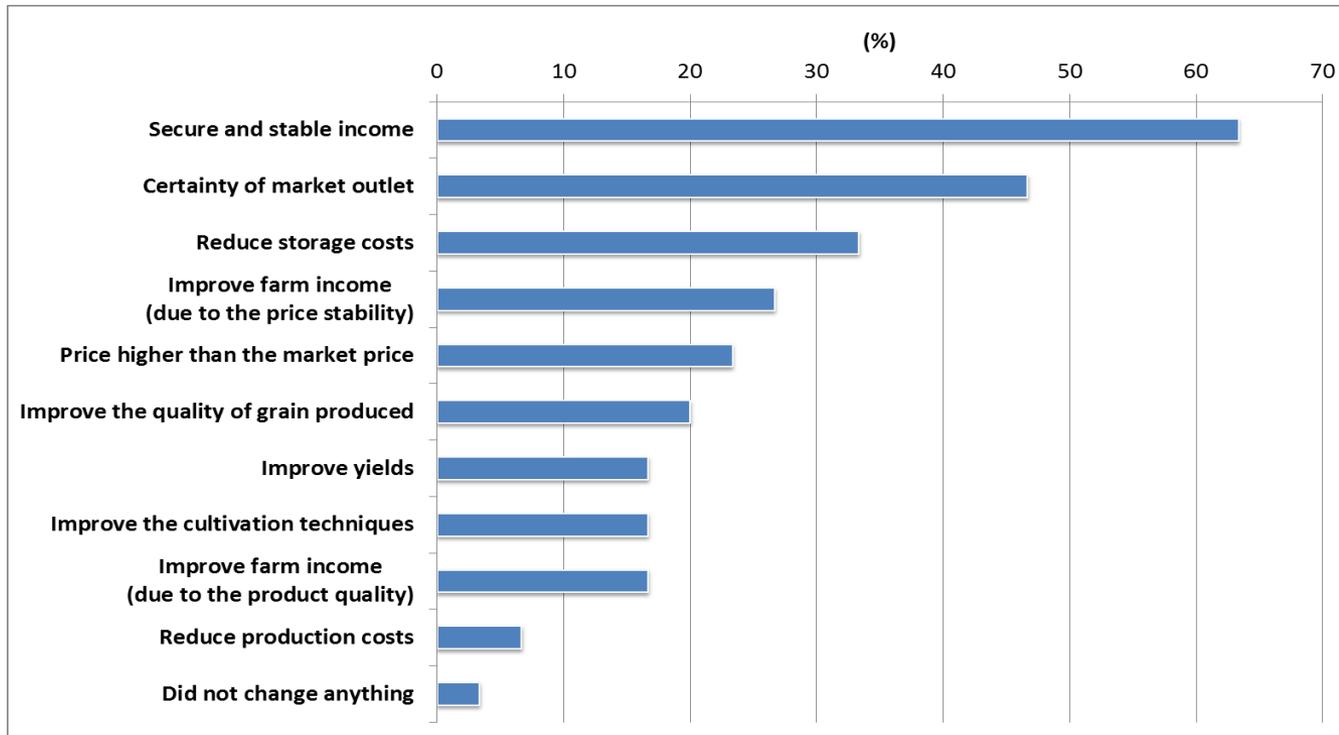


# Why farms do not choose written contracts for cultivation/sale?

Reason	Age			Total
	Less than 40 years	From 40 to 60 years	Over 60 years	
Lack of information	13.0	6.3	8.0	7.7
I do not want constraints	39.1	50.5	49.4	48.9
It is not convenient	13.0	14.4	12.6	13.6
It is risky	0.0	5.4	5.7	5.0
I do not trust	17.4	7.2	13.8	10.9
Other	17.4	16.2	10.3	14.0
<b>Total</b>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

- ▶ For almost half of the farms the main problem is related to the constraints required by the contract.
- ▶ 13.6% of farms have doubts on the effective convenience of a written contract, while nearly 11% say that they “do not trust” the contracts.
- ▶ 7.7% of farms for which the decision “not to adopt a written contract” is related to the lack of information.
- ▶ The age of the holder affects the results:
  - ▶ the incidence of lack of information is higher in the youngest group while the risk is not considered as a major problem
  - ▶ For the over 40’s “I do not want constraints” is the main answer for more than half of the farmers

# Benefits of choosing written contracts for cultivation/sale



## Benefits for almost all farms

- ▶ Major benefits linked to income/price stability and market outlet
- ▶ Lower benefits to the improvement of quality and to cultivation techniques
- ▶ Benefits to the costs are mainly related to the storage phase and not to the production activity

# Assessment of the effectiveness of written contracts for cultivation/sale

The contract has allowed:	Strongly Disagree	Somewhat Disagree	Indifferent	Somewhat Agree	Strongly Agree
Increased productivity	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 11	<input type="checkbox"/> 9	<input type="checkbox"/> 3
Improved coordination with buyers	<input type="checkbox"/> 4	<input type="checkbox"/> 1	<input type="checkbox"/> 7	<input type="checkbox"/> 14	<input type="checkbox"/> 5
Improved investment and/or access to credit	<input type="checkbox"/> 13	<input type="checkbox"/> 3	<input type="checkbox"/> 15		
Improved the planning of activities	<input type="checkbox"/> 8	<input type="checkbox"/> 2	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 1
Provision of technical assistance/support	<input type="checkbox"/> 3	<input type="checkbox"/> 6	<input type="checkbox"/> 13	<input type="checkbox"/> 8	<input type="checkbox"/> 1
Provision to access new technologies	<input type="checkbox"/> 8	<input type="checkbox"/> 3	<input type="checkbox"/> 15	<input type="checkbox"/> 4	<input type="checkbox"/> 1
Reduction of the risks of price volatility	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 6	<input type="checkbox"/> 14	<input type="checkbox"/> 4
Reduction of the risk of sale		<input type="checkbox"/> 1	<input type="checkbox"/> 3	<input type="checkbox"/> 18	<input type="checkbox"/> 9

- ▶ The most important aspect in choosing a written contract is the risk reduction, of both price volatility and sale
- ▶ On the contrary, no/few farms consider the written contract valuable in facilitating access to credit or new technologies

# Degree of satisfaction of written contracts for cultivation/sale

Degree of satisfaction:	Not at all satisfied	Not very satisfied	Indifferent	Fairly satisfied	Very satisfied
Adequate production costs coverage	4	2	15	9	1
Price received		6	7	13	5
Reward provided for product quality	7	2	14	6	2
Earned income	1	4	8	17	1
Clear and transparent rules		7	6	12	6
Payment times		3	2	16	10
Adequacy of the contract	2	2	8	18	1

Overall positive judgment. High satisfaction for the adequacy of the contract.

- ▶ Highest satisfaction for the times of payment...
- ▶ ...but most farms consider also transparency rules and production remuneration more than adequate.
- ▶ Lower satisfaction for rewards linked to the quality of production

# Logistic model: factors associated with the choice of adopting a written contract

- ▶ Logistic regression aimed at predicting and exploring a binary dependent variable, with the relative impact of each predictor/independent variable.
- ▶ Dependent variable: underwriting / or not a contract
- ▶ Independent variables collected from survey and FADN

Independent variables	Categories
Holder's age	Less/more than 60 years
Holder's education	Graduated/not graduated
Holder's gender	Male/female
Legal status	Sole trader/others
Management	Family run/others
Economic size (Standard Output)	Less/more than € 500,000
Organic farm	Yes/no
Durum wheat specialisation	Percentage of area with durum wheat
Other activities	Yes/no
Propensity to innovate	Innovation/no innovation in production and management in the last 2 years

# Logistic model: results

- ▶ Backward stepwise elimination was used in the logistic regression to select significant variables

<b>Selected variables</b>	<b>B coefficient</b>	<b>Exp(B) Odds ratio</b>
Economic size*	1.54	4.68
Education**	1.08	2.94
Management*	1.16	3.19
Propensity to innovate*	1.02	2.78

Significant at the \*.05 level, \*\*.10 level.

- ▶ Relevant factors associated with the increasing the odds of adopting written contracts:
  - ▶ Economic farm size (farms over € 500,000 are 4.7 times more likely to regulate their cultivation/sale relations through written contractual instruments)
  - ▶ Higher level of education
  - ▶ Non-family run farms are more likely to use contracts
  - ▶ Higher dynamism and propensity in innovation (product and management)

# Final remarks

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- ▶ The farmers seem to have no interest in written cultivation/sale contracts (in the survey only 12% of the sample)
- ▶ In most cases, they do not want constraints and do not have confidence in this type of instrument
- ▶ They prefer to sell to local buyers (usually private dealers) with whom they establish a long standing relationship
- ▶ Written contracts are related to economic size, non-family run, level of education and propensity in innovation
- ▶ For the farms that choose written contracts: overall positive judgment on the adequacy of the contract (also for transparency and production remuneration)
- ▶ Benefits mainly linked to income/price stability and market outlet; lower benefits for improvement of quality and cultivation techniques