AGRO-FOOD MANUFACTURING IN MEDITERRANEAN SPANISH REGIONS. ANDALUSIA VERSUS VALENCIAN REGION

ABSTRACT

Agro – food manufacturing is a basic activity in economic structure of Mediterranean regions. Spanish Mediterranean regions are not an exception in this pattern of specialization. Agro – food manufacturing is very important in all the Spanish Mediterranean regions (Catalonia, Valencia, Murcia and Andalusia). But there are some problems of reduced articulation of economic activities in southern Spanish Mediterranean regions that are not perceived in other Mediterranean spaces (Catalonia or Valencia). The aim of this article is to compare the different patterns of behaviour of agro – food manufacturing in two different Spanish Mediterranean regions: Andalusia and the Valencia community. Andalusia is a region that represents approximately 18% of Spanish population and territory. However, his participation in national g.d.p. is only of 12%. So, Andalusia is a region with some degree of backwardness in Spanish context. One of the rare activities where Andalusia has a participation of national average higher than his participation in population is agro food manufacturing. Andalusian agro food manufacturing represents 25% of total Spanish value added.

Valencian community however is a richer regions and it has a more diversified manufacturing structure. The comparing between the two regions will allow to evaluate if the patterns of relation of agro – food manufacturing with the rest of regional economic activities are similar in both region or there are important changes between them. This fact is very important for the design of a regional economic policy. Traditionally, the thesis of lack of economic articulation and orientation of economic activities toward other spaces has been defended in southern regions, especially in Andalusia. From this point of view, these elements decreased the possibilities of actuation of regional policies. However, agro – food manufacturing, even in regions like Andalusia did not experience this kind of problems. In 1980 more of the 80% of the inputs used by this industry had regional origins. But in 1995 this participation was of the 63,3%. So there is a process of substitution of regional inputs for non-regional inputs even in activities with traditionally strong ties with regional productive structure, like agro – food manufacturing. In this text, this hypothesis will be tested, comparing Andalusian situation with other regional situations a priori non-affected by this problem, like Valencian region. Input – output tables of Andalusia and Valencian region will be employed to analyze this fact. The analysis will be carried for the agro – food manufacturing and for different sectors included inside. It will be possible so to study with a relative high degree of detail the reality of agro – food manufacturing in two concrete regions that, possibly, are representatives of a more general dynamic.

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1. INTRODUCTION AND METHODOLOGY

Mediterranean regions have some common functioning and specialisation profiles, but also present serious differences among them. These differences happened not only between distant regions of different countries, but also among relatively nearby regions. Andalusia and the Valencian region are two Spanish Mediterranean regions that have in some aspects similar economic working patterns. Between them, it is necessary to underline a relatively similar manufacturing specialization and a productive structure oriented towards services. Nevertheless, in spite of these facts, there are also important differences in its industrial structure and in its recent past economic evolution.

The aim of the following lines is to analyse similarities and differences of both regional economic structures, focusing the research on a particular case: agro – food manufacturing. For this purpose, information provided by the tables inputs - output of Andalusia and Valencian region for 1995 (last available) is going to be used. Both tables were elaborated following SEC-95 indication. This fact guarantees the same methodological approximation and, therefore, the result comparability. In any case, there are different sector classification in both tables. It is necessary to consider same sectors in order to be able to make a comparative analysis. For this reason, two sector aggregations have been made. Thus, two new tables for each region have been obtained (71 and 18 sectors). The 71 sector aggregation wants to respect a criteria of maximum possible desegregation. The 18 sectors aggregation is a result of a personal research choice that tries to identify the most strategic sectors of both regional economies.

The text is going to be divided in four paragraphs. In the first one, the different productive specialisation of Andalusian and Valencian region are going to be analysed, insisting on the role of agro – food manufacturing in them. In the second point, a deeper analysis of agro – food manufacturing and its effect upon the overall economic regional structures will be made. The overall effect of agro – food manufacturing in the overall regional economic structure will be analysed again in the third point, using a more sophisticated mathematical tools (multipliers). Finally in the fourth part main conclusions are going to be summarized.

2. ANDALUSIAN AND VALENCIAN PRODUCTIVE SPECIALISATIONS

Andalusia is a very large region. Its territory represents 18% of the total Spanish surface. Valencian region, on the other hand, is smaller. It represents approximately 1/3 of Andalusian extension. But the surface is mostly a geographic non a economic indicator. It is also necessary to analyse population and economic regional weight.

TABLE 1: SOME SYNTHETIC INDICATORS

	Andalusia	Valencian region
Territory (Km2)	87.602	29.255
Population (inhab)	7.314.644	4.028.774
GNP per capita 1995	1,22	1,56

In terms of population, the relation between Andalusian and Valencian region is more balanced. Valencian region represents more than 55% of Andalusian population. In economic terms there is still a bigger closeness. Valencian GNP was in 1995 the 70,4% in relation to Andalusian GNP.

TABLE 2: GNP SECTOR PARTICIPATION

	Andalusian Participation	Valencian region Participation
Agriculture, farming and fisheries	9,0%	3,7%
Manufacturing industries	15,8%	25,7%
Building	9,3%	7,8%
Service industries	66,9%	62,8%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

First, it is important to underline that Andalusia and Valencian region have a very different productive specialisation. Service – industries are very important in both regions. But service – industries role is (as it will be analysed in the next paragraph) very different. Nevertheless, the most important difference affects the manufacturing sector. Valencian region has a relatively important manufacturing industry with a relatively high participation in regional GNP. Andalusia, however, has less developed manufacturing industries with a less relevant role in regional economic structure. As

table 2 shows, there is a big difference of GNP manufacturing participation between both regions of more than 10 percentage points

TABLE 3: GNP PARTICIPATION OF MANUFACTURING SECTORS

	Andalusia. GNP manufacturing industries participation	Andalusia. GNP regional participation	Valencian region. GNP manufacturing industries participation	Valencian region. GNP regional participation
Extractives and energy	15,1%	2,4%	10,4%	2,7%
Agro – food manufacturing	29,4%	4,6%	10,6%	2,7%
Heavy industries	25,4%	4,0%	26,1%	6,7%
Machinery and equipment	5,3%	0,8%	8,0%	2,1%
Car building	8,0%	1,3%	7,0%	1,8%
Light manufacturing	16,8%	2,6%	37,8%	9,7%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

In any case, real manufacturing industry development difference is more important and more complex than GNP participation indicates. This fact can be observed if a more detailed analysis of manufacturing activities is made. The main difference is that Valencian manufacturing sector is based on light manufactures (pottery, toys, wearing shoes, textile, furniture etc.) These activities are practically absents in the Andalusian case. For example, in Valencian region light industries represent more than 10% of total regional GNP. However, the same ratio does not achieve in Andalusia 2,5%.

A relative heavy and energetic industrial development exists in both region. It is partially the result of “developmentist policies” implemented by the central government in the sixties. In relative terms, heavy and energetic industries are more important in Valencian region (9,4% of regional GNP, 6,4% in Andalusia). But, Andalusian manufacturing industry weakness produces that heavy industries participation in regional manufacturing GNP was higher in this case (35% of manufacturing GNP in contrast to 30% for the Valencian case).

Agro – food is the only manufacturing specialisation where Andalusia has a clear advantage in relation with Valencian region. This is logical in a region with a stronger agricultural base and with difficulties to develop other manufacturing industries.

Therefore, agro – food manufacturing is the only example where Andalusia has, a priori, some competitive advantages in relation with Valencian region**.**

TABLE 4: GNP PARTICIPATION OF MANUFACTURING SECTORS

	Andalusia. GNP service industries participation	**Andalusia. GNP regional participation**	**Valencian region. GNP service industries participation**	**Valencian region. GNP regional participation**	**Andalusian – Valencian services industries participation difference**
Commerce and Retailing	28,5%	19,1%	21,5%	13,5%	7,0%
Business advanced services	21,6%	14,4%	22,8%	14,3%	-1,2%
Social non market services	15,5%	10,4%	11,1%	6,9%	4,5%
Transport	10,1%	6,8%	12,9%	8,1%	-2,8%
Public Administration	8,2%	5,5%	7,1%	4,5%	1,1%
Hotels and restaurants	7,1%	4,8%	12,2%	7,7%	-5,1%
Social market services	4,5%	3,0%	4,8%	3,0%	-0,3%
Other services	3,3%	2,2%	6,4%	4,0%	-3,1%
Financial services	1,2%	0,8%	1,2%	0,8%	0,0%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

The service sector analysis shows that Andalusia is basically specialised in "refuge" activities. This is, for example, the retailing case. Retail trading, very often non competitive and with a low market share, is very important. Also, social services and public administration are very relevant in a region with a relatively high population weight and education and health universal systems. However, Valencian region presents evident advantages in competitive market service activities like tourism or business services (consultancy, telecommunications, etc.). Thus, there is a service sector hypertrophy in both cases, but Andalusia is more oriented towards refuge service activities.

TABLE 5. GNP PARTICIPATION OF AGRO – FOOD MANUFACTURING SECTORS

	Andalusia. GNP agro-food manufacturing industries participation	**Andalusia. GNP manufacturing industries participation**	**Valencian region. GNP agro-food manufacturing industries participation**	**Valencian region. GNP manufacturing industries participation**
Meat industries	11,6%	3,4%	8,6%	1,4%
Canned vegetables and fish	9,8%	2,9%	12,1%	1,9%
Milk industries	6,3%	1,9%	11,5%	1,8%
Bakery and Pastes	16,4%	4,8%	26,4%	4,2%
Diverse Foods	31,7%	9,3%	18,9%	3,0%
Drinks	21,4%	6,3%	16,8%	2,7%

Tobacco	2,7%	0,8%	5,7%	0,9%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

Agro- food manufacturing activity is in Andalusia very polarised around some sectors with a strong relation with regional agriculture. For example, "other food products" sector, that includes strategic olive oil activity, represents more than 30% of regional agro – food manufacturing GNP and a little more than 9% total regional manufacturing GNP. Also, "drinks" sector has an important GNP regional participation. There are not such as strong agro –food manufacturing specialisations in the Valencian case. Only, bakery and pastry are relatively important due to the development of Christmas cakes activity.

3. ANDALUSIAN AND VALENCIAN AGRO FOOD MANUFACTURING AND ITS RELATION WITH OTHER PRODUCTIVE SECTORS

A synthetic exposition of a key theoretical concepts that are going to be used in the empirical analysis is going to be made in this paragraph. In this sense, the concept of agro – food system plays an essential role. This concept emphasizes the fact that supplying food is a function with a high complexity degree in actual post- industrial societies. The distance between population living places (mostly urban) and agricultural production places is important (Fine, Heasman y Wrigth, 1995). To guarantee supplying implies to organise an enormous product flux that needs very often (because its "perishable character") previous manufacturing transformation processes in order to substantially modify its properties. Also, distribution and retailing chains play a very important role in order to allow food products to arrive at final customers (Caldentey, 1998). For all these reasons, food supplying do not only depend on agriculture, but on a "complex food related activities" or "agro –food system" that include.

- Agriculture, farming and fisheries that are the activities that are the origin of theses processes. Thus, it is not possible to conceive food supplying function without them.

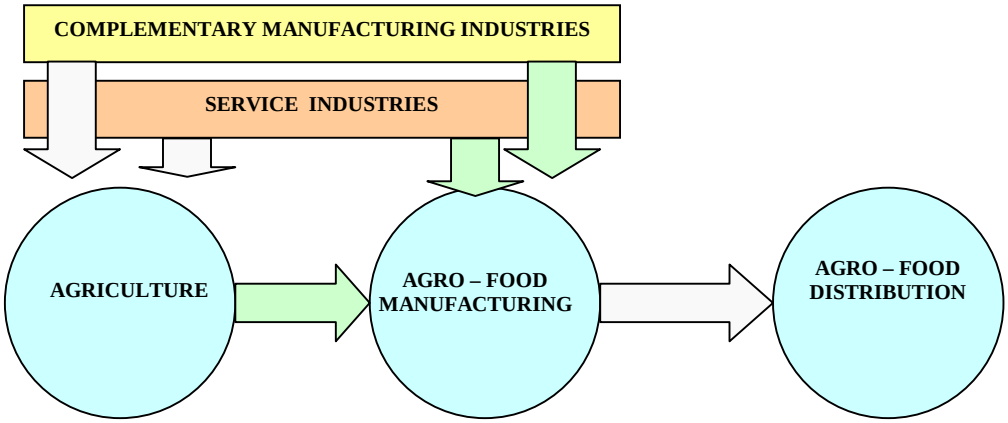
- Agro – food manufacturing that must make industrial transformation processes of agricultural and farming products.

- Complementary manufacturing industries that provide agriculture (for example, manures and fertilizers) and agro – food manufacturing (for example, packages y crates) with industrial inputs

- Agro – food distribution

Graphically, agro – food system can be synthetically represented in the next way.

PICTURE 1: SYNTHETIC AGRO- FOOD SYSTEM DEFINITION



Some of the inter-sector relationship of this picture are difficult to analyse with the existing statistical information. For this reason, analysis will be limited to direct and indirect agro – food manufacturing input acquisitions. Therefore, this kind of analysis do not answer all the theoretical possibilities of "agro –food system" concept. In any case, in this article the following aspects will be analysed [1]:

- Agriculture and agro – foods manufacturing relations

- Existing relations inside agro- food manufacturing

- Agro – food and complementary manufacturing relations

- Agro – food manufacturing and service – industries relations

[1] Es decir, las relaciones que aparecen con una línea verde en el gráfico.

The general aim of the next analysis is to study the way in which agro – food manufacturing activity produces an inducted growth effect in other regional productive sectors. It will be necessary to analyse supplier/ customer relationships in agro – food manufacturing for this general aim. Different sector input origins and its distribution will also be important. The supplier/ customer relation study will also give an indication on the real embeddedness level of different agro – food activities in the two considered regions.

It is important to differentiate between total flux (that give important indication of technical production characteristics) and regional flux (that inform about embeddedness levels).

TABLE 6. INPUT AGRO- FOOD MANUFACTURING PARTICIPATION

	Andalusia. Total input participation	**Andalusia. Regional inputs in Total input participation**	**Valencian region. Regional inputs in Total input participation**	**Valencian region. Total input participation**
Agriculture, farming and fisheries	48,3%	67,0%	35,7%	44,7%
Agro – food manufacturing	25,0%	52,3%	35,5%	36,4%
Complementary industries	13,4%	50,3%	11,9%	50,5%
Service industries	13,3%	79,0%	16,9%	76,7%
Total	100,0%	62,7%	100,0%	47,9%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

There are some similarities and some differences between both territories from a technical point of view,. The main difference is the varied agrarian and agro – food input structure. In Andalusia agrarian product participation in total inputs (48,3%) is higher than in Valencian region (35,7%). However, the agro – food manufacturing participation is higher in Valencian region (35,5%) than in Andalusia (25,0%). There is a classic explanation of this fact. The modernisation of "agro – food systems" tends to substitute agrarian inputs (non industrially transformed) for agro – food manufacturing products (industrially transformed). This substitution tendency is clearer in more advanced economies, where accumulation capital processes have been traditionally stronger. This is the Valencian region case in relation to Andalusia. Thus, in the Valencian case a higher consumption of agro – food inputs and a lower consumption of agricultural inputs is a priori expected result. In the same line, if agrarian and agro-food

manufacturing are considered at the same time, Andalusian and Valencian results are very similar (73,3% and 71,2%).

Service and complementary input structures are also very close in both regions. A more detailed examination of complementary inputs do not show big differences between these two regions either.

TABLE 7: COMPLEMENTARY MANUFACTURES INPUT ORIGIN

	Andalusia. Regional input participation	Valencian region. Regional input participation
Extractives and energy	12,6%	17,8%
Heavy industries	70,3%	65,8%
Machinery and equipment	5,4%	5,8%
Car building	0,0%	0,3%
Light manufacturing	10,4%	7,5%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

Nevertheless, it is not only important to study not only technical input structure but also embeddedness. The embeddedness degree of Andalusian agro – food manufacturing is considerably higher than Valencian. In the Andalusian case more than 62% input are provided by regional firms. In Valencian region this indicator do not achieve 48%. A deeper analysis shows that regional participation is very similar in both regions in complementary and service industries. The differences are, therefore, concentrated on agrarian and agro – food inputs. For example , in Andalusia more than 67% of total agrarian inputs have regional origin. In Valencia the same indicator was 45%. A similar tendency can be observed in agro – food manufacturing inputs.

It is important to highlight that in both cases, agro – food manufacturing products are mostly provided by non regional companies. This fact has a close relation with specific characteristics of agro – food value chains. Agrarian products are perishable. Therefore, supplying from other spaces is difficult. Transport, industrial cold, buying centers etc have helped the agricultural trade product augmentation and, consequently, abroad purchase possibilities of agro – food manufactures. But, there are still some technical barriers.

However, agro – foods product are characterised because, in general, they are not perishable. Thus, to buy inputs abroad is easier, because its transport and its trade is less difficult. For this reason, in agro – food manufacturing inputs, the levels of embeddedness are lower than in agriculture. In Valencian region only 36,4% of agro – food inputs had a regional origin. In Andalusia, this indicator was a little higher (52,7%) but lower than the regional agricultural input participation (62,7%). In any case, it is important to underline that a strong process of agrarian substitution inputs for agro – food inputs happened even in Andalusian agro – food sector from 1980 to 1995. (Coq, 2003)

TABLE 8: DRAGGING CAPACITY AND EMBEDDEDNESS OF DIFFERENT AGRO – FOOD MANUFACTURING ACTIVITIES IN ANDALUSIA

	Total inputs / Gross Production	Regional inputs / Total inputs	Regional inputs / Gross Production
Meat industries	77,0%	60,3%	46,4%
Canned vegetables and fish	79,6%	77,9%	62,0%
Milk industries	74,4%	62,2%	46,3%
Bakery and Pastes	66,4%	57,1%	37,9%
Diverse Foods	88,5%	63,4%	56,2%
Drinks	67,6%	60,8%	41,1%
Tobacco	62,8%	19,1%	12,0%

SOURCE: ANDALUSIAN INPUT – OUTPUT TABLES

Regarding embeddedness, there are also important differences between different activities included inside agro – food manufacturing. The overall cost structure is also different in both cases. In Andalusia, firms spend more in paying salaries to workers. In Valencian region, however, the intermediate input cost is more important than in Andalusia and the worker salaries are lower. This is also a typical trait of a more developed activity (Valencian agro – food) that demands more intermediate production because it exists a broader firm division of labour that allows this producing way. Anyway this is only a general sector pattern. That means that it does not happen in all the sectors. Thus, intermediate input participation in Andalusia is higher in this sectors where there are a clear regional competitive advantage (olive oil, for example)

Embeddedness level of agro – food manufacturing is systematically higher in Andalusia than in Valencia. This fact means that stronger agro-food manufacturing relationship

with the overall regional economy is produced by the higher capacity of regional agriculture and regional agro –food manufacturing to provide this kind of inputs.

TABLE 9: DRAGGING CAPACITY AND EMBEDDEDNESS OF DIFFERENT AGRO – FOOD MANUFACTURING ACTIVITIES IN VALENCIAN REGION

	Total inputs / Gross Production	Regional inputs / Total inputs	Regional inputs / Gross Production
Meat industries	90,2%	58,4%	52,7%
Canned vegetables and fish	79,6%	41,3%	32,9%
Milk industries	67,3%	48,1%	32,4%
Bakery and Pastes	70,7%	48,8%	34,5%
Diverse Foods	82,8%	47,7%	39,5%
Drinks	75,0%	41,9%	31,4%
Tobacco	44,3%	10,8%	4,8%

SOURCE: VALENCIAN INPUT – OUTPUT TABLES

Finally, regional input participation in gross production (a first lagging capacity indicator) is always higher in the Andalusian case. Thus, Andalusian agro – food manufacturing is more embedded and it has a higher dragging effect. Anyway, this indicator measures only direct not indirect input buying. Actually, overall dragging effect depends on both. In order to consider indirect input acquisition a more complex analysis focusing on demand multipliers is needed.

4. MULTIPLIER ANALYSIS

The aim of this paragraph is to analyse agro – food value chain, considering not only direct but also indirect input purchases, using demand multipliers for this purpose. Demand multiplier concept points out the overall production augmentation inducted by an unitarian and exogenous demand increase. Two different demand multipliers are going to be used. The first one considers exclusively regional production augmentation inducted by an unitarian demand increasing. The second one, however, considers total production augmentation (regional and non regional) inducted by a demand increasing. The first one is going to be called regional multiplier and the second one total multiplier. Regional multiplier can be defined in mathematical terms in the following way:

$$RM = \sum_j \alpha_{ij}$$

α_{ij} are the Leontief matrix [$(\mathbf{1-A_d})^{-1}$] coefficients, being, thus, $\mathbf{A_d}$ regional technical coefficient matrix. Therefore, RM is the row matrix coefficient aggregation and it shows the unitarian demand increase effect in one sector upon all the sectors. When differences between regional and non- regional firms are not considered, the reference model is the next one.

$$\mathbf{Y= (1-A)^{-1} f}$$

Where:

Y≡ Final Production Vector

f ≡ Final Demand Vector

$(1-A)^{-1}$ ≡ Total (regional and imported) Technical Coefficient Matrix

Thus, a total (regional and imported) demand multiplier can be defined.

$$TM = \sum_j \alpha^*_{ij}$$

Therefore, α^*_{ij} **are the coefficients obtained from Total Leontief Matrix** [$(\mathbf{1-A})^{-1}$]. To define a non-regional retained multiplier is now possible. It would be the difference between total and regional multipliers. Non-retained multiplier can defined in the next way.

$$MNPR = TM - RM = \sum_j \alpha^*_{ij} - \sum_j \alpha_{ij}$$

To quantify the "fugue" value in relative terms can be also interesting and useful. It is possible to define a ratio among regional and total multipliers.

$$REM = TM / RM = \sum_j \tilde{}^{*}_{ij} / \sum_j \tilde{}_{ij} - 1$$

Table 10 is obtained, considering, firstly, the differences between total multipliers in Andalusia and in Valencian region.

TABLE 10: TOTAL MULTIPLIERS

	Valencian total multipliers	Andalusian total multipliers	Multipliers difference	Multipliers ratio
Light industries	1,7298	2,5172	-0,7874	-31,3%
Social market services	1,4432	1,8402	-0,3970	-21,6%
Building	1,9106	2,3964	-0,4858	-20,3%
Other services	1,5402	1,8667	-0,3265	-17,5%
Heavy industries	2,3577	2,7841	-0,4265	-15,3%
Transport	1,5328	1,7690	-0,2362	-13,4%
Extractive and energetic industries	2,1507	2,3832	-0,2325	-9,8%
Public Administration	1,3726	1,4513	-0,0788	-5,4%
Machinery and equipment	2,2904	2,4101	-0,1197	-5,0%
Hotels and restaurants	2,0219	2,1094	-0,0875	-4,1%
Retailing	1,5144	1,5457	-0,0313	-2,0%
Agro – food manufacturing	**2,6737**	**2,6558**	**0,0179**	**0,7%**
Social non market services	1,3271	1,3009	0,0263	2,0%
Financial services	1,4310	1,3633	0,0677	5,0%
Agriculture, farming and fisheries	1,9348	1,7979	0,1369	7,6%
Business advanced services	1,4168	1,2572	0,1596	12,7%
Car building	2,7819	1,5256	1,2563	82,3%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

As it is possible to see, Valencian dragging capacity is, in general, lower than Andalusian. This fact is related with Andalusian higher participation in intermediate inputs. Thus, Andalusian economy employs a bigger rent proportion to pay intermediate inputs and, therefore, a demand increase has a higher dragging effect. Nevertheless, Valencian economy employs a bigger rent proportion to pay salaries. This fact implies a lower dragging capacity. This tendency is clearer in sectors where Valencian competition is higher. Competitive Valencian activities are based on a great utilisation of regional manpower. However, total multiplier difference go down until being smoothly higher Andalusian agro – food manufacturing case where this region is more competitive.

TABLE 11 REGIONAL MULTIPLIERS

	Valencian regional multipliers	Andalusian regional multipliers	Multipliers difference	Multipliers ratio
Other services	1,2958	1,55097	-0,25518	-16,5%
Hotels and restaurants	1,2670	1,50650	-0,23950	-15,9%
Light industries	1,2475	1,47480	-0,22733	-15,4%
Transport	1,2055	1,41550	-0,21005	-14,8%
Agro – food manufacturing	**1,4930**	**1,68334**	**-0,19036**	**-11,3%**
Public Administration	1,1791	1,31011	-0,13103	-10,0%
Building	1,4445	1,58864	-0,14418	-9,1%
Extractive and energetic industries	1,3250	1,44267	-0,11769	-8,2%
Heavy industries	1,2349	1,30415	-0,06924	-5,3%
Retailing	1,2453	1,31216	-0,06690	-5,1%
Social market services	1,1865	1,24562	-0,05912	-4,7%
Financial services	1,2282	1,26251	-0,03432	-2,7%
Car building	1,1403	1,15576	-0,01548	-1,3%
Social non market services	1,1216	1,10498	0,01659	1,5%
Agriculture, farming and fisheries	1,3145	1,28544	0,02905	2,3%
Machinery and equipment	1,3078	1,22904	0,07881	6,4%
Business advanced services	1,2526	1,15588	0,09670	8,4%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

In any case, the situation does not change when regional multipliers are observed. Lower Valencian potential dragging effect is transferred to an effective lower regional induced demand. In general, a demand increase has, in the Valencian case, a lower dragging capacity. This is, really, a surprise because, in general, Valencian economy is more developed than Andalusian. Valencian region is usually considered an intermediate developed region and Andalusia a peripheral region. But regional economic articulation is higher in Andalusia than in Valencia. Thus, in general terms, an exogenous demand increase has a lower influence in Valencian than in Andalusian case.

There are two reasons to explain this behaviour. The first one is that, as it has been pointed out before, a great part of this demand increase go to final productive factor payments (salaries). But it is also due to a second filtration way. In the Valencian case regional input participation in total inputs is an 11% lower than in Andalusian case. Also Valencian regional multiplier average is an 6,7% lower than Andalusian.

TABLE 12: ANDALUSIAN AND VALENCIAN VALUE FUGUES

	Valencian Multipliers ratio	Andalusian Multipliers ratio	Difference
Agriculture, farming and fisheries	0,4719	0,3986	0,0732
Extractive and energetic industries	0,6232	0,6519	-0,0287
Agro – food manufacturing	0,7909	0,5777	0,2131
Heavy industries	0,9092	1,1348	-0,2256
Machinery and equipment	0,7513	0,9610	-0,2097
Car building	1,4397	0,3200	1,1197
Light industries	0,3866	0,7068	-0,3201
Building	0,3227	0,5085	-0,1857
Retailing	0,2161	0,1780	0,0381
Hotels and restaurants	0,5958	0,4002	0,1956
Transport	0,2715	0,2497	0,0218
Financial services	0,1651	0,0798	0,0853
Business advanced services	0,1311	0,0876	0,0435
Social non market services	0,1833	0,1773	0,0060
Social market services	0,2163	0,4774	-0,2610
Public Administration	0,1641	0,1078	0,0563
Other services	0,1886	0,2035	-0,0150

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

A value fugue valuation can be done comparing total and regional multipliers (that means using REM indicator). As table 12 shows, Valencian economy undergoes higher value fugues than Andalusian. Anyway, value fugues tend to be lower in activities with solid regional specialisations. For example, Valencian region is specialised in light manufacturing and in this sector fugue value is 32% lower than in Andalusia. The existence of great inter-industrial market seems to have helped big regional supplying input chains. Following this argument, in agro –food manufacturing (being stronger the Andalusian specialisation) value fugue tends to be lower than in Valencian region. Actually, the REM coefficient for Andalusian agro - food manufacturing is higher in more than 20 points to the same Valencian indicator. If a more detailed analysis of different agro- food manufacturing activities is carried out the reality is not very different.

TABLE 13: ANDALUSIAN AND VALENCIAN TOTAL AGRO FOOD MANUFACTURING MULTIPLIERS

	Valencian total multipliers	Andalusian total multipliers	Difference
Meat industries	3,1064	2,6540	0,4524
Canned vegetables and fish	2,6806	2,6605	0,0201
Milk industries	2,5945	2,5391	0,0554
Bakery and Pastes	2,5757	2,4397	0,1360
Diverse Foods	3,0155	2,9333	0,0822
Drinks	2,7633	2,4946	0,2687
Tobacco	1,9185	2,2068	-0,2884

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

The Valencian potential agro – food manufacturing dragging capacity is smoothly higher than Andalusian. This behaviour is repeated in all agro – food manufacturing activities. It shows that productive factor remuneration is lower and the intermediate input weigh higher. But this potential input demand can be satisfied by regional o non regional producers.

TABLE 14: ANDALUSIAN AND VALENCIAN REGIONAL AGRO FOOD MANUFACTURING MULTIPLIERS

	Valencian regional multipliers	Andalusian regional multipliers	Difference
Meat industries	1,7574	1,6732	0,0842
Canned vegetables and fish	1,4409	1,8870	-0,4461
Milk industries	1,4513	1,6434	-0,1921
Bakery and Pastes	1,4746	1,5682	-0,0936
Diverse Foods	1,5688	1,7953	-0,2265
Drinks	1,4247	1,5975	-0,1729
Tobacco	1,0685	1,1637	-0,0952

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

But as it is possible to see in table 13, even if dragging potential capacity is higher in Valencian region, in effective terms, Andalusian agro – food manufacturing activities have a higher regional multipliers. Therefore, finally Andalusian agro – food manufacturing activities dragging effects are higher because of the greater acquisitions of regional inputs. Thus, dragging potential effects are better exploited in the Andalusian case.

TABLE 15: AGRO- FOOD MANUFACTURING MULTIPLIER RATIO

	Valencian Multipliers ratio	Andalusian Multipliers ratio	Difference
Meat industries	76,8%	58,6%	18,1%
Canned vegetables and fish	86,0%	41,0%	45,0%
Milk industries	78,8%	54,5%	24,3%
Bakery and Pastes	74,7%	55,6%	19,1%
Diverse Foods	92,2%	63,4%	28,8%
Drinks	94,0%	56,2%	37,8%
Tobacco	79,6%	89,6%	-10,1%

SOURCE: ANDALUSIAN AND VALENCIAN INPUT – OUTPUT TABLES

The value fugue is, therefore, higher in relative terms in Valencian region. For example in canned vegetables and fish REM indicator was for Valencian region superior in more than 45 points to Andalusia.

5. CONCLUSIONS

Valencian manufacturing specialisation is more important than Andalusian. Manufacturing industry represents in Valencian region more than 25% of regional GNP and only 15% in Andalusia. But not only Manufacturing weight is different, but also existing manufacturing specialisation. In Valencian case specialisation focuses on light industries (textile, wearing shoes, pottery, toys etc.). Andalusian manufacturing specialisation is basically agro- food.

Agro – food manufacturing activities are not so important in the Valencian case, even if in some specific activities have an important weigh. It is interesting to compare the principal traits of this activity in these two regions being Andalusia and Valencia region two Mediterranean regions with different levels of development but with a stronger Andalusian agro- food specialisation. In this sense, it is important to highlight that Andalusian agro -–food manufacturing does not exactly demand the same inputs than Valencian agro – food manufacturing. Andalusia, having a lower capital accumulation level than Valencia, it produces a demand basically oriented towards agrarian (not agro – foods) products. In other words, a stronger substitution of agrarian inputs for agro – food products is produced in the Valencian case. But, this is not an exclusively Valencian process. It also happened in Andalusia, but in the Valencian case this process is acuter (Coq, 2003).

The relationship with regional firms are also stronger in Andalusia. Therefore, Andalusian agro –food manufacturing is more embedded than Valencian. It is possible to see this accounting direct regional input acquisitions or considering also indirect buying (using demand multipliers). In any case, value fugue is in Valencian region more important than in Andalusia. The strong Andalusian agro – food specialisation helps to elude intense value fugue processes. In the same line, strong manufacturing Valencian specialisations, like light manufactures, have a sensibly lower value fugues than these that can be observed in Andalusia.

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