

## **Beatriz TOVAR DE LA FE**

### **BIONOTES**



**Dr Beatriz Tovar** is Full Professor at Las Palmas University and a member of the University Institute for Tourism and Sustainable Economic Development, a leading research team at international level in the field of innovative and sustainable tourist development and a member of its Tourism and Transport Research Unit, a leading research team at international level in the field of Transport. She teaches in undergraduate and graduate (including MBA and PhD) courses regarding the productivity and efficiency measurement for utilities and Transport. She has been actively involved in contracts and research projects with the World Bank, CEPAL, the European Commission or the Spanish Ministry of Transport. She has published in several respected international journals including *Applied Economics*, *Energy*

*Economics*, *Energy policy*, *European Journal of Transport and Infrastructure Research*, *Fisheries Research*, *International Journal of Sustainable Transportation*, *Journal of Air Transport and Management*, *Journal of Energy in Southern Africa*, *Journal of Environmental Management*, *Journal of Production Economics*, *Journal of Transport Economic and Policy*, *Maritime Economics & Logistics*, *Maritime Policy and Management*, *Operational Research*, *Research in Transportation Business & Management*, *Tourism Economics*, *Tourism Management Perspectives*, *Transport Policy*, *Transport Review*, *Transportation*, *Transportation Research Part A*, *Transportation Research Part D*, *Transportation Research Part E*, *Transportation Science*, and *Utility Policy*. She is also a member of the editorial board of *Transportation Research Part E*. She does also act as a reviewer for several international journals such as *Case Studies on Transport Policy*, *Economía Mundial*, *Energies*, *Energy Economics*, *Energy policy*, *European Journal of Transport and Infrastructure Research*, *International Journal of Transport Economics*, *International Journal of Sustainable Transportation*, *Journal of African Economies*, *Journal of Advanced Transportation*, *Journal of Air Transport and Management*, *Journal of Cleaner Production*, *Journal of Environmental Management*, *Journal of Shipping and Trade*, *Journal of Transport Economic and Policy*, *Journal of Transport Geography*, *Maritime Policy and Management*, *Marine Pollution Bulletin*, *Ocean and Coastal Management*, *Research in Transport Economics*, *Research in Transportation Business & Management*, *Revista de Economía Aplicada*, *Science of the Total Environment*, *Sustainability*, *The International Trade Journal*; *Transactions on Maritime Science*; *Transport Policy*, *Transportation Research Part A*, *Part D*, and *Part E*, *Utilities Policy*, *WMU Journal Maritime affairs* and also for international congress such as *IAME 2014*, *IAME 2015*, *IAME 2016*, *IAME 2018*, *IAME 2019*, *IAME 2021* and *World of Shipping Portugal Conference 2020*, *2021* and *2022*. Finally, she is a member of the Editorial Advisory Board for the journal *Transportation Research Part E: Logistics and Transportation Review (TRPE)*, a member of the Editorial Board of *International Journal of Transportation Engineering and Technology*, and also a member of the Editorial advisory board for the journal *Sustainability (Sustainable Transportation Section)*.

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*Education:*

- BA in Economics and Business, de Las Palmas de Gran Canaria, Spain, 1990
- Advanced Studies in International Economic Policy Research. Kiel Institute of World Economy. Germany. 1993
- PhD in Economics, Universidad de Las Palmas de Gran Canaria, Spain, 2002

*Personal Data:* Born in Las Palmas de Gran Canaria (Spain), married, two children.

*Consulting Work:*

- **CEPAL, Infrastructure Vice-Presidency** (2011-): POLÍTICAS E INSTRUMENTOS PARA LA PROMOCIÓN DEL CRECIMIENTO EN AMÉRICA LATINA Y EL CARIBE. Contributed to cross country various sector performance and regulatory assessments for the transport and energy sectors.
- **CEPAL, Infrastructure Vice-Presidency** (2008-2011): POLÍTICAS E INSTRUMENTOS PARA LA PROMOCIÓN DEL CRECIMIENTO EN AMÉRICA LATINA Y EL CARIBE III, Componente 4, Innovación Ambiental de Servicios Urbanos y de Infraestructura: Hacia una Economía sin Carbono.
- **World Bank, Infrastructure Vice-Presidency** (2003-2007): Contributed to cross country various sector performance and regulatory assessments for the transport and energy sectors.
- **World Bank, Africa Region** (2004-2006): Study of the efficiency of the electricity sector in the southern African region
- **World Bank, Latin America Region** (2006-2007): Participated in operational mission and report to provide policy advice on infrastructure privatization and regulation in Uruguay (co-author of various policy reports discussed with governments)
- **European Commission (DGII)** (1996-1998): Report on the Economic Aspects of Pricing European Transport System which served as a basis for the discussion on a Common Transport Infrastructure Charging Framework in the EU. This report was elaborated in cooperation with European Universities from several countries (United Kingdom, Germany, Sweden, Italy, Switzerland, Finland, Norwich, Portugal and France).
- **National Public Works Ministry** (1996): Report on Cost-benefit analysis for the evaluation of large projects which served as guidelines for a new approach adopted by the Ministry
- **Spanish Competition Agency** (1996): Background report on the competitiveness of the Spanish ports presented at a public audience
- **Regional Government of the Canary Islands** (1995-2008): Various reports on transport policy, port tariffs, ports costs functions, cost benefit analysis of large projects prepared with various colleagues at the University of LPGC as contributions of the University to the regional policy debate.
- **Las Palmas Port Authority** (1997-) Various reports on port tariffs, ports costs functions, cost benefit analysis of large projects prepared with various colleagues at the University of LPGC.

*Current Policy Research:*

- Energy and transport
- The measure of efficiency and productivity in regulated network industries
- Modeling multi-output cost function in the transport sector
- The nexus between infrastructure regulation and competition policy
- Environmental issues in maritime transport
- Cruise Tourism

#### Other professional activities:

- Research visitor: Universidad Nacional del Callao (2013)
- Research visitor: CEPAL (2013)
- Research visitor: IE-UFRJ (Instituto de Economia- Universidade Federal do Rio de Janeiro), (2008, 2009 y 2011).
- Editorial advisory board (EAB) for the journal Transportation Research Part E: Logistics and Transportation Review (TRPE).
- The award of a Reviewer Certificate of Excellence of TRPE.
- Editorial advisory board (EAB) for the journal Sustainability (Sustainable Transportation Section)

### **Refereed Publications**

#### ***Articles***

- Spengler, T.; **Tovar, B.** (2022): Environmental valuation of in-port shipping emissions per shipping sector on four Spanish ports **Marine Pollution Bulletin** 178, 113589. <https://doi.org/10.1016/j.marpolbul.2022.113589>. Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 5.553.
- Spengler, T.; **Tovar, B.** Wilmsmeier (2022): Are output disaggregation and energy variables, key when measuring container terminal efficiency? **Maritime Policy & Management** <https://doi.org/10.1080/03088839.2022.2047812>. Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 3.778.
- **Tovar, B.**; Wall, A. (2022): The relationship between port-level maritime connectivity and efficiency **Journal of Transport Geography**, 98, 103213 <https://doi.org/10.1016/j.jtrangeo.2021.103213>. Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 4.986
- Perez-Reyes, R.; **Tovar, B.** (2021): Peruvian Electrical Distribution Firms' Efficiency Revisited: A Two-Stage Data Envelopment Analysis **Sustainability**. 131, 66. <https://doi.org/10.3390/su131810066> Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 3.251
- **Tovar, B.**; Wall, A. (2021): The external costs of port activity for port cities: An environmental efficiency analysis of Spanish ports **International Journal of Sustainable Transportation**. <https://doi.org/10.1080/15568318.2021.1943074> Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 3.929
- Baños, JF; **Tovar, B.** (2021): Estimating cruise passenger expenditure: A censored system approach. **Tourism Management Perspectives**. <https://doi.org/10.1016/j.tmp.2021.100808> Abstracted/indexed in: ISI web of knowledge. Impact factor (2020) 6.586.
- Chang, V; **Tovar, B.** (2021): *Efficiency Drivers for the South Pacific West Coast Port terminals: A two-stage non-convex metafrontier DEA approach* **Operational Research** <https://doi.org/10.1007/s12351-021-00626-5>. Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 2.410
- Spengler, T., **Tovar, B.** (2021): Potential of cold-ironing for the reduction of externalities from in-port shipping emissions: The State-owned Spanish Port System case. **Journal of Environmental Management**. 279, 111807. <https://doi.org/10.1016/j.jenvman.2020.111807> Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 6.789
- **Tovar, B.**, Espino, R. and Lopez-del-Pino, F. (2021). Residents' perceptions and attitudes towards the cruise tourism impact in Gran Canaria. **Transportation Business and Management**. 100586. Doi.org/10.1016/j.rtbm.2020.100586. Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 2.740.
- Ramos Real, F.; **Tovar, B.** (2020): Revisiting electric utilities' efficiency in the Southern African Power Pool, 1998-2009. **Journal of Energy in Southern Africa** 31(1), pp. 1-13. DOI: <https://dx.doi.org/10.17159/2413-3051/2020/v31i1a7670>. Abstracted/indexed in: ISI web of knowledge. Impact factor (2020): 0.661

- **Tovar, B.**; Wall, A. (2019): Environmental efficiency for a cross-section of Spanish port authorities ***Transportation Research Part D: Transport and Environment*** 75, pp. 170–178. Abstracted/indexed in: ISI web of knowledge. Impact factor (2019): 3.445
- **Tovar, B.**; Tichavska, M. (2019): Environmental cost and eco-efficiency from vessel emissions under diverse SOx regulatory frameworks: A special focus on passenger port hubs ***Transportation Research Part D: Transport and Environment*** 69, pp. 1–12. Abstracted/indexed in: ISI web of knowledge. Impact factor: 3.445
- Tichavska, M.; **Tovar, B.**; Gritsenko, D.; Johansson, L. and Jalkanen J.-P. (2019): Air emissions derived from passenger vessels in port: does regulation make a difference? ***Transport Policy***. 75, pp. 128–140. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.512
- Baños, JF.; **Tovar, B.** (2019): Explaining cruisers' shore expenditure through a latent class tobit model: evidence from the Canary Islands ***Tourism Economics***, DOI: 10.1177/1354816618823599, pp. 1 – 29. Abstracted/indexed in: ISI web of knowledge. Impact Factor: 0.942
- Jiménez Alvarado, D.; **Tovar, B.**; Baños, JF.; Castro, JJ., (2019): How to fish? Key factors influencing the probability of choosing a recreational fishing modality. ***Fisheries Research***, 212, pp. 87 – 96. Abstracted/indexed in: ISI web of knowledge. Impact Factor: 1.874
- **Tovar, B.**; Wall, A. (2019): Are larger and more complex port more productive? An analysis of Spanish port authorities. ***Transportation Research Part A: Policy and Practice***, 121, pp. 265 – 276. Abstracted/indexed in: ISI web of knowledge. Impact Factor: 3.026
- Chang, V; **Tovar, B.** (2017): Metafrontier analysis on productivity for West Coast of South Pacific terminals. ***Transportation Research Part A: Policy and Practice***. 103, pp. 118 – 134. Abstracted/indexed in: ISI web of knowledge. Impact Factor: 2.609
- **Tovar, B.**; Wall, A. (2017): Specialisation, diversification, size and technical efficiency in ports: A empirical analysis using frontier techniques. ***European Journal of Transport and Infrastructure Research***, 17 (2), pp. 279 – 303. Abstracted/indexed in: ISI web of knowledge. Impact Factor: 0.619
- Chang, V., and **Tovar, B.** (2017) Heterogeneity unobserved and efficiency: A latent class model for west coast of South Pacific terminals. ***Journal of Transport Economic and Policy***, 51(2), 139-156. Abstracted/indexed in: ISI web of knowledge. Impact factor: 0.935
- Tichavska, M., **Tovar, B.**, (2017): External costs of vessel emissions at port: A review of the methodological and empirical state of the art. ***Transport Reviews***. 37, 3, pp. 383-402. Abstracted/indexed in: ISI web of knowledge. Impact factor: 3.329.
- **Tovar, B.** and Wall, A. (2017): Dynamic cost efficiency in port infrastructure using a directional distance function: accounting for the adjustment of quasi-fixed inputs over time. ***Transportation Science***, 17(2), 296-303. Abstracted/indexed in: ISI web of knowledge. Impact factor: 3.295.
- Tichavska, M., **Tovar, B.**, (2015). Environmental Cost and Eco-Efficiency regarding vessel emissions in Las Palmas Port ***Transportation Research Part E***, 83, pp. 129-140. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2,676.
- Tichavska, M., **Tovar, B.**, (2015) Port-city Exhaust Emission Model: an application to Cruise and Ferry operations in Las Palmas Port. ***Transportation Research Part A: Policy and Practice***, 78, pp. 347-360. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2,789
- **Tovar, B.**, Rodríguez-Déniz, H. (2015) Classifying ports for efficiency benchmarking: a review and a frontier-based clustering approach, ***Transport Reviews***. 35(3), pp378-400. DOI: 10.1080/01441647.2015.1016473. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.903
- **Tovar, B.**, Ramos Real, F. Y Fagundes Edmar. (2015) Efficiency and performance in gas distribution. Evidence from Brazil. ***Applied Economy***. 47(50), pp. 5390-5406 DOI: 10.1080/00036846.2015.1047093 Abstracted/indexed in: ISI web of knowledge. Impact factor: 0.613
- **Tovar, B.** and Wall, A. (2015): Can Ports increase traffic while reducing inputs? Technical efficiency of Spanish Port Authorities using a directional distance function approach. ***Transportation Research Part A***. 71, pp.128-144. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.789

- **Tovar, B.** Hernandez, R. And Rodriguez-Deniz, H. (2015): Container port competitiveness and connectivity: the Canary Islands main ports case **Transport Policy**, 38, pp.50-41. Abstracted/indexed in: ISI web of knowledge. Impact factor: 1.492
- Chang, V., and **Tovar, B.** (2014) Drivers Explaining the Inefficiency of Peruvian and Chilean Ports Terminals. **Transportation Research Part E**, 67, pp: 190-203 Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.676
- **Tovar, B.** and Wall, A. (2014): The impact of demand uncertainty on port infrastructure costs: Useful information for regulators? **Transport Policy**, 33, pp: 176-183. Abstracted/indexed in: ISI web of knowledge. Impact factor: 1.492
- Chang, V., and **Tovar, B.** (2014) Efficiency and Productivity Changes for Peruvian and Chilean Ports Terminals: A Parametric Distance Functions Approach **Transport Policy**, 31, pp: 83-94. Abstracted/indexed in: ISI web of knowledge. Impact factor: 1.492
- Wilmsmeier, G., **Tovar, B.** and Sanchez, R.J. (2013). The evolution of container terminal productivity and efficiency under changing economic environments. **Research in Transportation Business & Management**, 8, pp: 50-66.
- Rodríguez-Alvarez, A. and **Tovar, B.** (2012): Have Spanish port sector reforms during the last two decades been successful? A cost frontier approach, **Transport Policy**. 24, pp: 73-82. Abstracted/indexed in: ISI web of knowledge. Impact factor: 1.541
- **Tovar, B.** and Wall, A. (2012): Economies of Scale and Scope in service Firms with Demand Uncertainty: An Application To a Spanish Port. **Maritime Economics & Logistics**, 14 (3), pp: 362-385. ISI web of knowledge. Impact factor: 0.833
- Trujillo, L. and Tovar, B. (2012): Análisis de terminales portuarias: competencia versus regulación. **Papeles de Economía Española**, pp:148-171. Abstracted/indexed in: Latindex.
- **Tovar, B.**, Ramos-Real, F., and Fagundes de Almeida, E. (2011): Firm size and productivity. Evidence from the electricity distribution industry in Brazil, **Energy Policy**, 39, 826-833. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.723
- Rodríguez-Alvarez, A.; **Tovar, B.** and Wall, A. (2011): The effect of Demand Uncertainty on Port Terminal Costs. **Journal of Transport Economic and Policy**. 45(2), pp: 303-328, Abstracted/indexed in: ISI web of knowledge. Impact factor: 0.949
- **Tovar, B.**, and Rendeiro Martin Cejas R. (2010): Technical efficiency and productivity changes for Spanish airport: a parametric distance functions approach. **Transport Research Part E** 46, pp: 249-260. Abstracted/indexed in: ISI web of knowledge. Impact factor: 1.954
- Ramos-Real, F.J. and **Tovar, B.**, (2010): Productivity Change and Economies of Scale in Container Port Terminals: a Cost Function Approach. **Journal of Transport Economic and Policy** 44, pp:1-18. Abstracted/indexed in: ISI web of knowledge. Impact factor: 0.732
- Pérez-Reyes, R., and **Tovar, B.** (2010): Explaining the inefficiency in electrical distribution companies: the case of Peruvian firms. **Energy Economics**, 32, 1175-1181. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.466
- Pérez-Reyes, R., and **Tovar, B.** (2009): Measuring Efficiency and Productivity Change (PTF) in The Peruvian Electricity Distribution Companies after Reforms, **Energy Policy**, 37, 2249-2261. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.436
- Ramos-Real, F., **Tovar, B.**, lootty, M, Fagundes de Almeida, E. and Queiroz, H. (2009): The evolution and main determinants of productivity in Brazilian electricity distribution 1998-2005: an empirical analysis, **Energy Economics**, 31(2), pp:298-305. Abstracted/indexed in: ISI web of knowledge. Impact factor: 2.333
- **Tovar, B.**, and Rendeiro Martin Cejas R. (2009): Are outsourcing and non-aeronautical revenues important drivers in the efficiency of Spanish Airports? **Journal of Air Transport and Management**, 5, pp: 217-220. Abstracted/indexed in: ISI web of knowledge. Impact factor: 0.828
- Estache A., **Tovar, B.**, and Trujillo L. (2008): How efficient are African Electricity Companies? Evidence of Southern African countries, **Energy Policy**, 36, 6 1969-1979. Abstracted/indexed in: ISI web of knowledge. Impact factor: 1.755
- Jara Diaz, S., **Tovar, B.** and Trujillo, L. (2008): On the proper modelling of multioutput port cargo handling costs, **Applied Economy**, 40, pp: 1699-1705. Abstracted/indexed in: ISI web of knowledge. Impact factor: 0.430
- Rodríguez-Alvarez, A.; **Tovar, B.** and Trujillo, L. (2007): Firm and Time Varying Technical and Allocative Efficiency: An application for Port Cargo Handling Firms, **International**

**Journal of Production Economy**, 109, pp: 149-161. Abstracted/indexed in: ISI web of knowledge. Impact factor: 0.995

- **Tovar, B.** Jara Diaz, S. and Trujillo, L. (2007): Econometric Estimation of Scale and Scope Economies within The Port Sector: A Review. **Maritime Policy and Management**, 34(3), pp: 203-223. Abstracted/indexed in: Econlit
- Trujillo, L. and **Tovar, B.** (2007): The European Port Industry: An analysis of its Economics Efficiency, **Maritime Economics & Logistics**, 9, pp:148-171. Abstracted/indexed in: Econlit, e-JEL Jel on CD
- Trujillo, L., **Tovar, B.**, and González M (2006): Financiación de la infraestructura portuaria, un debate abierto, **Economistas**, 110, pp:13-21. Abstracted/indexed in: Latindex
- Jara Diaz, S., **Tovar De La Fe, B.** and Trujillo, L. (2005): Multioutput analysis of cargo handling firms: An application to a Spanish port., **Transportation**, 32 (3), pp: 275-291. Abstracted/indexed in: ISI web of knowledge. Impact factor: 1.190
- Estache A., **Tovar De La Fé, B.**, and Trujillo L. (2004): Sources of Efficiency Gains in Port Reform: A DEA Decomposition for a Malmquist TFP Index for Mexico, **Utility Policy**, 12, pp: 221- 230. Abstracted/indexed in: International Bibliography of the Social Sciences.

### **Books**

- Ginés De Rus, M.; **TOVAR, B.** and González, M.M. (2009) **Impacto económico del puerto de Las Palmas** (2009). Colección: Biblioteca Civitas Economía y Empresa. Colección Economía. Serie Especial. Editorial Cívitas, S.A. Madrid. ISBN:978-84-470-3222-8.
- **Las terminales de Contenedores del Puerto de La Luz y de Las Palmas. Un enfoque multiproductivo** (2004). Las Palmas City Research Prize. Edited by Las Palmas Town Council and Las Palmas University.

### **Chapters in Books**

- **TOVAR, B.**, Wall, A., (2021). Regulation and finance in the Spanish port sector, in: Haralambides, H., Tei, A., Ferrari, C., (Eds), Regulation and Finance in the Port Industry: lessons from worldwide experiences. Palgrave. Forthcoming.
- **TOVAR, B.**, Wall, A., (2021). Economic and Environmental Regulation in the port sector. In: Marcucci, E. (Ed.), International Encyclopedia of Transportation – Elsevier. pp: 563-569.  
<https://www.sciencedirect.com/science/article/pii/B9780081026717104841?via%3DIhub>
- Sánchez, R. and Sánchez, S. **TOVAR, B.** (2019): La bendición o maldición de los recursos naturales: un breve análisis empírico, **Temas De Gobernanza De Los Recursos Naturales: Sustentabilidad, Políticas, Macroeconomía, Medio Ambiente y Conflictividad**. Comisión Económica para América Latina y el Caribe (CEPAL). Chile.  
<https://repositorio.cepal.org/handle/11362/46179>
- **TOVAR, B.**, Wall, A., (2017). Competition strategies in the Spanish port system in recent decades and their relation with port authority efficiency, in: Pettit, S..and Beresford A. (eds), Port Management: Cases in Port Geography, Operations and Policy. P Kogan Page Ltd. United Kingdom. pp: 376-406. <http://hdl.handle.net/10553/55669>.
- **TOVAR, B.**, and WALL, A. (2017): Competition strategies in the Spanish port system in recent decades and their relation with port authority efficiency, In Pettit, S. and Beresford A. (eds) **Port Management: Cases in Port Geography, Operations and Policy**. P Kogan Page Ltd. United Kingdom. pp: 376-406.
- TICHAVSKA, M., CABRERA, F., **TOVAR DE LA FÉ, B.** ARAÑA, V (2015): Use of the automatic identification system in academic research. Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 9520. Editorial: Springer International Publishing. pp: 33-40
- GOMEZ-LOBO, A., GONZALEZ, M.M. and **TOVAR DE LA FÉ, B.** (2013): La Economía de la Pesca: una introducción conceptual y revisión de experiencias mundiales., In Castro-

Hernández, J.J. (eds) **La pesca entre sus circunstancias y consecuencias**. Anroart Ediciones S.L. Madrid. Spain. pp:367-397

- JARA-DÍAZ, S., **TOVAR, B.**, and TRUJILLO, L. (2007): The Effect of Using Aggregated Output in the Economic Analysis of Cargo Handling Operations, In Coto, P. and Inglada V. (eds) **Essays in Transport Economics n**. Physica-Verlag. A Springer-Verlag Company. Heidelberg, Germany. pp: 79-92.
- BAÑOS, J. and **TOVAR, B.**, ¿Cómo priorizar la inversión en grandes infraestructuras? (2006) in **Monográfico de Asturias .Serie Estudios Regionales del BBVA**. Edited by Fundación BBVA 161-182 (with BAÑOS, J.)
- GONZÁLEZ, M., **TOVAR, B.**, and TRUJILLO, L. Organización y Regulación de la Industria Portuaria Europea (2006) in **La Política de transporte europea: el papel del análisis económico**. Edited by: Fundación BBVA 157-223.
- **TOVAR, B.**, TRUJILLO, L. and JARA-DÍAZ, S. (2004): Organization and regulation of the port industry: Europe and Spain. , In Coto, P. (eds) **Essays on Microeconomics and Industrial Organization**. Physica-Verlag. A Springer-Verlag Company. Heidelberg, Germany. pp: 189 -207

### **Recent Working Paper**

- Are output differentiation and energy key variables when measuring container terminal efficiency? (2021) (with SPENGLER, T. and WILMSMEIER, G.)
- Environmental valuation of in-port shipping emissions per shipping sector on four Spanish ports. (2021) (with SPENGLER, T.)
- Factors influencing the cruisers to recommend the on shore excursion in Las Palmas port. (2021) (with MONTESDEOCA, S.)