

# Port Statistics

## **E61 Port Equipment Statistics**

### **E61010 Channel**

A waterway facilitating vessel entry, exit, and navigation.

### **E61020 Harbor**

An area of water that is sufficiently spacious and deep and adequately sheltered by natural or manmade formations to provide secure berthing for vessels.

### **E61030 Port**

In addition to having the abovementioned attributes of harbors, ports have the wharves, storage facilities, maintenance facilities and water and fuel supplies necessary to meet the cargo and passenger handling needs of vessels. Ports are hubs for water transportation services.

### **E61040 Commercial Port**

A port that is visited by commercial vessels.

### **E61050 International Commercial Port**

A port that is designated to receive regular calls from ROC and foreign-registered commercial vessels.

### **E61060 Domestic Commercial Port**

A port that is regularly designated to receive ROC-registered vessels only. Foreign-registered vessels may call only under special government authorization or when emergency sheltering is justified.

### **E61070 Free Trade Zone (FTZ)**

May refer to either a specially designated section of international airport/seaport. Cargoes entering/exiting free trade zone are not subject to Custom's controls and may be repackaged, transshipped, stored, and undergo value added processing onsite. Cargoes transferred from free trade zone inland are subject to normal Custom's processing and clearance procedures and import tariffs.

### **E61080 Industrial Port**

Port established to meet the needs of coastal industries that primarily receives industrial raw materials and ships out finished products.

### **E61090 Fishery Port**

Port used by fishing vessels and providing related support services. Established for the berthing, resupply, offloading, refrigeration, and processing needs of coastal and deep-water fishing vessels.

- E61100 Stevedoring/Warehouse Facility  
A facility within commercial ports that handles or stores cargo, handles cargo lightering operations, or services vessel passengers.
- E61110 Warehouse  
This type of facility, which may be located adjacent to wharves or in near-port areas, is used for long-term cargo storage in a manner that protects cargoes from the elements. Most warehouses are multistory structures.
- E61120 Transit Shed  
A storage facility located on the wharf premises that is used for the temporary storage of cargo awaiting loading for export or just offloaded and awaiting pickup. Most transit sheds are large, single story structures.
- E61130 Warehouse & Transit Sheds  
Term that includes both port warehouses and transit sheds.
- E61140 Berth  
Includes port berths, mooring buoys and other vessel mooring facilities capable of berthing vessels, offloading/onloading cargoes, or handling passengers.
- E61150 Wharf  
Section of a port designated for berthing vessels, onloading/offloading cargoes, and/or handling passengers.
- E61160 Container Terminal  
Wharf specifically designated for onloading/offloading containerized cargoes.
- E61170 Passenger Terminal  
Wharf specifically designated for the berthing of passenger vessels.
- E61180 Grain Wharf  
Wharf specifically designated for the berthing of bulk grain vessels.
- E61190 General Cargo Wharf  
Wharf specifically designated for the berthing of cargo vessels.
- E61200 Public Wharf  
Wharf funded and built by a harbor authority and designated for general use.
- E61210 Speedy Wharf  
Wharf designated by the harbor authority for the expedited onloading/offloading of cargoes. All related operations must be completed and the berthed vessel must vacate the wharf within a specified period of time.
- E61220 Preferential Berthing Wharf

Wharf designated by the harbor authority for priority use by specially designated types or categories of vessels.

- E61230 Mooring Buoy  
Spherical buoy firmly tethered to the seabed within a designated anchorage (e.g., anchorage area, turning basin). A type of docking/mooring facility.
- E61240 Anchorage  
An area of water designated for vessel mooring.
- E61250 Turning Basin  
Section of navigable waterway located at the intersection of multiple navigation channels of a sufficient dimension to allow vessels to change or reverse direction.
- E61260 Basin  
Natural or manmade body of water within a port designated for vessel navigation and mooring.
- E61270 Wet Dock/Basin  
Dock fitted with a dock/slucice gate for the independent adjustment of internal water levels.
- E61280 Shuttle Boat  
Boat used to conduct port business or transport staff within the port.
- E61290 Water Supply Barge  
Boat with water tanks and water pumping facilities used to supply the water needs of various vessels.
- E61300 Floating Crane  
Crane installed on a vessel used to onload/offload cargoes from vessels moored at mooring buoys, anchorages, or other non-wharf sites.
- E61310 Dredger  
Boat with special equipment used to open new navigation channels, create harbors, dig underwater foundations, maintain designated harbor water depths, and dredge accumulated silt/mud/etc.
- E61320 Tug Boat  
Boat used to assist commercial vessels to complete berthing and unberthing operations.
- E61330 Lighter/Barge  
Smaller-sized boats used to transfer cargoes to and from moored vessels.
- E61340 Mooring and Unmooring Boat

Boat used to moor/unmoor commercial vessels from wharves or mooring buoys.

E61350 Winch

A device allowing steel cable wrapped around a drum and connected to the cargo boom pulley block or anchor chain to, respectively, lift/move cargo or retract/release the cable. Winches may be powered electrically, hydraulically, or pneumatically.

E61360 Mobile Crane

Land-based crane able to move independently (usu. on tires or crawlers) used to onload/offload cargoes.

E61370 Fork Lift Truck

Vehicle fitted with a pallet fork and mast that is used to raise and lower cargo and that is able to move independently (on tires) to move cargo to a different desired location.

E61380 Derrick/Lift

Cargo unloading/offloading device comprised of a boom, pulley, cable, and hook.

E61390 Container Gantry Crane

Device installed at wharves and used exclusively for unloading/offloading containers. Moves along tracks fixed to the ground. Responsive, fast, and safe operations make these cranes the primary, first-line container-handling device at container yards.

E61400 Transtainer

Vehicle used in container yards exclusively to onload/offload and stack containers. Capable of stacking containers.

E61410 Straddle Carrier

Vehicle used to move containers. "Straddle" refers to how this vehicle must first straddle a container before lifting and moving it. Capable of transporting containers from storage yards to shipside.

E61420 Trailer

Used at general cargo wharves/terminals. Includes one truck cab and one tail vehicle trailer, with the former pulling the latter. Capable of hauling 10~20mt in goods/cargo and easy to maneuver inside warehouse/storage areas.

E61430 Dock

Site designated for new vessel construction or repairs that is large enough to accommodate an entire ship and has facilities to control the entry and release of water. The dock is flooded to allow vessel entry/exit and drained to allow vessel repair/construction work.

E61440 Dry Dock

A dry dock is built below the waterline and enclosed on its three shoreline sides using

steel or reinforced concrete (RC) pilings or RC walls. The fourth side, facing open waters, is fitted with a dock (sluice) gate that is closed after vessel entry, allowing seawater to be evacuated from the dock and the bottom of the vessel to come to rest on the dock floor. The dry environment facilitates vessel repair/new construction work. When a vessel in dry dock is ready exit, seawater is reintroduced, allowing the vessel to float and power out into open waters.

#### E61450 Floating Dock

A barge with two high side walls and open front and back sides (resembling a “U” when viewed from the front or back) constructed to float and maneuver on water. To facilitate the entry of a vessel, seawater is introduced into ballast tanks, which partially submerges the floating dock to a depth sufficient for vessel entry. After the floating dock with its vessel reaches a predetermined destination for repairs, ballast tanks are drained, allowing the vessel and dock platform to rise above the water line. After repairs, the floating dock is submerged again to allow the vessel to power out into open waters.

#### E61460 Slipway

Ramp of reinforced concrete (RC) located along the shore and inclined downward into the sea that allows vessels to be released into/brought out of open waters. The slipway is fitted with fixed rails and a ship cradle, which is connected to a winch used to pull the cradle and vessel onshore to effect vessel repairs. Also used to launch new vessels into open water.

#### E61470 Sea Dike/Sea Embankment

Structure built to demarcate the boundary between the open waters beyond the port and port land, control the effect of tides and waves on port waters, and ensure the safety of port land and related structures and facilities.

#### E61480 Breakwater

Engineered structure used to protect vessels within a port from incoming sea waves.

#### E61490 Groin

Engineered structure used to prevent seabed sand from moving in toward the coast and silting port waters.

#### E61500 Training Wall

Engineered structure used to redirect flowing water out to sea to prevent seabed sand from building up in and obstructing navigation channels. Installed primarily at ports located near silt/sand-prone bays and estuaries.

#### E61510 Silo

Storage structure used exclusively to store grains. These honeycomb-type, compartmentalized structures incorporate equipment that suction grain directly from ship holds to silos.

E61520 Container Yard (C.Y.)

Dedicated holding and storage area for containerized cargo. CYs are designed to hold containers for longer periods of time than marshalling yards (MYs). Empty containers are also stored onsite for use in container loading and devanning operations, as directed by the container freight station (CFS).

E61530 Marshalling Yard (M.Y.)

A part of container terminal operations that links container wharves to associated yard areas. All loaded containers awaiting vessel loading and all offloaded containers awaiting inland transportation are processed through the MY. Thus MYs typically require significant physical space that, in principle, should be large enough to hold all of the containers from one, full container ship. MYs typically occupy 50~65% of the total land area of a container terminal.

E61540 Container Freight Station (C.F.S.)

Dedicated area for the consolidation/de-consolidation of duty-exempt import/export containerized cargoes, with primary work focused on consolidating/de-consolidating “less-than container load” LCL consignments and on Customs matters. The CFS is typically located inside a container terminal, nearby within the port, or at a convenient inland location. CFS responsibilities include container loading/emptying, container consignment, leasing container/cargo handling equipment, container inspection and storage, providing power for refrigerated containers, agency for container leasing, the repair/maintenance of container handling equipment and trailers, and the bonded warehousing of containerized cargoes.

E61550 Self-provided Trolley

Shipboard container crane.

E61560 Conveyor

System comprising a motor, gear box, chain, and sheet rubber used for point-to-point cargo conveyance.

**E62 Port Business Statistics**

E62010 Number of Ships

Total number of vessels entering (exiting) a port during a specified time period. Each discrete entry (exit) of a vessel during this time period increases the total number.

E62020 Vessel-hour

Accumulated vessel time at berth (dock). Used for fee calculation.

E62030 Ship Time in Port

Time elapsed between a vessel passing by the vessel traffic control center (VTCC) during port arrival and that same vessel passing by the VTCC during port departure.

- E62040 Turnaround Time  
Time elapsed between a vessel arriving in the outer anchorage of a port and it departing from the port (i.e., time in port + waiting time).
- E62050 Mooring Buoy Hours  
Duration of time moored at a mooring buoy. Time spent unmooring is deducted from this calculation.
- E62060 Wharfing Hours  
Duration of time moored at a wharf. Time spent unmooring is deducted from this calculation.
- E62070 Berthing Hours  
Duration of time spent at berth (i.e., total wharfing hours + total mooring buoy hours).
- E62080 Ship Waiting Time for Berth  
Duration of time spent in the outer anchorage area awaiting port entry. Exclusive of time attributable to vessel-related factors and time spent on navigation activities outside of the port.
- E62090 Incoming and Outgoing Passengers  
Number of onboarded/offboarded passengers departing/arriving in a port by ship.
- E62100 Berth Utilization Rate  
Ratio used to determine the utilization status of berths at a port calculated using the total actual berthing hours divided by the total number of available berths multiplied by the total available berthing hours.  
Formula:  
Berth Utilization Rate =  $\Sigma(\text{unmooring time} - \text{mooring time}) / (\text{no. of available berths} \times \text{total available berthing hours})$   
note: ‘berth’ refers to wharves, mooring buoys, and other mooring facilities available for the water mooring of vessels and the onloading/offloading of cargoes and/or passengers. Each available berth is presumed to have 24 available berthing hours per day.
- E62110 Wharf Utilization Rate/Berth Occupancy Rate  
Ratio used to determine the utilization status of wharves at a port categorized by type. Three variables are generally used, including time, vessel length, and vessel days in port. Example A: On one day, one vessel in port moored at one wharf for 12 hours generates a single-day utilization rate for that wharf of 50%. Example B: On one day, a one 100m-long vessel in port moored at a 200m-long wharf for 12 hours generates a single-day utilization rate for that wharf of 25%; i.e.,  $(100/200) \times (12/24) = 25\%$ . Example C: On one day, two vessels in port moored (at non-overlapping periods of time) at one wharf generates a single-day utilization rate for that wharf of 200%.

E62120 Average Wharfing Hours

Calculated as the total number of wharfing hours divided by the total number of ships docked.

Formula:

Average Wharfing Hours =  $\Sigma(\text{unmooring time} - \text{mooring time}) / \text{total no. of ships docked}$

E62130 Average Berthing Hours

Calculated as the total number of berthing hours divided by the total number of ships docked.

Formula:

Average Berthing Hours =  $\Sigma(\text{total wharf hours} + \text{total mooring buoy hours}) / \text{total no. of ships docked}$

E62140 Vessel Congestion Index

Calculated as the total time of ships awaiting entry in outer port waters divided by time

Formula:

Vessel Congestion Index =  $\text{total time spent by all vessels in outer port waters awaiting entry} / \text{total time spent by all vessels in port} \times 100\%$

note: time spent in port refers to time elapsed between a vessel passing by the vessel traffic control center (VTCC) during port arrival and that same vessel passing by the VTCC during port departure.

E62150 Loading

The onloading of cargo onto a vessel from a wharf, barge, or water surface. Typically calculated in freight tons (aka revenue tons).

E62160 Unloading/Discharge

The offloading of cargo from vessels onto a wharf, barge, or water surface. Typically calculated in freight tons (aka revenue tons).

E62170 Revenue Ton/Freight Ton

Unit of measure widely used in cargo handling and shipping. Revenue ton/freight ton is equal to either the registered tonnage or deadweight tonnage of a cargo consignment (whichever value is largest).

E62180 Cargo Tonnage Handled

Total weight of cargo loaded/offloaded from a vessel. Typically expressed in revenue tons/freight tons.

E62190 Cargo Throughput

Total weight of cargo transported into/out of a port. Expressed in deadweight tons (dwt). Cargo throughput comprises two components: inbound cargo tonnage and

outbound cargo tonnage.

E62200 Inbound Cargo Tonnage

Total weight (in deadweight tons) of cargo transported into a port via both international and domestic routes.

E62210 Outbound Cargo Tonnage

Total weight (in deadweight tons) of cargo transported out of a port via both international and domestic routes.

E62220 Containers Handled

Total number of containers handled at a port. Expressed in twenty-foot equivalent units (TEU), i.e., standard 20' container units.

E62230 Pipe Line Handling

Volume of unloaded/offloaded pipes destined for above/below ground or above/below water use.

E62240 Man-hours

Number of individuals actually deployed in cargo handling operations multiplied by the total number of working hours. Total man-hours for a specific period of time may be calculated using the following formula:

$$\text{Total Man-Hours} = \sum_{i=1}^N \text{Man}_i \times H_i$$

notes:  $\text{Man}_i$  refers to the number of individuals assigned to cargo handling operations;  
 $H_i$  refers to the number of total hours spent on cargo handling operations; “N” refers to the number of cargo shipments handled during the targeted time period.

E62250 Machine-hours

Number of machines actually deployed in cargo handling operations multiplied by the total number of hours used. Total machine-hours for a specific period of time may be calculated using the following formula:

$$\text{Total Machine-Hours} = \sum_{i=1}^N \text{Mach}_i \times H_i$$

notes:  $\text{Mach}_i$  refers to the number of machines assigned to cargo handling operations;  
 $H_i$  refers to the number of total hours spent on cargo handling operations; “N” refers to the number of cargo shipments handled during the targeted time period.

E62260 Cargo Handling Efficiency

This ratio may be expressed in terms of either human efficiency or machine efficiency. The formula for cargo handling efficiency divides handled cargo volume by either man-hours or machine-hours. Machine cargo handling efficiency is generally expressed in terms of either gross or net cargo handling. Net cargo handling is the standard currently used in official Taiwan (ROC) port statistics.

- E62270 Gross Cargo Handling Rate  
Quantity of handled cargoes as a ratio of vessel time at wharf.
- E62280 Net Cargo Handling Rate  
Quantity of handled cargoes as ratio of handling machine operating time.
- E62290 Container Handling Rate  
Total containers handled divided by time spent on related handling operations.  
Formula:  
Container Handling Rate = Total containers handled (TEU) / machine (or man)-hours
- E62300 Container Gantry Crane Handling Rate  
Total number of containers handled by gantry cranes divided by time spent by gantry cranes on said handling operations. Formula:  
Container Gantry Crane Handling Rate = No. of container gantry cranes in operation (unit) / container gantry crane (or man)-hours
- E62310 Warehouse & Transit Shed Capacity  
Total volumetric space in warehouses and transit sheds (minus designated reserved space and access pathways/roads) available for cargo storage. Expressed as the largest quantity of cargo that may be stored concurrently (in revenue/freight tonnage).
- E62320 Warehouse & Transit Shed Receiving  
Volume of cargo received by warehouses and transit sheds during a specific period of time.
- E62330 Warehouse & Transit Shed Delivery  
Volume of cargo delivered from warehouses and transit sheds during a specific period of time.
- E62340 Warehouse & Transit Shed Remaining  
Volume of cargo currently stored at warehouses and transit sheds.
- E62350 Ton-day of Storage  
Daily volume of cargo in storage over a specific period of time. Calculated as the product sum of cargo volume and number of days held in storage.
- E62360 Capacity of Storage in Ton Days  
The capacity of a warehouse (or transit shed) multiplied by days in use. For example, the capacity of storage in ton days for a specific warehouse in January would be that warehouse's capacity multiplied by 31 (days).
- E62370 Warehouse & Transit-Shed Utilization Rate  
A ratio obtained by dividing the storage capacity used in a specific warehouse (or transit shed) during a specific period of time by the total storage capacity available

in that warehouse (or transit shed). This ratio is used to assess the usage/underutilization status of storage facilities.

**E62380 Average Storage Days**

The average number of days that a metric ton of cargo spends in a given warehouse or transit shed during a given period of time. Calculated as: ton-day of storage during a specified period of time divided by warehouse & transit-shed receiving.

**E62390 Warehouse & Transit-Shed Turnover Rate**

The ratio of stored cargo to capacity for a given warehouse or transit shed during a given period of time. Formula:

Turnover Rate for current month = cargo volume received this month / total capacity of warehouse or transit shed

**E62400 Tally**

This activity refers to the regularized tasks of inventorying, shipping-documents confirmation, and goods inspection conducted during the shipping process (onloading/offloading, warehouse arrival/departure) by representatives of the shipping company or warehouse.

**E62410 Degree of Containerization**

Formula:

Degree of Containerization = total tonnage weight of containerized freight / (cargo throughput - bulk cargo [tonnage]) x 100%

**E62420 Marine Casualties at the Port**

Number of vessels (excluding fishing boats) involved in collision, grounding, fire accident, explosion, leakage, capsizing, or mechanical failure incidents or experiencing major incidents with regard to cargoes, vessel personnel, or passengers.

**E62430 Free Trade Zone (FTZ) Enterprise**

A company authorized to operate in a port free trade zone (FTZ) in one of the following sectors: trading, goods storage, logistics, container/cargo distribution, reexport, transshipment, stevedoring/forwarding, customs-clearance services, assembly, repacking, repair/refitting, value-added processing, manufacturing, inspection, testing, exhibition, and technical services.

**E62440 Tax Zone**

All areas outside of designated bonded areas within a customs territory.

**E62450 Bonded Area**

Duty-exempted area within a nation's borders where cargoes may be stored prior to customs clearance procedures under national customs agency supervision and approval.

- E62460 **Science Industrial Park**  
An industrial park established under the auspices of the National Science Council and approved by the Executive Yuan to stimulate the development domestically of high-tech industries and technical personnel critical to long-term national industrial research, innovation, and industry development goals.
- E62470 **Export Processing Zone (EPZ)**  
An industrial zone established and managed under regulations set by the Ministry of Economic Affairs and approved by the Executive Yuan to promote inbound investment and Taiwan's profile in international trade.
- E62480 **Bonded Factory**  
A legal factory established by a registered corporation under the Company Act that has been approved by the Customs authority and is operated in accordance with the Regulations Governing Customs Bonded Factories.
- E62490 **Exemption Amount**  
Amount of tariff, business tax, and trade promotion service charge exemption due an FTZ enterprise after submitting to the customs authority an F1 statement on goods import and storage (incl. values and tariff no.).
- E62500 **Foreign Goods to be Stored**  
Cargoes to be imported into and offloaded and stored at a port.
- E62510 **Goods for Export**  
Cargoes to be onloaded and shipped by vessel overseas from a port.
- E63 Port Finance Statistics**
- E63010 **Operating Revenues**  
Port revenues attributable to operations (port services).
- E63020 **Operating Expenses**  
Port costs and expenditures attributable to operations (port services).
- E63030 **Operating Profit (Loss)**  
The remainder after operating expenses are subtracted from operating revenues. An operating profit is expressed as a positive number, and an operating loss is expressed as a negative number.
- E63040 **Non-Operating Profit (Loss)**  
Profits or losses accrued from non-operating (core business) sources. A non-operating profit is expressed as a positive number, and a non-operating loss is expressed as a negative number.
- E63050 **Average Operating Revenue per Employee**

Total operating revenues divided by number of employees. Formula:  
Average Operating Revenue per Employee = operating revenue / no. of employees

**E63060 Average Operating Profit (Loss) per Employee**

Total operating profit (loss) divided by number of employees. Formula:  
Average Operating Profit (Loss) per Employee = operating profit or loss / no. of employees

**E63070 Average Earnings per Employee**

Earnings (net profit) divided by number of employees. Formula:  
Average Earnings per Employee: earnings [net profit] / no. of employees. Earnings (net profit) equal to the sum of operating profits and non-operating profits.

**E63080 Port Business Revenues & Expenses Ratio**

Total port revenues divided by port business expenditures, expressed as a percentage.  
Formula:  
Port Business Revenues & Expenses Ratio = port business revenues / port business expenditures x 100%  
Port business expenditures comprise costs and cost allocations related to maintenance expenses, operating expenses, management expenses, and other relevant expenses.

**E63090 Terminal Operational Revenues & Expenses Ratio**

Terminal-related operational revenues divided by operational expenses, expressed as a percentage.  
Formula:  
Terminal Operational Revenues & Expenses Ratio = terminal operational revenues / terminal operational expenses x 100%  
Terminal operational expenses comprise terminal fees and costs allocated for maintenance expenses, operating expenses, management expenses, and other relevant expenses.

**E63100 Average Cost for Loading or Unloading Container**

Costs directly attributed or allocated to container loading/offloading operations divided by total number of containers loaded/offloaded.  
Formula:  
Average Cost for Loading or Unloading Container = Costs attributed or allocated to container loading or offloading operations (terminal fees + maintenance fees + business fees + management fees + other operational costs) / container handling volume in current period.

**E63110 Average Remaining Ton-Day Cost**

Costs directly attributed or allocated to storage and warehousing services divided by cargo ton-days of storage.

Formula:

Average remaining Ton-Day Cost = Costs directly attributed or allocated to storage and warehousing services (terminal fees + maintenance fees + business fees + management fees + other operational costs) / cargo ton-days of storage in current period.

#### E63120 Port Service Fees

Fees collected by the port administrative agency for arriving vessels, departing passengers, and handled cargoes in accordance with the Regulations on the Collection, Custody, and Use of Commercial Port Dues.