

## *Executive summary*

**Ports and cities are historically strongly linked, but the link between port and city growth has become weaker.** Economic benefits often spill over to other regions, whereas negative impacts are localised in the port-city. How can ports regain their role as drivers of urban economic growth and how can negative port impacts be mitigated? Those are the questions that this report aims to answer.

**Well-run ports produce many economic benefits.** They lower the costs of trade, generate value added and employment and attract certain economic sectors. Doubling port efficiency of two countries has been found to increase their bilateral trade volume by 32%. One tonne of port throughput is on average associated with USD 100 of economic value added, and an increase of one million tonnes of port throughput is associated with an increase in employment in the port of 300 jobs in the short term. Moreover, ports are associated with innovation in port-related sectors. Nine out of the 10 world regions with the largest amount of patent applications in shipping are home to one or more large global ports, including Houston, Los Angeles/Long Beach, Tokyo, Oakland and Rotterdam.

**However, a lot of these benefits from ports spill over to other regions.** Firms in other regions also benefit from efficient ports when exporting and importing, and links with other sectors mostly take place outside the port region. Less than 5% of the economic linkages with suppliers take place in the port or the port-region, with a larger share in the main economic centre of the country, which could be relatively far away from the port, *e.g.* Ile-de France for the ports of Le Havre and Marseille; and Bavaria and Baden-Württemberg for the port of Hamburg. Large ports play a role of gateway for their countries.

**Ports also have negative port impacts, mostly related to the environment, land use and traffic congestion.** These impacts can be very substantial; *e.g.* more than half of the sulphur dioxide emissions in Hong Kong are related to shipping. A third of the land surface of the city of Antwerp consists of its port, which is not problematic in itself, but could raise the question of opportunity costs. In addition, port truck traffic accounts for more than 85% of total truck traffic on some sections of the highways in Los Angeles. Although shipping is global, including some of its impacts, such as greenhouse gas emissions, most of the negative impacts of ports are localised, taking place close to the port area (in terms of noise and dust) and in the metropolis (for air emissions, water quality, congestion and land use). These impacts have consequences for the health of local population. There is a port-city mismatch: the combination of benefits spilling over to other regions and the localised negative impacts. This presents a major challenge to mayors and other leaders of port-cities. How can this mismatch be resolved?

**Evidently, the port must be competitive if cities want to benefit from it.** Port-related value added and employment is strongly related to urban wealth. Ports can become more competitive by strengthening their maritime links, port operations and hinterland connections. Local goodwill for a port's functions in cities is essential and can be earned. Environmental policies and incentive schemes have reduced a variety of

environmental impacts, transport policies in and around ports have mitigated congestion and port relocations have freed up centrally located urban land for other functions.

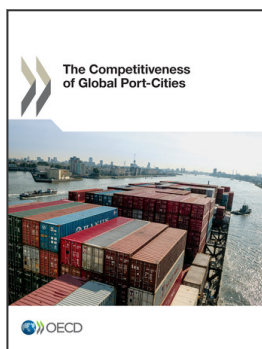
**A key issue for cities is how to get more local value for money out of ports.** Three main models exist that can help cities derive additional benefits from their ports: maritime services clusters, industrial development and port-related waterfront development. Maritime services clusters try to attract high-value-added services related to the maritime industry, such as maritime finance, consulting, law and engineering services. Industrial development related to ports has traditionally taken place because many industries are interested in being close to imported resources and consumer markets. Finally, waterfront development has frequently managed to capitalise on their port and maritime heritage and transform this into a source of urban growth.

**A range of policy instruments can be applied to support these strategic orientations.** These include incentive schemes, training and education, platform organisations and knowledge transfer schemes to attract high-value-added companies that could make the city an international maritime services centre; Singapore is a clear example of pro-active policies in this regard. With respect to industrial development on port sites, many initiatives have emerged that position the port as a site for industrial ecology (Rotterdam) and renewable energy (Bremerhaven). Master planning and financial mechanisms for redevelopment have been applied to waterfronts to create areas with a productive mix of functions that still maintain port functions, such as Port Vell in Barcelona.

**Public policies can be effective in increasing port-city performance.** There is some evidence of the effectiveness of certain transport policy instruments, such as the Clean Truck Program and terminal gate strategies both applied in the ports of Los Angeles and Long Beach. Several ports have also started to track environmental impacts, the reduction of which can sometimes be linked to policies. In terms of overall policy packages, there are clear indications, based on our research, of the effectiveness of port policies, transport policies and policies stimulating university-business co-operation: more active policies in these fields have a positive influence on performance.

## Recommendations

- **Improve port competitiveness.** A port cannot be a driver of urban economic growth if it is not competitive. Port competitiveness can be improved by increasing maritime connectivity, effectiveness of port operations and hinterland connections. Ports cannot sustain their operations if they lack local support; so an essential element of the port competitiveness agenda should consist of acquiring support of the local population. Good practices analysed in this report could help to inspire local tailor-made solutions to improve port competitiveness.
- **Increase local benefits.** Port-cities should think more strategically about using ports as drivers of urban economic growth. The port could be used to develop the city into a leading maritime cluster, industrial complex or waterfront. Such development models should be based on deep knowledge about local port-city assets, possible development paths and a clear reflection on economic sub-sectors that should compose the new cluster. The most successful port-city economic models use a panoply of instruments, ranging from development support, spatial planning, incentive schemes, co-ordination mechanisms to human capital matching. The instrument mix should be adapted to the maturity of the sector.
- **Mitigate negative impacts.** Shipping is a global activity, so there are good reasons for global regulation of environmental impacts of shipping. In line with these, and in addition to these, ports should develop policies to reduce the health impacts of shipping and port activity on urban population. This could take the form of internalising external effects and polluter pays-principles. Incentive schemes for clean ships have started to appear, but should be introduced on a much larger scale. Traffic impacts of ports could be mitigated by better transport planning, intermodal strategies and more incentives to spread traffic flows over the day, including port gate strategies and urban congestion fees.
- **Strengthen policy coherence.** Policy instruments should not cancel each other and could be based on a comprehensive strategy that aligns different actors with their instruments and means. Ports and cities should look for synergetic development (win-wins), should at a minimum find mutually interesting compromises, but avoid antagonistic behaviour. Alignment of policies of different government tiers can facilitate effective policy implementation.



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