Port and Modal Elasticity of Containerized Asian Imports via the Seattle-Tacoma Ports

Review of Dr. Leachman's Report

Prepared for JTC Freight Investment Study Stakeholder Group

January 23, 2008

By BST Associates

Agenda

- Are Dr. Leachman's analysis and findings reasonable
- Are there disagreements, and
- What you believe would be a more reasonable findings

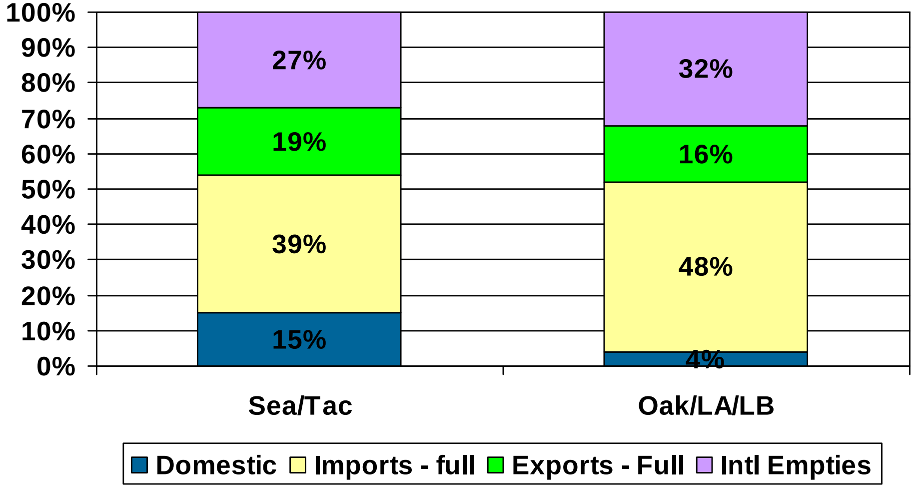
Dr. Leachman's Findings

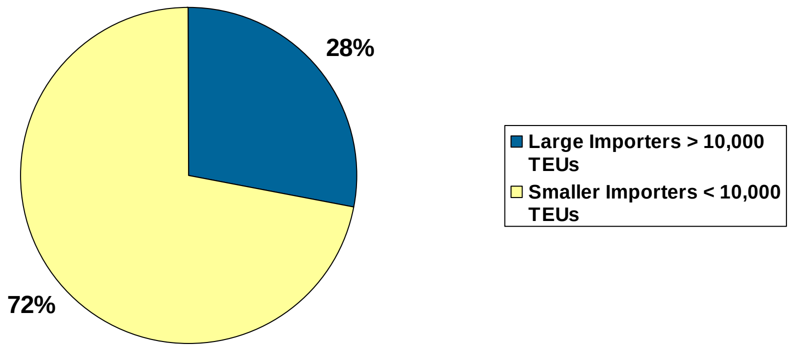
- In general, we agree with the report findings.
  - Our concerns:
    - But the model is a black box.
    - Can't verify info on regions or rates
    - Question use of container cubic capacity rather than cargo volume
    - Question on use/source of data

Dr. Leachman's Findings

- **Key Finding:**
  - **Puget Sound container ports have significant competition and imposition of a fee could lead to a significant loss of container traffic.**
  - **We agree but have caveats:**
    - **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.**
    - **Other factors are changing the competitive equilibrium.**
    - **Decision makers should proceed with care.**

Distribution of Container Traffic





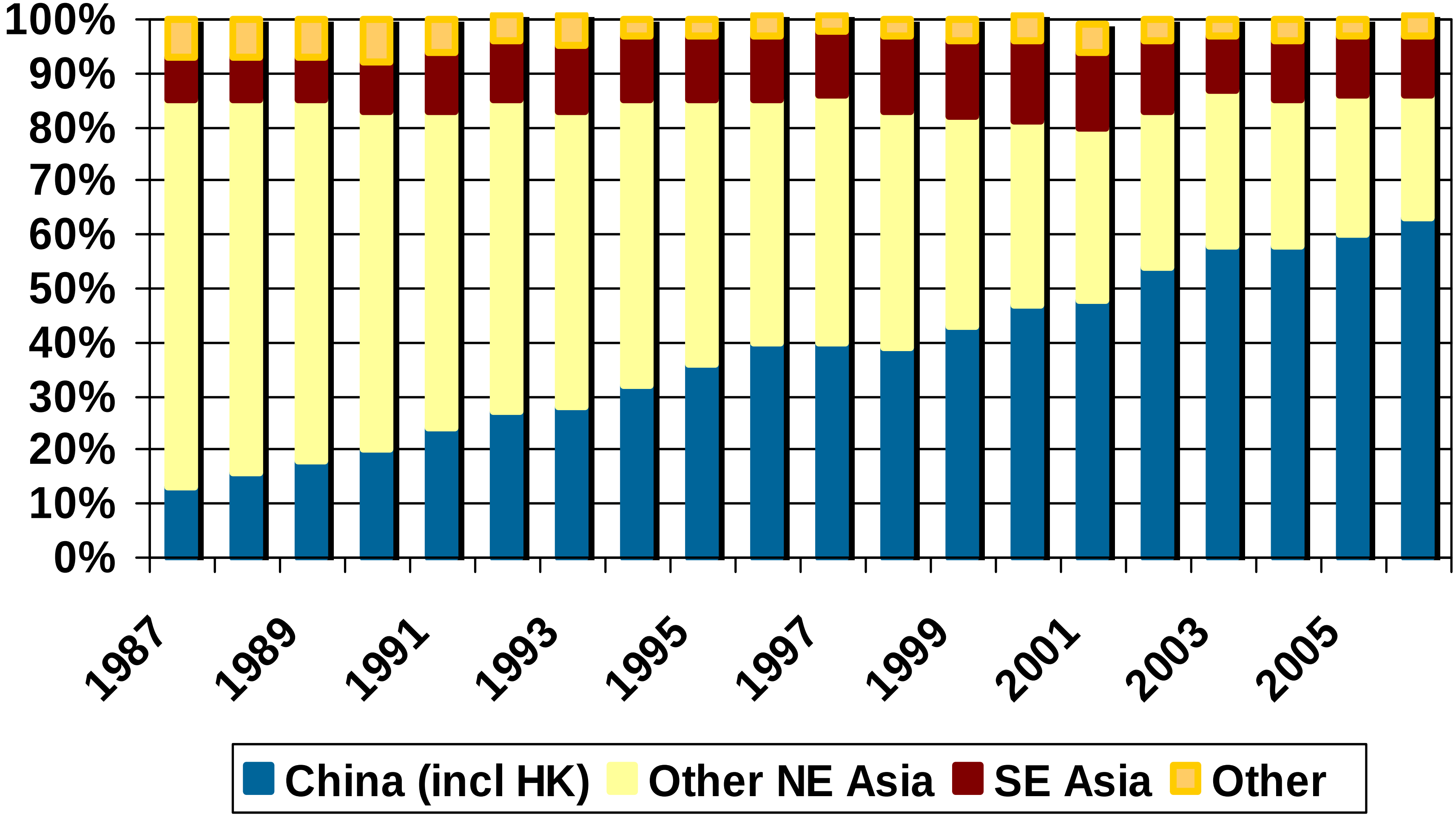
Dr Leachman's model addresses Transpacific imports directly.

The flow of traffic via Sea/Tac and Cal is quite different.

The model addresses around 36% of the traffic but is focused on large importers which represent around 28% of Asian imports.

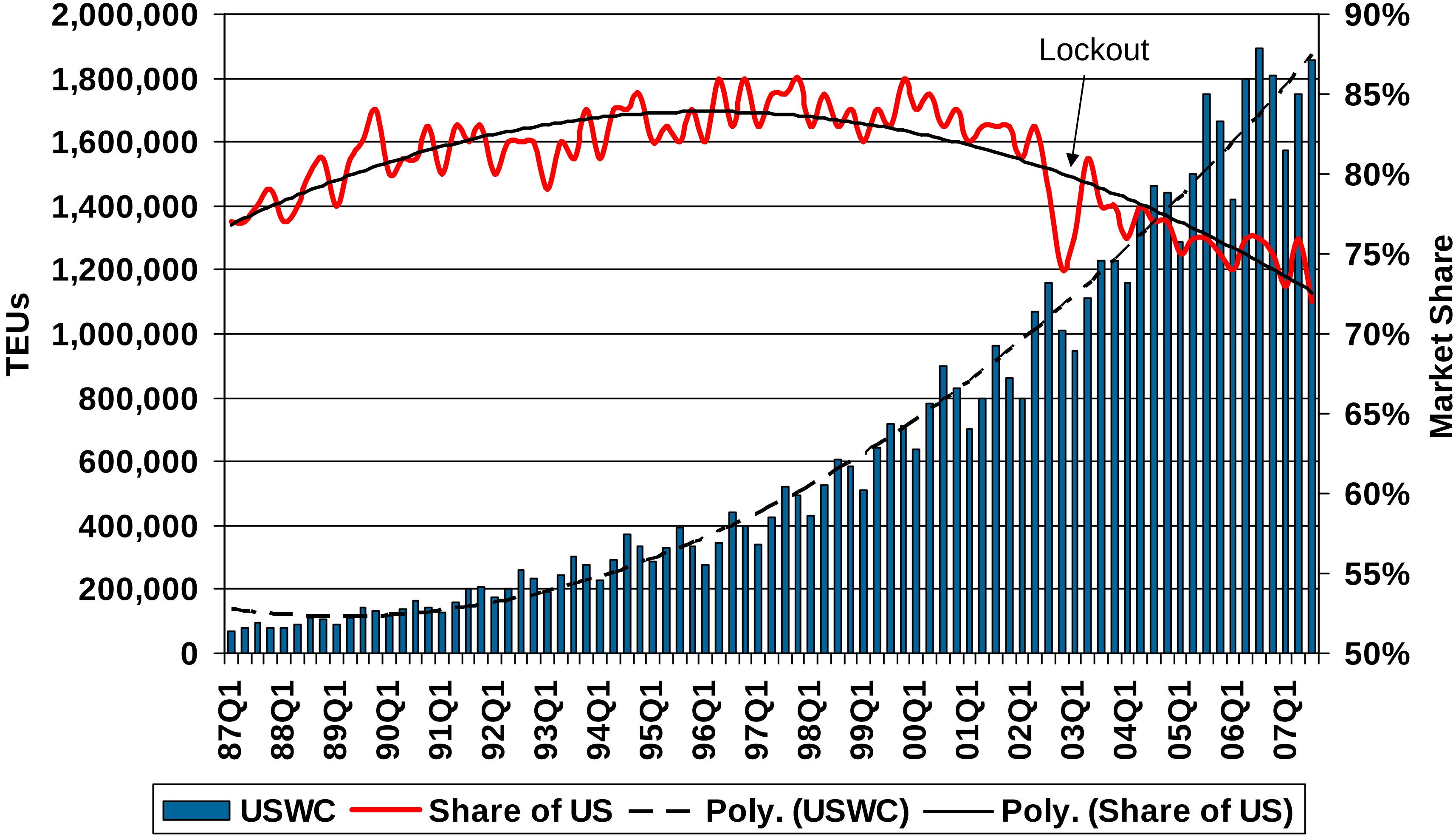
The model addresses 10+% of the traffic flow (36% times 28%).

Puget Sound Ports
Import Share by Trade Route



Asian imports are very important to Puget Sound ports and are linked to the volumes of exports and outbound empties.

US West Coast – Share of China Imports

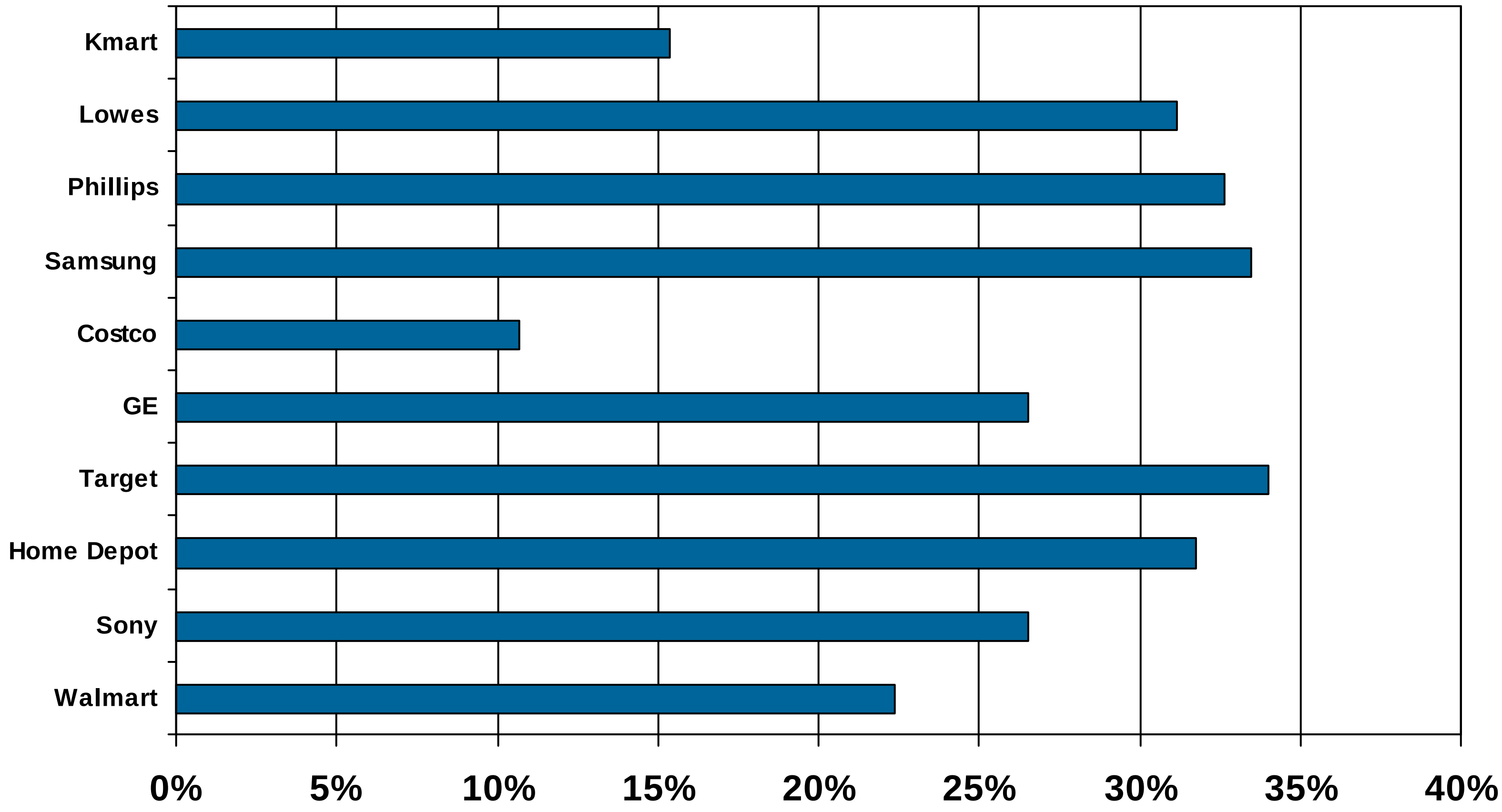


Other factors (related to cost) are driving port choice decisions right now.

Cost-related Factors Driving Port Choice

- Shipper supply chain dynamics & thin margins put downward pressure on transportation costs
- Ocean carriers face large cost increases and supply/demand imbalances
- Railroads are renegotiating intermodal rates
- Port charges are increasing:
  - TWIC
  - Clean air programs
  - Harbor Maintenance Tax et al
- Competitors are offering subsidies

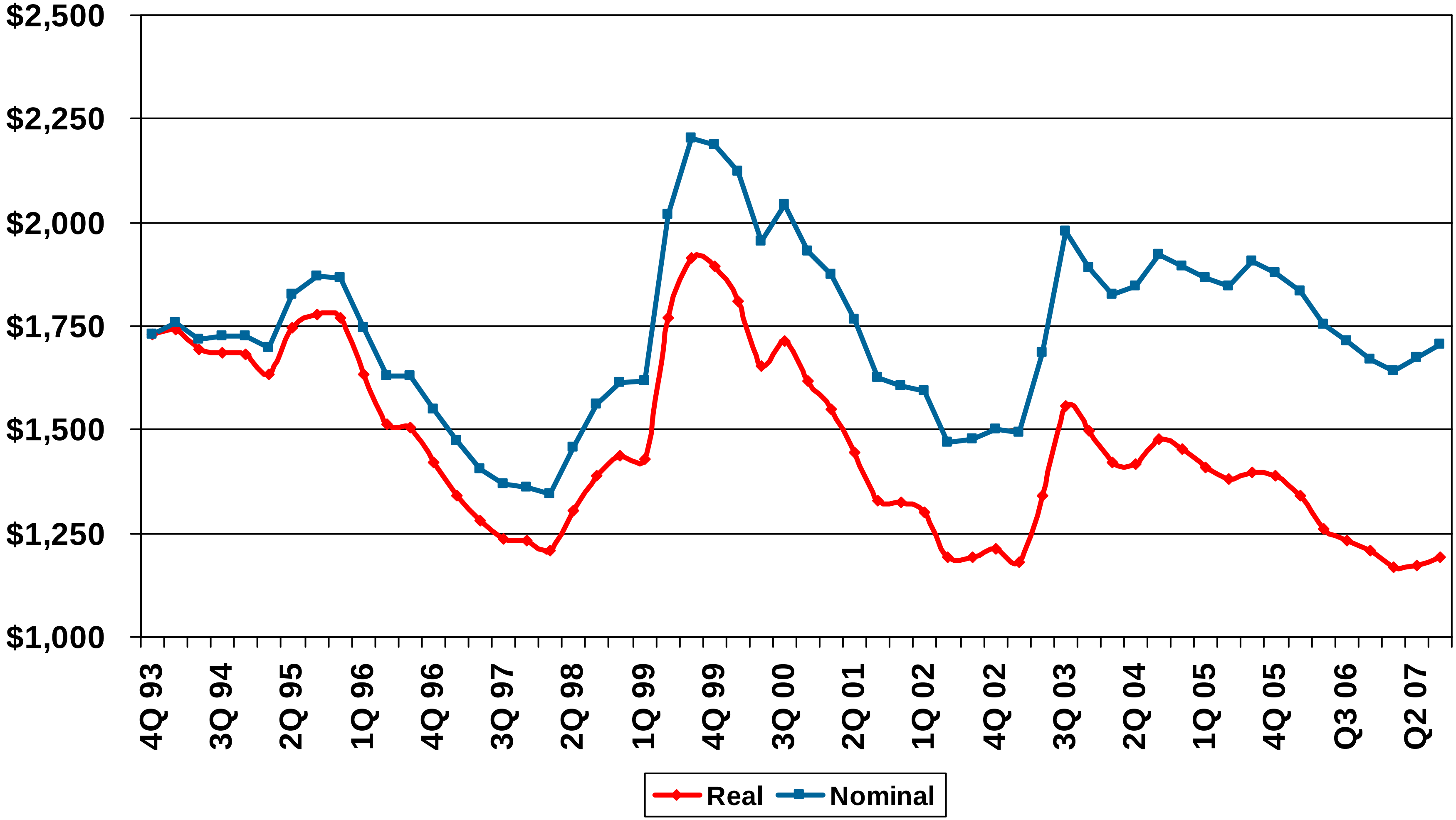
Margin between Sales & Costs of Goods Sold



Most large shippers have a relatively small margin to operate with – between 11% and 35% of the value of sales. The main method to make profits has been by squeezing transportation costs.

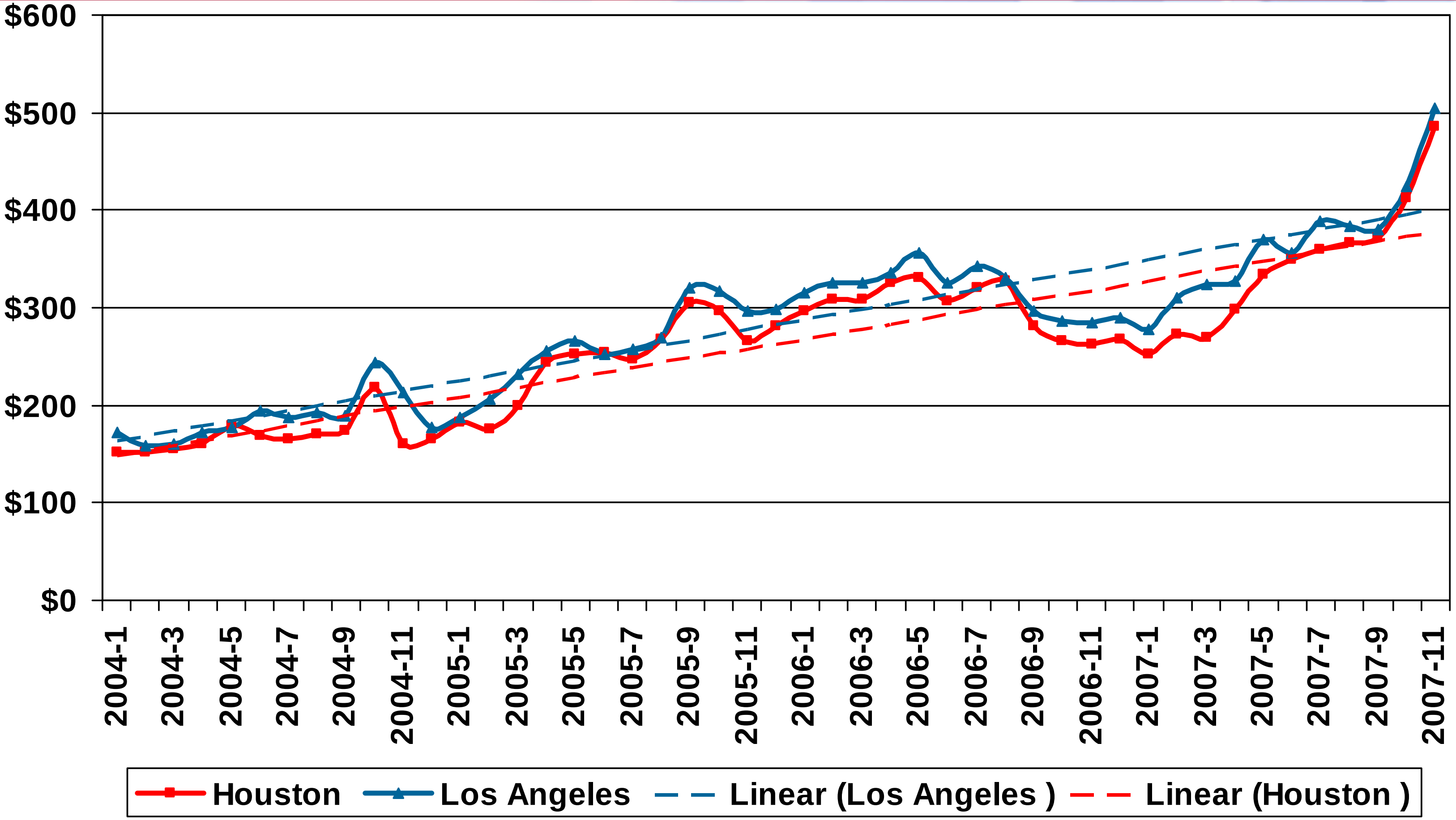
Asia to US – Eastbound ($/TEU)

Source: Containerization International



Rates in the Transpacific are volatile, depending upon economic conditions (growth in consumption, supply/demand of vessels et al). Rates have generally fallen, particularly in real terms.

Spot Bunker Prices ($/Ton)



Bunker costs have increased 200+% since the beginning of 2004. Bunkerworld: “The relentless rise in the price of bunkers observed over the past year has taken an increasing toll on the bottom line of shipping companies.” Carriers are under pressure and will seek lower cost solutions. Maersk states bunker now represents 50% of operating costs up from 20% ten years ago & announced a plan to cover more of the BAF from customers.

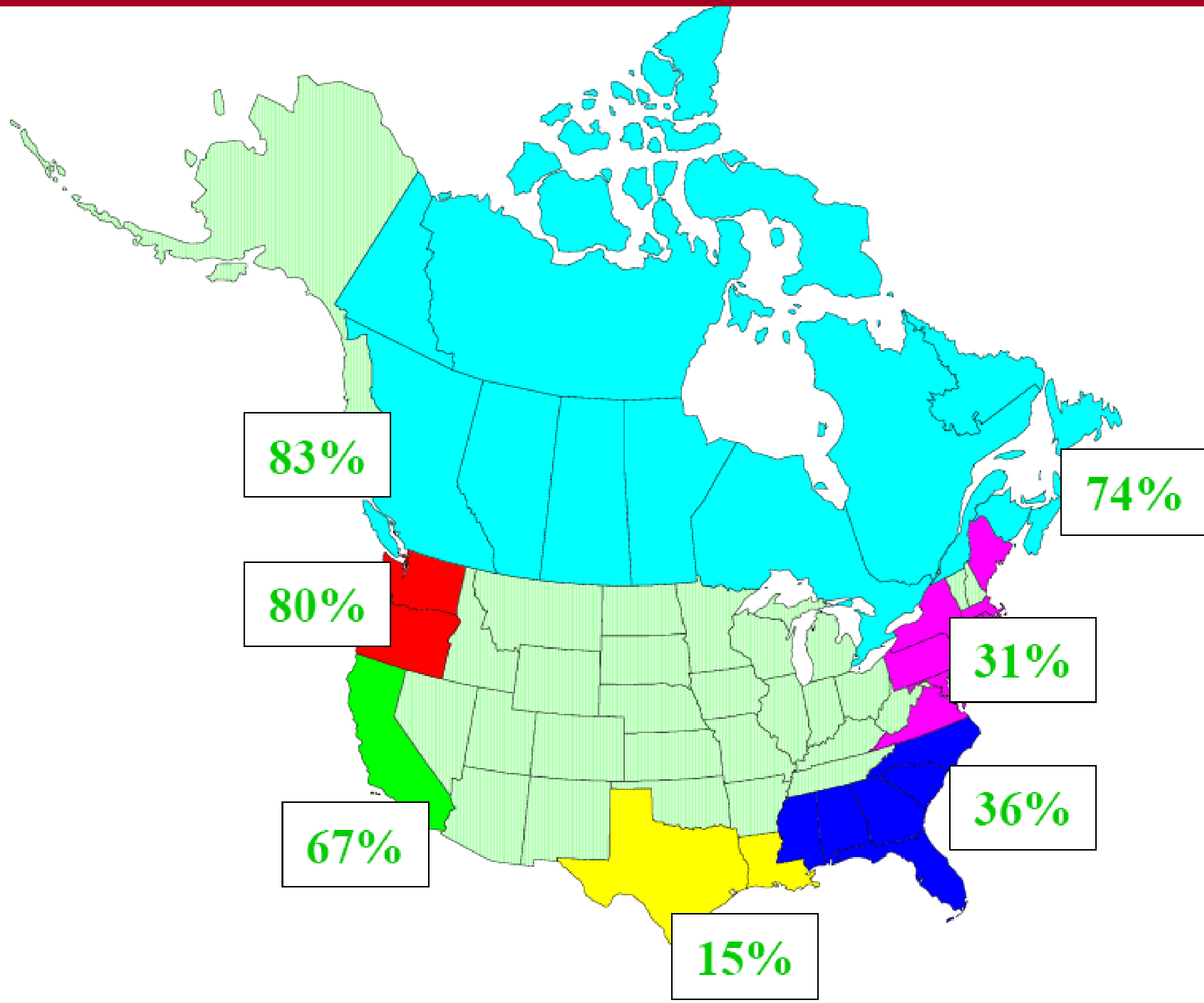
Current Container Vessel Fleet & Order Book

TEUs	Current Fleet	Percent	Order Book thru 2012	Percent	Total	Percent
4,000-4,999	1,701,996	32%	898,478	20%	2,600,474	26%
5,000-5,999	1,350,866	25%	259,082	6%	1,609,948	16%
6,000-6,999	500,815	9%	279,623	6%	780,438	8%
7,000-7,999	374,043	7%	28,000	1%	402,043	4%
8,000-8,999	916,478	17%	781,300	17%	1,697,778	17%
9,000-9,999	381,515	7%	272,100	6%	653,615	7%
10,000-10,999	20,100	0%	626,100	14%	646,200	7%
11,000-11,999	-	0%	226,000	5%	226,000	2%
12,000+	108,000	2%	1,172,500	26%	1,280,500	13%
Total	5,353,813	100%	4,543,183	100%	9,896,996	100%
Over 8,000 TEUs	**1,426,093**	**27%**	**3,078,000**	**68%**	**4,504,093**	**46%**

Source: Clarkson Research data

The introduction of new large vessels could further pressure rates.
Ron Widdows (APL) “You are going to see rates increase in the transpacific. That the U.S. economy, the stock market, and some of my customers are not faring well economically will not be relevant. Rates will go up. They must. The underlying costs are too high. Rates are going to go up, bunker recoveries are going to increase”.

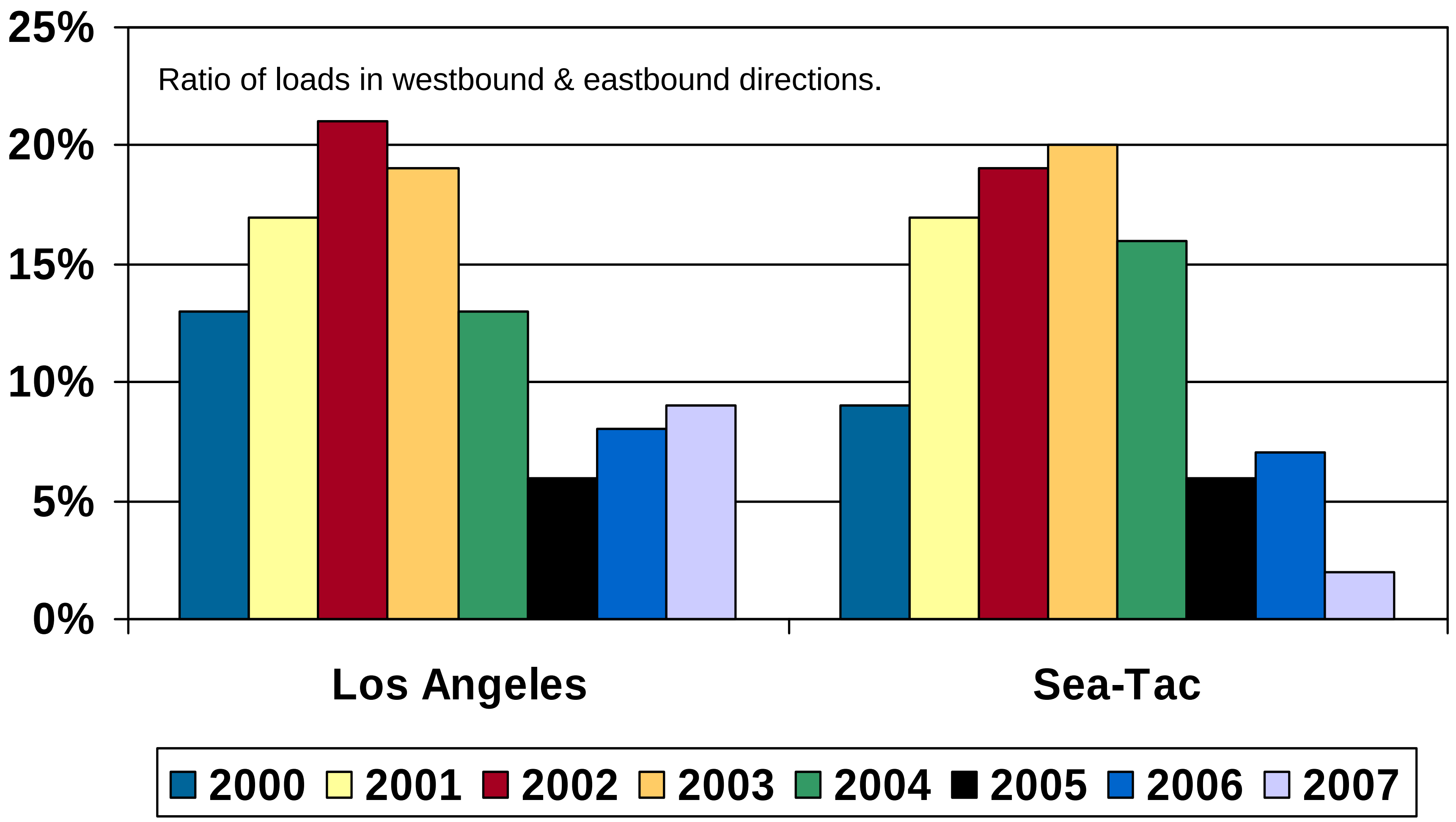
Share of Import Containers that Move by Rail



Rail intermodal rates are being increased 25% to 40% as contracts expire.

East vs. West Balance

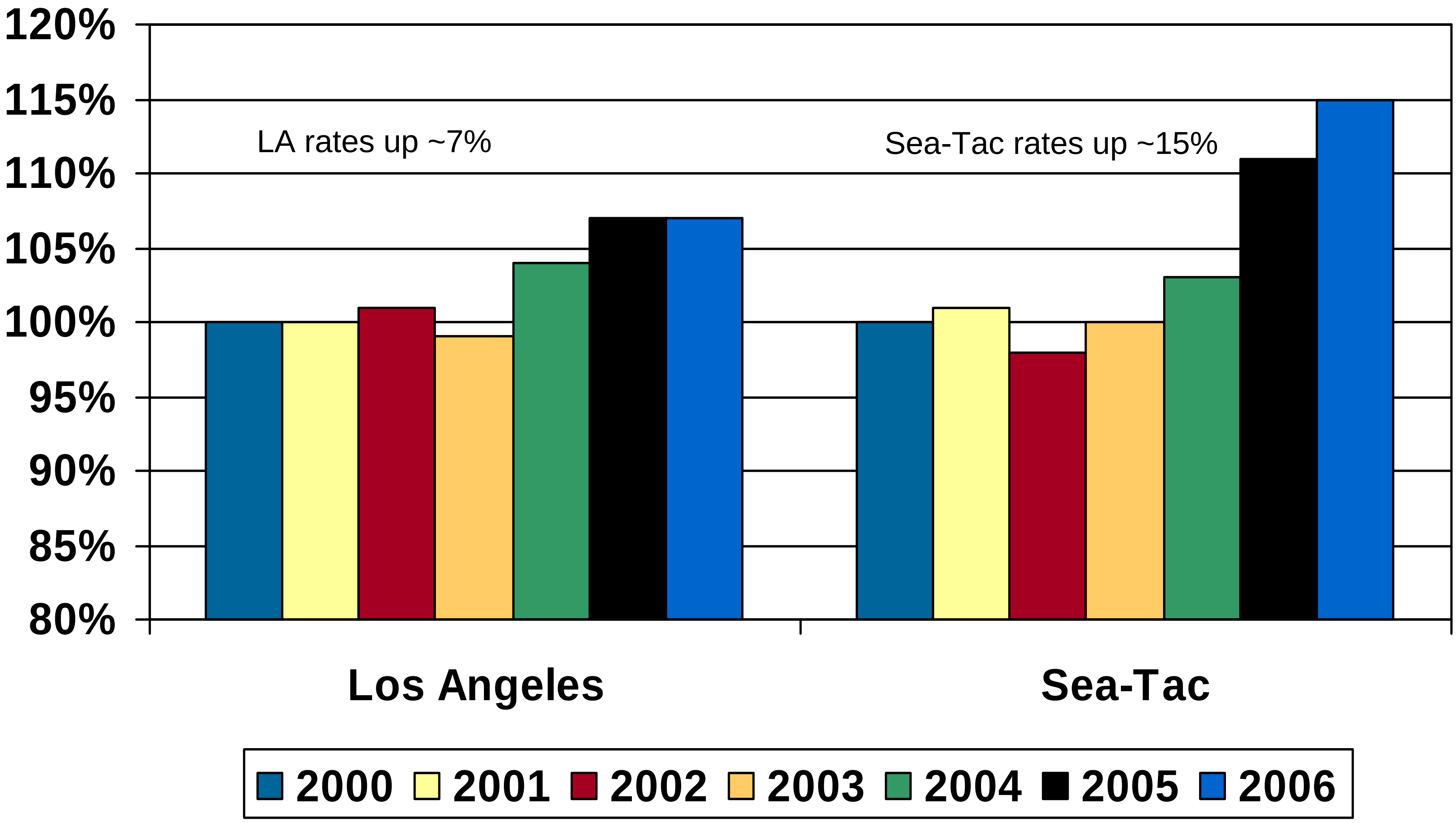
Source: IANA Data



Railroads sought and achieved a balance between westbound and eastbound flows.

Change in Westbound Rates ($/Loaded TOFC/COFC)

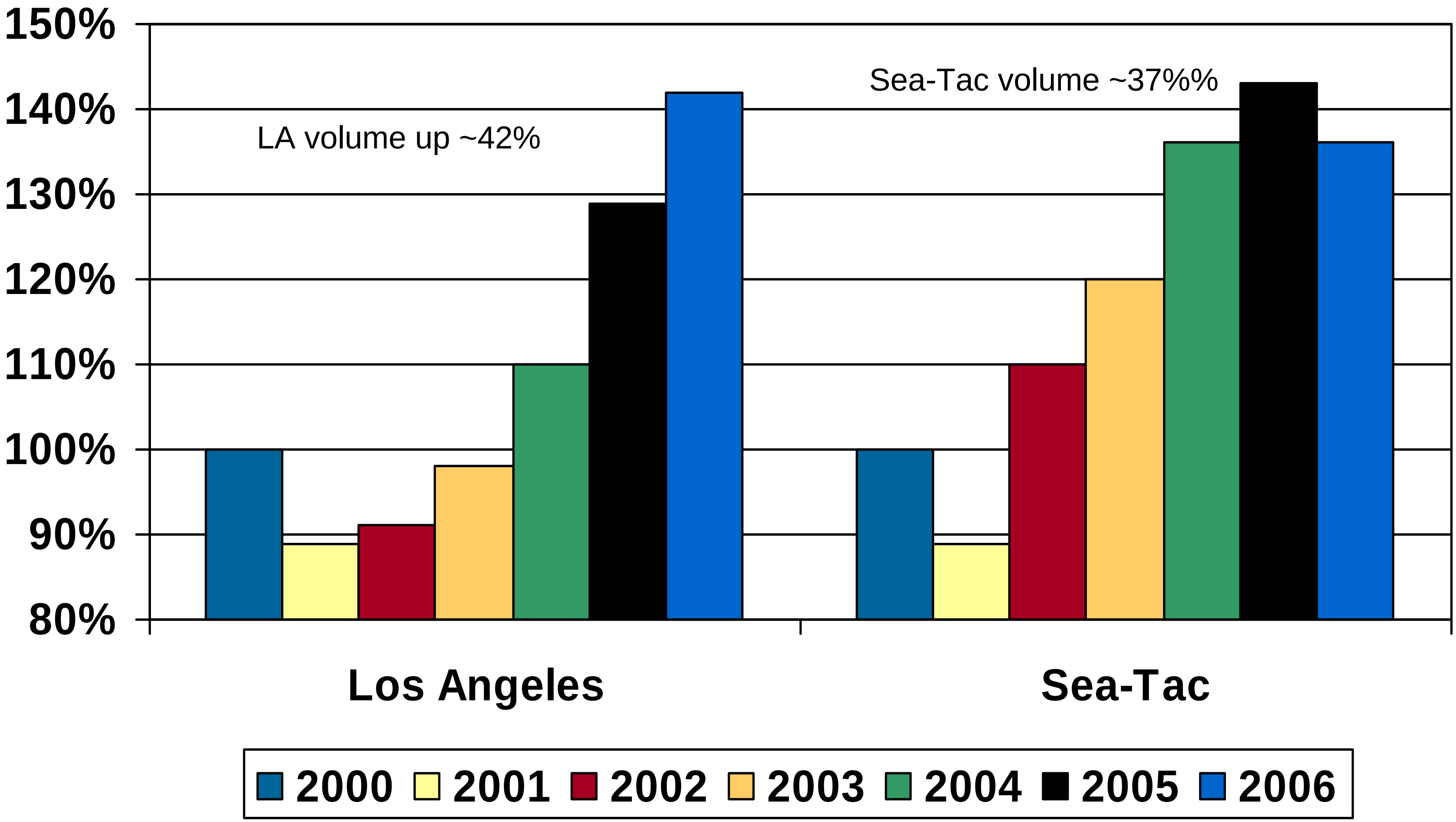
Source STB Data



Balance is being accomplished through relative rate increases for westbound full traffic.

Change in Westbound Loads (Full TOFC/COFC)

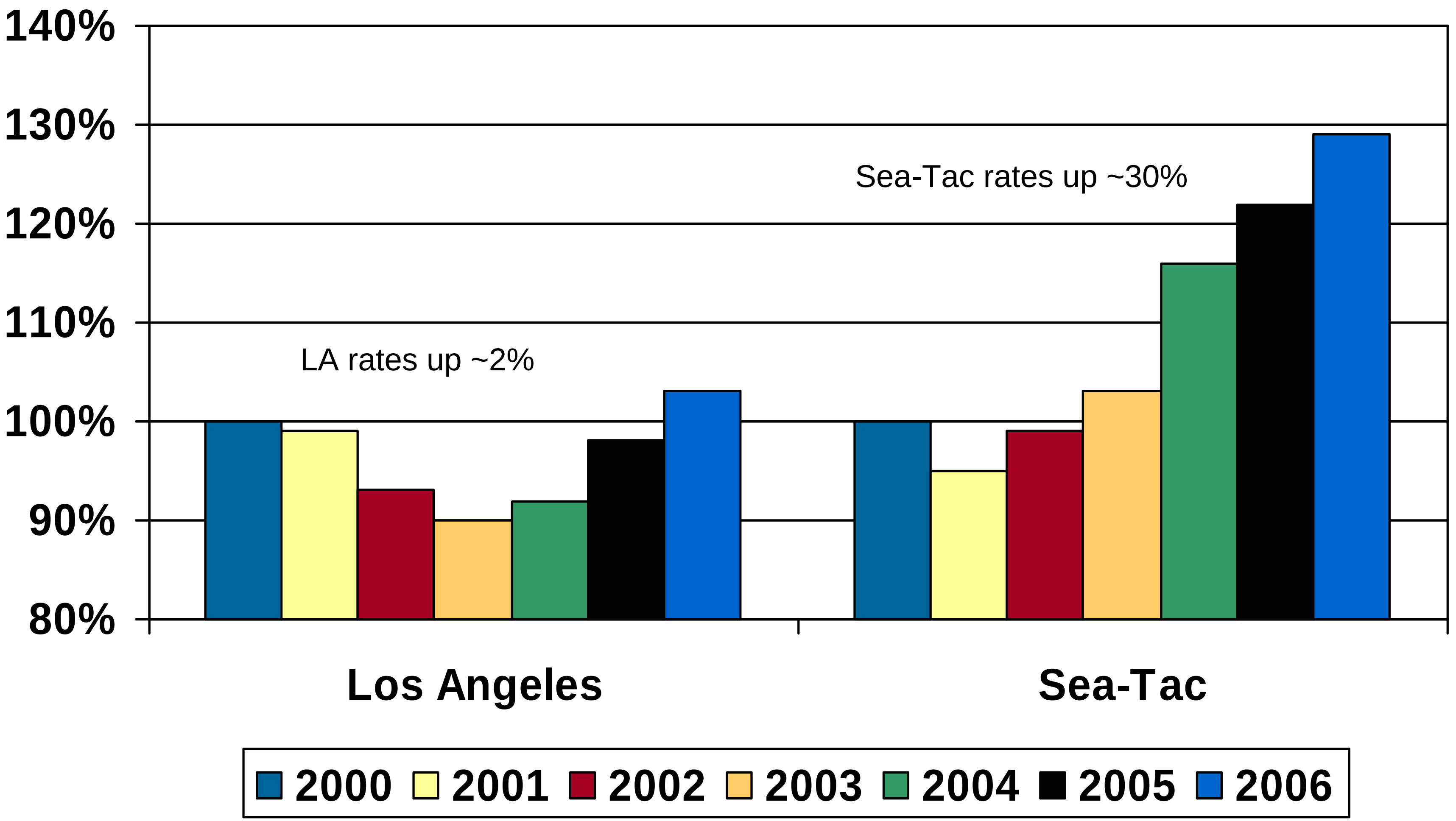
Source STB Data



Result was relative loss of westbound traffic (mainly exports) for Sea-Tac = loss of share.

Change in Westbound Rates ($/Empty TOFC/COFC)

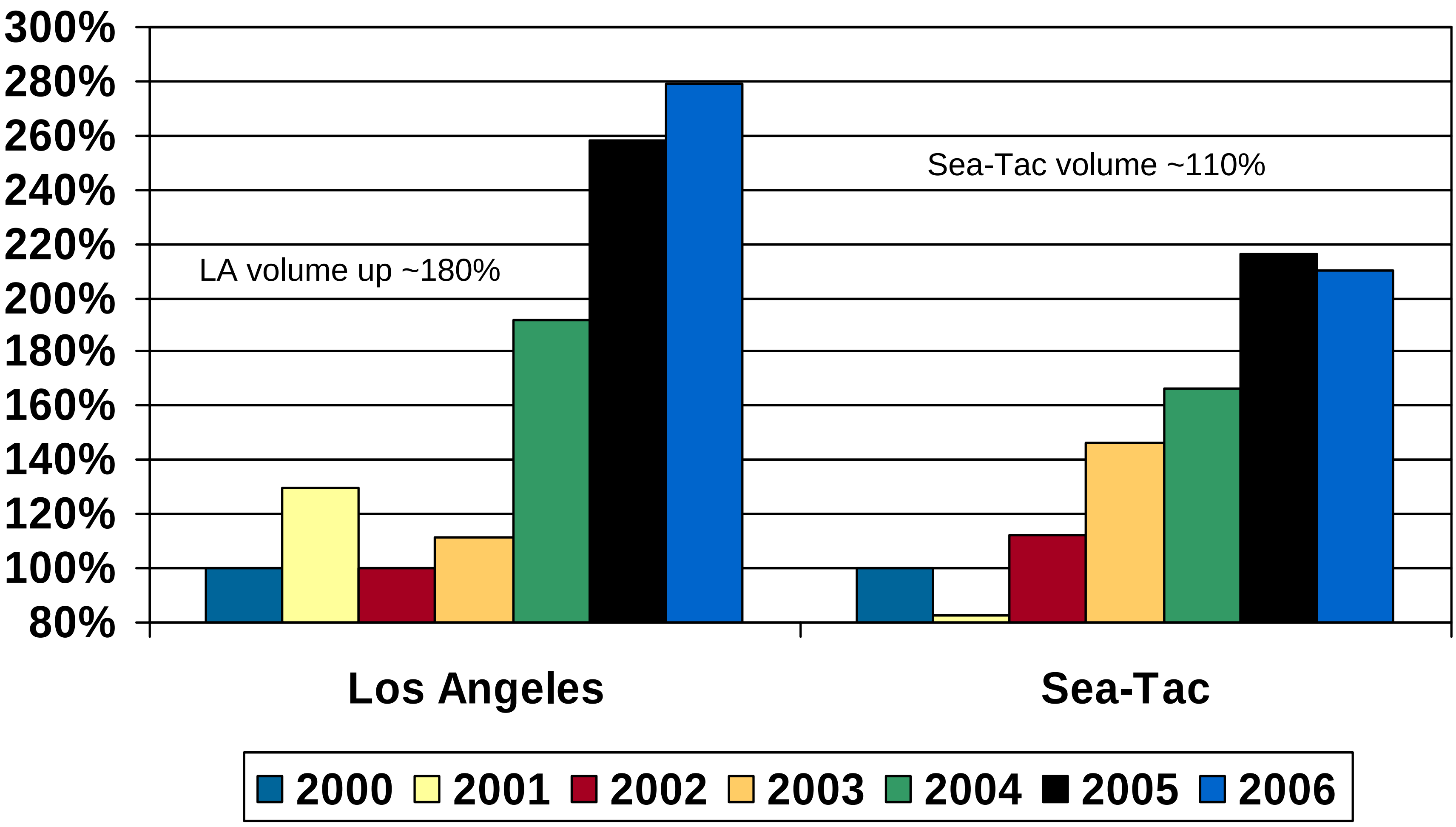
Source STB Data



Relative rate increases for westbound empty traffic (mainly intl) is even greater.

Change in Westbound Empties (Empty TOFC/COFC)

Source STB Data



Result was large relative loss of westbound empty traffic for Sea-Tac.

Prince Rupert – Export Opportunities

Export Opportunities

Northwest Transportation Corridor

- **Alaska and local Seafood (est. 75,000 – 100,000 TEUs per annum)**
- **Pork (est. 100,000 – 160,000 TEUs per annum)**
- **Beef (est. 40,000 – 80,000 TEUs per annum)**
- **Forest Products (est. 120,000+ TEUs per annum)**
- **Special Agricultural Products (est. 60,000 – 100,000 TEUs per annum)**
  - **Pulses** - **Grains and Oilseeds**
  - **Malt** - **Cubes, Pellets, Hay**
- **Other (originating in Chicago-Memphis area)**
  - **Cotton (est. 160,000 - 180,000 TEUs per annum)**
  - **Recycled paper (est. 40,000 - 100,000 TEUs per annum)**
  - **Soybeans (est. 130,000 to 170,000 TEUs per annum)**
- **Petrochemicals/plastics** (to be determined)
- **Developmental** (to be determined)
  - **Log and modular home manufacture**
  - **Bottled water**

Bottom Line

- As Dr. Leachman has pointed out:
  - The competition is fierce for discretionary import container markets.
  - It is also fierce for exports, empties and domestic traffic.
  - This results in downward pressure on rates by all stakeholders (shippers, ocean carriers and railroads et al).
  - Container fees could cause stakeholders to seek other corridors.

Thank you!

Paul Sorensen
BST Associates
bstassoc@seanet.com
(425) 486-7722