

The Port Of Virginia: A Primer



THE PORT OF VIRGINIA: A PRIMER

The Port of Virginia (“the Port”) is the third-largest port on the East Coast and the fifth largest in the United States. In 2014 alone, 2,789 vessels called on the Port and more than \$71 billion worth of cargo flowed through it. Like any business, activities at the Port have evolved amid changing economic and political conditions. To remain competitive, the Port must be nimble and adjust to changing circumstances.

Our goal in this chapter is to provide readers with a nontechnical primer about the Port and its prospects. We’ll deal with its organization, its financial situation, its current activities, the likely effects of future developments such as the expansion of the Panama Canal, and its logistical challenges.

How The Port Is Organized

Since the early 1980s, the Port of Virginia has operated as a public-private partnership. In 1981, the Virginia General Assembly gave the Virginia Port Authority (VPA) the power to acquire and maintain Virginia port terminals. The intent was to place all of the Commonwealth’s maritime assets under one umbrella. Prior to this, several municipalities (in our region, Newport News, Norfolk and Portsmouth) owned the marine terminal on their shores. The General Assembly accurately surmised that the unification of the terminals would help keep the Port competitive with its East Coast rivals and stimulate economic growth.

The state-run VPA created Virginia International Terminals (VIT) in 1982 as a private, not-for-profit organization. VIT was tasked with running the daily operations at the Port Authority’s newly acquired terminals in Newport News, Norfolk and Portsmouth. Because it is a private organization, VIT is not subject to a variety of Virginia statutes and regulations. For example, VIT has the ability to contract with the International Longshoremen’s Association, which dominates port labor relations throughout the United States, whereas the Commonwealth is forbidden by statute from doing so.

The public VPA owns or leases terminals, while the private VIT has historically managed operations and negotiated with customers. This type of management structure is not unusual. An easy majority of the world’s largest ports are managed and operated by private firms, the largest of which are Hutchison, DP World, PSA and APM Maersk.

Until 2007, all of the major maritime container terminals in Hampton Roads were owned by the Commonwealth’s VPA. However, in that year, APM Terminals Virginia (operated by Danish business conglomerate Maersk) opened in Portsmouth. The APM facility utilizes state-of-the-art technology and was built at a cost approximating \$540 million. At the time, APM Terminals Virginia was the largest privately owned terminal in the United States and was designed to accommodate larger vessels that are expected to come through the expanded Panama Canal.

In 2010, the VPA chose to lease the APM Terminals facility and signed a 20-year lease agreement with APM. The positives associated with the leasing deal included once again placing all of the major port facilities under one umbrella (important for marketing and efficiency reasons) and providing the Port with additional capacity and connections to critical railroad infrastructure. On the other side of the ledger, however, leasing the APM facility came at a hefty price and is estimated to cost approximately \$1 billion over the 20 years. The cost of the lease is among the reasons why the Port has incurred financial losses in recent years.

Port Finances

Since the VPA is a state agency, questions have emerged regarding its financial performance as well as the very closely connected financial performance of the Port. Graph 1 displays the Port's operating revenues, expenses and net income (revenues minus expenses). These data provide an important measure of the success of the Port's operations and how its fiscal health has changed over time. The data relate to the VPA fiscal years, which end on June 30.

If net income is the criterion, then the Port often has not fared well financially over the last decade. In only three of the last 11 years has it experienced positive net operating income. The spike in operating costs since 2010 reflects (among other things) the leasing costs for APM Terminals Virginia, which since has been renamed the Virginia International Gateway.

Operating revenues fell dramatically during the Great Recession, but then fell again in 2014. The former decline was understandable: weak economic conditions during that recession reduced maritime trade, and this was out of the control of management. However, the decline in 2014 cannot be similarly dismissed. A look at VPA financial statements reveals that the decline in revenue in FY 2014 was due primarily to a decline in revenue coming from the port operator, VIT.

However, the Port's performance in FY 2015 has rebounded smartly. Preliminary reports for FY 2015 indicate that the Port recorded net operating income of \$16.1 million. It seems to have turned an important corner financially.

The Port relies upon a variety of funding sources to finance its operations and capital expenditures (see Graph 2). Its operating revenues include grants and federal appropriations (for example, those coming from the federal government to finance the development of Craney Island), operating revenues from VIT and the VPA, and funds coming from the Commonwealth Port Fund.

VIT's contribution is the largest overall source of revenue at the Port and totaled \$75 million in FY 2014. The Port also receives significant funding from the state via the Commonwealth Port Fund. This fund, in turn, annually receives 4.2 percent of Virginia's Transportation Trust Fund receipts. This funding source accounted for almost 30 percent of the Port's revenues in FY 2014. This flow of income is intended to support capital projects at Virginia marine terminals, rather than run operations or develop off-terminal capital projects. A recent study by the Virginia Joint Legislative Audit and Review Commission (JLARC) advocated loosening these restrictions to include off-terminal capital expenses, which is the situation enjoyed by the Port's competitors in Charleston and Savannah.

The Port's dreary financial record during the previous decade led some to conclude that its operations were in need of a makeover. In 2011, then Gov. Bob McDonnell shook up the Virginia Port Authority board by replacing 10 of its 11 members. In 2012, several private firms placed bids to take over operations of Port terminals from Virginia International Terminals. These companies believed they could manage operations more efficiently than VIT. The most serious suitor was APM Terminals, a company that just a few years prior leased its terminal in Portsmouth to the VPA. The proposed deal was estimated to be worth between \$3 billion and \$4 billion in today's dollars over the proposed 48 years, and included APM eventually giving the VPA its container terminal in Portsmouth at the end of the lease period.

The proposal was contentious for several different reasons, not the least that privatization of the Port's management would have altered or destroyed well-established regional and Commonwealth business relationships. In addition, some were concerned that a private for-profit operator would make decisions based on its bottom line (rather than the welfare of the Commonwealth) and that APM might whipsaw this region against other ports, such as New York/New Jersey, where it also was involved. Ultimately, political pressure from a variety of sources torpedoed the idea.

GRAPH 1

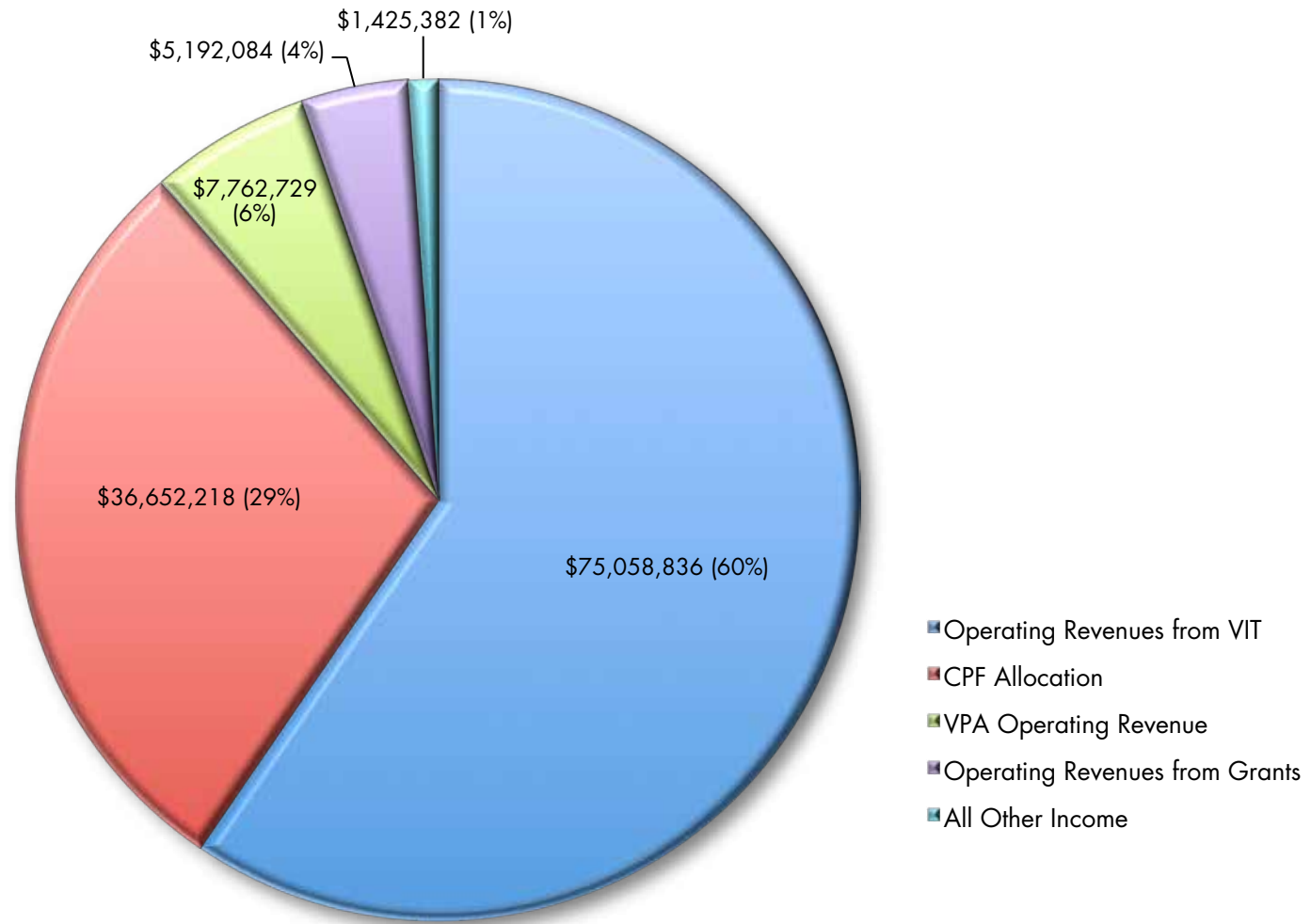
**NET OPERATING INCOME FOR THE VIRGINIA PORT AUTHORITY, FY 2004 THROUGH FY 2015 YTD
(MILLIONS OF DOLLARS)**



Source: Port of Virginia annual reports for fiscal years ending on June 30

GRAPH 2

VIRGINIA PORT AUTHORITY REVENUE BY SOURCE, FY 2014



Source: Virginia Port Authority, "Comprehensive Financial Report 2014"

Whether the Port of Virginia actually is losing money for the Commonwealth is less clear than it might first seem because of the VPA's complicated structure and financing, state subsidies, complex capital investments, leases, depreciation and its economic impact. Viewed as a private business, the Port often has lost money. Viewed as a public enterprise designed to stimulate economic activity in Virginia, the answer is not the same. An economic impact study of the Port performed by the College of William & Mary in 2014 reveals that the Port is a major economic engine for Virginia. Does this mean that the VPA can be forgiven its deficits? Probably not, but it does place the VPA in a different light.

Nevertheless, it was not so long ago (June 1, 2014) that The Virginian-Pilot editorial board labeled the performance of the Port "a legacy of chaos." In truth, the Port's management and members of the board of directors have changed several times in recent years. However, in late 2013, the VPA appointed John Reinhart as the new executive director. The appointment of Reinhart was a move praised by members of the maritime community. He assumed the position at a time when Gov. Terry McAuliffe had voiced criticism of the Port's finances and its long-term lease agreement for the APM terminal in Portsmouth.

Reinhart is charged with turning around the Port's finances and developing and leading its strategic vision for the future. In recent months, Port finances have rebounded from their mediocre performance over the past decade.

The Port reported positive operating income for the second half of 2014, totaling \$6.1 million. In broad strokes, Port officials point to cost-saving innovations and the elimination of redundancies between the VPA and VIT as important reasons for the improvement.

Types Of Cargo The Port Handles

Ports in the United States typically handle four broad classifications of cargo: (1) containers; (2) break bulk; (3) roll-on, roll-off and (4) bulk liquids, fuels and grains. The latter two classifications are the most easily understood. Roll-on/roll-off cargo consists of automobiles, trucks and motorcycles, while liquids and fuels include natural gas and oil. The Port of Virginia is not a big international player in either of these cargo classifications, though some believe that it could become much more aggressive in pursuing roll-on/roll-off opportunities that relate to the importation of new automobiles from Europe and Asia. The Port of Baltimore currently dominates this market space in the Mid-Atlantic region.

Containers come in many varieties, but the ubiquitous 20-foot equivalent unit (TEUs) easily is the dominant model. Hence, when people say that the Port is prospering (or declining), they usually are referring to changes in the volume of TEU traffic. Graph 3 depicts the Port's TEU traffic over the past decade. Note the dramatic decline in TEU traffic that occurred in 2009 because of the effects of the Great Recession. Port activity is quite sensitive to the business cycle – and not just the U.S. business cycle. If China's economic growth rate continues to decline, and Europe remains in the economic doldrums, this will be reflected in stagnant or declining TEU traffic at the Port of Virginia. The reverse also holds – when these countries prosper, the Port of Virginia does well. Indeed, usually 50 percent to 55 percent of all cargo handled by the Port involves exports to other countries.

Break bulk cargo includes materials that cannot easily be containerized, but typically arrive as a single unit. Examples include large pieces of machinery, such as Caterpillar D-11 tractors, and pallets of rubber and paper. One might conclude from Graph 4 that break bulk cargo has not been the forte of the Port of Virginia and that there is considerable room for growth in this regard. The not-so-heavily used Portsmouth Marine Terminal may present such an opportunity.

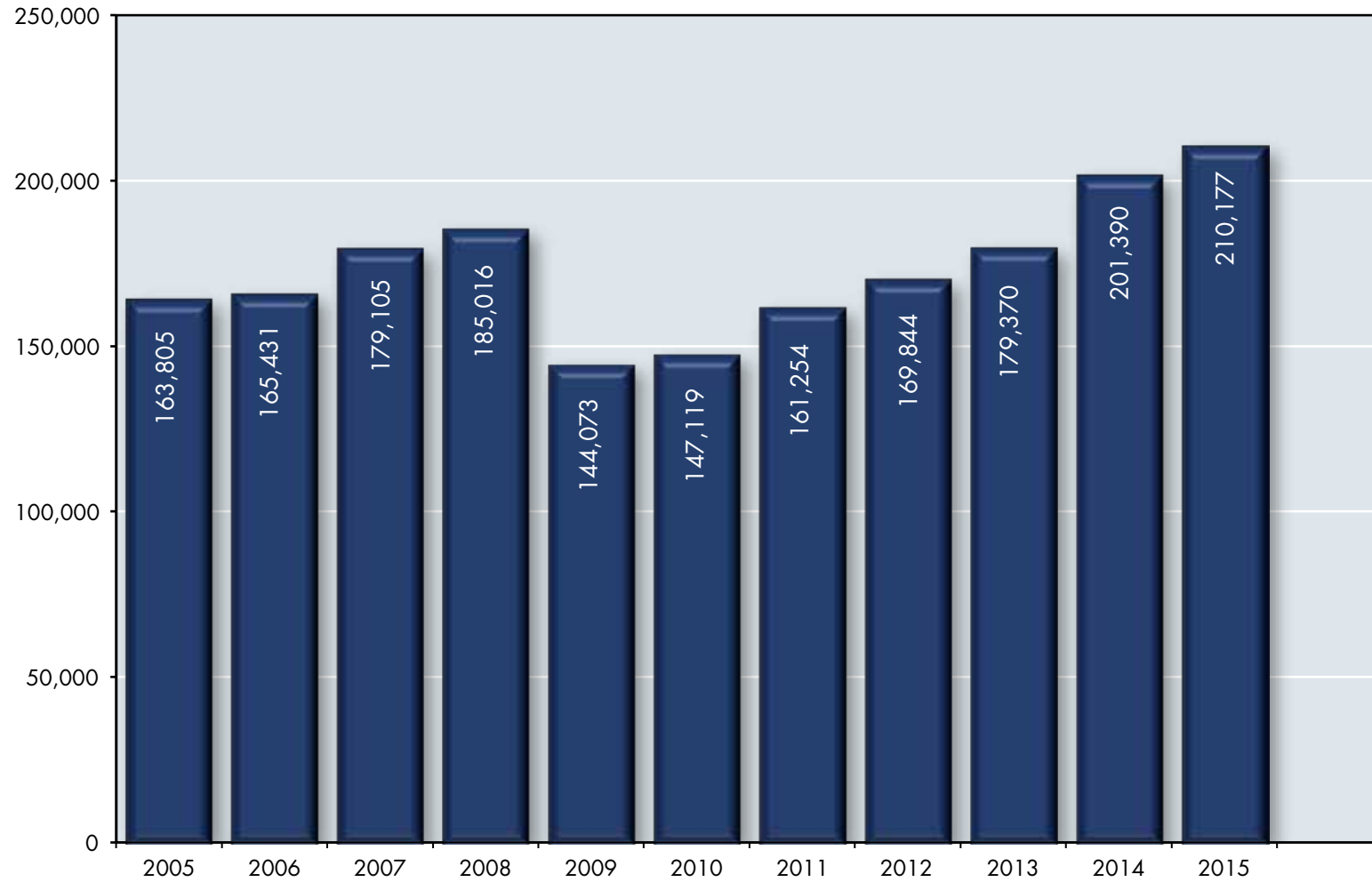
Roll-on/roll-off cargoes include automobiles and trucks. Sporadically, the Port has registered this type of activity, but trails competitors such as Baltimore by a wide margin in this market. Once again, there is room for improvement.

The major bulk cargo coming through Hampton Roads today is coal, but virtually all of that coal is handled by Norfolk Southern Corp. at its private-sector Lamberts Point Coal Terminal. (This means that the 47 million tons of coal handled in 2011 by Norfolk Southern do not appear in Graphs 3 or 4.)



GRAPH 3

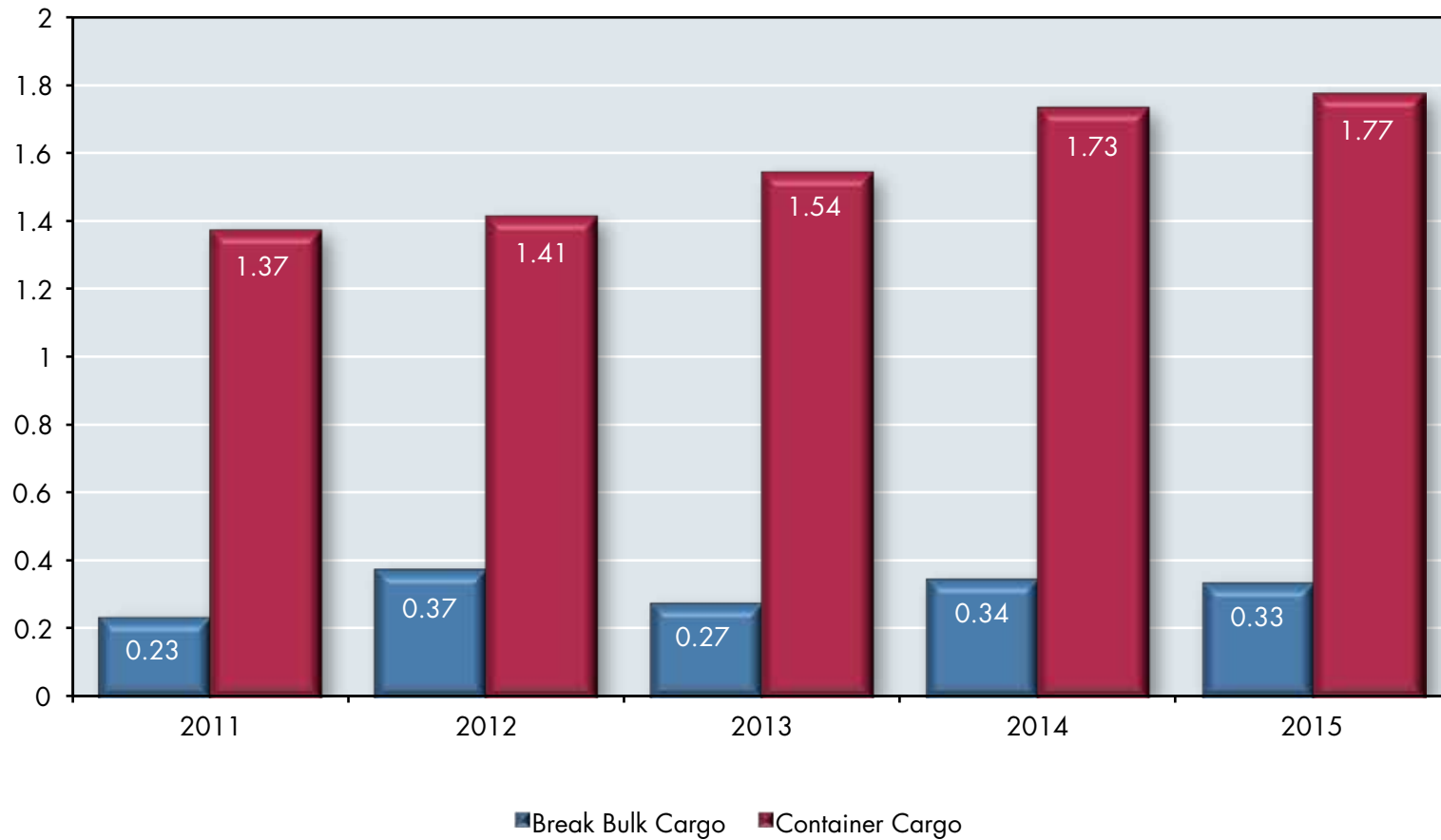
TWENTY-FOOT EQUIVALENT UNITS (TEUS) HANDLED BY THE PORT OF VIRGINIA, 2005-2015



Source: Virginia Port Authority. Note that TEUs are measured in April of each year.

GRAPH 4

CONTAINER AND BREAK BULK CARGO (IN MILLIONS OF TONS), 2011-2015



Source: Virginia Port Authority. Note that tonnage is measured in April of each year.

MOVING THE PORT'S CARGOES

A critical complement to the activity of any port is the transportation infrastructure that serves it. Customers located within 200 to 250 miles of most American ports typically receive their orders via trucks that have been loaded at the ports. This is "captive" cargo that is unlikely to be lost to other ports, or to railroads, unless the service provided is exceptionally poor, or the prices being charged are particularly high. Beyond the 200- to 250-mile radius, however, train transportation becomes more cost-effective and competition from other ports usually becomes more important. The Port of Virginia competes with the likes of New York/New Jersey, Savannah and other Atlantic Coast ports for these customers and cargoes. Thus, prospective customers located in cities such as Chicago, Cincinnati, Cleveland, Dayton, Detroit, Indianapolis and Memphis benefit from competition among Atlantic Coast ports. Price and service competition in these markets is intense.

Currently, about one-third of the cargoes unloaded at the Port of Virginia are delivered to customers via rail. This percentage has risen in recent years because of competitive improvements by Norfolk Southern and CSX. Norfolk Southern, for example, now can double-stack TEUs on the railroad cars traversing many routes from the Port of Virginia into the interior of the United States. This has lowered its costs and reduced delivery times.

The Wall Street Journal has written about logistics and congestion problems at the Port of Virginia,¹ though such difficulties are characteristic of most large U.S. ports today. These problems have resulted in long queues of truckers at our Port and formal complaints by organizations such as the Tidewater Motor Truck Association, for whom time is money. The Port has responded by extending hours, scheduling truck appointments, acquiring more truck chassis, retooling work patterns, utilizing new software, etc., and has approved a healthy \$123 million capital budget that includes \$43.35 million for new container-handling equipment. This FY 2016 capital budget is larger in size than the capital budgets for the last four fiscal years combined and represents solid recognition of outstanding needs.

¹ Arian Campo-Flores and Cameron McWhirter, "U.S. Ports See Costly Delays as Cargo Ships, Volumes Grow," The Wall Street Journal (April 29, 2015), www.wsj.com.

Those interested in long-term solutions to these logistical challenges usually are strong proponents of the construction of a third crossing across the James River estuary, or a variant such as the proposed Patriot's Crossing, a new four-lane tunnel that would link I-564 and the Port's major Norfolk terminal with I-664 and the Monitor-Merrimac Memorial Bridge-Tunnel. They also advocate widening I-64 to Richmond and a package of other improvements, including the high-rise drawbridge on the southern extremity of I-64 in Chesapeake.

There is little doubt that improvements would benefit the Port and enable traffic in and out of the Port to move more expeditiously. There are, however, two caveats. First, highway transportation already is highly subsidized by governments at all levels (at least when compared to rail traffic) and it is

The peak-time toll trucks will pay in 2016 for the Elizabeth River crossings will be \$7.36. If this toll increases at 3.5 percent annually until 2070, when the ERC agreement ends, it will rise to \$47.17. If, however, toll increases match the consumer price index when the CPI rises by more than 3.5 percent, then the peak-time truck toll will skyrocket to \$86.24. The CPI provision plausibly would increase ERC's total toll revenue by 82 percent. In addition, ERC's agreement allows it to earn 13.5 percent on its invested capital and requires the Commonwealth to reimburse it if competitive facilities are constructed that drain its revenue.

not clear that further car and truck subsidies are merited from an economic standpoint.² Second, the multibillion-dollar cost of these improvements, plus emerging environmental issues, makes the package difficult to swallow. In this regard, revenues from the 0.7 percent regional sales tax increase that was implemented a few years ago are insufficient to pay for the projects

² This is the conclusion of a March 2015 Congressional Budget Office Study by David Austin, www.cbo.gov/sites/default/files/cbofiles/attachments/50049-Freight_Transport_Working_Paper-2.pdf.

just noted. Thus, it appears that tolls will be necessary to finance these improvements.

Tolls are not a popular solution to improving the transportation infrastructure that would benefit the Port. The region's experience with tolls on traffic traveling through the Midtown and Downtown tunnels across the Elizabeth River has been mixed. Portsmouth is bearing a disproportionate share of the costs of these projects, while the benefits are distributed more evenly throughout the region.

Additionally, it now is clear that the Commonwealth did not cover itself with glory when it negotiated its tunnel deals with the Elizabeth River Co. (ERC), which is building an additional Midtown Tunnel tube and a connector between Route 164 and I-264, plus other renovations. ERC will manage and operate the entire enterprise when completed, and negotiated a 58-year contract that grants it the ability to increase tolls through the two tunnels by 3.5 percent annually, or the annual growth rate of the consumer price index, whichever is larger. **If the behavior of the CPI over the past 58 years is an appropriate guide, then this provision of ERC's agreement with the Commonwealth will result in an increase in the peak-time toll for trucks – from \$7.36 in 2016 to \$86.24 in 2070. This is hardly good news for the Port. Locally, some truckers travel back and forth to the Port several times per day and this would impose a significant financial burden on them. At the margin, such costs may cause some national shippers and truckers to shift their patronage away from the Port of Virginia to other East Coast ports. Arguably, an important public policy objective of our region is to find ways to moderate likely future toll increases across the Elizabeth River.**

The Panama Canal

Container shipping is a \$6 trillion world industry that moves more than 95 percent of the world's manufactured goods (The Wall Street Journal, June 2, 2015). It is a marketplace beset by a variety of problems, however, one of which is the overcapacity of ships that carry the containers. There are too many ships and too much ship capacity available relative to the demand for such. This has been exacerbated by the appearance of massive new vessels that can carry up to 20,000 TEUs. APM Maersk, for example, ordered 20 supersized ships in 2011, each of which will carry more than 18,000 TEUs, and recently announced a \$1.8 billion order for 11 new megaships that will handle more than 19,000 TEUs each (Costas Paris, The Wall Street Journal, June 5, 2015). As recently as 10 years ago, such an array of ships was no more than a pipe dream.

Container traffic through the Panama Canal peaked in 2007 (when 3,600 ships transited through it) and since then has declined approximately 20 percent (2,891 container ships in 2014). There are two reasons for this. First, the Canal currently cannot handle ships that carry more than about 5,000 TEUs. Second, the Canal's technology and operations are costly and outdated. Taken together, these two factors have constituted a recipe for decline in a world where ship sizes are growing by leaps and bounds.

Panama is in the midst of a \$5.5 billion expansion that includes upgrades to the coastal locks and enormous rolling gates that move ships into higher or lower bodies of water. Additionally, entrances on both sides of the Canal will be dredged to a lower depth. The expansion of the Canal is set for completion in early 2016 (but this may be optimistic).

After expansion, the Canal will be able to handle ships that carry as many as 13,000 TEUs and require water depth of at least 50 feet. It also will be able to accommodate 97 percent of the global merchant fleet (Shawn Donnan, Financial Times, May 26, 2015). The problem is that a dozen huge ships are now afloat that can carry 20,000 TEUs or more and at least 50 active ships already exist that handle more than 13,000 TEUs. Hence, while its expansion brightens the future of the Canal, ship economics have changed so rapidly that the expanded Canal will be obsolete before it ever

opens. It may lose out to the Suez Canal, where much larger ship traffic is concerned. Maersk already has moved some of its largest ship traffic in the direction of the Suez Canal.

Ocean carriers such as Maersk and Hanjin (and their customers) will carefully evaluate their options for carrying product to the East Coast. They can ship directly to the U.S. West Coast and then move cargo via rail to locations such as New York City and Atlanta. Or, they can move cargo through the Panama Canal. Or, they can route their ships through the Suez Canal – a route increasingly favored by expanding South Asian exporters. Finally, in a few circumstances, they can send ships around either Cape Horn or the Cape of Good Hope. Ultimately, their choices will depend upon the cost of each route and the time it takes to ply that route. The expansion of the Panama Canal is not going to alter this decision calculus a great deal.

PANAMA CANAL READINESS ON THE EAST COAST

The Port of Virginia already can handle any ship that will come through the expanded Panama Canal. Indeed, with some adjustments, the Port will be able to handle even the huge 20,000-TEU-capacity ships now being constructed. Predictably, however, many East Coast ports are updating their infrastructure (deeper channels and larger dockside container cranes) in hopes of winning the competition for larger vessels coming through the Canal. A conservative estimate is that at least \$6 billion is being spent by competitor ports to ready themselves for larger ships. This includes the estimated \$1.3 billion to raise the Bayonne Bridge at the Port of New York and New Jersey and \$2 billion-plus in improvements at the Port of Miami, which includes cranes and intermodal transit upgrades. The good news, however, is that the Port of Virginia now is able to handle large ships that several of its competitor ports cannot. This advantage is likely to disappear in a few years.

The Port Of Virginia's Major Competitors

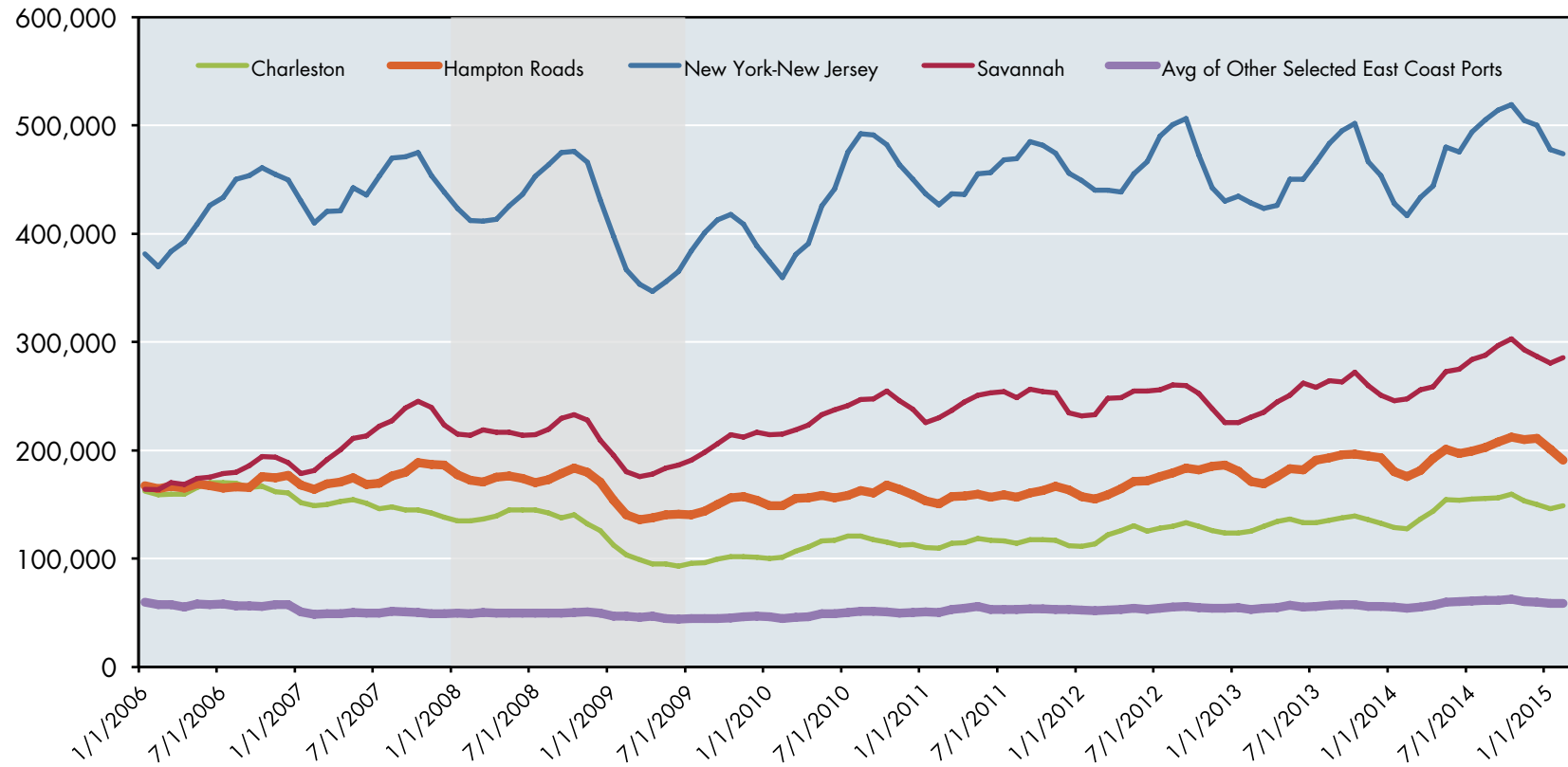
Graph 5 shows the average monthly TEUs handled at four major East Coast ports. The Port of Virginia is the third-largest container port on the East Coast, trailing only Savannah and New York/New Jersey. The Port is roughly tied for the distinction of being the fifth-largest port in the United States with the Port of Oakland. Both handled approximately 200,000 TEUs per month in 2014.

New York/New Jersey usually is our biggest competition for rail container traffic into the Midwest, while Savannah, and to a lesser extent Charleston, is a natural rival for Mid-Atlantic retail goods and regional distribution centers. In 2006, the ports of Virginia, Savannah and Charleston all recorded about the same level of TEU throughput. Each experienced a decrease in volume during the Great Recession. Since then, however, the three ports' paths have diverged. In the past few years, the Port of Virginia has moved past Charleston. Savannah, however, has leaped ahead of both the Port of Virginia and Charleston and now has established itself firmly as the second-largest port on the Eastern Seaboard. Charleston, though, appears to have overcome management and political problems and probably will emerge as a much tougher competitor in the years to come.

Many within the maritime industry contend that Savannah's rise is due to its ability to attract large retail shippers (such as Wal-Mart) that have invested in regional distribution centers. The Port of Savannah's progress was facilitated by generous state economic development incentives, including ready-to-go sites outside that port, but it also enjoys the advantage of being the closest port to Atlanta and the burgeoning Southeast region. Meanwhile, the Port of Virginia's strategy has been a bit different and has focused a little more on solidifying contractual relationships with the largest shipping carriers in the world, such as Cosco, CMA and Maersk.

GRAPH 5

AVERAGE MONTHLY TOTAL TEUS FOR SELECTED EAST COAST PORTS



Source: American Association of Port Authorities. Data represent a three-month moving average for total TEUs.

Savannah's conspicuous success perhaps has stimulated the Commonwealth to place more emphasis on economic development incentives in order to encourage businesses to locate or expand their operations in Hampton Roads. These incentives include the Barge and Rail Tax Credit, the International Trade Facility Tax Credit and the Port Volume Tax Credit. All of these programs make Hampton Roads and Virginia financially more attractive locations for firms that might otherwise locate or expand near a different port. The ill-fated Route 460 development at one time was considered to be part of this thrust because it was advertised as reducing the costs of trucking cargo in and out of the Port.

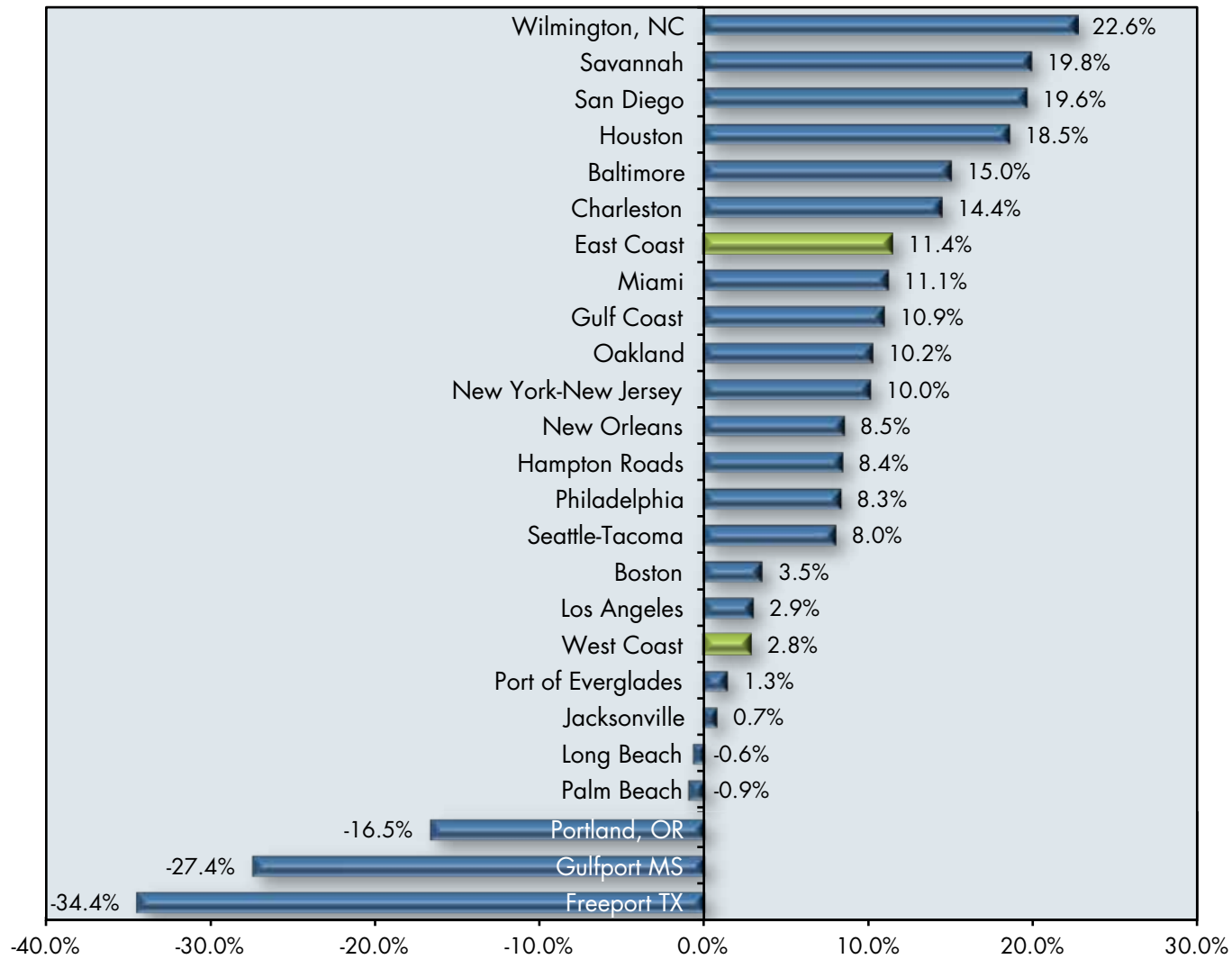
Battles for import cargo extend well beyond the East Coast. Ships traversing the Pacific Ocean from countries such as China and Japan, with cargoes intended for the East Coast, can opt to land at ports such as Los Angeles and Long Beach and then send their cargoes to the East Coast via rail. Graph 6 shows growth in containerized cargo for ports on the East Coast and West Coast, plus the Gulf of Mexico between fourth quarter 2013 and fourth quarter 2014. During this four-quarter time period, East Coast ports grew at over 11 percent compared to less than 3 percent for their West Coast rivals. Some of this differential likely was due to labor problems that slowed or idled West Coast ports during 2014 and extended into early 2015.

While containerized import traffic at the Port of Virginia grew at a healthy pace of 8.4 percent between fourth quarter 2013 and fourth quarter 2014, the Port nevertheless lagged behind its larger rivals on the Eastern Seaboard in this regard. Still, a bright spot for the Port of Virginia is that several of its major competitors will not be ready to host the largest ships for several years. This will provide the Port with an opportunity to increase its containerized market share.



GRAPH 6

GROWTH IN U.S. PORT CONTAINERIZED IMPORTS, Q4 2013 TO Q4 2014



Source: American Association of Port Authorities

The Port Of Virginia And The Hampton Roads Economy

Several studies have attempted to quantify the total impact of the Port of Virginia on the Hampton Roads economy, the most prominent of which was a 2014 study completed by the Mason School of Business at the College of William & Mary that attributed 6.8 percent of the Commonwealth's gross state product to the Port, along with 374,000 jobs and \$60 billion in related spending.³

These are impressively large numbers, but one cannot perform an economic impact study without making a series of assumptions about how and where economic activity occurs. One of the most critical assumptions relates to how much and how quickly economic activity "leaks" from the region and the Commonwealth. Consider a longshoreman who is working at the Port. How much of the wages he/she receives at the Port does he/she spend on goods and services in Virginia? When the Port purchases large pieces of equipment, does it purchase those items from firms in South Korea rather than Virginia? The answers to these questions make a huge difference when one is estimating economic impact. To the extent that the expenditures are made outside of Virginia, the economic impact of the Port is diminished. The economic ripples inside Virginia that are generated by the Port are reduced when expenditure leakages occur. Much the same thing occurs when wages are saved rather than spent.

Any economic impact study also must rely upon assumptions concerning the degree of "agglomeration" – often referred to as clustering – that is present. Simply put, while sometimes it may seem otherwise, firms in related industries often benefit as more of them cluster together in the same area. Agglomeration can increase labor supplies, reduce costs, stimulate firm productivity and spur innovation. More to the point, the formation of an industry cluster in Virginia usually reduces economic leakages outside Virginia because individuals don't have to go elsewhere to find what they

need. It is important that any economic impact study get these relationships right, but the truth is that there are several popular economic impact-estimating models that approach these matters in different ways.

A variety of other assumptions also must be made in order to generate an economic impact study, and differing assumptions lead to disparate results. The William & Mary study provides a competent, plausible estimate to the Port's economic impact, though its estimates impress some professionals as being somewhat generous.

Even so, we can drill down into our regional economy to see how the Port affects specific economic activities and sectors. Figure 1 compares the share of gross regional product generated by the transportation, warehousing and wholesale trade sectors for several regions that boast large ports.

Direct Port-related activities directly generate approximately 6 percent of Hampton Roads' regional gross domestic product (GDP). This is a smaller percentage than holds true for many of the Port's East Coast competitors.

The industries identified in Figure 1 are those most likely to benefit from the Port. Railroads, which handle approximately one-third of the cargo exiting from the Port of Virginia, are major beneficiaries of Port activity. So also are regional distribution centers, exemplified by the Target warehouse distribution facility in Suffolk.

Figure 2 traces employment in the same sectors. Hampton Roads employs almost 50,000 people in Port-related industries – a slightly higher percentage than Savannah and Charleston. Interestingly, while the Port of Savannah's success in attracting regional distribution centers has received much favorable attention, and no doubt helps that city's tax base, it does not appear to have created substantial employment differences between Savannah and Hampton Roads. Indeed, while the Port of Savannah moves more cargo than the Port of Virginia, it utilizes fewer employees in the transportation and trade sector as it does so. This could reflect greater efficiency in its warehousing activities, necessitating fewer employees, larger capital investments that make workers more productive, or other factors.

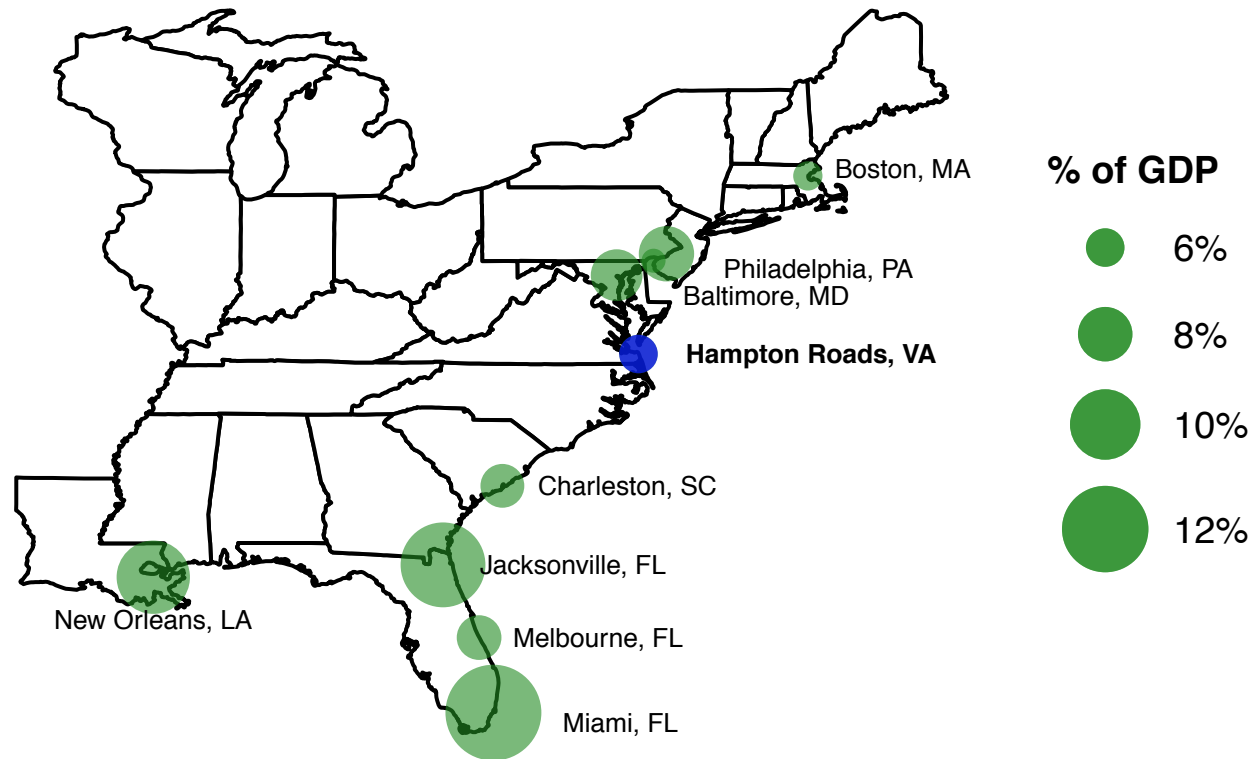
³ www.portofvirginia.com/pdfs/POV%20Econ%20Impact%20Study%202014.pdf.

The Port asserts that every 1,000 increase in container traffic creates 300 new jobs (both direct and spinoff) that pay an average wage of \$46,000. While the job number in particular appears to be a generous estimate, there is no dispute that Port activities create jobs both directly at the Port and indirectly in many industries that either supply the Port or serve its employees.



FIGURE 1

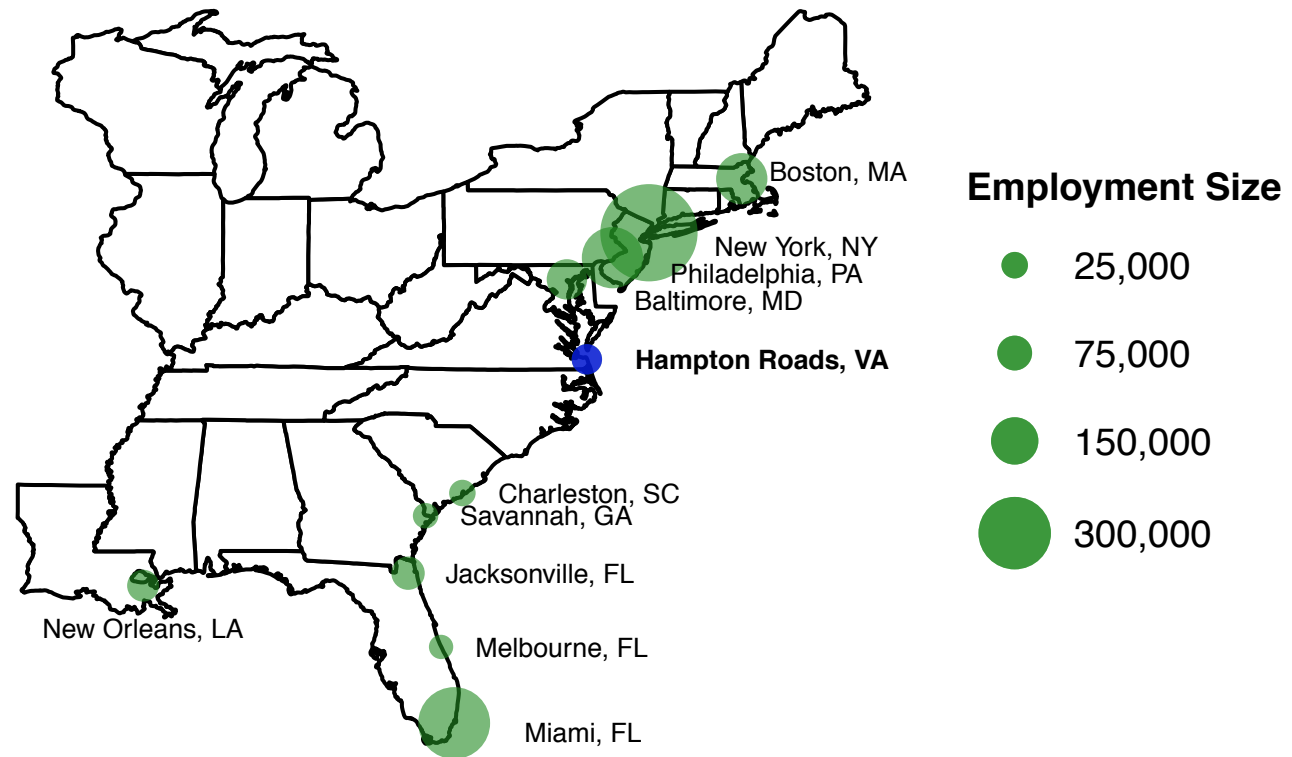
TRANSPORTATION, WAREHOUSING AND WHOLESALE TRADE SHARE OF REAL REGIONAL GROSS DOMESTIC PRODUCT, 2012-2013



Sources: BEA and the Old Dominion University Economic Forecasting Project

FIGURE 2

TRANSPORTATION, WAREHOUSING AND WHOLESALE TRADE EMPLOYMENT, 2012-2013



Sources: BEA and the Old Dominion University Economic Forecasting Project

Productivity Issues

It is not easy to measure and compare the productivity of ports because of the different ways each port measures and records its activities. Nonetheless, ports sometimes are compared on the basis of measures such as the number of TEUs they move per hour that a ship is at berth. While its performance has been improving recently, the Port of Virginia does not fare particularly well in these comparisons, according to the JOC Group, which annually ranks the world's ports in terms of the number of container moves they make per hour per ship at berth (JOC Group, "Berth Productivity," July 2014). In 2013, for example, New York/New Jersey, Baltimore, Savannah and Charleston, in this order, all recorded more container moves per hour than the Port of Virginia. However, the Port of Virginia believes that a measure focusing on moves per hour when a ship is at berth potentially distorts actual productivity because it ignores the number of cranes involved. Five cranes unloading a ship at a larger port might move more TEUs per hour than three cranes unloading the same ship at the Port of Virginia, but the larger port's capital-intensive approach likely would be more expensive. Reliable data permitting cost comparisons among ports are difficult to obtain because privately owned operations seldom make such information public. Thus, it is difficult to issue a flat statement that the Port of Virginia either is, or is not, more (less) efficient than its competitors.

Nevertheless, the Port's performance by the container-moves metric has been improving. In a January 2015 presentation, VPA CEO and Executive Director John Reinhart reported that through December of the 2015 fiscal year, the number of container moves per hour had increased by 8.82 percent at Virginia International Gateway and 10.52 percent at VIT.⁴ Such improvements are desirable, but the Port's current logistical problems relate primarily to what happens to cargo once it has been unloaded from berthed ships, rather than to the number of moves per hour as it unloads ships.

It may be necessary for the Commonwealth to increase its capital investments in the Port and surrounding infrastructure in order for necessary productivity and logistical improvements to continue. The Port's current level

⁴ www.portofvirginia.com/wp-content/uploads/2015/01/Productivity-Summit01-23-15.

of financial support from the Commonwealth for capital improvements does not constitute a magic number generated by hard analysis, and instead reflects a set of political compromises greatly affected by the money that happened to be available to the General Assembly in particular legislative years. While it would be unfair to label the size of the current stream of funding accidental, it also would be a misrepresentation to imply that it is the result of rigorous analysis.

Final Thoughts

Given the rather sluggish nature of defense spending, and the relatively modest recovery of tourism, the Port of Virginia represents an economic engine of growing importance to Hampton Roads. There is much talk about the need to diversify the regional economy; the Port represents such diversification. Figure 3 displays the logos of firms that expanded in Virginia in 2014 and whose expansion was at least partially dependent on the Port of Virginia. These 34 firms intend to invest \$2.6 billion in sites, plant and equipment in the Commonwealth.

The Port also serves a set of markets that are growing faster than either the U.S. economy or the world economy. For example, in 2014, both the U.S. economy and the world economy grew at rates below 3 percent. Container traffic at the Port of Virginia, however, grew at more than 8 percent.

The Port of Virginia is well situated to handle the huge super ships, with capacities of up to 20,000 TEUs, that either already have been launched, or are being constructed in the world's shipyards. Currently, only the Port of Virginia and the Port of Baltimore are capable of handling large ships with 50-foot drafts, and Baltimore still lacks the impressive rail connections that our Port boasts. If the Port of Virginia is able to deal effectively with its current logistical challenges, then it will be able to handle the burgeoning container traffic that almost surely will characterize the future. The economic rewards that will flow as a consequence to Hampton Roads and the Commonwealth will be substantial.

FIGURE 3

LOGOS OF 34 FIRMS WHOSE EXPANSION IN 2014 IN VIRGINIA WAS CONNECTED TO THE PORT OF VIRGINIA



