



# **CONTAINER FORECAST FOR THE SAN PEDRO BAY PORTS AND THE IMPACT OF IMPORTS ON REGIONAL EMPLOYMENT**

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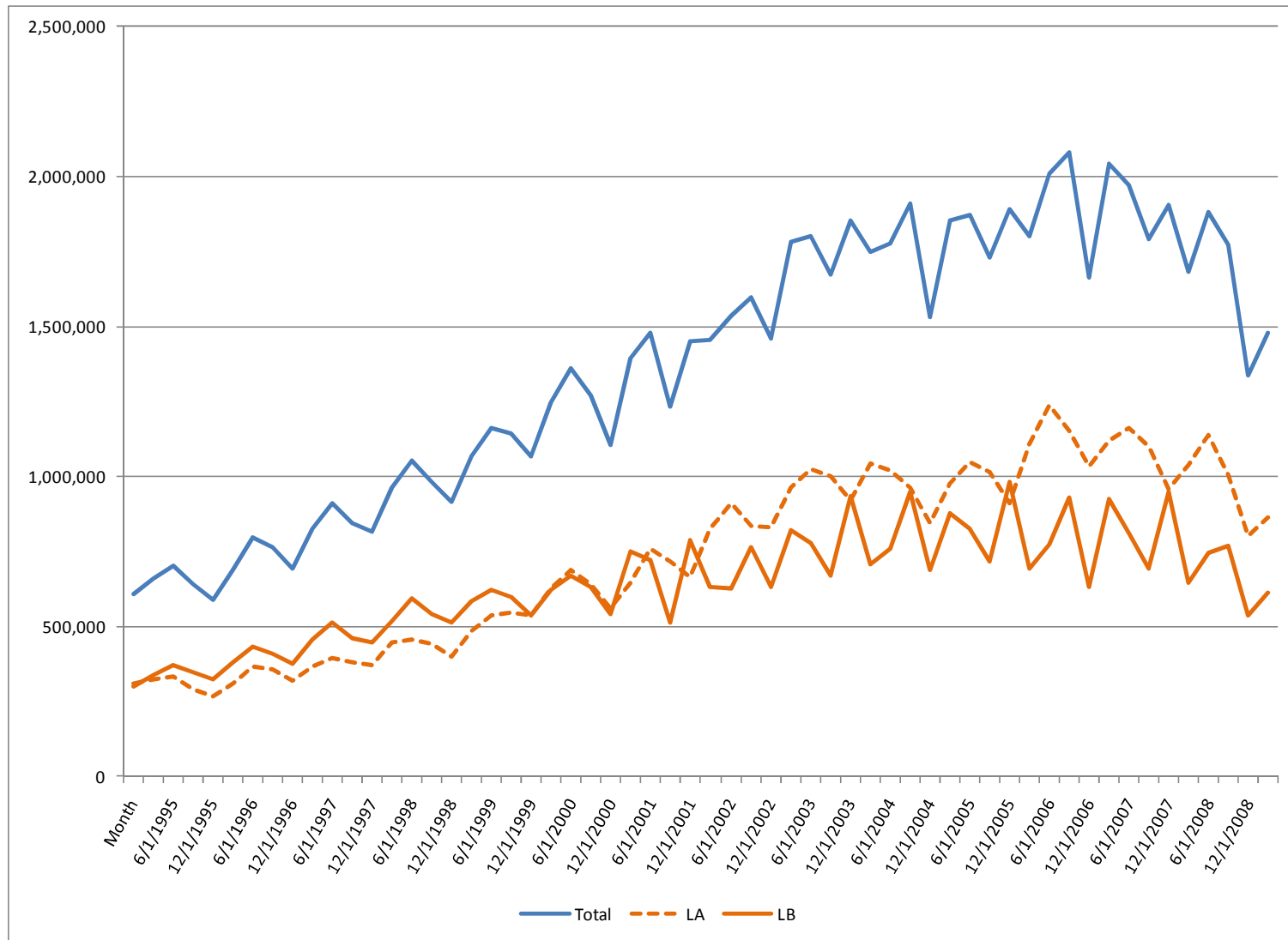
# PORT TRAFFIC AND REGIONAL ECONOMIC ACTIVITY

- Both local policymakers and researchers concerned with regional economic issues recognize the vital role played by ports in contributing to regional economic activity
- In addition to providing a basic foundation for economic activity, ports generate positive spillovers
  - A 2007 trade impact study by the Alameda Corridor Transportation Authority and the San Pedro Bay ports found that the number of direct and indirect jobs associated with the trade activity generated by the San Pedro Bay ports increased from 1.1 million jobs nationally in 1994 to 3.3 million jobs in 2005
- Yet, despite the acknowledged importance port activity for regional growth, the relationship between port traffic and regional employment has yet to be fully explored

## OBJECTIVE AND STRATEGY

- The goal of this study is to link port traffic to regional employment activity in a more direct way than a standard input-output model
- We thus develop two models:
  - Port import forecast
    - Univariate model
    - Theory-based multivariate model
    - Correlation model
  - Regional employment as a function of port imports
    - Multivariate Panel Model
    - Models of total employment, transportation employment, and transportation payroll
      - Preliminary results for transportation employment presented

# TRENDS IN SAN PEDRO BAY (SPB) PORT TRAFFIC, LOADED INBOUND



## CHANGES IN REAL IMPORT VALUE – SPB

Rank	Commodity	2008 Value (in millions)	Percentage Change, '06-'08	US Percentage Change, '06-'08
1	Electric Machinery	\$46,923	8.12	11.04
2	Nuclear Reactors, Boilers, Machinery	\$43, 740	-11.84	-4.42
3	Vehicles	\$24,486	-17.03	-12.01
4	Toys, Games, Sports Equip	\$13,710	11.27	23.90
5	Mineral Fuel, Oil, Etc	\$13,141	23.20	35.69
6	Apparel Articles, knit	\$12,904	12.17	4.80
7	Furniture, Bedding, Lamps	\$11,688	-16.58	-7.79
8	Apparel Articles, not knit	\$11,561	-6.90	-7.52
9	Footwear	\$8,981	-4.19	-3.40
10	Articles of Iron or Steel	\$7,527	7.77	33.70
11	Plastics and articles thereof	\$7,319	-4.15	1.29
12	Rubber and articles thereof	\$5,812	5.61	12.78
13	Optic, Medic or Surgical Instr.	\$4,725	7.75	13.98
14	Leather Art, Saddlery, Handbags	\$4,050	-11.28	1.01
15	Organic Chemicals	\$3,662	65.84	24.81

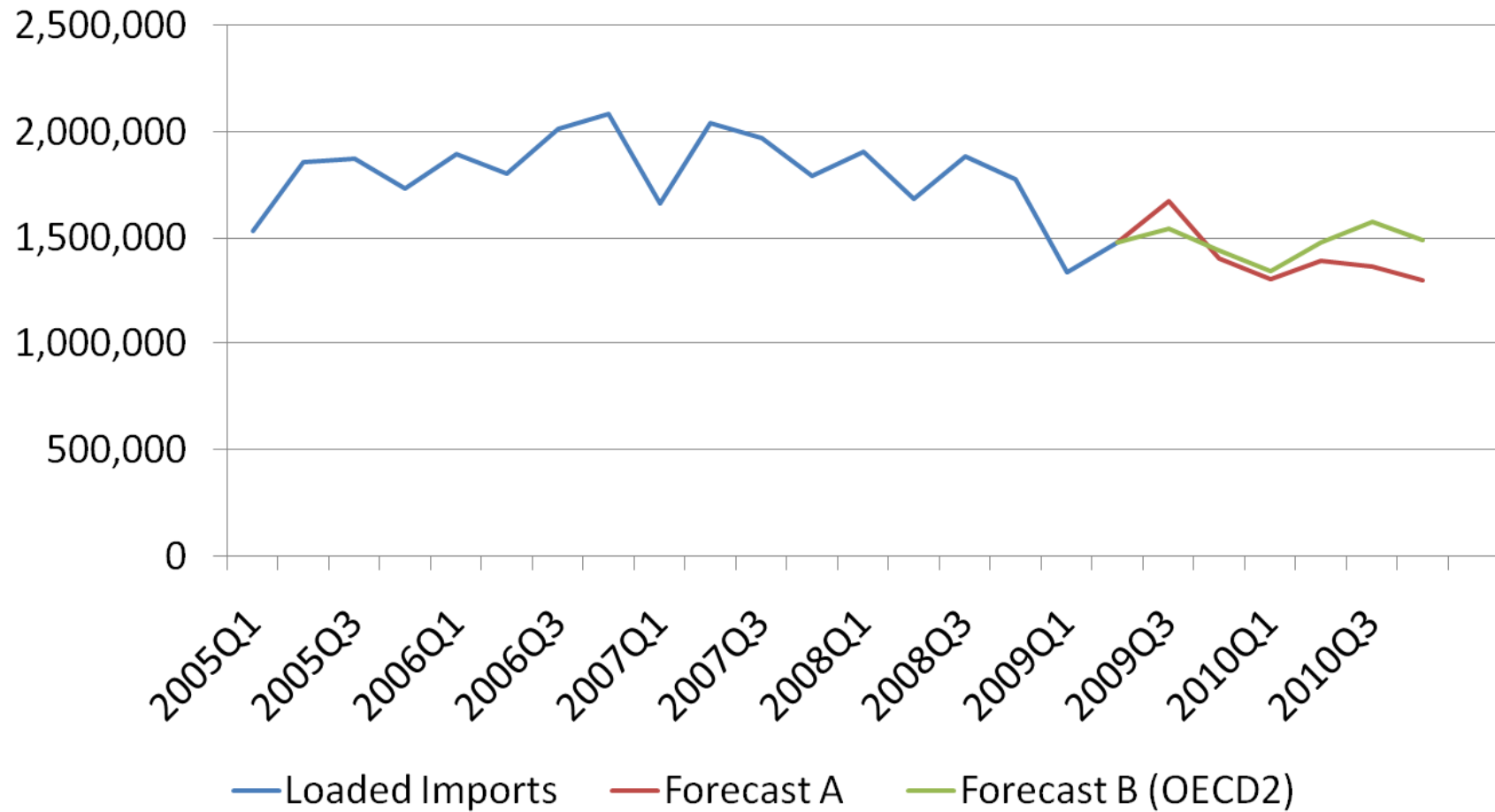
## CHANGES IN IMPORT VOLUME – SPB

Rank	Commodity	2008 SWT (in millions)	Percentage Change, '06-'08	US Percentage Change, '06-'08
1	Mineral Fuel, Oil, Etc	19,357	-11.02	-8.00
2	Nuclear Reactors, Boilers, Machinery	4,368	-8.65	-9.66
3	Furniture, Bedding, Lamps	3,997	-21.31	-12.22
4	Electric Machinery	3,858	-5.68	-2.71
5	Articles of Iron or Steel	3,384	-14.17	10.48
6	Vehicles	3,033	-8.91	-11.91
7	Iron and Steel	2,680	-39.88	10.48
8	Plastics and articles thereof	2,476	-15.60	-10.25
9	Toys, Games, Sports Equip	1,876	-9.75	-6.94
10	Art of Stone, Plaster, Cement	1,645	-8.49	-17.38
11	Rubber and articles thereof	1,636	-3.75	-2.27
12	Salt, Sulfur, Earth and Stone	1,392	-72.16	-28.50
13	Paper and Paperboard	1,314	-7.70	-15.08
14	Ceramic Products	1,219	-26.70	-33.94
15	Wood and Articles of Wood	1,105	-32.99	-50.73

# FORECASTING SPB PORT ACTIVITY

- Data: quarterly loaded inbound containers to SPB port, 1995:1-2009:2
- All models contain a constant, quarterly dummies, a 2002:4 dummy (lockout), and 2004:3 dummy (congestion)
  - Univariate control model (OLS)
    - Loaded inbound (two lags)
  - Theory model (VECM)
    - Loaded inbound, U.S. real exchange rate, U.S. real GDP
  - Correlation model (OLS)
    - OECD forecasts of U.S. imports

# FORECASTS OF LOADED IMPORTS THROUGH SPB PORTS



## REGIONAL EMPLOYMENT MODEL

- We estimate a multivariate panel model of transportation employment for LA, Orange County, and Riverside and San Bernardino Counties from 1995-2007
  - Controls are included for county and year
  - The dependent variable is county transportation employment
  - Explanatory variables include human capital, state transportation employment, and loaded inbound containers through POLA and POLB
  - Model is estimated in log-log functional form to yield elasticities

# TRANSPORTATION EMPLOYMENT RESULTS

- A one percent change in loaded inbound containers is associated with a 0.15 percent change in transportation employment (holding all else equal)
- In 2007, transportation employment was:
  - 148,500 in LA County
  - 25,400 in Orange County
  - 64,450 in the Inland Empire
- The 9.6% drop in loaded inbound containers from 2007-08 should result in:
  - 931 transportation jobs lost in the Inland Empire
  - 365 transportation jobs lost in Orange County
  - 2,131 transportation jobs lost in LA County
- The Forecasted 19.6% drop this year should result in roughly twice this number of jobs lost