

# Private Sector Participation in International Ports

## The PPP Experience and the Road Ahead

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**Abstract:-** This paper attempts to trace the evolution of ports and how private sector has always been a part of global port services. The role of private sector has at all times been significant in Port development and delivery. While looking at emergence of PPP in Global ports and two successful case studies, the conflict that can arise in private participation of public (government owned) entities are also touched upon. These developments and current trends focussing on growth of 'smart ports' are outlined.

**Keywords:-** Global Ports, PPP, PSP, Private Sector, Smart Ports.

### I. INTRODUCTION- EVOLUTION OF GLOBAL PORTS

A port has an assortment of meanings- it can be a small quay for docking a ship or it can refer to a widespread hub that encompasses terminals and several business centres, manufacturing hubs and amenities. Each Port is unique in the manner of the assorted services they provide, their hinterland businesses, their connectivity and their operations. Ports are essentially those hubs that provide interfaces between sea and land for transport storage and distribution of commodities.

Sea lanes evolved over centuries and has a history dating back to thousands of years The Silk Road is one which is legendary in ancient International trade and which shaped many contemporary trade links. The East-West movement of goods happened with the evolution of the Silk Road. The below figures (Fig 1 & 2) outline the Silk route that stretches from the Mediterranean region across Persia (Iran), undivided India, China and the Far East. Other than of course silk, the Chinese also traded in a multitude of their cultivated products – tea, sugar, the famous chinaware and spices. Their imports included commodities like cotton and wool and precious metals including ivory. These trade links not only established commerce but also flourished in transfer of cultures and traditions of the Asian kingdoms and Persia to the European countries of Greek and Rome.

Port history has always been fascinating for the sociologists and anthropologists who studied evolution of trade and culture which essentially travelled through seas; and Ports were gateways to vital links between cultures. The interest however was earlier mostly focused on the land and water interface which facilitated Trade and shipping, whereas currently Ports are looked at on a broader perspective, such as the worth of goods traded and the competitive position.



Fig. 1:- Silk Route

Source -<https://www.revolvy.com/page/Silk-Road>

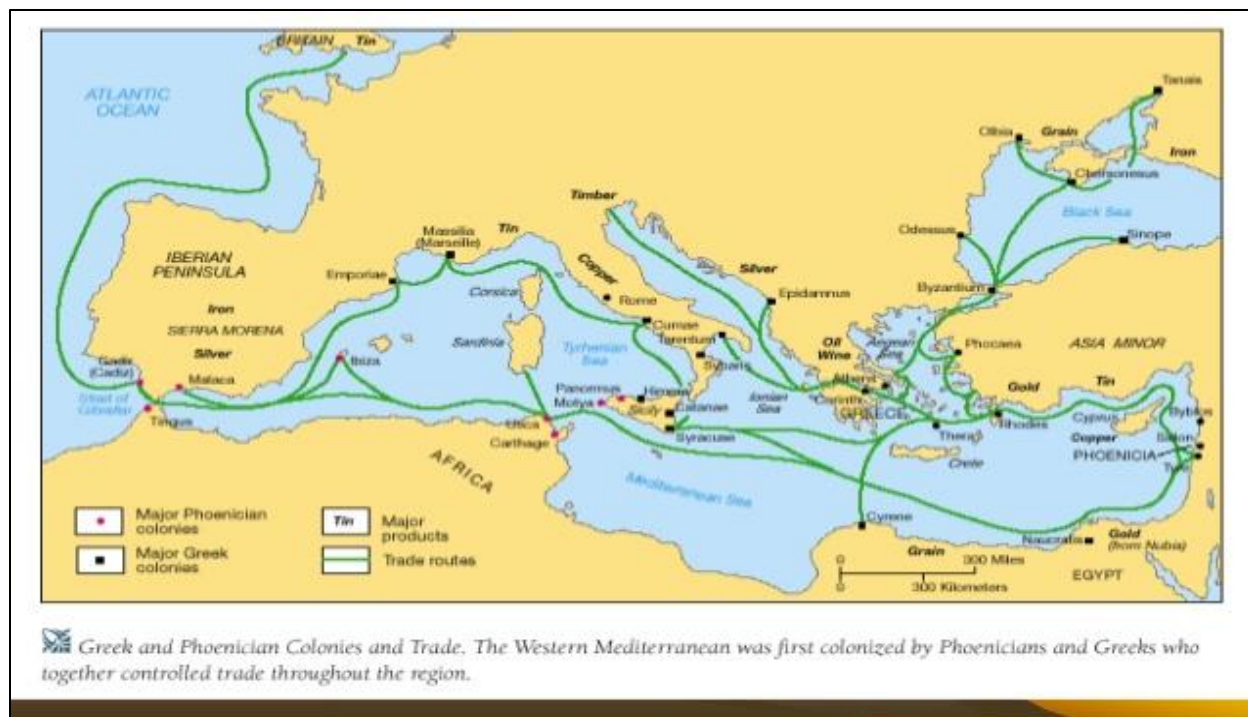


Fig. 2:- Mediterranean Sea Lanes

Source -<https://www.sutori.com/item/mediterranean-sea-lanes-9048>

There were three great influences on the ports worldwide in general that combined to make this sector an attractive destination for investors. Firstly, the rise of container trade that grew faster than the world’s GDP. Secondly, corporate alliances in shipping business that created huge differences in the manner of conduct of shipping in general and shaped genuinely international hubs where global exchange of container cargo happened. Thirdly, the foundation of Ports in terms of structure and functions that were racing to stay abreast with the changing dynamics in global trade practice.

In developed nations, conservation and legal issues have inhibited the ports’ capability to rise to the need for expansion. Every port has its unique set of settings and restrictions. Port competition hinges on a combination of features – its location, positioning, hinterland connectivity, management, industry relations, regular clientele, and logistics facilities. These above affect the port’s performance and its investment appeal. Fig3 shows that trade growth is aligned to global GDP growth in the two decades before the global meltdown, and many in the shipping trade opine that the growth rate in container throughput is directly correlated to the world GDP.

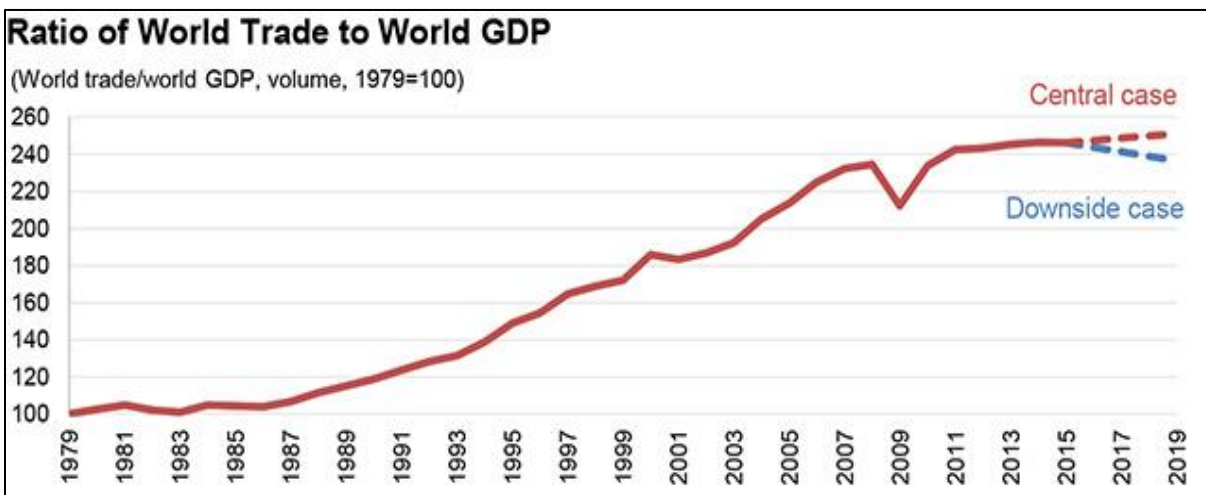


Fig 3:- Trend line of ratio of World Trade to World GDP

Source – IMF, DataStream, Fitch 2017

## II. RISE OF THE PRIVATE SECTOR IN PORTS

The vast writings on Ports and Shipping in general give valued insight into the intricacies of how a Port functions. Taking into account its historical and jurisdictional context, the evolving of various models and the service delivery is closely linked to the hinterland connectivity and resources. One of the world's oldest known harbors is at Wadi al-Jarf on the Red Sea. <sup>1</sup> Irrespective of the terms of proprietorship and regulation, the operation of a port never was meant to be looked at within the precincts of the dock or the border walls. Ports are not only interfaces between land and water, but are pedestals of the state wealth, security and superiority. These walled structures have been islands of intense interface between world's far flung societies and their culture.

In port governance, there was seen a universal inclination towards larger private sector participation, particularly in port services. The old-fashioned closed community ownership of public entities offering ports services underwent a metamorphosis. Across the globe there occurred mounting pressure on Port authorities to outsource their operations to the private sector based on resource availability and risk. Competition and availability of private enterprise in infrastructure management have in fact gradually changed the structure of public ports entities limiting themselves to governance and taking up a landlord role.

There arose the inclination by the port authorities for switching from public to viable corporate entities. This eventually led to the rise of Public Private Participation (PPP) in Port sector. The capability of PPPs has not been very encouraging in several nations, both developed and developing. Some have shown significant results in the public sphere, as there seems dearth of certain essential services much needed by the public.<sup>2</sup>

Traditionally, ports were operated on the public service model, wherein port infrastructure, equipment and all principal operations were operated by port authorities (PAs). The tool port model allows for private sector involvement as operators but relies on equipment provided by a PA. Today, most of the world's largest container ports operate using a landlord model, which has become the predominant choice for governments seeking to reform and engage the private sector.

Port Type	Infrastructure	Super structure	Stevedoring labour	Other functions
Service port (Major Indian Ports)	Public	Public	Public	Mainly public
Tool port (France, some African nations)	Public	Public	Private	Mainly public
Landlord port (Antwerp, Rotterdam, Singapore etc)	Public	Private	Private	Mainly private
Private port (UK, New Zealand)	Private	Private	Private	Mainly private

Fig Port Management Models

Within the landlord model, the public authority owns the port and provides the basic infrastructure and management of the marine side assets, while the private sector through concessions – often to international terminal operators– operates the container terminals with their own equipment and superstructure.

In typical port PPPs, the public entity enters into contracts with private port management companies which then operate individual terminals within the port. The landlord port authority functions as a technical regulator, overseeing the private operator, and collecting fees which typically consist of a fixed rental charge, a percentage of the private operators' revenues, a charge per container handled by the private operator, or some combination of the three.

### ➤ Effect of Privatising Operations in Ports

Since liberalisation, there has been a gradual commercialisation of infrastructure projects and a universal acceptance that Investment was most suitable where such projects would yield revenue from usage by the public who make use of the service. It was a matter of importance that such services should no longer be provided free of cost since user charges would be directly proportional to the welfares provided. There are several instances of Port administration being tentatively handed over to private players and where the latter made a runaway success of the partnership.

A model illustration is the Port of Buenos Aires, which in 1994 achieved stardom after its four busy Terminals were conceded to different private entities and their handling charges came down remarkably so much so that the entire Port productivity went up. Yet another instance was as early as 1995 when strategic services in Port of Panama were opened to the Private sector for expansion and modernisation and in three years' time, the Port attracted investments that crossed \$380 million. In Kipevu container terminal in Port of Mombasa, Kenya, private entity came in and scrapped

<sup>1</sup> <http://www.historyofinformation.com/detail.php?id=3552>

<sup>2</sup> Romero, M., 2018. *Opinion: Public-private partnerships don't work. It's time for the World Bank to take action.*

[Online]

Available at: <https://www.devex.com/news/opinion-public-private-partnerships-don-t-work-it-s-time-for-the-world-bank-to-take-action-92585>

outmoded equipment, bought new ones and administrative bottle necks were ironed out to bring in efficiency. Largely, from the 1990's about 220 private sector ventures in ports brought in \$21 billion for Terminal building and replacement of the old equipment with more modern efficient gear.

In the UK a bold move toward privatisation was ventured by selling off entire port operations. In Malaysia there is almost full adoption of above model, although most of its contracts in reality deal with creation of lease holds and not outright transfers. Many nations restrict the contracting part to terminal operations. Chinese Ports prefer joint ventures (JV) where the Government maintains a stake. According to industry experts, global movement of cargo is likely to be well affected by the organisational change happening in the Port & shipping industry and the strong wave of protectionism that is gripping the world's oldest trading nations. The containerisation growth seems to have hit a plateau and China is emerging as a key player in world trade.

Port privatisations have had its share of woes too and there are joint ventures that have backfired. There have been a number of cases of privatisations involving ports that have not worked out. In Indonesia, the Koja container terminal Port at Tanjung Priok, which was established by Hutchison Ports (a private firm) to handle additional throughput had to hand over the reins to the public port authorities after operational issues. In Germany, Rostock Port had to revoke its agreement with the private concessionaire as it faced non-compliance issues. In Italy after a disagreement arose with the Public Port (Trieste) entity, the private investor chose to opt out of the 30-year contract for container terminal operation within a year and a half. In Brazil, at the Port of Rosario, the concession granted was cancelled due to work disputes. The Kipevu concession in Mombasa was reversed as arguments regarding equipment broke the deal between the public and private parties.

#### ➤ *Port Privatisations- Emerging Conflict and their resolution*

The Private entity that enters into a concession agreement with Public Port entities often find that the service delivery requires more than just investment. The Ports with potential usually attract enough business to create Value for Money for the Public entity and enough Revenue for the Private entity. But very often transparency is missing, and dialogues turn stale and the partnership burns itself out. Due diligence before awarding of contracts was the key as learned by many Ports all over the globe as many attempts at PSP (Private Sector Participation) fell out of grace due to poor bidding and improper allocation of tenders.

A whole gamut of perspectives needed to be attended to: What was the legal framework for allowing private players into a hitherto public domain? What kind of guidelines need to be in place? What will be the extent of

independence granted to the private operators? Who will play the regulatory role? How will common expenses be split? Who is custodian of the Port resources? Will there be scope for re-negotiation?

There were enough instances where Private Investment in Port operations eventually took off in spite of the multitude of issues assailing the concession. Each country developed its own model of PPP/PPI and tried to resolve disputes arising from the partnership. China saw some very successful ventures where Public Ports like Port of Shanghai and Port of Hong Kong took to BOT projects for infrastructure building and building cross harbour tunnels. The Port service charges in Port of Hong Kong are known to be the lowest in the world. Given below are two successful Port PPP case studies and an outline of their Critical Success Factors.

### III. THE SUCCESS STORY OF PORT OF HONG KONG

Port of Hong Kong is reputed as the leading port in the world in container output. Over 40,000 ships berth here in a year and it services nearly 2, 00,000 river vessels. Hong Kong Port has nine well equipped large container terminals that offers complete set of Port services to the shippers to any destination in the world.



Fig. 4:- Port of Hong Kong

Source:

[https://www.porttechnology.org/news/hong\\_kong\\_outlines\\_congestion\\_master\\_plan](https://www.porttechnology.org/news/hong_kong_outlines_congestion_master_plan)

The Port attributes its enormous success to its ample privatisation policies. All the Port services are under private concessions and the container handling with the latest Cranes equipment, Piloting, Warehouse facility, Stevedoring, Ship repair and Tugs are all efficiently managed by the private entities. The Public entity maintains the Port premises as a

Landlord Port and does not concern itself in the merchant operations at all. All expansion projects in the premises are taken care of by the private entity as is technology update. Port authority provides the water depth required and includes clauses to protect the public interest.

Analysts opine that while regional and locational factors play a contributory role in the success of Hong Kong Port, an investor friendly approach, confidence on the demand supply dynamics, and the government's non-interference policy have significantly contributed to the Port's coveted place as an intercontinental shipping hub.

#### IV. PORT OF SHANGHAI- CHINA'S GATEWAY PORT TO INTERNATIONAL TRADE



Fig. 5:- Port of Shanghai, China

Source: <https://steelguru.com/auto/port-shanghai-china-throughput-down-by-0-6pct-h12018/514905?type=logistic#>

Port of Shanghai is China's largest all-inclusive port and is termed as China's Gateway to the world. The Port is fortunate to be the hub of multi-modal transport and is connected to highways that link the Port to all areas of the large nation. Most notably, Shanghai has developed all its terminals on the PPP model. Port of Shanghai is known for its vantage position, the natural setting and the well-developed and connected hinterland. The Port of Shanghai provides facilities to an extensive hinterland and handles over 25 percent of total trade of the nation. As many as over 3,000 container ships is said to berth at the Port monthly, with USA, Canada, Europe, the Middle East, Australia and many other as their destinations.

#### V. INTERNATIONAL TRENDS IN PORT GOVERNANCE

While Port privatisation was happening there was rising concern about the safety and protection of the environment as Ports increased their operations and widened their horizons. While increased economic activity was the most tangible outcome of Port expansion and container trade, there were also worldwide dialogues on the wellbeing of the entire ecosystem including coastal rehabilitation and threat to natural habitats. The following are the trends observed.

##### ➤ *Greenification:*

The continuous push for greener and more sustainable solutions forces ports and port companies to consider new approaches. The share of renewable energy is increasing - Following up on international climate targets, the world is increasingly transforming the energy-mix towards renewable sources. The share of renewable energy is increasing rapidly. Efficiency is going up while costs are going down fast. With the transshipment of fossil fuels at the core of many of the world's largest ports in connection to the chemical industry, this will have a major impact on port operations and its industrial clusters. Developing economies in Asia and Africa are expected to fully make up for this downward trend.

##### ➤ *Smart Ports:*

Technological advancements offer ports the opportunity to transform into smart ports-Data-driven technologies and Internet of Things, combined with advanced robotics and analytics and additive manufacturing will redefine the future of ports. Smart ports are capitalising on the ever-expanding universe of connected 'things'; the Internet of Things. Technology already has a strong impact on ports around the world today, but that impact will further increase. The message is to be disruptive or get disrupted. Being disrupted simply translates to not being prepared and to become redundant over time.

##### ➤ *Data is key:*

Data analytics is fast becoming a tool that that the Port sector can discerningly use to meet competition. Capacity sensing, route optimization, energy management, fault detection & resolution can be done for cost efficiency. Advanced data analytics allows for streamlining and optimizing existing infrastructure usage and operations by eliminating unnecessary / empty transport. Additive manufacturing is driving manufacturers towards the goal of zero-inventory. New opportunities will also emerge as a result of the growing focus on circular economy initiatives both by governments and companies. It is expected that soon automation will see advances where Robots will replace people which can result in increased efficiency and effectiveness of resource utilisation. Usage of drones for inspection can become a reality very soon. Self-steering ships will likely become the standard and the usage of sensors will replace the need for towing.

### ➤ Energy Hubs:

Ports are traditional concentrations of Petro-chemical industrial activity. Given the ongoing industrial restructuring towards renewable energy and a need to fight against greenhouse gases, ports necessarily need to adapt in order to survive and hold on to the thousands of jobs and the added value that is created in the port area. The energy transition provides ports with plenty of opportunities to bring new activities and employment to the port area. Leading ports are becoming centres of the off-shore wind energy sector or building refineries that transform urban domestic waste into electricity/heat or even chemicals. Port authorities have an important role to play in this transition. This however requires port authorities to be more than a landlord and work together with governments and scientific organizations.

### ➤ The Road ahead for Global Port sector

The outlook for ports as per industry experts is less positive than before, as global trends ensure an operating environment that is increasingly competitive, risky and predicts slower growth. While the port sector will largely remain as a profitable business, margins are expected to decline from “exceptional levels” enjoyed in the past decades<sup>3</sup>. IMF and the World Bank believe that South Asia presents a bright spot amid the gloomy global economic outlook. With huge populations and rising private consumptions in its hinterlands, the region is poised to be fastest growing in the next few years. There is also upside in production driven growth, although the risk of overcapacity lurks in the background. On the Technology front, Port infrastructure is on the cusp of a massive transformation with the advent of Elon Musk’s Hyperloop transport technology, enabling the rapid, point-to-point transfer of passengers or cargo using pods in a vacuum tunnel (Fig-5). The draw of the system is clear: Hyperloop could provide rapid transport of cargo directly from the port to various inland hubs and warehouses, or even to other port cities that have Hyperloop stations, thereby replacing rail, trucks, and – in the long term – possibly, feeder vessels<sup>4</sup>.

On the Private Sector Participation (PSP) front, a renewed focus on asset ‘recycling’ which is the term adopted for Infrastructure privatisation is being seen across countries. While this is presently an ostracized policy in many markets, it is widely accepted that it is the only pragmatic way out. This comes down to emerging as a smart port in order to stay in the game. PPP in infrastructure, according to many industry experts will strengthen and eventually pave way for more sustained growth of economies. Port sector has become

a very significant with economies being closely linked to trade and fluctuating GDP. As the world witnesses a wave of protectionism, Port and Shipping industry finds itself in a very challenging spot.

The above could be summed up in the following words of Patrick Burnson<sup>5</sup>, “**A recent increase in protectionist and anti-globalization rhetoric, particularly in the U.S., represents a risk for the ports sector. While this has not yet translated into higher tariffs or non-tariff barriers, and our base case is that disputes will be resolved within the existing World Trade Organization framework, our analysis suggests broader protectionist measures would have a significant impact**”<sup>6</sup>.



Fig 6:- Hyperloop Transportation  
Source: www.depositphotos.com

## VI. CONCLUSION

Private investment in the Global Transport sector has almost doubled in the last year (2017-18) with China and Indonesia having record private investments percentage share as compared to previous years. Port sector is believed to be in a dynamic flux where the traditional Port functions are being redefined by technology and PPI is undoubtedly the driver of the change. In spite of the protectionist wave felt over the European and American continents, Asian countries have immense potential for growth and it is expected that Asian Ports will ride the wave of growth and will emerge as future hubs of shipping and trade.

<sup>5</sup> Patrick Burnson is executive editor for *Logistics Management and Supply Chain Management Review* magazines and web sites.

<sup>6</sup> Burnson, P., 2017. *Global ports sector faces structurally slower growth, says Fitch Ratings*. [Online] [https://www.logisticsmgmt.com/article/global\\_ports\\_sector\\_faces\\_structurally\\_slower\\_growth\\_says\\_fitch\\_ratings](https://www.logisticsmgmt.com/article/global_ports_sector_faces_structurally_slower_growth_says_fitch_ratings)

<sup>3</sup> Wong, A., 2016. *Global Trends and their impact on the Port Sector*. [Online]

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<sup>4</sup> <https://fairplay.ihs.com/dredging/article/4303741/cargo-transport-via-hyperloop-may-disrupt-ports>