



PORT INFRASTRUCTURE AND PUBLIC-PRIVATE PARTNERSHIPS

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PUBLIC-PRIVATE PARTNERSHIPS (P3s)

P3s are contracts between a public agency and a *private* entity to finance, develop, or operate public infrastructure, including port facilities. They are particularly attractive to public agencies that cannot generate the revenue needed to finance large-scale infrastructure.

Under a P3, the private entity supplies some or all of the capital to develop the infrastructure. In exchange for the private capital, the public agency allows the private entity to operate the infrastructure and keep some or all of the revenue it generates.

Public agencies usually finance infrastructure by selling bonds to private investors and repaying them over a specified term with the revenue the agencies generate or funds they receive from other sources.

QUESTIONS

1. How does port infrastructure contribute to a state's economic development?
2. What are public-private partnerships (P3s) and can they be used to develop and operate port infrastructure?

SUMMARY

Port infrastructure contributes to a state's economic development by reducing shipping time and cost, but the extent to which it does so depends on several factors, including the use of labor saving technologies and methods for loading and unloading ships and the ability of trucks and trains to access port facilities.

Port infrastructure projects are generally very costly, potentially straining the financial capacity of state and local agencies, including quasi-public port authorities with independent bonding and taxing powers. For example, after the Port of Miami announced plans in August, 2013 to issue \$389 million in debt to finance major infrastructure improvements, Moody's Investors Services "cut its rating to four steps above junk...citing the growing debt burden" ([Bloomberg Politics](#), September 10, 2013).

Other challenges facing port infrastructure include competing against highways, bridges, and other types of public infrastructure for bond funds and, in the case of quasi-public port agencies, laws limiting their ability to use new funding and procurement methods, including P3s.

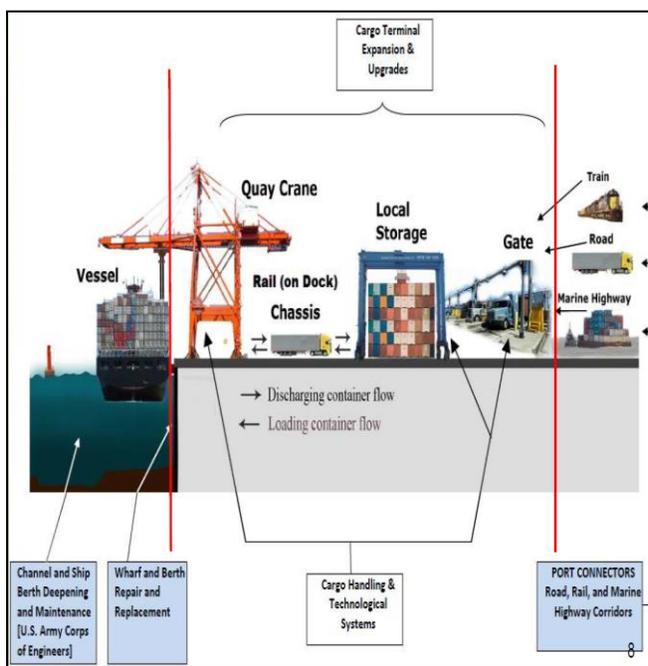
P3s have been used to develop and operate different kinds of infrastructure, including highways and ports, the nonprofit [National Council for Public-Private Partnerships](#) reports. P3 terms and conditions vary, but most involve the private partner in developing, maintaining, or operating the infrastructure in exchange for providing some or all of the financing.

Negotiating a P3 requires the public and private partners to sort out their roles and identify their respective risks. Risks for the public partner include higher port fees necessitated by private financing. Those for the private partner include contractual limits on the adjustments it can make to address cost overruns and revenue shortfalls.

Because P3s represent relatively new contractual arrangements for financing port projects, experts advise public agencies to proceed cautiously. Some, for example, speculate that P3s insulate the private partner from market competition and the pressure it generates to hold down costs. They also speculate that the public partner will be hard pressed to find cost savings if tax-exempt bond financing gives way to private financing.

“Availability Payments” P3s appear to address some of these concerns. Under this P3 model, which is still relatively new in the U.S., the private partner designs,

builds, finances, and operates the infrastructure as the contract requires. The public partner makes scheduled payments to the private partner as long as it meets the contract’s performance standards. The model’s proponents claim that it aligns the partners’ interests, but also advise the partners to proceed cautiously.



PORT INFRASTRUCTURE
Competitive Advantage

Port infrastructure improves a region’s competitive advantage by reducing the amount of time and money spent

on storing and moving cargo until it reaches its customer. The volume of cargo moving through U.S. ports is significant. According to the [American Association of Port Authorities](#) (AAPA), American ports handle more than 2 billion tons of cargo a year. In 2011, the value of that cargo was \$1.73 trillion, more than 11% of the nation's gross domestic product, AAPA stated.

As the graphic shows, port infrastructure generally consists of wharfs and berths for docking and securing vessels; quay cranes for loading or unloading cargo containers; rail systems for moving the containers to holding facilities; and depots where trucks, trains, and barges can delivery or receive containers for further transport (U.S. Maritime Administration).

The extent to which these components reduce shipping time and costs depend on several factors, including the depth of the navigation channels and berthing areas, the technology and techniques used to load and unload cargo, and the connections between the port and highways, railroads, and other modes of transportation.

The graphic illustrates this point. The cargo is contained in standard-size containers and placed on a vessel specifically designed transport them. Putting cargo in containers makes it easier to load or unload the cargo and store it for further shipment.

Before the advent of the container, world trade was a piecemeal undertaking with the land and sea segments accomplished in isolation with little coordination between various independent operations. The ship owner accepted the cargo when it arrived at the pier. Shipper and recipient alike did not expect, nor could they even envision, so-called 'just-in-time' service (Rod Vulovic, "Changing Ship Technology and Port Infrastructure Implications," [Trends and Future Challenges for U.S. Coastal Policy: Proceedings of a Workshop](#), January 22, 1999).



The value containers add to the shipping process is lost or diminished if the navigation channel is too shallow for container ships or the port cannot efficiently store and retrieve the containers for further shipment ([see graphic](#)). "Today's container ship is the linch-pin of cargo transportation, but it is only part of the total system which includes sophisticated shoreside terminals, intermodal

extensions to inland points by rail and highway, and automated information systems that track a shipment throughout its journey," Vulovic explained.

The pressure to reduce the time cargo remains in storage poses new challenges, including “bridge construction and repair, streamlining of intermodal transport and transshipment systems, dock demolition and land use conversion, new land uses, securing the ports, dredging or deepening the harbor to accept larger vessels so as to remain competitive via gaining scale economies, managing intergovernmental units, managing preferences of different groups, managing and defining the roles of the public and private sector, and marketing the interests of the port and infrastructure financing,” Stouch stated.

Miami’s infrastructure expansion plan supports Vulovic’s and Stouch’s analyses and illustrates the high cost of port infrastructure improvements. The port plans to spend \$220 million on dredging the channel, \$1 billion on constructing a tunnel directly linking the port to the interstate highway, and \$50 million on improvements linking the port to rail lines (*Bloomberg*).

Financing Hurdles

Despite the competitive advantages modern ports offer, governments seeking to maintain, upgrade, or develop ports or other types of public infrastructure face many financial hurdles, Hofstra University economic geography professor, Jean-Paul Rodrigue [explained](#), including:

1. funding proposals that fail to provide enough funds for maintaining transportation infrastructure and improving their performance,
2. avoiding politically driven investments that spread transportation dollars among many different projects while undermining the transportation system’s overall productivity,
3. identifying how different transportation projects affect the system’s performance, and
4. aligning government’s and the private investors’ timeframes for repaying bonds.

As port agencies struggle to meet these challenges, some turn to the private sector to cover the financial gap. Traditionally, the private investors purchased the bonds or other debt instruments port agencies issued to raise the capital for developing the infrastructure. The investors paid no taxes on the interest they earn, exercise little or no operational control over the infrastructure, and received none of the income it generates. Today, many port agencies and other bond-issuing government agencies lack the financial wherewithal to issue the amount of bonds needed to develop or maintain the infrastructure.

“The level of government expenses in a variety of social welfare practices is a growing burden on public finance, leaving limited options for divesture,” Rodrigue wrote. The other reasons public agencies turn to the private sector include:

1. management and labor costs that exceed those incurred to operate and maintain comparable private infrastructure,
2. the need to use tax revenue to close the gap between the revenues ports generate and the cost to operate them, and
3. higher infrastructure costs resulting from the pressure to satisfy many competing constituents.

Meanwhile, private investors are competing to acquire port facilities and other intermodal terminals, whose value has substantially increased in recent years as they emerged as key links in the global supply chains. Consequently, investors view such infrastructure as “fairly liquid assets with an anticipation that they will gain in value,” Rodrigue stated. Because shippers and other transporters pay fees to use this infrastructure, they “guarantee a source of income linked to the traffic volume they handle.” Acquiring intermodal terminals also allows investors to diversify their holdings and thus reduce their overall risks.

PUBLIC-PRIVATE PARTNERSHIPS

Benefits

A P3 potentially shores up a port agency’s financial capacity to develop and maintain infrastructure by incenting private entities to participate in financing and operating port infrastructure. Historically, public port agencies separately bid the design and construction of port infrastructure, including breakwaters, connecting roads and bridges, and other components that serve many users. They also award concessions to private companies to build and operate new facilities under long-term leases or operate existing facilities under such leases.



<http://marketextension.com/en/services-sales-partnerships.php>

Under a P3, port agencies issue one bid for both phases (i.e., design and build procurement), a practice its proponents claim eliminate construction delays, reduce cost overruns, and permit the use of other innovative methods. These and other expectations are stated in New York’s law authorizing design and build procurement (Part F, Chapter 56 of the Laws of New York of 2011; [see](#) New York State Comptroller DiNapoli’s summary of that law). Other procurement options include long-term concessions allowing the private entity to manage and operate infrastructure serving many users. Consequently, P3s “confer a wide range of options in terms of capital allocation and respective levels of participation,” Rodrigue stated.

Limits and Constraints

By expanding the range of procurement options for developing and operating public infrastructure, P3s alter the historical relationship between public agencies and private entities. Consequently, “ports need to be alert to the issues and limits on their authority so they do not concede to developers’ structuring proposals (that may sound perfectly reasonable in a private context) and find themselves in the midst of something they ought not to be,” Skinner wrote ([*Ports Partnering with Private Developers: A Public Approach to Real Estate Deals*](#), American Association of Port Authorities Property Management and Pricing Seminar, June 25, 2008).

For example, the laws governing a port authority—a type of quasi-public agency created to develop, maintain, and operate ports—may prohibit it from sharing profits and risks with a private entity. They may also prevent the authority from lending funds to private entities for building port facilities or allowing these entities to set the fees for using those facilities. In some cases, the laws may not address the issues that arise when negotiating a P3, including (1) the tax-exempt status of port infrastructure developed with public funds but operated by a private entity, (2) whether public bidding and prevailing wage laws apply to privately financed port infrastructure, and (3) the port authority’s ability to condemn and convey land to private entities.

Environmental and economic factors could also affect a port authority’s ability to negotiate a P3. For example, “port property often features unstable soils and fill materials or is subject to height restrictions so as to block water views—this limits the size of a project and the potential return,” Skinner wrote. These and similar issues may cause the private partner to negotiate conditions that minimize its risks and maximize its returns. “The guiding principle of a real estate developer—to use as little of its own money as possible—should lead the port to explore how much ‘skin in the game’ the developer really has (i.e., how much money it has at risk).”

The private partner’s other strategies to maximize gains and minimize risk include setting up “a separate ‘special purpose entity’ (and indeed may be required to do so by its lender) that only owns its piece of the project and has no other assets.” Such an arrangement could work against the port authority by preventing any recourse to the private partner’s “deep pockets.”

Lastly, successfully negotiating a P3 could also depend on (1) the terms and conditions a lender imposes on the private partner’s financing, (2) the private partner’s expectations about when the authority will issue bonds and complete site improvements, and (3) whether the private partner will agree to contractual assurances that are binding on it and its successors.

Assigning Risks

An infrastructure project's inherent risks could affect a P3 negotiation, as each partner seeks contractual assurances minimizing their respective risks and uncertainties. The public partner wants the private partner to assume some of the financial risk of developing and operating public infrastructure. The private partner is mainly concerned about contractual conditions restricting its ability to address changes affecting its profits, such as decreases in the amount of cargo flowing through the port, and ensuring that the public partner continues to provide the funds needed to develop, maintain, or operate the infrastructure. Because neither party can foresee all possible eventualities, both may also propose conditions and procedures for amending the contract (Work Bank, [Port Reform Toolkit Module 5: Financial Implications of Port Reform](#), 2007).

Possible Unintended Consequences

While P3s allow governments to leverage private resources and expertise, they potentially insulate the partners from competition and remove the incentive to control costs and seek new markets, Rodrigue warned. For example, contractual terms and conditions limiting the private partner's profits could discourage it from investing in new technology and management techniques. Trying to comply with these terms and conditions could come "at the expense of focusing on new opportunities and mitigating the associated risk." Consequently, "the rewards of risk taking are essentially removed." Ironically, such an outcome "can be seen as a reverse form of moral hazard where a government guarantee undermines the risk taking behavior of private enterprise," he stated.

Cautionary Approach

Governments finance many infrastructure projects by selling tax-exempt bonds to private investors and hiring private contractors to construct the infrastructure. P3s change that relationship by making private entities partners in financing, developing, and operating public infrastructure. "At its best, private investment can save the public money and improve services in the long run. At its worst, it can burden the public with costs that could have been avoided while degrading the quality or limiting the access to essential services," New York State Comptroller, Thomas P. DiNapoli, [stated](#) (*Private Financing of Public Infrastructure: Risks and Options for New York State* (June 2013)). Consequently, "policy makers should first develop a better understanding of the potential costs and benefits of this [P3] approach," DiNapoli advised.

DiNapoli's caution stems from differences in how public agencies and private investors finance infrastructure projects. Public agencies spend less to borrow

funds when they issue tax-exempt bonds, a practice that allows them to charge no or minimal fees for using the infrastructure the bonds finance. Private developers cannot issue these bonds and thus must borrow funds from private sources. Consequently, P3s that use private financing to develop public infrastructure must find cost savings “in areas other than the financing itself, such as lower costs for employee compensation, reduced operations and maintenance costs and the monetary value of shifting the risks from the public to the private sector.”

Quantifying these potential cost savings is difficult, according to di Napoli. And yet, “effective use of P3 procurements requires the governmental authority to make most of its major decisions early in the process, ensuring that financial and other safeguards are built into the contracts it signs with private entities. In contrast, traditional public procurement methods allow the state to put off questions of operations and maintenance to the future,” he stated.

Availability Payments

“Availability payments” P3s appear to address some of the above-mentioned concerns. The term refers to a partnership in which (1) the private partner designs, builds, and finances the infrastructure on the public partner’s behalf and (2) the public partner agrees to make predetermined payments to the private partner as long as the private partner designs, builds, maintains, and operates the infrastructure as the partnership agreement requires. (P3s under which the private partner must perform all of these tasks are also called Design-Build-Finance-Maintain-Operate contracts (DBFMOs)).

Although the private partner plays a larger role under a DBFMO, the public partner “remains in full control and keeps ownership over the assets, including all revenues the asset generates,” according to the law firm Mayer-Brown (“[Availability Payment Public-Private Partnership for Port Projects](#),” 2011.) The public partner makes the availability payments only if the private partner performs the required tasks, which not include serving a specified number of customers or generating a specified amount of revenue. Consequently, availability payment P3s work best when the partners:

1. can easily defined the performance or operational criteria for making payments,
2. cannot readily predict or influence the amount of revenue or demand the infrastructure generates, and
3. agree that the quality of service matters more than the amount of revenue generated (Dochia and Parker, “[Introduction to Public-Private Partnerships with Availability Payments](#),” Jeffrey A. Parker and Associates, 2009).

According to Mayer-Brown, availability payment P3s benefit the public partner by:

1. eliminating or reducing the need for public funding to start and complete the infrastructure project,
2. motivating the private partner to construct the infrastructure to minimize future maintenance and operating costs,
3. ensuring that private partner completes the construction on time and continues to make it available to its users, and
4. shifting the risk of cost overruns and higher-than-expected maintenance costs onto the private partner.

Despite these potential benefits, a public agency might consider the following factors before negotiating an availability payments P3. Because selecting a partner is more complex than hiring a contractor, the selection process may require more time and money. The relatively long term of these P3s could limit the public partner's ability to make future changes, especially if they affect the private partner's cost assumptions.

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