

# BST ASSOCIATES

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January 4, 2008

Mr. Christopher Wornum  
Cambridge Systematics, Inc.  
555 12th Street  
Suite 1600  
Oakland, CA 94607

Re: Final Review of Dr. Leachman's Port and Modal Elasticity Report

Dear Chris:

Enclosed is our final review of the Leachman report. As you will recall, we initially prepared a draft review in December, and then received comments from Dr. Leachman. This final review is based upon the comments by Dr. Leachman.

In general, we agree with the report findings. Puget Sound container ports have significant competition and imposition of a fee could lead to a significant loss of container traffic. The report focuses on imports from Asia. However, for reasons sited in the report and further enhanced in our review, there could be an equal or greater loss to other international traffic (specifically exports and empty containers). There may also be a loss of domestic traffic due to competition from Prince Rupert. Decision makers should proceed with care.

I trust this submittal meets your needs. Please feel free to call if you have any questions.

Very Truly Yours,

Paul Sorensen  
Principal

**PO Box 82388, Kenmore, WA 98028**

## **BST Comments on the Leachman Report<sup>1</sup>**

### ***Findings***

BST Associates has reviewed the Leachman Report and concurs with its conclusions. The Leachman elasticity report concludes that:

- If fees are imposed at Puget Sound ports but not competing ports, the Puget Sound ports could lose substantial volumes of cargo.
- If fees are raised at other ports, Puget Sound ports could match those fees and maintain market share.

Puget Sound import volume is very elastic with respect to potential container fees. If unmatched by new fees at other ports, even relatively small fees of \$60 per FEU or less would render supply-chain channels using other ports more economically attractive for imports to be consumed in most of the markets located east of the Rockies.

- BST concurs that Puget Sound container traffic is very elastic based upon recent market response patterns. Puget Sound ports have recently lost market share without any imposition of user fees.
- In addition, Seattle will lose intermodal traffic to Prince Rupert since COSCO has decided to shift its US Midwest intermodal traffic from Seattle to Prince Rupert. The province of BC and Government of Canada have subsidized the development of the Canadian Gateway (i.e., the Federal Government has put \$590 million into the project and the BC Provincial Government has contributed \$150 million). This includes a direct public subsidy for construction of the container terminal in Prince Rupert and inland infrastructure.

For most points east of the Rockies and north of the Mason-Dixon Line, the total transportation costs for cargo routed through California ports are competitive with Puget Sound ports, regardless of whether the cargo moves directly in ocean containers or is transloaded into domestic equipment. Canadian West Coast ports are also very competitive with Puget Sound ports in regard to the total transportation costs for shipping of ocean containers to certain inland US regions. These factors make imports quite elastic to potential fees at Puget Sound.

- BST concurs that, for intermodal container traffic destined for the northern states located east of the Rocky Mountains, Puget Sound competes with other West Coast ports in both California and British Columbia (and perhaps Mexico when they develop), as well with all-water services to East/Gulf Coast ports. The combined ocean and rail rates from alternative ports are similar to those via Puget Sound ports to key inland destinations.

As fees are instituted at other West Coast ports, the Puget Sound ports may choose to match these fees and maintain market share, or, if unmatched, to gain market share.

- Leachman assumes that the proposed fees for Washington ports are not used to improve infrastructure and that fees are not raised at competing ports.

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<sup>1</sup> BST Associates prepared draft comments on the Leachman report, which were then reviewed by Dr. Leachman (colored yellow in the following report). BST Associates prepared a final response based upon Dr. Leachman's comments (BST's final review comments are colored green in the following report).

- At the present time, a number of container charges are being implemented or contemplated at other West Coast ports, including (but not limited to):
  - PierPASS in Los Angeles and Long Beach, which imposes a fee on containers trucked during the day to help subsidize nighttime operations. This is an example of a charge that improves operational productivity and has increased port productivity in Los Angeles and Long Beach. Other charges may be used to fund infrastructure improvements that could improve productivity, but there is a significant temporal problem between when the fees are paid and when the improvements are made (it could be several years).
  - Clean Air Program: Long Beach and Los Angeles recently initiated a \$35 per TEU charge to help pay for replacement of older (dirtier) trucks. This fee provides a benefit to the community but does not improve the productivity of container movements. The Port of Vancouver has also imposed a clean air franchise fee. It is unclear whether these charges will be applied in Prince Rupert, Mexican or East/Gulf Coast ports.
  - The cumulative impacts of these (and other) fees have not been fully evaluated. Some of these charges may be implemented at other ports on the US West Coast (including those in Washington). If these types of fees are implemented at the Washington ports but not at all competitive ports, such as those in Canada, Mexico, and the US East and Gulf Coasts, further impacts to Puget Sound's share of container traffic could be expected.

As explained below, the Leachman findings are based on approximately one-third of the container traffic that moves via the Ports of Seattle and Tacoma (i.e., imports from Asia). We suspect that the impacts on exports and empty international containers are as sensitive if not more so than imports. Thus, the Leachman findings may under-estimate the impacts on Puget Sound container traffic.

**General Commentary**

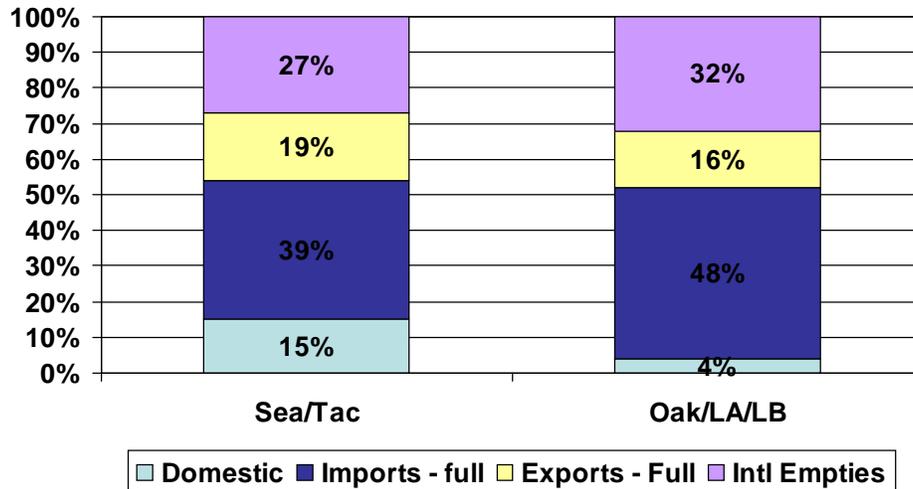
The Leachman elasticity report is based on imports from Asia (specifically those from China).

*Dr. Leachman’s COMMENT: The entire volume of imports from Asia to the USA is considered in the Leachman model and report, not just imports from China.*

*BST Final Comment: Understood. The confusion stemmed from the transportation costs presented from Shanghai in Table 8. These are apparently a subset of the model outputs.*

This is a relatively small but very important subset of the total containerized cargo base moving through Puget Sound ports. For the Puget Sound ports, foreign imports represent around 39% of total container volume. The remaining 61% consists of empty containers (27%), full international export containers (19%), and domestic containers (15%). Of the full import containers moving through Puget Sound ports, China accounts for around 63%. Consequently, the Leachman model addresses around ~~~36% 25% (63% x 39%)~~ of the total container traffic moving through the Puget Sound ports.

Figure 1 – Distribution of Container Cargo by Type



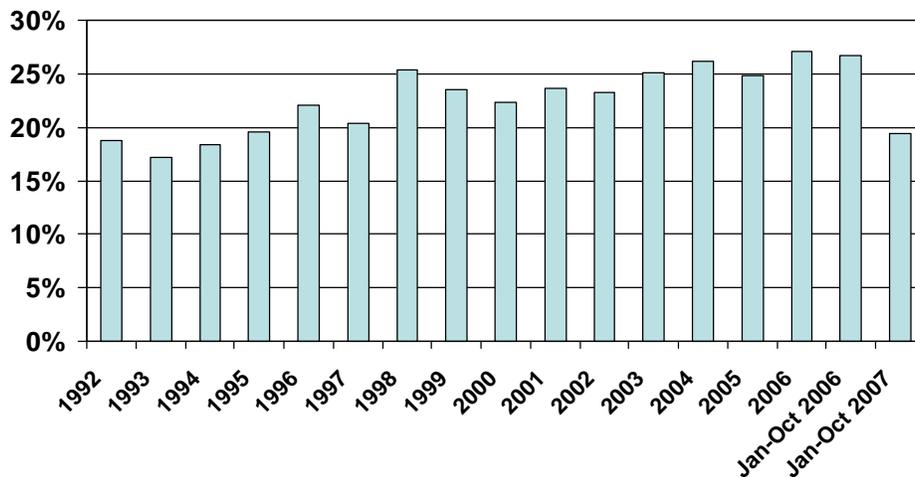
*Dr. Leachman’s COMMENT: The entire volume of imports to the USA from Asia is considered in the Leachman model and report, not just imports from China. I would estimate that about 36% of total container flows through the Puget Sound ports are accounted for by imports from Asia to the USA. Moreover, the prevailing rate structures from the US railroads impose stiff penalties on steamship lines if westbound rail container volumes through each of the major West Coast port areas (Southern California, Northern California, Puget Sound) are not kept in balance with eastbound rail container volumes. Thus westbound empty container movements are strongly tied to decisions on how the lines handle Asian imports.*

*BST Final Comment: BST concurs that relative changes in rail rates have been the key force in shifting intermodal containers from the PNW to the PSW. This practice underscores our concerns about the impact on exports and empties. Please see additional information presented below.*

This could be problematic because we expect that the sensitivity of exports and empties may be greater than that for imports for the following reasons.

The recent trend for empty containers at Puget Sound ports has shown a significant decline in this type of traffic. From 1996 through 2006, empty containers represented 20% to 28% of total international containers (full + empty). Generally, empties trended upward during this period in response to the stronger growth of imports relative to exports. However, in 2007 (YTD through October) empties fell to less than 20% of international container traffic. Some, but not all, of this shift can be explained by increased export volumes. The number of empties appears to be declining at Puget Sound ports and at other West Coast ports. This will negatively affect the terminal operators in Puget Sound since empties generate revenue for them. It could also affect rail service and rates because the railroads are forcing shippers to fully utilize railcars in both directions. A decline in empties returning by rail to Puget Sound could exacerbate this situation. Finally, the supply of empties is important for local and regional exporters.

Figure 2 – Trend in Puget Sound Empty International Containers as a Percent of Total International Containers



*Dr. Leachman's COMMENT: The real reason for the decline in empty container movements through Puget Sound ports is as I explained above. Rail rates to steamship lines were revised starting in 2006 to impose stiff penalties if westbound and eastbound container flows to any of the three West Coast major port areas are out of balance. Before these new rates, it was advantageous to steamship lines to return most empties to Asia via the Puget Sound ports, as this saved about two days of cycle time on their containers as well as reduced fuel consumption for vessels moving up the Coast from California to the Puget Sound ports before returning to Asia.*

*BST Final Comment: See below.*

The proposed fee could also impact exports moving via the Puget Sound ports. In some cases, the products exported through Puget Sound ports are commodities whose prices

are set in world markets. An example is waste paper, which has an average value of \$2,500 per FEU (around \$130 per metric ton). Waste paper is the largest export from US West Coast ports. A fee on this product could decrease or eliminate shipments through Puget Sound ports. A secondary impact of the decreased exports of waste paper would likely be increased use of landfills.

Other key Puget Sound exports are competitively produced along the entire West Coast. An example of this is animal feeds, which are purchased or produced by companies with operations throughout the region, such as Anderson Hay and Grain. Anderson has operations in eastern Washington (exports via Seattle and Tacoma), eastern Oregon (exports via Portland, Seattle and Tacoma), northern California (exports via Oakland) and Southern California (exports via Los Angeles and Long Beach). As with waste paper, this product also has a price established in world markets. Unilateral imposition of a fee at Puget Sound ports could negatively impact exports here, causing a loss of local jobs in the state as well as a loss of revenue to container terminal operators.

Finally, some exports such as pork and beef arrive in Puget Sound by rail (either direct intermodal or refrigerated boxcar for reload into containers). These exports fit into the category of discretionary products that can be diverted to other ports if it is less expensive to do so. The tight competitive nature that Leachman describes for intermodal imports also applies to these discretionary exports.

Port charges at Seattle and Tacoma are currently lower than at competing ports on the West Coast. These charges have been kept low to provide a competitive edge. However, a decline in container volumes has the affect of increasing the average or marginal cost of port operations for fixed costs such as rent.

Figure 3 – Prince Rupert Port Authority Identification of Potential Export Accounts



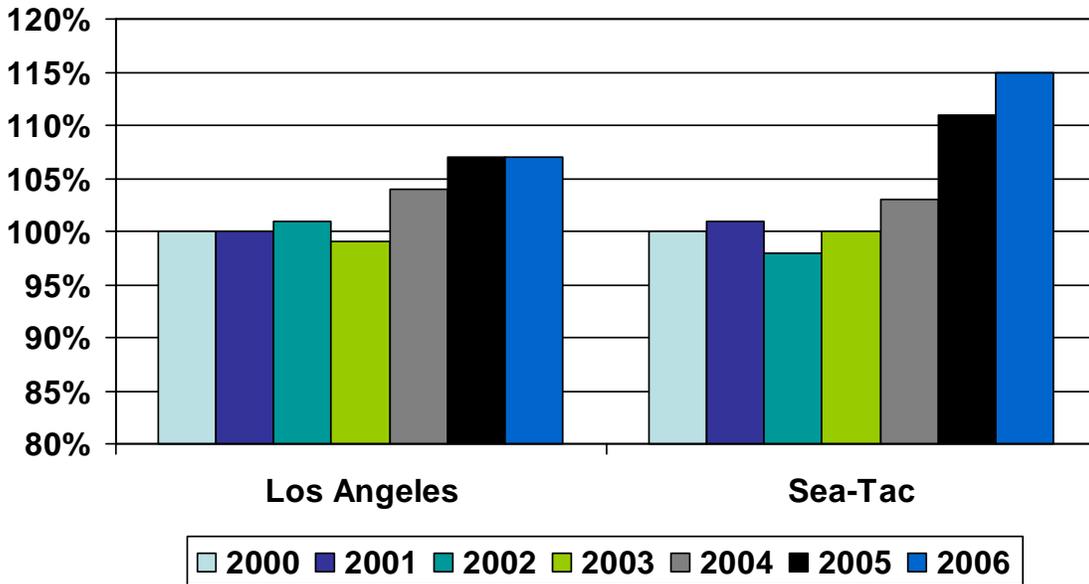
Domestic container traffic accounts for a larger share of total container traffic at Puget Sound ports than it does at competing ports in California and British Columbia. Officials

in Alaska and Hawaii have already voiced their opposition to additional fees. In response to the unilateral imposition of new fees in Puget Sound there is some potential for loss of domestic traffic. In particular, exports from Southeast Alaska that currently move through Puget Sound ports could shift to Prince Rupert or other ports. As shown in Figure 3, Prince Rupert has evaluated potential export opportunities, and is targeting Alaskan and inland US refrigerated and dry cargoes.

For these reasons, BST Associates believes that the sensitivity of the container markets in Puget Sound could be larger than identified in the Leachman report.

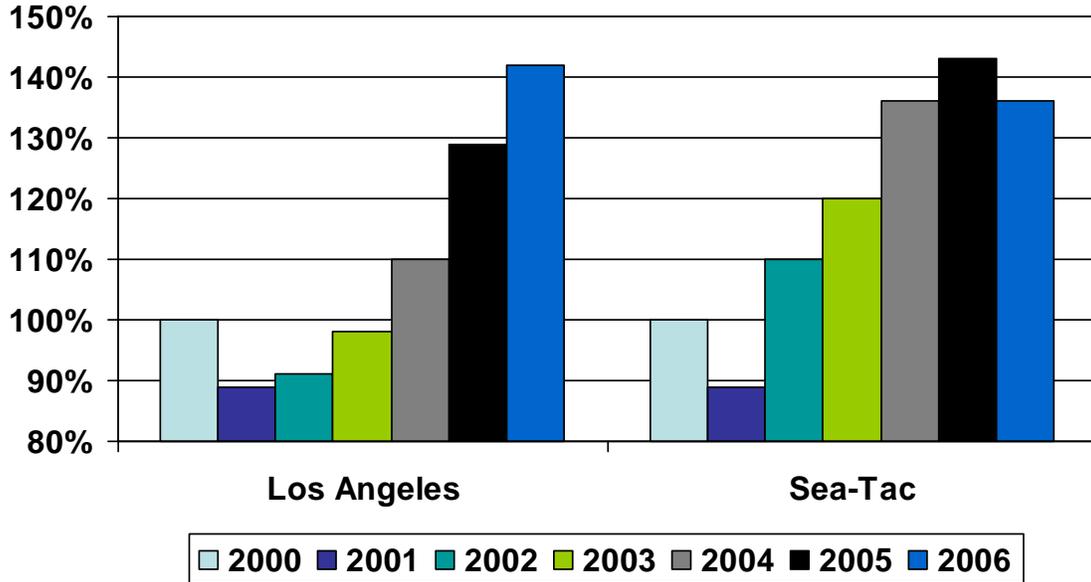
*BST Final Comment: BST concurs that a relative change in rail rates has been a major force in shifting some intermodal containers from the PNW to the PSW. Figure 4 illustrates the relative rail rate increases for westbound full containers from Chicago to the US West Coast. Rail rates from Chicago to LA/LB increased approximately 7% in between 2000 and 2006, while rates from Chicago to Sea-Tac increase by 15% over the same period. Up until 2004 the increases in rail rates to Sea-Tac was comparable to the increase to LA/LB.*

Figure 4 – Relative Rail Rates Chicago to USWC (\$/full TOFC-COFC unit; index 2000 = 100%)



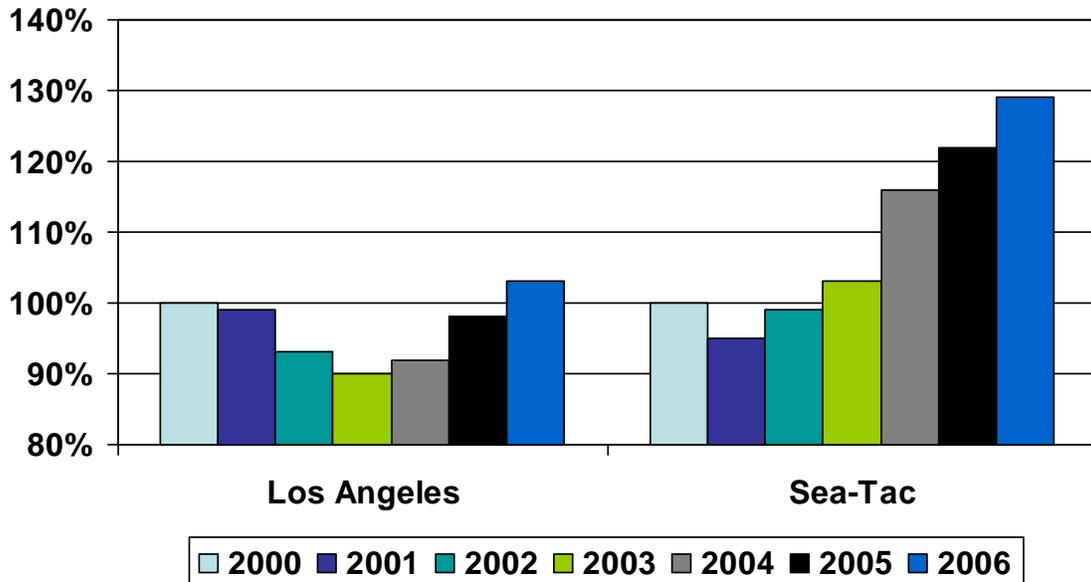
*BST Final Comment: As a result of these rate increases, LALB has experienced faster growth in full westbound container traffic. In 2006, full westbound traffic decreased in Sea-Tac while it increased at LALB. See Figure 5.*

Figure 5 – Full TOFC/COFC Traffic from Chicago to USWC (index 2000 = 100%)



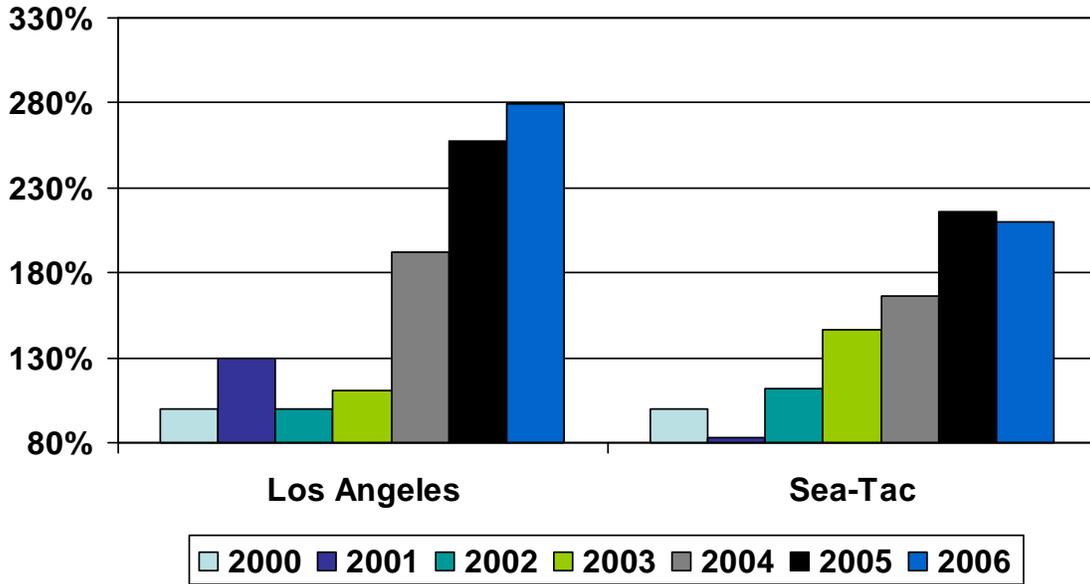
*BST Final Comment: The situation was even more pronounced for westbound empty containers. Figure 6 illustrates the relative rail rate increases for empty westbound containers from Chicago to the US West Coast. Rates from Chicago to the Los Angeles area were increase approximately 3% between 2000 and 2006, while rates to Sea-Tac were increased by nearly 30% over 2000 levels.*

Figure 6 – Relative Rail Rates Chicago to USWC (\$/empty TOFC-COFC unit; index 2000 = 100%)



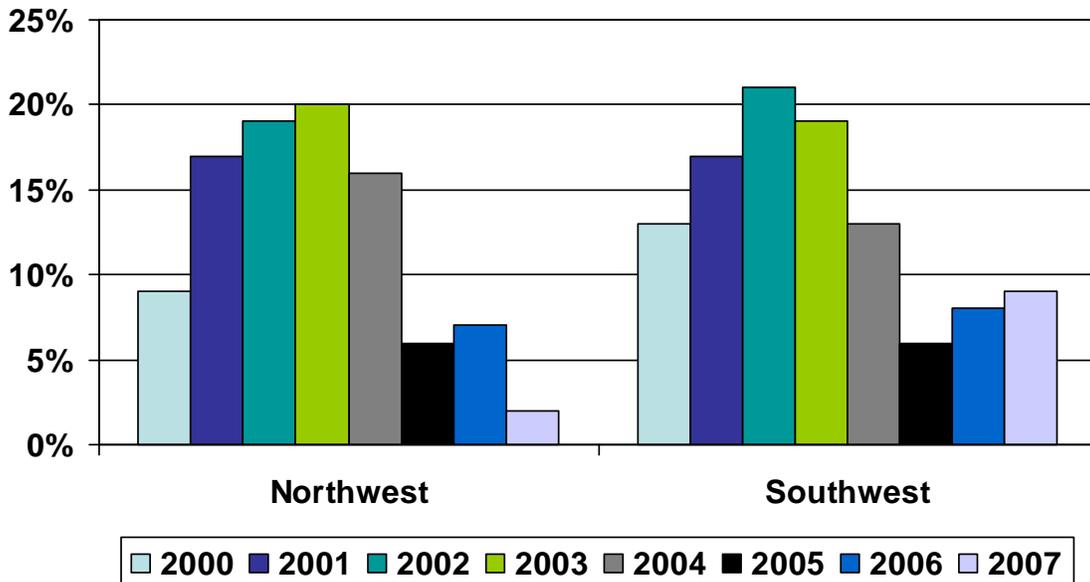
*BST Final Comment: The resulting impact on westbound empties is shown in Figure 7. Westbound empties from Chicago bound for LALB were up 180% over 2000 levels while empties bound for Sea-Tac were up only 110% over 2000 levels but actually fell in absolute terms between 2005 and 2006.*

Figure 7 – Empty TOFC/COFC Traffic from Chicago to USWC (index 2000 = 100%)



*BST Final Comment: The railroads have largely accomplished their goal of balancing rail traffic, as show in Figure 8. Imbalances were 15% to 20% during the period 2001 and 2004. Now the bidirectional imbalances are under 10%.*

Figure 8 – Rail Unit Imbalances via US Southwest and Northwest Port Regions (% imbalance)



### *Specific Assessment of the Leachman Model*

We have the following specific questions and/or comments about the Leachman report.

- We understand the need to protect confidential data but there are several conclusions or public data inputs that are not sufficiently documented. This makes it difficult to validate study inputs, as well as results.
  - We request the actual numbers on elasticity that underlie Figure S-2 in the Puget Sound report and Figure S-3 in the San Pedro Bay report. A spreadsheet with the values would be appreciated.

*Dr. Leachman's COMMENT: I have enclosed such a spreadsheet with this mailing.*

*BST Final Comment: Received.*

- How long is long run and how long is short run? The model purports to be long-run but apparently uses current published rates. Leachman says that in the long run everything that is intermodal is discretionary, but more discussion on this issue should be provided.

*Dr. Leachman's COMMENT: As explained in the report, "long run" and "short run" refer to the suitability of the model for supporting long-term and short-term decisions, not to particular time frames for evolution of trade flows. In the Long-Run model, service quality at other ports is assumed to be fixed, even when substantial volumes are diverted to those ports. The idea is that investments or fees in the home port need to be justified even if other ports make changes to accommodate more market share at current service quality. Since decisions about investments in infrastructure have very long-term implications (e.g., 20-30 year bonds), this assumption is prudent to support such decision-making.*

*BST Final Comment: There is an uneven (or differential) rate of terminal and inland rail development at alternative corridors. This could create congestion at individual ports and present an opportunity or constraint for competitors.*

- Leachman developed a transportation cost matrix using 10 ports (only 9 appear in the text of the report):

<b>Row</b>	<b>Ports</b>	<b>Assumed trans-load warehouse site</b>
1	Vancouver, BC.	Abbotsford, BC.
2	Seattle-Tacoma, WA.	Fife, WA.
3	Oakland, CA.	Tracy, CA.
4	Los Angeles – Long Beach, CA.	Ontario, CA.
5	Houston, TX.	Baytown, TX.
6	Savannah, GA.	Garden City, GA.
7	Charleston, SC.	Summerville, SC.
8	Norfolk, VA.	Suffolk, VA.
9	Port of New York – New Jersey.	50% East Brunswick, NJ and 50% Allentown, PA.
10		

- Is the 10<sup>th</sup> Prince Rupert? Is it reasonable to assume that rates for Prince Rupert are similar to those for Vancouver BC? We assume that more attractive rates have been offered at Prince Rupert in order to attract COSCO.

*Dr. Leachman's COMMENT: The above table shows only the ports with economically practical trans-loading services available to use in connection with consolidation – de-consolidation inventory strategies, not all ports included in the model. (Consolidation – de-consolidation of Asia – US imports is not economically feasible via Canadian ports because of the need to pay double customs duties.) Two other ports included in the analysis are Prince Rupert and Lazaro-Cardenas. Prince Rupert has very competitive IPI rates to Chicago and Memphis that were included in the analysis. Rates to other points from Prince Rupert also were included. LC has rates and service somewhat competitive to Texas and southeastern points. These also were included.*

*BST Final Comment: 11 port areas were examined.*

- Leachman's model develops costs for 21 US regions. How are these regions defined, and do they make sense? What is the build-up for these regions – counties, MSAs, BEA regions? This should be specifically provided and mapped.

*Dr. Leachman's COMMENT: Each region is represented as a single location where all Regional Distribution Centers (RDCs) serving that region are assumed to be located. The distribution of goods from RDC to retail outlets within each region is common to all logistics alternatives. Thus the build-up and mapping of regions are irrelevant. The choice of locations for RDCs in the model reflects actual current practice at several large US retailers. For ease of reference, I repeat from the report the definitions of regions:*

*BST Final Comment: These regions appear reasonable but it would be useful for the reader to have them better defined. Our goal in providing a peer review was to verify or compare estimates where possible. The documentation in the report does not allow this to be accomplished.*

1	Atlanta	Atlanta Region – including Alabama, Georgia and 50% of Florida. Regional distribution center assumed to be in Duluth, GA.
2	Baltimore	Baltimore Region – including Maryland, DC and Delaware. Regional distribution center assumed to be in Frederick, MD.
3	Boston	Boston Region – including Rhode Island, Massachusetts, New Hampshire, Vermont and Maine. Regional distribution center assumed to be in Milford, MA.
4	Charleston	Charleston Region – including 50% of South Carolina. Regional distribution center assumed to be in Summerville, SC.
5	Charlotte	Charlotte Region – including North Carolina and 50% of South Carolina. Regional distribution center assumed to be in Salisbury, SC.
6	Chicago	Chicago Region – including Illinois, Indiana, and Michigan 50% of Wisconsin. Regional distribution center assumed to be in Joliet, IL.
7	Cleveland	Cleveland Region – including 50% of Ohio and 25% of New York. Regional distribution center assumed to be in Chagrin Falls, PA.
8	Columbus	Columbus Region – including 50% of Ohio. Regional

9	Dallas	distribution center assumed to be in Springfield, OH. Dallas Region – including Oklahoma and 50% of Texas. Regional distribution center assumed to be in Midlothian, TX.
10	Harrisburg	Harrisburg Region – including 50% of Pennsylvania. Regional distribution center assumed to be in Allentown, PA.
11	Houston	Houston Region – including Louisiana, Mississippi and 50% of Texas. Regional distribution center assumed to be in Baytown, TX.
12	Kansas City	Kansas City Region – including Kansas, Nebraska, Iowa and Missouri. Regional distribution center assumed to be in Lenexa, KS.
13	Los Angeles	Los Angeles Region – including Arizona, New Mexico, 66% of California, 67% of Nevada, 33% of Utah, and 50% of Colorado. Regional distribution center assumed to be in Ontario, CA.
14	Memphis	Memphis Region – including Arkansas, Tennessee and Kentucky. Regional distribution center assumed to be in Millington, TN.
15	Minneapolis	Minneapolis Region – including North Dakota, South Dakota, Minnesota and 50% of Wisconsin. Regional distribution center assumed to be in Rosemount, MN.
16	New York	Minneapolis Region – including North Dakota, South Dakota, Minnesota and 50% of Wisconsin. Regional distribution center assumed to be in Rosemount, MN.
17	Norfolk	Norfolk Region – including Virginia. Regional distribution center assumed to be in Suffolk, VA.
18	Oakland	Oakland Region – including Wyoming, 50% of Colorado, 67% of Utah, 34% of California, and 33% of Nevada. Regional distribution center assumed to be in Tracy, CA.
19	Pittsburgh	Pittsburgh Region – including West Virginia and 50% of Pennsylvania. Regional distribution center assumed to be in Beaver Falls, PA.
20	Savannah	Savannah Region – including 50% of Florida. Regional distribution center assumed to be in Garden City, GA.
21	Seattle-Tacoma	Seattle Region – including Washington, Oregon, Idaho and Montana. Regional distribution center assumed to be in Fife, WA.
22	Toronto	Not included in study

- Leachman allocates imports to these regions based on purchasing power from US Dept of Commerce. This data (purchasing power by region) should be provided in the report. We have used retail sales, population, income and employment in other analyses and found little overall variation. However, using purchasing power may introduce income elasticity effects,

specifically if higher income groups avoid the big box retailers. This could occur in New York, for example, and may lead to a misallocation of import containers.

*Dr. Leachman's COMMENT: See Table 6 in the report. My opinion is that income elasticity differences from region to region are negligible. The big-box retailers are well-patronized in all regions of the country. Moreover, the import strategies of the big-box importers have been adapted recently to supply chains involving wholesalers and smaller retailers.*

*BST Final Comment: We understand the reasons for the assumption but it could be tested empirically.*

- Imports were allocated to 8 US regions in the San Pedro Bay Report. The split is based on 1996 data from the 1998 *Long-Term Cargo Forecast*.

*Dr. Leachman's COMMENT: The allocation of the imports to regions in the 2005 report was solely for the purposes of studying discretionary traffic. It had nothing to do with the Elasticity Model. In the Elasticity Model there is no allocation of imports to regions based on 1996 data. Imports are allocated to destinations solely based on 2005 purchasing power statistics for the 21 continental US regions as defined above.*

*BST Final Comment: Understood.*

- How were imports allocated to the 21 destinations, and why use such old data?

*Dr. Leachman's COMMENT: See above comment.*

*BST Final Comment: Understood.*

- We concur with the difficulty of using PIERS data but question how the theoretical allocation of imports by purchasing power is ground-truthed with other data that reflect actual practices? More discussion on this aspect would be helpful.

*Dr. Leachman's COMMENT: The predictions of the model in terms of import strategies practiced by individual retailers correlate well with actual practice.*

*BST Final Comment: Again, our goal in providing a peer review was to verify or compare estimates where possible. The documentation in the report does not allow this to be accomplished.*

- Import values (declared values) came from the World Trade Atlas (Global Trade Information Services). This database has a reported 99 commodity types. Is the data at 2-digit HS? If so, there may be some significant problems with weighted averages of value, cube and weight.
  - TEU volumes were developed from PIERS data
  - WTA value and PIERS TEU volumes were combined by commodity type. Again, is this 2-digit HS?

- Since PIERS commodity codes includes some codes that don't appear in the Harmonized System ("00"), the values of these were allocated to the other 99 categories based on a weighted average. Does it make sense to allocate them that way, or do the goods in this category fall primarily in a small number of the other categories?

*Dr. Leachman's COMMENT: Please read page 21 of the report where the handling of the PIERS and WTA data is explained. The two-digit commodity codes in PIERS and WTA match except for one. It is important to account for all imports and have consistent totals of PIERS and WTA data. This is why an allocation of the mismatched code was necessary. In the end, only a single weighted-average declared value for each commodity code is obtained. As explained in the text, some of the codes are very aggregate, leading to an unrealistic, lumpy non-Pareto-like curve. I smoothed out each value category and re-summed; the resulting distribution is a Poisson-like or Pareto-like curve, which I strongly believe is the shape of the real distribution. This is my judgment.*

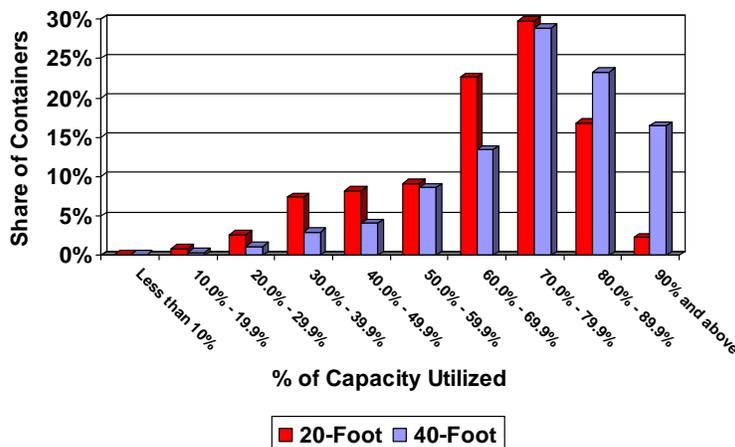
*BST Final Comment: The lumpiness may be realistic which could impact model results.*

- Leachman calculated a weighted-average container size (1,274.4 cubic feet per TEU) and applied that to all 99 commodity groups.
  - This is the capacity of the container, not the volume of the commodity.
  - Why not use the container size field from PIERS? Why not use the containerized volume field from PIERS?

*Dr. Leachman's COMMENT: I only have TEU totals for each commodity in the PIERS summaries that I receive. But I doubt such detail could have any significant impact on the analysis.*

*BST Final Comment: Perhaps it would have no impact. However, our concern remains that it may lead to an over-estimate of low cube transloadable cargo.*

Figure 9 – Percent of Container Capacity Used in 20- and 40-foot Containers<sup>2</sup>



Source: 2005 PIERS data for the Ports of LA and LB

- Figure 9 suggests that most cargo does not cube out. By using the \$/cu ft of the container, the impact of transportation charges on product value may be understated. However, this may be partially compensated for by using low value and high value products.

*Dr. Leachman's COMMENT: What matters is the \$ per cu ft of container capacity that is shipped, not the \$ per cu ft of actual imports.*

*BST Final Comment: The transportation cost using \$ per cu ft of cargo would likely be higher than using the container capacity. This could result in larger impacts from unilateral imposition of fees.*

- Leachman presents the TEU volumes by declared value per cubic foot, in \$4.00 increments. It is a lumpy graph, but on Page 52 of the San Pedro Bay report Leachman states that the real distribution must exhibit a Pareto or Poisson-like shape.
  - Why must it be smoothed? Smoothing could also under-estimate the impact of transportation charges on lower valued cargo.

*Dr. Leachman's COMMENT: See comment above. I do not believe the smoothing has any impact whatsoever of low-valued cargoes.*

*BST Final Comment: Perhaps and perhaps not.*

- Aren't there distinct groups (i.e. furniture, clothing, electronics) that account for most of the containerized imports? There are different rates for these products.

*Dr. Leachman's COMMENT: See Table 1 for the contributions of the top 15 commodities. Transportation rates paid by major importers generally are not distinguished by commodity.*

*BST Final Comment: Is this true for smaller importers? Our point here is that the ocean rates are averages and could have more or less impact on specific importers. According to the Leachman report, large importers account for around 3.8 million TEUs (page 26). However, there were 13.5 million TEUs from Asia (Chins, NE Asia and SE Asia) in 2006. Large imports thus only accounted for 28% of the Asian import trade. Our question focuses on whether the model relies too much on large importers and thus under-estimates the impacts from imposition of fees.*

- Leachman states that retail values are roughly double the declared values. What is the basis for this? Table 1 shows that the retail sales in shoe stores are 46% higher than the duty value of imports. Since 98% of shoes are imported this is a useful example of the ratio of sales to import value.

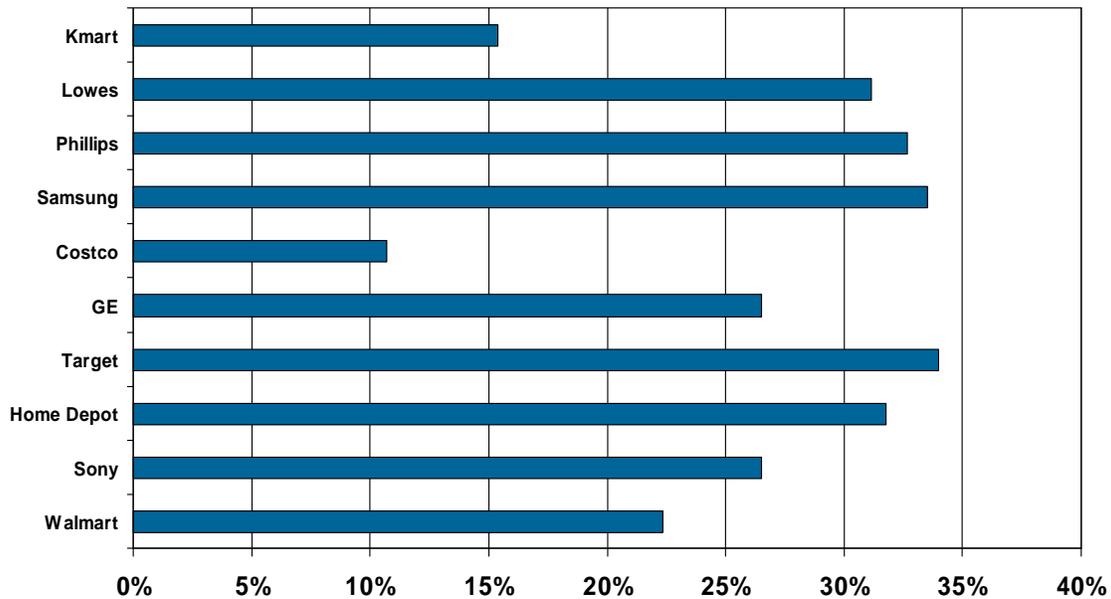
Table 1 – US Shoe Store Sales in 2006

	Millions
Shoe Store Sales	
Total Retail Sales	25,488
Import Value	17,493
Sales ratio to Import Value	146%

*Dr. Leachman's COMMENT: My statement said "roughly double". It is general long-standing practice that retail prices are roughly double wholesale prices. This comment is not really part of model development. What matters is how importers value pipeline and RDC inventories compared to declared values. Please read page 20 to ascertain the assumptions that are made.*

*BST Final Comment: We agree that this is the traditional concept but wonder if introduction of big-box retailers with slim margins are putting additional pressure on rate differentials. Major retailers have a relatively small margin to operate with – between 11% and 34% of the value of sales (see Figure 10). The main method to create profits has been by squeezing transportation costs.*

Figure 10 - Margin between Sales & Costs of Goods Sold



- Should the retail value be used instead of import duty value?

*Dr. Leachman's COMMENT: Please read page 20. Pipeline and RDC inventories are valued at levels intermediate to declared value and retail value. This is consistent with practice in actual large retailers I have met with.*

*BST Final Comment: Understood with reservations.*

- Inventory costs for the top 83 importers of containerized Asian goods were modeled. These top 83 importers accounted for just 32% of US containerized imports from Asia.
  - Leachman estimated the average declared value for each of these firms based on PIERS and interviews.
  - PIERS numbers were adjusted to estimated actual numbers by adding 10%. However, Target apparently reported that their imports were under-reported by PIERS (330,000 TEU actual vs. 202,000 reported), so why use 10%?

*Dr. Leachman's COMMENT: My judgment. Other importers reported the PIERS numbers were closer to their actual figures.*

*BST Final Comment: Understood with reservations.*

- The remaining 68% of import volume was divided into 19 increments of cubic-foot values, ranging from \$2.00 per cubic foot to \$70.00 per cubic foot, in \$4.00 dollar increments. This is a big assumption and distribution in the smoothed manner may overstate the value of the cargo.

*Dr. Leachman's COMMENT: No. Please read report carefully. Remaining import volume was assigned to the value categories such that the overall distribution, including the large importers, matched the smoothing of the actual overall value distribution in Figure 1.*

*BST Final Comment: Understood with reservations.*

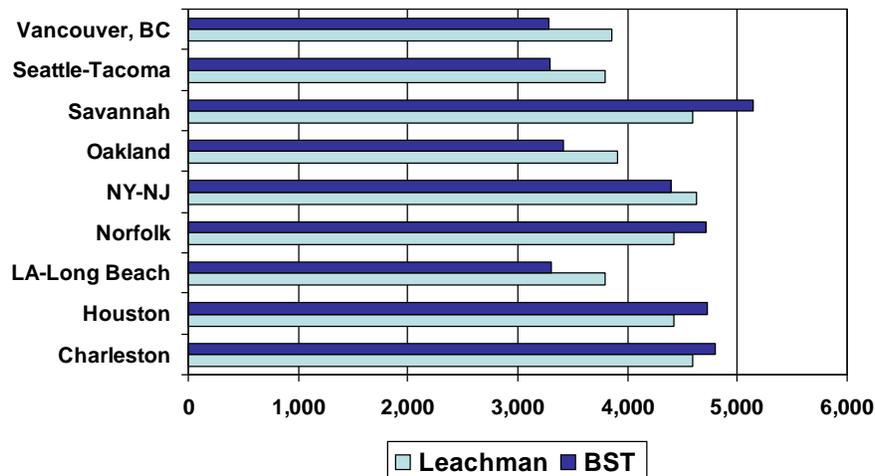
- We agree with the use of the inventory carrying cost but are not exactly sure how it was done in the model.
  - a. Low value products incur a 20% carrying cost. High valued products can carry up to a 50% carrying cost. However, it is not known what specific rates were used.

*Dr. Leachman's COMMENT: 50% carrying costs apply only to electronics and fashion goods importers. For all others, 20% is assumed.*

*BST Final Comment: Understood.*

- b. We assume that the number of days of the trip is divided by 365 days times the value of the product times the carrying cost rate. As an example, a low valued product via Seattle to Chicago would incur 29 days (23 mean lead time plus 6 day transit time)/365 times \$15/cu ft times 20% = \$.24/cuft or \$613 per 40 foot container carrying cost.
- Transportation costs (Leachman) were modeled based on stated tariffs and confidential data from interviews. It is unclear exactly what source was used. As a crosscheck, BST Associates compared the rate per container with other sources of data (Drewry for ocean & port charges, plus STB data for rail rates to Chicago). There is a significant difference between the Leachman and BST estimates. BST is 10% to 15% lower for West Coast intermodal to Chicago and 5% to 10% higher for East Coast intermodal to Chicago.

Figure 11 – Comparison of Transportation Rates from Shanghai to Chicago via Selected Gateways (\$ per 40 foot container)



*Dr. Leachman's COMMENT: I stand by my rates. They reflect actual contracts and quotations used in the trade. I suspect rates BST obtained for imports via the West Coast are lower because they do not include destination dray, and there may be differences in fuel cost recovery surcharges. I suspect rates BST obtained for imports via the East Coast are higher because large, nation-wide importers have negotiated better rates than are offered to other customers.*

*BST Final Comment: Our sources are updated annually and represent another basis for assessing rates. It is unclear how close the confidential contract rates paid by larger importers are to the rates charged to smaller importers, who represent the majority of imports.*

- Leachman indicates that long-term rail contracts are ending, and as a result some steamship lines are seeing rail rates increase by 25% to 40%, which leads to a lot of disparity in IPI rates. Leachman also indicates that rail rates do not include charges for repositioning equipment.
  - Anecdotal information suggests that new intermodal rates (to the Midwest) favor Los Angeles and Long Beach over Oakland and Puget Sound. This differential is said to partially explain the shift of cargo back to Los Angeles and Long Beach in 2006 and 2007.

*Dr. Leachman's COMMENT: No. The shift back to LA and Long Beach in 2006 and 2007 is due almost entirely to two factors: (1) Certain lines shifted vessel strings from LA-LB to Seattle-Tacoma for the 2005 shipping season as a response to the 2004 meltdown at LA – Long Beach. Because the 2005 shipping season at LA-LB was much improved, the lines shifted the strings back to LA-LB for the 2006 season. (2) The rail rates taking effect in 2006 and 2007 require lines to balance inbound and outbound rail container flows at each port area. This forced many more empties and export containers to shift from Seattle-Tacoma to LA-LB in 2007.*

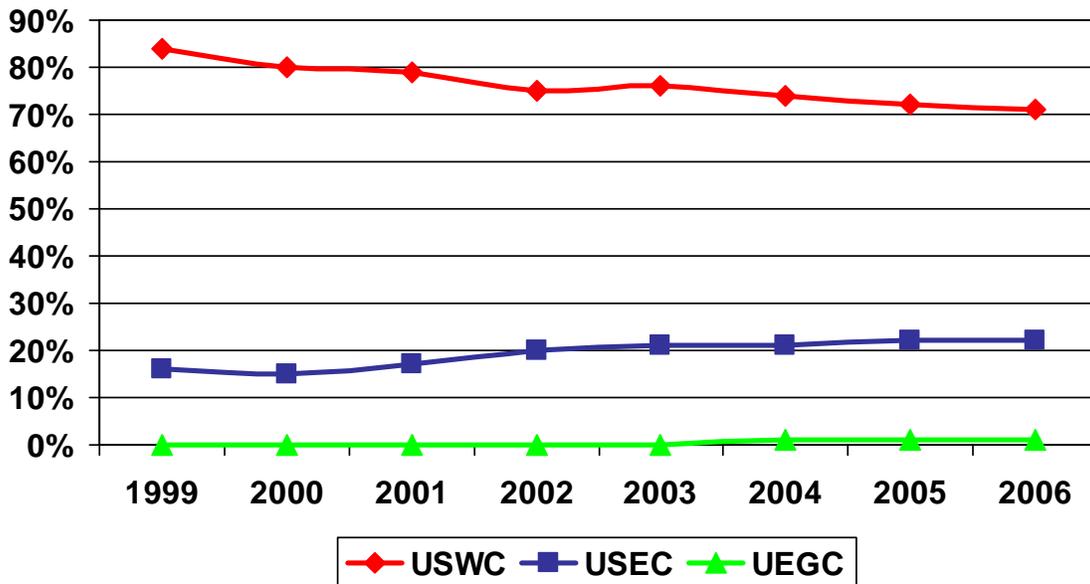
*BST Final Comment: Our point is that these shifts occurred due to differential rates as described above.*

- A recent article in The Journal of Commerce suggests that increased US West Coast intermodal rail rates have led to a shift to all water services<sup>3</sup>.

*Dr. Leachman's COMMENT: Not clear. Panama Canal costs are way up for the steamship lines, so they have sharply raised all-water rates. I think on balance the all-water market share has not changed appreciably.*

*BST Final Comment: Ocean rates for all water services have increased significantly relative to USWC rates. Despite this, market share has continued to increase. It is constrained by Panama Canal capacity at the present time but this will change in the long-run. Also, new services using the Suez are coming on line. See Figure 12.*

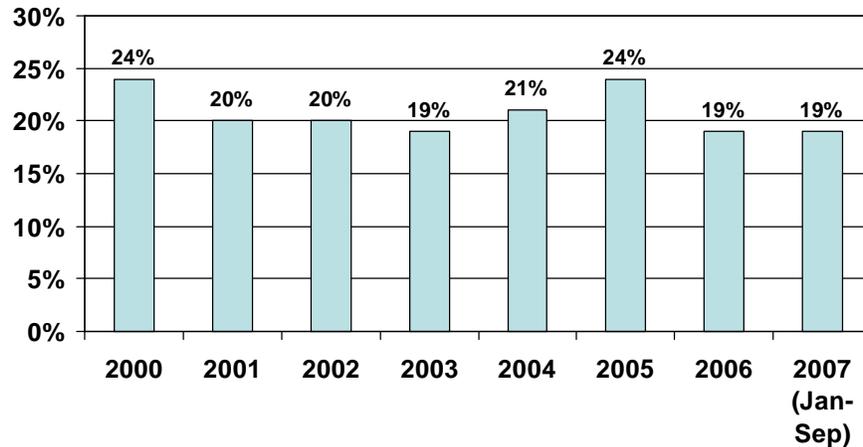
Figure 12 – Market Share of US Imports from China



<sup>3</sup> December 17, 2007, page 46

- As shown in Figure 13, Puget Sound ports gained market share in 2004 and 2005 and then lost share in 2006 and 2007 YTD. This illustrates the sensitivity of imports to rate differentials.

Figure 13 – Puget Sound Share of West Coast ISO Boxes bound for the Midwest<sup>4</sup>



*Dr. Leachman's COMMENT: No. It illustrates the sensitivity to port congestion and to the new requirement to balance westbound and eastbound container flows at each port. The meltdown at LA – Long Beach in summer of 2004 caused the shift up to Seattle – Tacoma. The success of PierPASS caused the shift back. The new requirement from the railroads for balanced flows caused a further shift of westbound containers. It was not an issue of significant rate differentials, unless one insists on referring to the penalties for imbalanced flows as “rates”.*

*BST Final Comment: We are not insisting but we think that changes in rates and capacity can shift cargo quickly.*

- Diversification of supply chains as a hedge against port risk is not considered. Leachman states that the value of risk mitigation due to using multiple ports may more than offset proposed container fees.
  - Isn't this what is happening in the shift of containers to Vancouver and Prince Rupert as well as East/Gulf coasts and perhaps Mexico in the future?

*Dr. Leachman's COMMENT: I was speaking primarily about large importers practicing consolidation – deconsolidation at multiple ports. They choose ports of entry and make investments in import warehouses. Diversification is important to them and it is something they can control. For importers using IPI services to direct-ship marine boxes to inland RDCs, they have little control over port of entry. So in that case diversification of ports is something of value to, and controlled by, the lines rather than the importers. My opinion is that the lines are not pursuing diversification to the extent that large importers are pursuing it. Expansion into Prince Rupert and Mexico is not being driven by the lines. Instead, the lines are being solicited to do it by port developers and landside carriers serving those new ports.*

*BST Final Comment: This has the same effect.*

<sup>4</sup> The source for this data is IANA and includes Western Canada, Pacific Northwest (Washington and Oregon) and Pacific Southwest (California)

- Leachman says that for small importers, ones with few destinations, or for low-valued commodities, transloading does not make sense.
  - Some third-party logistics providers serve the smaller importers. It is unclear what criteria are used to determine large versus small shippers.

*Dr. Leachman's COMMENT: It is not a matter of capital facilities. In fact, all the large importers outsource trans-loading to third parties. The issue is having sufficient volume to do the 5-to-3 re-packing of the contents of marine boxes into domestic boxes without having half-box-loads left over. See page 26 of the report. My rule-of-thumb is at least 10 TEUs per week to each RDC during the off-peak season is required to practice consolidation-de-consolidation. Because some wholesalers are now practicing this strategy, with their retail customers playing the role that RDCs do in a large importer, the trans-loading practice has expanded to embrace smaller importers.*

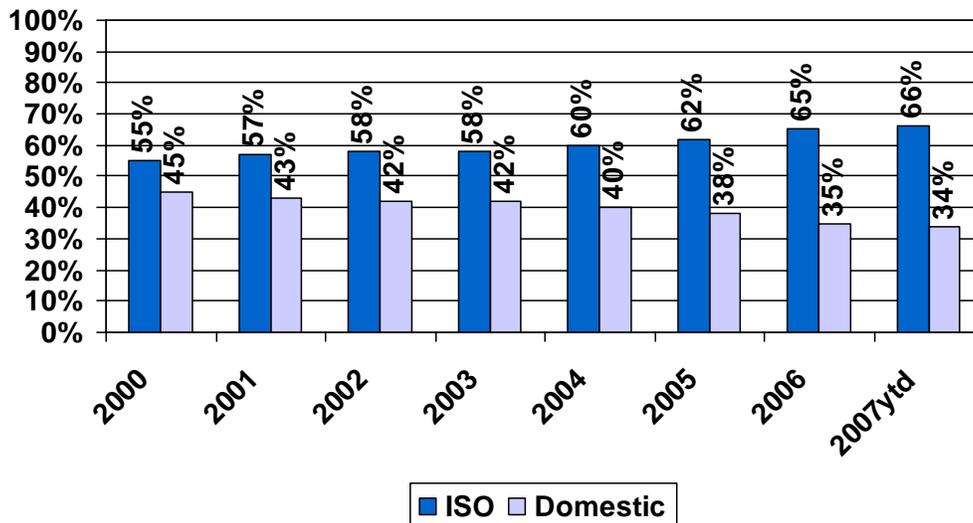
*BST Final Comment: Understood but the viability of transload also has to do with the cargo characteristics (low cube can take better advantage of transload than cargoes that weight out).*

- As a result, for the 19 proxy groups (68% of imports) transloading does not make sense, so they are assumed to be 100% IPI intermodal. Does that make sense? The decision by Maersk and Cosco to reduce inland points may increase transloading. However, there is little anecdotal evidence that this is occurring yet?

*Dr. Leachman's COMMENT: I watch IANA and port data closely. As of mid-2007, trans-loading had not picked up significant market share of Asian imports USA-wide. But I believe its market share grew in the second half of 2007 and will continue to grow in the coming years. As a percentage of total import volume through the Ports of Seattle and Tacoma, trans-loading has picked up substantial share since 2005.*

*BST Final Comment: The jury is still out. We don't see any see any growth in transload through October 2007.*

Figure 14 – IANA Data for Southwest Region Eastbound



- The model assumes that 50% of shipping occurs over three months in late summer & early fall. Why is that?

*Dr. Leachman's COMMENT: This was merely a comment in the 2005 report. Traditionally, this shipping peak was the case, reflecting the dynamic pattern of US retail sales over the year. But the peak has substantially smoothed out in recent years. The build-up starts earlier, and the increased use of gift coupons has spread sales into January and February. Actually, the model makes no such assumption about volume dynamics. The model is static.*

*BST Final Comment: Understood.*