





# **ECONOMIC IMPACT OF WESTERN MEDITERRANEAN LEISURE PORTS**



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# Objective

- ✓ The aim is to analyse the economic impact of a selection of leisure ports in the Western Mediterranean on the area where they are located.
- ✓ We have considered port industry as the whole of the economic activity which is strictly port-related: port authorities, pilots, tug boats, stowage, custom, police and shipping agents ⇒ **Port Community**

# Objective

- ✓ Two sources of information we have used for our purposes:
  - Regional and **Municipally** Input-Output Tables (IOT)
  - Port and associated businesses accounts information: Questionnaire

# Methodology

- ✓ The impact analysis has been conducted using Leontief's demand model with the IOT
- ✓ *Input-Output Analysis* concentrates on:
  - Transactions between various activities that make up productive sectors of an economy, *Intermediate Inputs*
  - Primary factor needs, *Primary Inputs*
  - *Final demands*

# Methodology: IOT

Block I  
INTERMEDIATE  
INPUTS

Block III  
FINAL  
DEMAND

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- **Block I:** information of activity branches. *Columns* indicate Inputs needed in the productive process. Rows indicate Outputs/Sales from production units to each branch

- **Block II:** salaries, social security contributions, exploitation surplus, taxes and imports

- **Block III:** part of production allocated to final uses in each branch (private consumption, government consumption, gross wealth formation and exports)

Block II  
PRIMARY INPUTS

TOTAL INPUTS

# Methodology

The idea behind the Quantities Model is that an increase in Final Demand is transmitted so that production increase is not just sufficient to meet the new final demand, but will also supply subsequent intermediate demands from the other branches till the required production increase is reached

$$[X_i] = [I - A_{ij}]^{-1} \cdot [Y_i]$$

$$a_{ij} = \frac{x_{ij}}{X_{ij}}$$

X: Total Outputs ( $X_i$ ), Total Inputs ( $X_j$ )

$Y_i$ : Final demands vector

I: Identity matrix

$A_{ij}$ : Technological coefficients matrix  $a_{ij}$

$[I - A_{ij}]^{-1}$ : Leontief reverse matrix

# Methodology

This method facilitates the calculation of some effects to assessment the port's relevance in the economy on its area

- *Initial Effect*
- *Direct Effect*
- *Indirect Effect*
- *Induced Effect*

# Methodology: Initial Effect

**Initial Effect** describes the port and associated business account situation. To get it we have designed an *ad hoc* questionnaire:

- Transactions between port activity and each branch (Block I)
- Primary Inputs: employers, salaries, social securities contributions, exploitation surplus, amortizations, taxes, and imports (Block II)
- Final Demand: private consumption, government consumption, gross wealth formation and exports (Block III)

# Methodology

–*Direct Effect* represents the direct productive effort that port industries must make in order to cope with changes in the final demand for their services

–*Indirect Effect* represents the impact of all successive transactions conducted between the sectors originally affected by port activity and other sectors of the economy

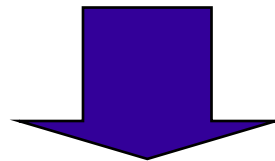
–*Induced Effect* is defined as that generated by the consumption and investment capacity of businesses and other economic agents directly related to the activity of a given branch



## Preparation of the Model: Valencia Region

We have used the last IOT published by Valencia Institute of Statistics (IOTVR1995B84):

- To aggregate: B84 → B19
- To update: 1995 → 2004 (RAS)



**IOTVR2004B19**



# Preparation of the Model: Valencia Region

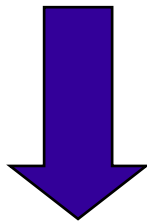
- The leisure ports analysed are:
  - Oropesa Yacht Club (IOTOROPESA2004B19)
  - Royal Yacht Club of Valencia (IOTVALENCIA2004B19)
  - Denia Marina (IOTDENIA2004B19)
  - Denia Yacht Club (IOTDENIA2004B19)
  - Les Bassetes Yacht Club (IOTBENISA2004B19)
  - “Marina de la Dunas” Marina (IOTGUARDAMAR2004B19)
  - Royal Yacht Club of Torrevieja (IOTTORREVIEJA2004B19)
  - Santa Pola Yacht Club (IOTSANTAPOLA2004B19)
  - Altea Yacht Club (IOTALTEA2004B19)
  - Campoamor Yacht Club (IOTORIHUELA2004B19)



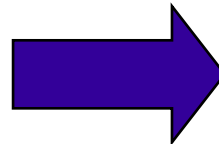
## Preparation of the Model: Italian provinces

We have used the last IOT published by ISTAT  
(IOTIT2000B59):

- To aggregate: B59  $\rightarrow$  B19
- To update: 2000  $\rightarrow$  2004 (RAS)



**IOTIT2004B19**



**IOTLG2004B19**



## Preparation of the Model: Italian provinces

We have analysed three leisure ports in Italy:

- Lega Navale (IOTGENOVA2004B19)
- Diano Marina (IOTIMPERIA2004B19)
- Porto Antico (IOTGENOVA2004B19)

Unlike the analysis of leisure ports in the Valencia Region, there was not enough information to refer the IOT to the town in question in this analysis



# Valencia Results: Purchase structure

Sector	OROPESA YACHT CLUB	R.Y.C. of VALENCIA	DENIA MARINA	DENIA YACHT CLUB	LES BASSETES Y.C.	MARINA DE DUNAS	R.Y.C. of TORREVIEJA	SANTA POLA Y.C.	ALTEA YACHT CLUB	CAMPOAMOR YACHT CLUB
Agriculture	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Energy	40.29%	9.48%	31.86%	13.99%	34.12%	28.46%	12.91%	26.45%	20.81%	13.69%
Food	0.00%	0.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Clothing and Footwear	1.48%	1.33%	7.66%	2.81%	1.30%	1.84%	0.00%	7.81%	4.20%	0.00%
Chemical Industry	7.91%	3.79%	0.00%	0.51%	0.32%	9.80%	0.00%	0.17%	0.32%	0.48%
Other Non-metallic Products	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Metallurgy	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Machinery	0.00%	0.57%	21.49%	5.10%	3.65%	0.00%	4.27%	14.20%	11.78%	0.00%
Electrical Equipment	0.00%	0.57%	0.00%	0.54%	0.54%	0.00%	0.00%	0.18%	0.54%	0.82%
Transport Material	1.90%	1.33%	0.00%	0.00%	0.00%	2.36%	0.00%	0.00%	0.00%	0.00%
Misc. Manufactures	0.00%	0.95%	5.13%	0.89%	0.87%	16.99%	4.64%	6.23%	5.41%	3.91%
Construction	0.00%	8.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Trade and Repairs	29.01%	12.16%	4.44%	9.50%	8.74%	20.49%	17.71%	13.01%	9.38%	14.07%
Hotels and Restaurants	0.00%	1.62%	4.01%	2.24%	3.55%	0.00%	0.00%	2.06%	5.11%	4.37%
Transport & Communications	0.07%	2.43%	1.34%	1.91%	4.30%	0.05%	0.41%	1.31%	4.56%	5.86%
Financial Intermediation	2.25%	8.10%	6.01%	3.75%	10.68%	7.91%	2.83%	4.28%	3.72%	5.56%
Real Estate Agencies and Business Services	6.96%	20.26%	9.00%	2.97%	6.69%	4.91%	3.17%	4.25%	2.94%	4.41%
Other Market Services	10.13%	28.37%	9.06%	55.80%	25.25%	7.19%	37.78%	20.03%	31.23%	46.84%
Non-market Services	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.28%	0.00%	0.00%	0.00%
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



## Valencia Results: Purchase structure

- Energy represents up to 40% of purchase in some leisure ports, such as Oropesa Yacht Club.
- This branch of activity includes the following types of products: fuel, electricity, gas, water and residual collection.
- All these products are necessary for the users of these facilities to be able to carry out their nautical and leisure activities.





## Valencia Results: Purchase structure

- “Other Market Services” is important in proportion to the rest of supplies due to the nature of the business activity these ports conduct.
- This sector includes these services: educational, health, social, associative, recreational, cultural, sports and other personal services.
- The Yacht Clubs in Denia, Orihuela and Torrevieja more than 35% of their expenses to these activities. However, in “Marina de las Dunas” and Denia Marina these services are not as relevant, because their activity is less recreational than that of yacht clubs.



## Valencia Results: Value Added structure

	OROPESA YACHT CLUB	R.Y.C. of VALENCIA	DENIA MARINA	DENIA YACHT CLUB	LES BASSETES Y.C.	MARINA DE DUNAS	R.Y.C. of TORREVIEJA	SANTA POLA Y.C.	ALTEA YACHT CLUB	CAMPOAMOR Y.C.
<b>Gross Wages</b>	30.39%	47.38%	25.03%	112.18%	66.78%	106.01%	54.15%	113.92%	76.16%	78.97%
<b>Operating Surplus</b>	63.72%	31.05%	59.74%	-35.92%	20.49%	-4.39%	46.27%	-22.89%	17.91%	1.05%
<b>Other Taxes</b>	0.92%	16.22%	6.97%	17.14%	13.01%	1.46%	1.41%	2.91%	11.41%	8.72%
<b>Net Indirect Taxes</b>	4.97%	-5.35%	8.27%	6.59%	-0.28%	-3.08%	-1.82%	6.06%	5.48%	11.26%
<b>Gross Value Added mp</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Nº of Employees</b>	23	73	14	41	11	22	40	39	24	11

- Value added structure reveals how more than 80% is accounted for by income distributed between wages and the gross operating surplus
- Due to the non-profit-making nature of yacht clubs some of them even get negative gross operation surplus (Denia Yacht Club, “Marina de las Dunas” and Santa Pola Yacht Club)



# Valencia Results: Initial Effect

(Thousand €)	Oropesa YC	% o/Oropesa	RYC Valencia	% o/Valencia	Denia Marina	% o/Denia	Denia YC	% o/Denia	Bassetes YC	% o/Benisa
Gross Wages	289	0,822%	1.545	0,022%	406	0,140%	848	0,291%	84	0,132%
Operating surplus	606	1,969%	1.013	0,016%	970	0,381%	-272	-0,107%	26	0,046%
Tax income	56	2,776%	355	0,088%	247	1,481%	179	1,075%	16	0,438%
GVA	904	1,353%	3.087	0,023%	1.489	0,269%	706	0,128%	127	0,104%
Output	1.772	1,305%	5.586	0,021%	2.844	0,253%	2.303	0,205%	191	0,078%
Nº employees	23	1,231%	73	0,019%	14	0,091%	41	0,265%	11	0,324%

(Thousand €)	Marina Dunas	% o/Guardamar	RYC Torrevieja	% o/Torrevieja	Santa Pola YC	% o/S.Pola	Altea YC	% o/Altea	Campoamor YC	% o/Orihuela
Gross Wages	350	0,377%	495	0,110%	552	0,529%	503	0,349%	220	0,049%
Operating surplus	-14	-	423	0,107%	-111		118	0,094%	3	0,001%
Tax income	-5	-	-4	-	43	0,726%	112	1,351%	56	0,215%
GVA	340	0,193%	931	0,109%	455	0,230%	697	0,255%	247	0,029%
Output	966	0,270%	1.918	0,110%	1.198	0,298%	1.398	0,252%	471	0,027%
Nº employees	22	0,447%	40	0,167%	39	0,704%	24	0,314%	11	0,044%



## Valencia Results: Initial Effect

- The **initial effect** shows the situation of leisure ports based on the data obtained from their accounts.
- The Royal Yacht Club of Valencia is seen to have the largest initial impact with respect to the rest of facilities (total output of 5,586,000 euros), followed by the Denia Marina and Denia Yacht Club (with an output of 2,844,000 € and 2,303,000 €).
- The larger the town is, the smaller the relative influence of the sports facility: the Royal Yacht Club of Valencia, which despite being the largest has a minimal impact on the city (0.02% of Valencia's output). The opposite occurs with Oropesa Yacht Club, whose effect on the town represents 1.3% of output, despite being smaller in size (1,772,000 €).



# Valencia Results: Direct, Indirect & Induced Effect

	OROPESA YC			RYC VALENCIA			DENIA MARINA			DENIA YC		
(Thousand €)	Direct	Indirect	Induced	Direct	Indirect	Induced	Direct	Indirect	Induced	Direct	Indirect	Induced
<b>Gross Wages</b>	204	16	152	756	55	494	325	28	215	535	32	327
<b>Operating surplus</b>	295	15	128	862	49	418	372	26	182	550	29	277
<b>Tax income</b>	15	1	10	57	3	33	22	2	14	32	2	22
<b>GVA</b>	508	31	285	1.646	106	927	707	55	403	1.098	62	614
<b>Output</b>	1.006	61	520	2.901	209	1.691	1.538	111	736	1.913	119	1.120
<b>Nº employees</b>	12	1	8	39	3	25	17	2	11	27	2	17

	LES BASSETES YC			MARINA DUNAS			RYC TORREVIEJA		
(Thousand €)	Direct	Indirect	Induced	Direct	Indirect	Induced	Direct	Indirect	Induced
<b>Gross Wages</b>	19	1	13	169	13	113	411	20	218
<b>Operating surplus</b>	23	1	11	199	12	95	317	17	184
<b>Tax income</b>	1	0	1	11	1	8	22	1	15
<b>GVA</b>	43	3	24	374	25	211	737	37	410
<b>Output</b>	80	5	44	787	50	385	1.229	70	747
<b>Nº employees</b>	1	1*	1	10	1	6	21	1	11

	SANTA POLA YC			ALTEA YC			CAMPOAMOR YC		
(Thousand €)	Direct	Indirect	Induced	Direct	Indirect	Induced	Direct	Indirect	Induced
<b>Gross Wages</b>	205	16	132	227	16	143	65	4	41
<b>Operating surplus</b>	225	15	111	244	15	121	72	3	35
<b>Tax income</b>	13	1	9	13	1	10	4	0	3
<b>GVA</b>	436	31	248	476	31	268	139	7	77
<b>Output</b>	896	62	451	919	61	489	236	14	141
<b>Nº employees</b>	11	1	7	12	1	7	3	1*	2



## Valencia Results: Direct, Indirect & Induced Effect

The **direct activity** they generate is more important to the rest of sectors than subsequent trade relations (indirect and induced effects).

For example, the Royal Yacht Club of Torrevieja generates a total output amounting to 1,229,000 € in order to meet the demand of the rest of the branches of activity, of which 737,000 € are increases in income (GVA) and 21 new jobs are created.

The **indirect effect** is quite small because nautical-sports activities mainly use services, which create only minimal inter-sector links.

**Induced effect** is larger than the indirect effect, but smaller than the direct effect. In all the ports under analysis, profits are very similar to the gross wages obtained through the same effect. For example, in Altea YC, the induced effect generates a profit of 121,000 € and gross wages of 143,000 €



## Italian Results: Direct, Indirect & Induced Effect

### PORTO ANTICO

(Thousand €)	Direct	Indirect	Dir. & Ind.	Induced	Totals	% o/GEN
Gross Wages	1.003	86	1.089	335	1.424	0,022%
Operating surplus	1.096	190	1.286	889	2.175	0,013%
Tax income	2.445	401	2.846	1.862	4.708	0,013%
GVA	1.805	256	2.061	1.159	3.220	0,014%
Output	2.941	469	3.409	2.214	5.624	0,013%
Nº employees	53	5	58	20	78	0,00017%

### LEGA NAVALE

(Thousand €)	Direct	Indirect	Dir. & Ind.	Induced	Totals	% o/GEN
Gross Wages	68	6	74	23	97	0,002%
Operating surplus	75	13	88	61	148	0,001%
Tax income	167	27	194	127	321	0,001%
GVA	123	17	140	79	219	0,001%
Output	200	32	232	151	383	0,001%
Nº employees	4	0	4	1	5	0,000012%

### DIANO MARINA

(Thousand €)	Direct	Indirect	Dir. & Ind.	Induced	Totals	% o/IMP
Gross Wages	235	23	258	86	344	0,022%
Operating surplus	291	52	343	228	571	0,014%
Tax income	640	111	751	477	1.228	0,014%
GVA	459	70	529	297	826	0,015%
Output	769	129	898	568	1.465	0,014%
Nº employees	13	1	14	5	19	0,000%



## Italian Results: Direct, Indirect & Induced Effect

The Italian ports generate significant **direct economic activity** among the rest of productive sectors. In the case of Porto Antico, this increase in demand boosts output by 2,941,000 €, of which 1,805,000 are increases in income (GVA) and creates 53 new jobs. Lower results were obtained in Lega Navale and Diano Marina as they are both smaller

**Indirect impact** is smaller than in the case of the direct effect described above. Once again, the reason this impact is absorbed so quickly is due to the sports activity demanding mainly services, which have a minimal inter-sector linking effect.

**Induced effect** of Porto Antico boosts output about 2,200,000 € and produces GVA amounting to slightly over 1,150,000 €, as well as creating 20 additional jobs. In Lega Navale and Diano Marina, the induced effect raises output by 151,000 and 568,000 €, GVA to the value of 79,000 and 297,000 € and created 1 and 5 new jobs respectively.



## Conclusions

- This study has made it possible to determine how important some Western Mediterranean nautical-sports infrastructures are in the towns where they are located using data for 2004
- The size of the city where the port is located is decisive when it comes to evaluating the overall impact (initial plus total effects) on the area under study
- The results obtained from the impact analysis highlight the fact that Input-Output Analysis is a good tool for evaluating how important the internal activity of a port area is and its repercussions on the region.
- In order to avoid the strictly linear nature of the model applied, specific matrices were used for the year and the region or town under study, thus improving data manipulation and consequently results.





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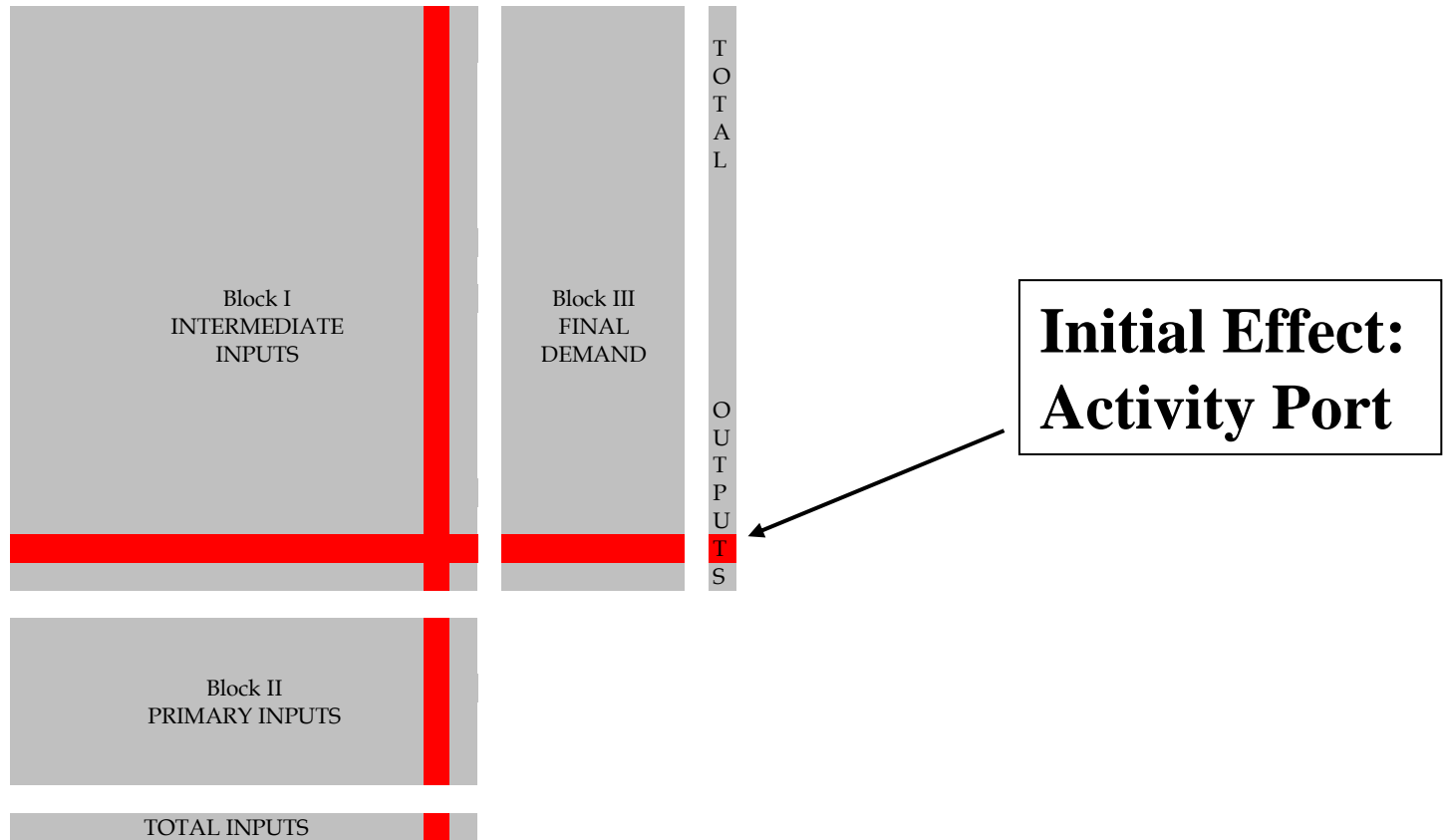


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**March 11-12th, 2007**



# Methodology





## Conclusions

- Direct effects are highly relevant in nearby areas from which leisure ports obtain supplies. In contrast, the indirect effects that are strictly economic are not very significant, while the effect induced through ports creating household wealth is again considerable in the town or region where the facility is located.
- Despite having a lesser impact, the indirect and induced effects are felt by all branches of productive activity and above all are evenly spread across productive factors, labour and corporate profits.