ESTIMATIVA DA IMPORTÂNCIA DAS AJUDAS PÚBLICAS AO GADO OVINO EUROPEU

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Resumo

Apesar do fato de que a criação de ovinos contribui muito pouco para o PIB europeu, a política agrícola da UE defende um importante programa de subsídios públicos destinado a sustentar esta atividade económica. Este artigo analisa a importância dos subsídios públicos para a manutenção do rendimento na criação de ovinos em oito países europeus. Os nossos resultados mostram que, na UE como um todo, tais subsídios representam quase 100% do lucro unitário das explorações e este número é ainda maior em alguns dos países estudados. A importância do sector dos ovinos para o desenvolvimento rural, especialmente em áreas menos favorecidas, e a sua natureza multifuncional nos domínios ambiental, cultural e paisagístico justificam a existência desses mecanismos.

Palavras-chave: Gado ovino; Política Agrícola Europeia; Subsídios públicos

ESTIMATING THE IMPORTANCE OF SUBSIDIES IN EUROPEAN SHEEP FARMING

Abstract

Despite the fact that sheep farming contributes very little to European GDP, EU agricultural policy upholds an important public subsidy

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programme aimed at sustaining this economic activity. This paper analyses the importance of public subsidies in maintaining the income of sheep farming in eight European countries. Our results show that in the EU as whole, such subsidies represent nearly 100% of unitary income and this figure is even higher in certain countries. The importance of sheep sector for the rural development, especially in less favoured areas, and its multifunctional nature in environmental, cultural and landscape questions justify the existence of these mechanisms.

Keywords: Sheep farming; European Agricultural Policy; Public subsidies

Introduction

Sheep farming is one of the essential activities in many European rural zones. The society expects the sector to continue fulfilling demand for cheap, fast and innocuous sheep products while providing good food safety conditions. Moreover, it is expected that this should be carried out in a sustainable way for the environment, controlling the occurrence and consequences of animal diseases and generating rural development opportunities. Despite contributing only a small amount to European GDP, EU agricultural policy upholds an important public subsidy programme aimed at sustaining this economic activity for several of these reasons.

This research aims to analyse the importance of public subsidies in maintaining the income of sheep farming. The analysis focuses in the eight countries: United Kingdom, Spain, France, Greece, Hungary, Bulgaria, Poland and Estonia. We have chosen an heterogeneous sample of countries that illustrates diverse situations and includes the largest sheep farming producers, namely the United Kingdom, Spain, France and Greece, medium sheep farming producers, namely Bulgaria and Hungary and small producers, namely Poland and Estonia.

The structure of the article is the following. In the first place, the paper provides the context to understand how important the sheep farming economy is in Europe. In the second place, we analyse the relative impact of subsidies on production. In the third place, we calculate the effect that subsidies have on income. Finally, the paper ends with a section devoted to conclusions.

The Importance of Sheep Farming Economy

We may interpret the economic importance of a sector in two ways. The first valuation refers only the production or income generated in the sector. A second more integrated approach should take into account other elements: on one side, the economy of a sector also depends on its integration into other productive activities and, on the other, its contribution to economic development in terms of social and environmental impact has to be considered.

We first can evaluate the economic importance of sheep farming from a macroeconomic point of view. Its scope is somewhat reduced and only makes up a small part of agrarian income and employment. Firstly, the total livestock sector of the European Union-27 (EU-27) makes up 41.4% of agrarian production, only being 1.2% of total Gross Domestic Product (GDP). While the sheep and goat sector

makes up only 4% of European livestock production (table 1). Looking beyond these global figures, within our group of countries, only Greece, Bulgaria, Spain and United Kingdom have sheep and goat farming sectors whose relevance within the livestock farming sector is relatively important, with percentages of 27%, 13%, 11% and 9%, respectively.

Table 1: Livestock sector economic output

	Livestock production on (%):		**Share of livestock production (%)**						
	Agrarian Output	**GDP**	**Milk**	**Egg**	**Beef**	**Pig meat**	**Sheep and goat**	**Poultry meat**	**Other**
BG	41.4	4.4	39	9	9	13	13	14	4
EE	48.2	2.0	55	3	8	22	1	6	6
GR	27.9	1.3	37	5	8	9	27	5	9
ES	36.6	1.4	19	6	15	33	11	13	2
FR	36.4	1.2	31	4	34	12	3	13	3
HU	35.4	2.3	22	9	5	28	2	27	7
PL	45.5	2.9	35	8	10	28	0	17	2
UK	56.8	0.6	33	5	26	9	9	14	3
EU27	41.4	1.2	34	5	20	21	4	11	5

BG: Bulgaria, EE: Estonia, GR: Greece, ES: Spain, FR: France, HU: Hungary, PL: Poland, UK: United Kingdom, EU27: European Union-27. Data are for 2007.
Source: Leip et al. (2010).

In any case, the relative importance of this sub-sector on general agrarian output is limited, the average of the EU-27 being 1.66%. Once again, only Greece, Bulgaria, United Kingdom and Spain show higher values: 7.53%, 5.38%, 5.11% and 4.03% (table 2). Logically, their importance in terms of GDP contribution is limited, being 0.05 the European average.

Table 2: Sheep and goat sector economic output

	Sheep and goat sector on (%):		
	GDP	**Agrarian output**	**Livestock output**
BG	0.57	5.38	13
EE	0.02	0.48	1
GR	0.35	7.53	27
ES	0.15	4.03	11
FR	0.04	1.09	3
HU	0.05	0.71	2
PL	0.00	0.00	0
UK	0.05	5.11	9
EU27	0.05	1.66	4

BG: Bulgaria, EE: Estonia, GR: Greece, ES: Spain, FR: France, HU: Hungary, PL: Poland, UK: United Kingdom, EU27: European Union-27. Data are for 2007
Source: Leip et al. (2010) and own calculations.

The population employed in the sheep farming sector is also very limited. According to Eurostat data referring to "sheep, goats and other grazing livestock", the countries that employ most workforce within the selected countries are Poland (407,740 persons), United Kingdom (169,400), Spain (137,740) and France (101,430). Then come Bulgaria (82,560) and Greece (81,780), and in Hungary (29,870) and Estonia (9,170) there are very few workers active in this sector (Eurostat, 2013).

Production in the sheep and goat farming sector has been experiencing a reduction of activity in the last few years, specifically since the present international economic crisis began (De Arriba; Sánchez-Andrés, 2014). Measured in euro, production has fallen sharply from 6,181 millions of euro in 2005 to 5,136 millions of euro in 2012 in the EU. All the countries in our study show the same tendency with more or less intensity. Table 3 also shows the value of sheep and goat production between 2005 and 2012. In this case, we can also observe a sharp fall in the activity of the sector in the EU, shown even before the present economic crisis; only Estonia and Poland are free from this trend.

Table 3: Sheep and goats: production in tonnes (1) and value at basic prices (2)

	2012		2011		2009		2005	
	Tn	euro	Tn	euro	Tn	euro	Tn	euro
Bulgaria	n.a	117	58.8	107	68.8	107	95.4	161
Estonia	n.a	2	1.0	1	1.0	1	1.0	1
France	n.a	669	112.7	706	108.5	654	129.1	862
Greece	n.a	605	151.7	662	155.8	696	163.6	948
Hungary	n.a	57	20.0	51	19.0	48	22.0	54
Poland	n.a	11	4.2	5	3.2	3	6.6	9
Spain	n.a	724	463.8	760	345.1	892	534.5	1,798
UK	n.a	1,881	401.0	1,958	314.0	1,547	336.0	1,166
Eu-27	n.a	5,136	1,607.3	5,311	1,382.6	4,935	1308.0	6,181

(1) in 1,000 tonnes. (2) in millions of euro (base 2005).
Source: Eurostat (2013).

In any case, the incomes generated from these activities are in general low compared with those of other agricultural sectors. The fact that the industry has limited capacity to generate sufficient income to sustain the activity makes public subsidies through Common Agricultural Policy (CAP) vital for the future of sheep farming.

However the importance of the sector is greater if we take into account that this is closely related to other economic activities to which it provides other inputs, such as the food industry, rural tourism, handwork or textile industries, and also with others which need other intermediate goods, such as fodder, veterinary services, etc.

As well as a purely macroeconomic evaluation, sheep farming also makes important contributions to the development of the rural environment through its social and environmental impact. Taking the social dimension, we should take into account that sheep farming may be (nearly) the only activity that the inhabitants in the rural zones can be used for (especially in isolated and less favoured zones), thus they represent the opportunity for income where no other is possible (OECD, 2001). Moreover, it contributes to population stability in areas seriously threatened by depopulation and abandonment.

Often, this activity is concentrated in areas of scarce vegetation, irregular rainfall, hot dry summer and hard winters (Sierra, 2002). Sheep farming is able to take advantage of these low quality spaces and resources, which cannot compete with others, or may even be abandoned by economic activity. This type of livestock farming develops flexible systems of farming, capable of making use of

low quality forage and pastures. Bearing in mind all these factors, the mainly extensive nature of sheep farming and its ability to make sustainable use of the habitats that occupies make an important contribution to rural development from an environmental point of view (De Ripoll et al., 2012).

The relationship between small ruminants and the environment is especially important for a number of reasons. In first place, they adapt to dry infertile zones. These species have low water consumption needs, consume woody undergrowth (especially goats) and their small mouth permits them to feed on small plants (De Rancourt et al., 2006). Secondly, they play an impotent role in the conservation of poor land. In third place, they make a multifunctional contribution to rural development, which is especially important in poorer areas (for example, conservation of landscapes, tourist services, fire prevention and hunting).

Subsidies on production

Direct payments have been one of the main support instruments to the agricultural sector in the EU. In budget year 2009, direct payments amounted to 39 billion euro, which is 84% of the European Agricultural Guarantee Fund expenditure for that year (European Commission, 2011). With the 1992 reform, they were introduced as coupled payments, linked to production based on the area or animals, compensating farmers for cuts in price support. From 2003, direct payments were gradually decoupled from farmers' production decisions.

Besides its role as income support for farmers (European Commission, 2013), direct payments play an important role in the delivery of public goods due to the link between direct payments and the fulfilment of cross compliance requirements (basic rules related to environment, health and animal welfare). These public goods are mostly environmental and relate for example to maintaining agricultural landscapes, farm-land biodiversity, water availability, soil functionality, climate stability and air quality. Direct payments also contribute to different public goods such as rural vitality. Galanopoulos et al. (2011) state that several small sheep and goat farms located especially in disadvantaged areas rely on such grants as a significant part of their total earnings. In any case, the maintenance of this activity in these areas is an important objective of the European rural development policy (Bertaglia et al., 2007).

The income support function of direct payments is particularly important given the relatively low level of income in the agricultural sector, which on average remains below 50% of the average salary in the total economy in the EU-27. Information found in Agriculture Statistics (Eurostat) makes reference to subsidies on production. The reform of the common agricultural policy in 2003 introduced a de-coupling process of agrarian subsidies in order to separate payments from production levels. Some countries de-coupled 100% of the payments from 2005 like the UK (Greece did it in 2006). Others decided to de-couple only 50% of the grants for 2006, like Spain and France. The more recent members, like Bulgaria, Estonia, Poland and Hungary, enjoy a simplified system of grants already separated from production levels.

Table 4: Subsidies on products: Sheep and goats sector (current prices; Millions Euro)

		2004	2005	2006	2007	2010	2011	2012
EU27	Subsidies on products	1,510.9	834.4	345.7	200.7	199.2	187.4	178.0
	Production, producer price	5,340.2	5,387.4	5,278.9	4,774.9	4,863.3	5,406.2	5,419.7
BG	Subsidies on products	0.0	0.0	0.0	7.5	8.8	10.4	18.0
	Production, producer price	172.6	161.2	151.7	137.4	113.4	142.9	150.6
EE	Subsidies on products	0.3	0.4	0.4	0.5	0.4	0.5	0.6
	Production, producer price	1.3	1.3	2.1	2.5	2.5	2.0	2.7
GR	Subsidies on products	187.3	179.1	12.0	0.0	0.0	0.0	0.0
	Production, producer price	707.8	790.6	817.4	703.9	773.2	767.5	698.0
ES	Subsidies on products	395.2	361.6	168.6	0.0	7.0	7.0	0.0
	Production, producer price	1,292.7	1,436.7	1,286.0	851.0	791.3	842.9	810.7
FR	Subsidies on products	174.9	170.4	77.6	124.2	124.2	122.9	120.0
	Production, producer price	676.5	692.5	691.2	633.2	636.5	660.1	634.2
HU	Subsidies on products	7.8	7.5	7.2	9.7	9.7	8.3	7.8
	Production, producer price	45.2	47.4	43.6	40.9	40.9	48.7	55.7
PL	Subsidies on products	0.0	0.0	0.0	11.3	1.4	1.5	1.0
	Production, producer price	7.0	9.7	7.8	3.1	5.0	5.1	12.0
UK	Subsidies on products	386.0	0.0	0.0	0.0	0.0	0.0	0.0
	Production, producer price	1,239.4	1,166.2	1,253.9	1,385.9	1,485.6	1,787.8	1,882.4

Source: Eurostat (2013)

This is why data from the table 4 show a steep reduction in subsidies on products from 2005 an 2006 on. Nevertheless, this doesn't mean that payments to the sheep farming sector has been reduced, but a part of the payments for production have been converted into single payments unconnected to production, established according to the subsidies received historically. In 2004 subsidies on products were 1,510 million for the whole of the EU-27, while in 2012 only 178 million was recorded. Until 2004, these subsidies represented between 25% and 30% of the value of total production of all the EU-27 countries, as well as of the United Kingdom, Spain, France and Greece production.

Subsidies and incomes

However, that information does not allow us to obtain an accurate picture of the current situation. Using data from Farm Accountancy Data Network (FADN), Agrosynergie (2011) has calculated the impact of grants on incomes. Here we must state that the information given refers to farms dedicated to "Other grazing livestock". This group excludes "Specialist dairying" ("Milk" and "Milk and cattle rearing") but includes "Specialist cattle-rearing and fattening", "Cattle-dairying, rearing and fattening combined" and "Sheep, goats and other grazing livestock". Thus, the data is not representative of the situation found only on sheep and goat farms. In any case, this information may offer us an approximate image of the importance of the direct payments to this type of farms.

Using the data from Agrosynergie, we have calculated the average share of direct payments on farm value added (table 5). The average level is 27%, although this needs to be seen against the background of important variations in agricultural income across Member States, regions and sectors. In the case of grazing livestock specialist farms the importance is the biggest: almost 50%.

Table 5: FNVA/AWU, with and without direct payments: average 2004-2007 (1)

	With direct payments	Without direct payments	Direct payments on FNVA/AWU
Field crops	23,351	12,991	44,4 %
Horticulture	22,630	22,073	2,5 %
Other permanent crops	19,298	17,474	9,5 %
Milk	23,311	16,180	30,6 %
Other grazing livestock	19,160	9,632	49,7 %
Granivores	25,475	21,576	15,3 %
Mixed farms	17,999	10,433	42,0 %
Average	21,604	15,765	27,0 %

(1) Farm Net Value Added per Agricultural Work Unit. Value in PPS.
Source: Agrosynergie (2011) and own calculations

Last data from the FADN offer information as to the group of subsidies on current operations linked to production until 2009. The information for the subgroup "Specialist sheep and goats farms" may be found in the table 6. Throughout the last decade the subsidies

received by this type of farms have grown, not only in the EU-27 group as a whole, but also in our group of counties. The average amount received by European farms reached 17,336 euros in 2009, although British, French and Hungarian farms received higher amounts (54,499, 28,365 and 22,707 euro respectively).

Table 6: Total subsidies (excluding on investments): Specialist sheep and goats farms

	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
BG	-	-	-	-	-	-	865	2,179	-
EE	-	-	-	-	-	-	12,130	13,635	12,260
GR	4,678	6,235	6,840	7,107	7,211	9,089	8,210	9,310	9,129
ES	8,379	12,871	11,852	13,192	12,408	11,599	13,973	15,252	15,421
FR	20,642	24,344	26,574	26,987	27,832	28,890	25,989	27,633	28,365
HU	-	-	-	10,489	14,763	13,201	20,039	22,136	22,707
PL	-	-	-	1,371	1,495	4,831	3,762	9,687	8,305
UK	42,224	53,657	51,146	50,951	53,767	53,286	56,350	52,062	54,499
EU27	13,025	15,663	15,207	15,627	16,093	16,438	11,945	13,335	17,336

Source: FADN (2013)

In order to judge the importance of these payments, it is useful to compare them with unitary income, in this case with the Farm Net Value Added per AWU (that is, the remuneration to the fixed factors of production per agricultural work unit). The tables 7 and 8 provide this information. Taking data for 2009, last available, for the EU countries these subsidies represent nearly 100% of the unitary income. In Spain and Greece the ratio is lower, 55% and 62%, respectively. But in the rest of the countries this is even higher and varies between 165% in United Kingdom and 236% in Poland.

Table 7: Farm Net Value Added/AWU: Specialist sheep and goats

	2001	2002	2003	2004	2005	2006	2007	2008	2009
BG	-	-	-	-	-	-	2,072	2,189	-
EE	-	-	-	-	-	-	6,449	8,418	6,863
GR	9,859	10,701	10,856	11,862	12,826	14,269	13,031	12,926	14,522
ES	23,721	28,651	28,344	28,906	31,915	27,779	31,905	28,361	27,964
FR	16,087	17,871	15,624	15,241	15,816	17,392	16,024	14,108	15,039
HU	-	-	-	7,226	8,999	7,085	8,461	12,880	12,374
PL	-	-	-	1,511	1,454	3,802	10,370	4,425	3,507
UK	18,605	29,676	29,066	26,585	26,374	21,719	25,718	27,184	32,996
EU27	15,506	18,158	18,582	16,947	17,289	17,351	10,942	12,322	17,724

Source: FADN (2013)

Table 8: Subsidies on FNVA/AWU: Specialist sheep and goats

	2001	2002	2003	2004	2005	2006	2007	2008	2009
BG	-	-	-	-	-	-	41.75	99.54	-
EE	-	-	-	-	-	-	188.09	161.97	178.64
GR	47.45	58.27	63.01	59.91	56.22	63.70	63.00	72.03	62.86
ES	35.32	44.92	41.81	45.64	38.88	41.75	43.80	53.78	55.15
FR	128.31	136.22	170.08	177.07	175.97	166.11	162.19	195.87	188.61
HU	-	-	-	145.16	164.05	186.32	236.84	171.86	183.51
PL	-	-	-	90.73	102.82	127.06	36.28	218.92	236.81
UK	226.95	180.81	175.97	191.65	203.86	245.34	219.11	191.52	165.17
EU27	84.00	86.26	81.84	92.21	93.08	94.74	109.17	108.22	97.81

Source: FADN (2013) and own calculations

Conclusions

The sheep farming represents one of the essential activities in many rural zones. Speaking in macroeconomic terms, the relevance of sheep and goat farming is reduced. However, sheep and goat farming is able to take advantage of low quality land and resources (especially in isolated and less favoured zones), and contributes to the development of the rural environment through its social and environmental impact.

The income generated from these activities is in general low compared with those of other agricultural sectors. Consequently, the sheep farming industry has the greatest ratio between direct payments and unitary farm value added of all agricultural industries. The results show that in the EU as a whole, sheep farming subsidies account for close to 100% of unitary income and this figure is even higher in certain countries, such as the United Kingdom and Poland. They are essential to mitigate the decline of the sector produced during last years.

The importance of sheep sector for the rural development, especially in less favoured areas, and its multifunctional nature in environmental, cultural and landscape questions explain the defence of these mechanisms of compensation to the sector for its indirect positive effects that benefit to the rest of society. Within the ambit of environmental protection, they should reduce or eliminate those subsidies that encourage excessive grazing, soil degradation, deforestation, the excessive use of water or the emission of greenhouse gasses. Additionally, payments of compensation for environmental services may contribute to increase environmental involvement of livestock farmers.

References

AGROSYNERGIE. **Evaluation of income effects of direct support. Final Report**. Brussles: Agrosynergie. 2011

BERTAGLIA, M.; JOOST, S.; ROOSEN, J. and ECONOGENE CONSORTIUM. Identifying European marginal areas in the context of local sheep and goat breeds conservation: A geographic information system approach. Agricultural Systems, n. 3/94, p.657-670. 2007

DE ARRIBA, R; SÁNCHEZ-ANDRÉS, A. Production and Productivity in Eastern and Western European Sheep Farming: a Comparative Analysis. Livestock Research for Rural Development, n. 4/26. 2014. Available on http://www.lrrd.org/lrrd26/4/arri26066.htm. Visited on 5 April 2014.

DE RANCOURT, M.; FOIS, N.; LAVIN, M.P.; TCHAKERIAN, E.; VALLERAND, F. Mediterranean sheep and goats' production: An uncertain future. Small Ruminant Research, n. 3/62, p.167-179. 2006

DE RIPOLL-BOSCH, R.; DÍEZ-UNQUERA, B.; RUIZ , R.; VILLALBA, D.; MOLINA, E.; JOY, M. et al. An integrated sustainability assessment of Mediterranean sheep farms with different degrees of intensification. Agricultural Systems, n. 1/105, p.46-56. 2012

EUROPEAN COMMISSION. **Impact Assessment Common Agricultural Policy Towards 2020**. Brussels: European Commission. 2011

EUROPEAN COMMISSION. **EU farm economics overview. FADN 2009**. Brussels: European Commission. 2013

EUROSTAT. **Agriculture Statistics.** Available on <http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/introduction>. Visited on 15 July 2013.

FADN. **Farm Accountancy Data Network**. Available on <http://ec.europa.eu/agriculture/rica>. Visited on 15 February 2013

GALANOPOULOS, K.; ABASA, Z.; LAGAB, V.; HATZIMINAOGLOUC, I.; BOYAZOGLU, J. The technical efficiency of transhumance sheep and goat farms and the effect of EU subsidies: Do small farms benefit more than large farms? Small Ruminant Research, n. 1/100, p.1-7. 2011

LEIP, A.; WEISS, F; WASSENAAR, T.; PEREZ, I.; FELLMANN, T.; LOUDJANI, P. et al. **Evaluation of the livestock sector's contribution**

to the EU greenhouse gas emissions. Final report. Brussels: European Commission, Joint Research Centre. 2010

OECD. **Multifunctionality: Towards an Analytical Framework**. Paris: Organisation for Economic Co-operation and Development. 2011

SIERRA, I. **Evolución y cambio en el sector ovino-caprino en España durante la última década**. Madrid: MAPA. 2002