NAR, 6(4): 564–572.

DOI: 10.3934/NAR.2024026
Received: 30 July 2024
Revised: 21 November 2024
Accepted: 09 December 2024
Published: 18 December 2024

https://www.aimspress.com/journal/NAR

***Research article***

**Top exporters and regional export specialization**

**Juan De Lucio1,** **Raúl Mínguez2, Asier Minondo3 and Francisco Requena4,\***

**1** Universidad de Alcalá, Pza. San Diego, s/n, 28801, Alcalá de Henares, Spain

**2** Cámara de Comercio de España and Universidad Antonio de Nebrija, Calle de Santa Cruz de Marcenado, 27, 28015, Madrid, Spain

**3** Deusto Business School, University of Deusto, Camino de Mundaiz 50, 20012 Donostia-San Sebastián, Spain

**4** Departmento de Estructura Económica, Universitat de Valencia, Avda. dels Tarongers s/n, Valencia 46022, Spain

**\* Correspondence:** Email: francisco.requena@uv.es.

**Supplementary**

**Appendix**

**Table A.1.** Contribution of the top exporter to RCA, 2018.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Province | Number | RCA all firms | RCA without top1 | Granular impact on RCA |
|  | HS2 sectors | Sectors | Share exports | Sectors | Share exports | N. firms | Share sectors | Share exports |
| Álava | 87 | 16 | 87.3 | 7 | 74.4 | 9 | 10.3 | 12.9 |
| Albacete | 81 | 23 | 80.2 | 13 | 68.1 | 10 | 12.3 | 12.1 |
| Alicante | 94 | 39 | 83.8 | 27 | 77.5 | 12 | 12.8 | 6.3 |
| Almería | 81 | 12 | 91.4 | 4 | 74.9 | 8 | 9.9 | 16.5 |
| Ávila | 51 | 16 | 92 | 3 | 15.9 | 13 | 25.5 | 76.1 |
| Badajoz | 73 | 23 | 81.2 | 14 | 71.8 | 9 | 12.3 | 9.4 |
| Baleares | 85 | 15 | 76.6 | 4 | 8.7 | 11 | 12.9 | 67.9 |
| Barcelona | 95 | 39 | 70.5 | 29 | 64.4 | 10 | 10.5 | 6.1 |
| Burgos | 82 | 23 | 75.8 | 6 | 11.7 | 17 | 20.7 | 64.1 |
| Cáceres | 69 | 21 | 87.7 | 9 | 66.1 | 12 | 17.4 | 21.6 |
| Cádiz | 91 | 11 | 80.1 | 6 | 57.7 | 5 | 5.5 | 22.4 |
| Castellón | 91 | 14 | 71.4 | 6 | 57.1 | 8 | 8.8 | 14.3 |
| Ciudad Real | 69 | 13 | 75.1 | 6 | 46.9 | 7 | 10.1 | 28.2 |
| Córdoba | 82 | 15 | 77.8 | 7 | 73.2 | 8 | 9.8 | 4.6 |
| A Coruna | 92 | 23 | 68.8 | 14 | 58.6 | 9 | 9.8 | 10.2 |
| Cuenca | 64 | 14 | 79 | 9 | 75.1 | 5 | 7.8 | 3.9 |
| Girona | 91 | 29 | 70.2 | 17 | 52.7 | 12 | 13.2 | 17.5 |
| Granada | 82 | 19 | 77.1 | 7 | 50.8 | 12 | 14.6 | 26.3 |
| Guadalajara | 77 | 21 | 84.5 | 7 | 28.7 | 14 | 18.2 | 55.8 |
| Guipúzcoa | 87 | 18 | 80.8 | 8 | 61.2 | 10 | 11.5 | 19.6 |
| Huelva | 68 | 11 | 96.4 | 4 | 59.8 | 7 | 10.3 | 36.6 |
| Huesca | 74 | 22 | 79.8 | 10 | 65.5 | 12 | 16.2 | 14.3 |
| Jaén | 73 | 15 | 87.3 | 4 | 21.3 | 11 | 15.1 | 66.0 |
| León | 77 | 19 | 94.1 | 5 | 44.6 | 14 | 18.2 | 49.5 |
| Lleida | 88 | 24 | 79 | 12 | 72.5 | 12 | 13.6 | 6.5 |
| La Rioja | 79 | 25 | 81.6 | 11 | 56.1 | 14 | 17.7 | 25.5 |
| Lugo | 64 | 13 | 87.3 | 7 | 36.3 | 6 | 9.4 | 51.0 |
| Madrid | 95 | 23 | 56.4 | 10 | 29.3 | 13 | 13.7 | 27.1 |
| Málaga | 89 | 22 | 67.8 | 9 | 53.7 | 13 | 14.6 | 14.1 |
| Murcia | 94 | 23 | 86.4 | 13 | 71.8 | 10 | 10.6 | 14.6 |
| Navarra | 91 | 18 | 62.9 | 9 | 58.3 | 9 | 9.9 | 4.6 |
| Orense | 77 | 21 | 87.9 | 8 | 43.9 | 13 | 16.9 | 44.0 |
| Asturias | 86 | 20 | 76.4 | 10 | 51.2 | 10 | 11.6 | 25.2 |
| Palencia | 63 | 5 | 95.1 | 2 | 8.7 | 3 | 4.8 | 86.4 |
| Las Palmas | 82 | 12 | 74.2 | 7 | 69.2 | 5 | 6.1 | 5.0 |
| Pontevedra | 94 | 15 | 81.6 | 7 | 74.4 | 8 | 8.5 | 7.2 |
| Salamanca | 70 | 23 | 85.1 | 12 | 56.5 | 11 | 15.7 | 28.6 |
| Tenerife | 73 | 9 | 86.8 | 3 | 25.7 | 6 | 8.2 | 61.1 |
| Cantabria | 84 | 19 | 68.5 | 10 | 45.1 | 9 | 10.7 | 23.4 |
| Segovia | 63 | 20 | 79.6 | 13 | 64.4 | 7 | 11.1 | 15.2 |
| Sevilla | 92 | 16 | 79.6 | 7 | 68.2 | 9 | 9.8 | 11.4 |
| Soria | 52 | 18 | 94.2 | 4 | 38.3 | 14 | 26.9 | 55.9 |
| Tarragona | 92 | 26 | 76.8 | 8 | 38.4 | 18 | 19.6 | 38.4 |
| Teruel | 58 | 17 | 82.8 | 8 | 50.6 | 9 | 15.5 | 32.2 |
| Toledo | 83 | 35 | 74 | 17 | 48.9 | 18 | 21.7 | 25.1 |
| Valencia | 95 | 30 | 72.2 | 15 | 66.7 | 15 | 15.8 | 5.5 |
| Valladolid | 82 | 8 | 89.9 | 4 | 55.3 | 4 | 4.9 | 34.6 |
| Vizcaya | 90 | 20 | 76.5 | 7 | 30.4 | 13 | 14.4 | 46.1 |
| Zamora | 54 | 18 | 94.3 | 6 | 73.1 | 12 | 22.2 | 21.2 |
| Zaragoza | 90 | 21 | 65.6 | 5 | 44.6 | 16 | 17.8 | 21.0 |
| Average | 80 | 19 | 80.2 | 9 | 52.4 | 10 | 13.3 | 27.9 |
| Maximum | 95 | 39 | 96.4 | 29 | 77.5 | 18 | 26.9 | 86.4 |
| Minimum | 51 | 5 | 56.4 | 2 | 8.7 | 3 | 4.8 | 3.9 |

Note: Own elaboration using Comtrade and Spanish AEAT-Customs data.

**Table A.2.** Contribution of the top exporter to RCA, 1998.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Province | Number | RCA all firms | RCA without top1 | Granular impact on RCA |
|  | HS2 sectors | Sectors | Share exports | Sectors | Share exports | N. firms | Share sectors | Share exports |
| Álava | 81 | 11 | 75.3 | 5 | 16.5 | 6 | 7.4 | 58.8 |
| Albacete | 71 | 22 | 79.3 | 12 | 67.6 | 10 | 14.1 | 11.7 |
| Alicante | 92 | 24 | 85.7 | 18 | 80.5 | 6 | 6.5 | 5.2 |
| Almería | 66 | 5 | 94.7 | 4 | 94.4 | 1 | 1.5 | 0.3 |
| Ávila | 50 | 10 | 95.1 | 1 | 85.8 | 9 | 18.0 | 9.3 |
| Badajoz | 77 | 23 | 70.6 | 14 | 66.2 | 9 | 11.7 | 4.4 |
| Baleares | 70 | 13 | 79.6 | 8 | 65 | 5 | 7.1 | 14.6 |
| Barcelona | 95 | 36 | 61.4 | 23 | 50.6 | 13 | 13.7 | 10.8 |
| Burgos | 78 | 22 | 85.6 | 8 | 46.7 | 14 | 17.9 | 38.9 |
| Cáceres | 59 | 17 | 85.3 | 10 | 68.7 | 7 | 11.9 | 16.6 |
| Cádiz | 85 | 13 | 79 | 7 | 19.8 | 6 | 7.1 | 59.2 |
| Castellón | 81 | 10 | 88.5 | 5 | 81.7 | 5 | 6.2 | 6.8 |
| Ciudad Real | 59 | 11 | 84 | 6 | 48.5 | 5 | 8.5 | 35.5 |
| Córdoba | 69 | 13 | 88.6 | 10 | 87 | 3 | 4.3 | 1.6 |
| A Coruna | 85 | 23 | 82.6 | 10 | 46.6 | 13 | 15.3 | 36.0 |
| Cuenca | 39 | 8 | 97.5 | 5 | 28.7 | 3 | 7.7 | 68.8 |
| Girona | 84 | 29 | 61 | 14 | 46.8 | 15 | 17.9 | 14.2 |
| Granada | 66 | 16 | 89.9 | 4 | 68.8 | 12 | 18.2 | 21.1 |
| Guadalajara | 50 | 15 | 84.7 | 5 | 39.4 | 10 | 20.0 | 45.3 |
| Guipúzcoa | 86 | 21 | 86 | 9 | 57.8 | 12 | 14.0 | 28.2 |
| Huelva | 67 | 11 | 87.8 | 5 | 60.5 | 6 | 9.0 | 27.3 |
| Huesca | 60 | 18 | 79.3 | 6 | 40.5 | 12 | 20.0 | 38.8 |
| Jaén | 56 | 14 | 82.1 | 3 | 42.4 | 11 | 19.6 | 39.7 |
| León | 55 | 17 | 86.3 | 5 | 43.6 | 12 | 21.8 | 42.7 |
| Lleida | 73 | 24 | 82.9 | 10 | 65.8 | 14 | 19.2 | 17.1 |
| La Rioja | 78 | 20 | 79.4 | 10 | 61.8 | 10 | 12.8 | 17.6 |
| Lugo | 52 | 11 | 94.9 | 5 | 43 | 6 | 11.5 | 51.9 |
| Madrid | 95 | 19 | 62.6 | 9 | 37.3 | 10 | 10.5 | 25.3 |
| Málaga | 82 | 20 | 74.6 | 10 | 69.1 | 10 | 12.2 | 5.5 |
| Murcia | 84 | 21 | 85.7 | 13 | 72.9 | 8 | 9.5 | 12.8 |
| Navarra | 83 | 11 | 73.4 | 7 | 68.6 | 4 | 4.8 | 4.8 |
| Orense | 74 | 15 | 79.7 | 7 | 68.6 | 8 | 10.8 | 11.1 |
| Asturias | 76 | 17 | 76.1 | 6 | 46.7 | 11 | 14.5 | 29.4 |
| Palencia | 43 | 4 | 97.7 | 0 | 0 | 4 | 9.3 | 97.7 |
| Las Palmas | 62 | 11 | 90.5 | 4 | 84.6 | 7 | 11.3 | 5.9 |
| Pontevedra | 84 | 15 | 88.3 | 6 | 81.9 | 9 | 10.7 | 6.4 |
| Salamanca | 70 | 25 | 93.1 | 10 | 43.2 | 15 | 21.4 | 49.9 |
| Tenerife | 67 | 7 | 89 | 5 | 88.2 | 2 | 3.0 | 0.8 |
| Cantabria | 69 | 21 | 87.7 | 6 | 26.7 | 15 | 21.7 | 61.0 |
| Segovia | 43 | 20 | 81 | 8 | 35.8 | 12 | 27.9 | 45.2 |
| Sevilla | 90 | 17 | 76.3 | 9 | 52.3 | 8 | 8.9 | 24.0 |
| Soria | 34 | 13 | 89.2 | 4 | 19.6 | 9 | 26.5 | 69.6 |
| Tarragona | 87 | 26 | 74.5 | 14 | 59.4 | 12 | 13.8 | 15.1 |
| Teruel | 33 | 12 | 86.1 | 3 | 15.5 | 9 | 27.3 | 70.6 |
| Toledo | 77 | 21 | 84.3 | 12 | 47.9 | 9 | 11.7 | 36.4 |
| Valencia | 93 | 26 | 69.3 | 17 | 38.5 | 9 | 9.7 | 30.8 |
| Valladolid | 72 | 6 | 94.1 | 3 | 61.2 | 3 | 4.2 | 32.9 |
| Vizcaya | 82 | 18 | 54.8 | 7 | 27.5 | 11 | 13.4 | 27.3 |
| Zamora | 43 | 17 | 91.9 | 6 | 49.3 | 11 | 25.6 | 42.6 |
| Zaragoza | 86 | 7 | 69.8 | 2 | 67 | 5 | 5.8 | 2.8 |
| Average | 70 | 17 | 82 | 8 | 54 | 9 | 13.1 | 28.6 |
| Maximum | 95 | 36 | 97.7 | 23 | 94.4 | 15 | 27.9 | 97.7 |
| Minimum | 33 | 4 | 54.8 | 0 | 0 | 1 | 1.5 | 0.3 |

Note: Own elaboration using Comtrade and Spanish AEAT-Customs data.



**Figure A.1.** Distribution of total exports and main export (2-digit HS) sector by province in 2018. Source: Own elaboration.



**Figure A.2.** Percentage of total exports (blue color scale) and number of affected sectors in each province (in parentheses) due to the loss of comparative advantage if the top exporter is eliminated in a particular sector. Year 1998. Note: Own elaboration using AEAT-Customs data.

© 2024 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0)