Impact analysis on the rising of Panama Canal toll

2013.12.19

Japan Maritime Center

Toll revenue amounted 7.2% of panama's GDP and payment to national treasury was 7.4% of Panamanian government revenue in 2012.
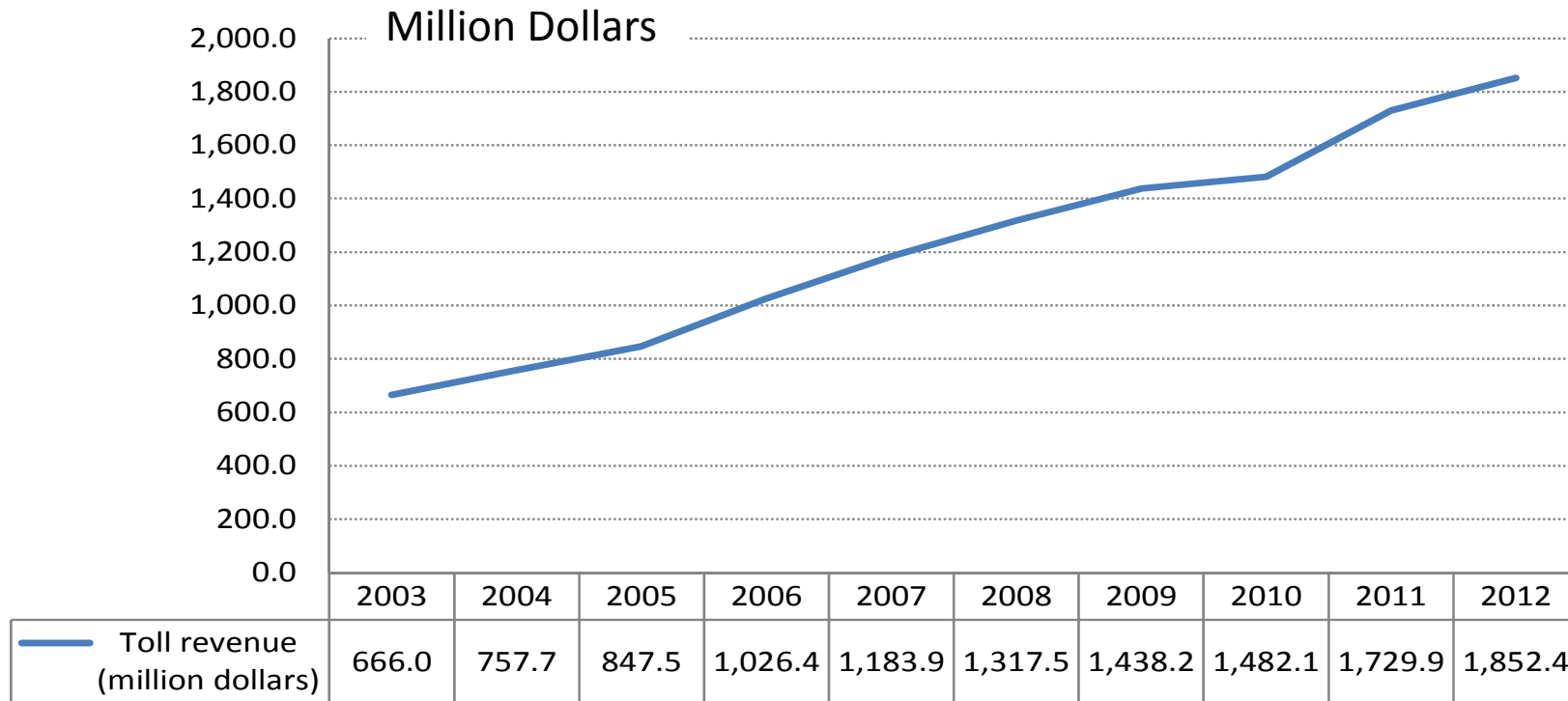
Million Dollars

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Toll revenue (million dollars)	666.0	757.7	847.5	1,026.4	1,183.9	1,317.5	1,438.2	1,482.1	1,729.9	1,852.4

Figure 1 : Toll Revenue of Panama Canal（2003-2012, million dollars）.

Data Source: Panama Canal Authority

The toll of Panama Canal has been rising by 95.2% since 2005.
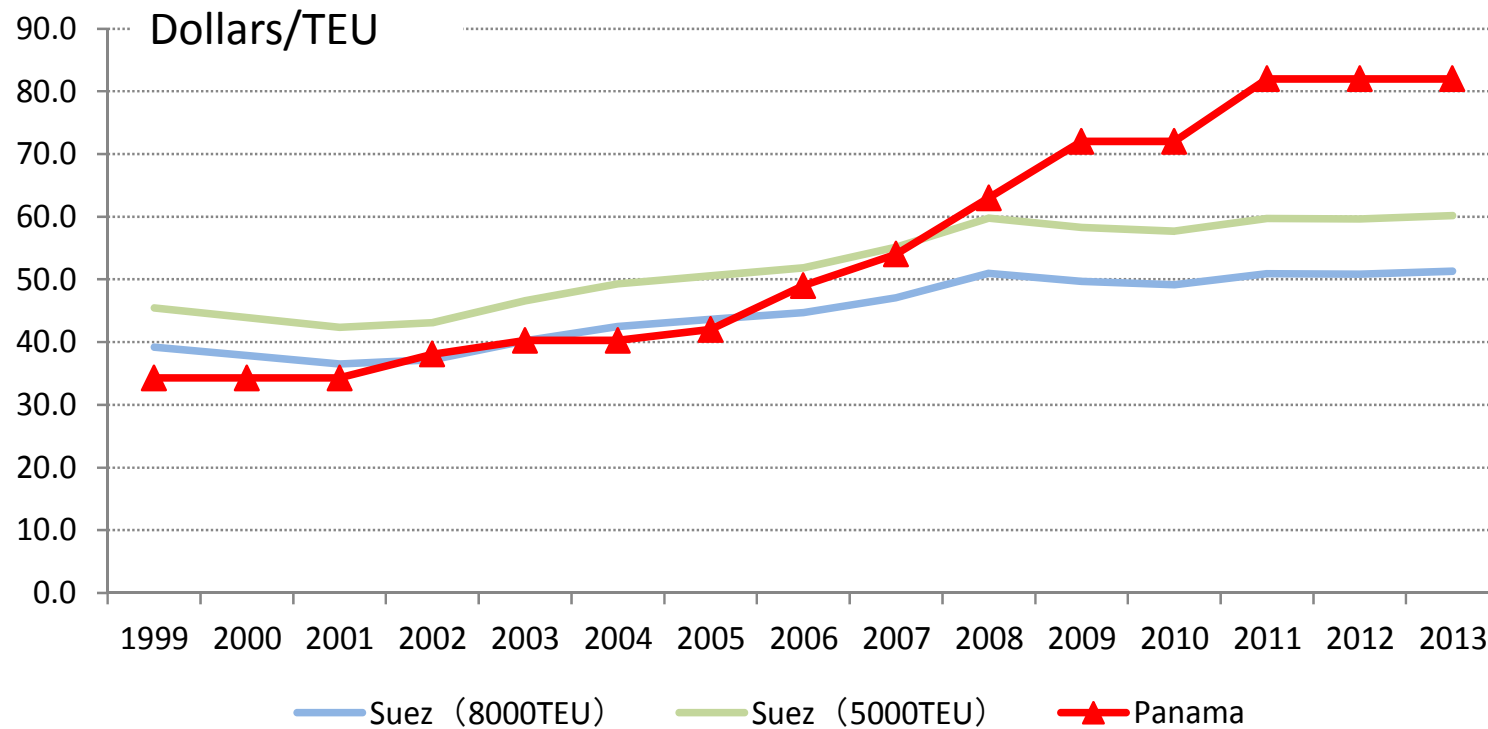
Figure 2 : Container ship toll of Panama Canal and Suez Canal（1999-2013,Unit:Dollars/TEU）.

Data Source: Panama Canal Authority, Suez Canal Authority and IMF.
※13.6PC/UMS=1TEU for calculating Panama tolls before 2005.

In 2012, Japanese shipping companies paid $216.3 million, $89.8 million for containerships and 93.0 million for car carriers.
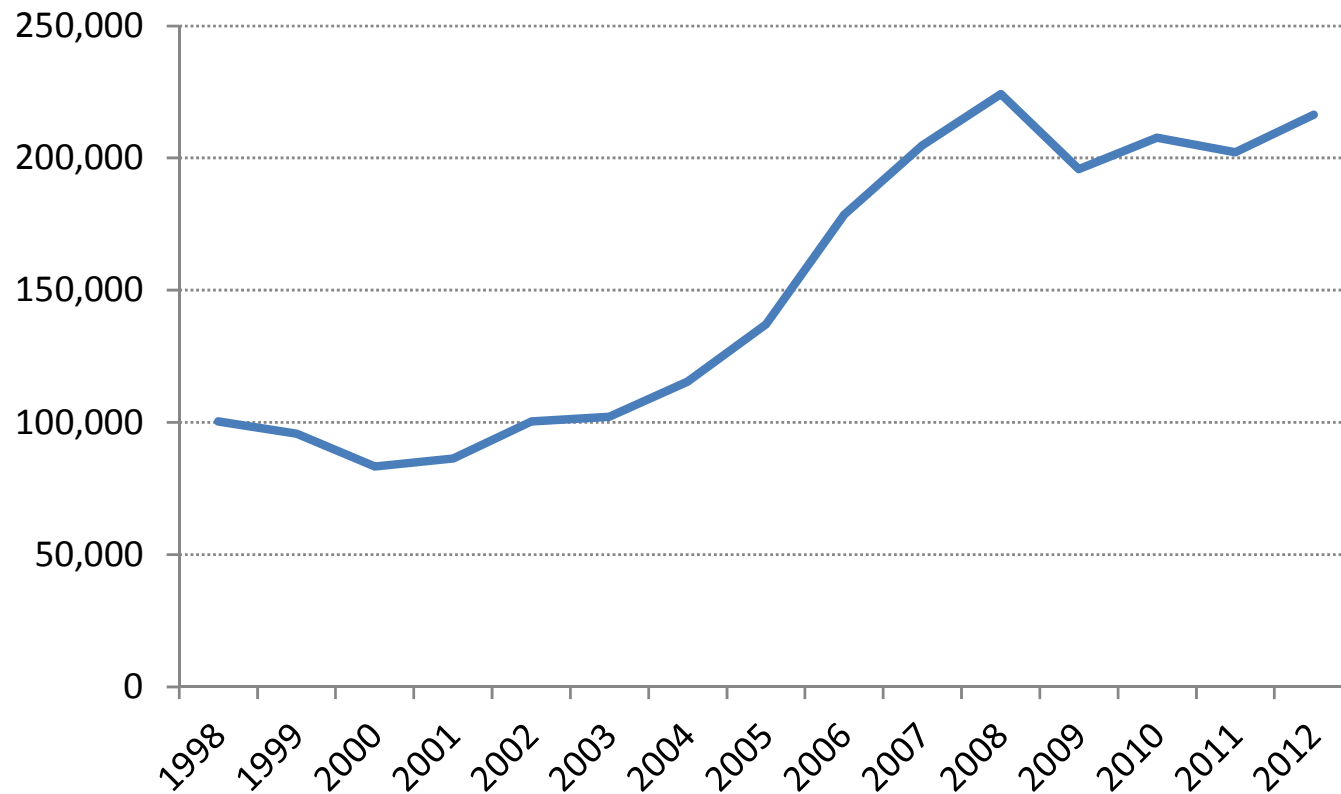

Figure 3 : Panama Toll payment by Japanese Shipping Companies（1999-2012,Unit:1,000Dollars）.

Data Source: The Japan Shipowners' Association

10% rise of Panama canal toll would cut down 11.1 % of Panama canal usage by Japanese Shipping Companies

$$\ln(PanamaDWT) = 1.17 + 3.64\ln(SuezToll) - 1.11\ln(PanamaToll) - 0.20d$$

$$Adj.R^2 = 0.54$$

Equation 1：Relationship between Panama Canal Usage by Japanese Shipping Companies and toll of Panama Canal and Suez Canal.
Data Source: The Japanese Shipowners' Association, Panama Canal Authority

Independent variables are (i)Natural logarithm of Toll of Suez Canal (ln(SuezToll)), (ii)Natural logarithm of Toll of Panama Canal (ln(PanamaToll)), and (iii) Shipping boom dummy "d" which takes unity for 2003-2008, otherwise takes zero. Dependent variable is the natural logarithm of Panama Canal Usage (ln(PanamaDWT)) by Japanese shipping companies.

※Data:1999-2012.
※ln indicates natural logarithm.
※"d" is dummy variable which indicates "shipping boom" and takes unity for 2003-2008, otherwise takes zero.
※the coefficient of ln(SuezToll), ln(PanamaToll) and "d" is 5% significantly different from zero.

World shipping companies also begin to switch routes from Panama to Suez.

Table 1: Deployed Capacity of Asia to ECNA（2008Q3, 2013Q3）

2008Q3				
	Average Vessel Size	Number of weekly services	Deployed Capacity	Share
ASIA/USEC&USWC	4,479	3	13,437	14.0%
ASIA/USEC(Panama)	3,978	17	67,626	70.6%
ASIA/USEC(Suez)	4,907	3	14,721	15.4%
ASIA/USWC	5,312	51	270,912	

2013Q3				
	Average Vessel Size	Number of weekly services	Deployed Capacity	Share
ASIA/USEC&USWC	6,057	3	18,171	12.1%
ASIA/USEC(Panama)	4,520	17	76,840	51.4%
ASIA/USEC(Suez)	6,824	8	54,592	36.5%
ASIA/USWC	6,501	43	279,543	

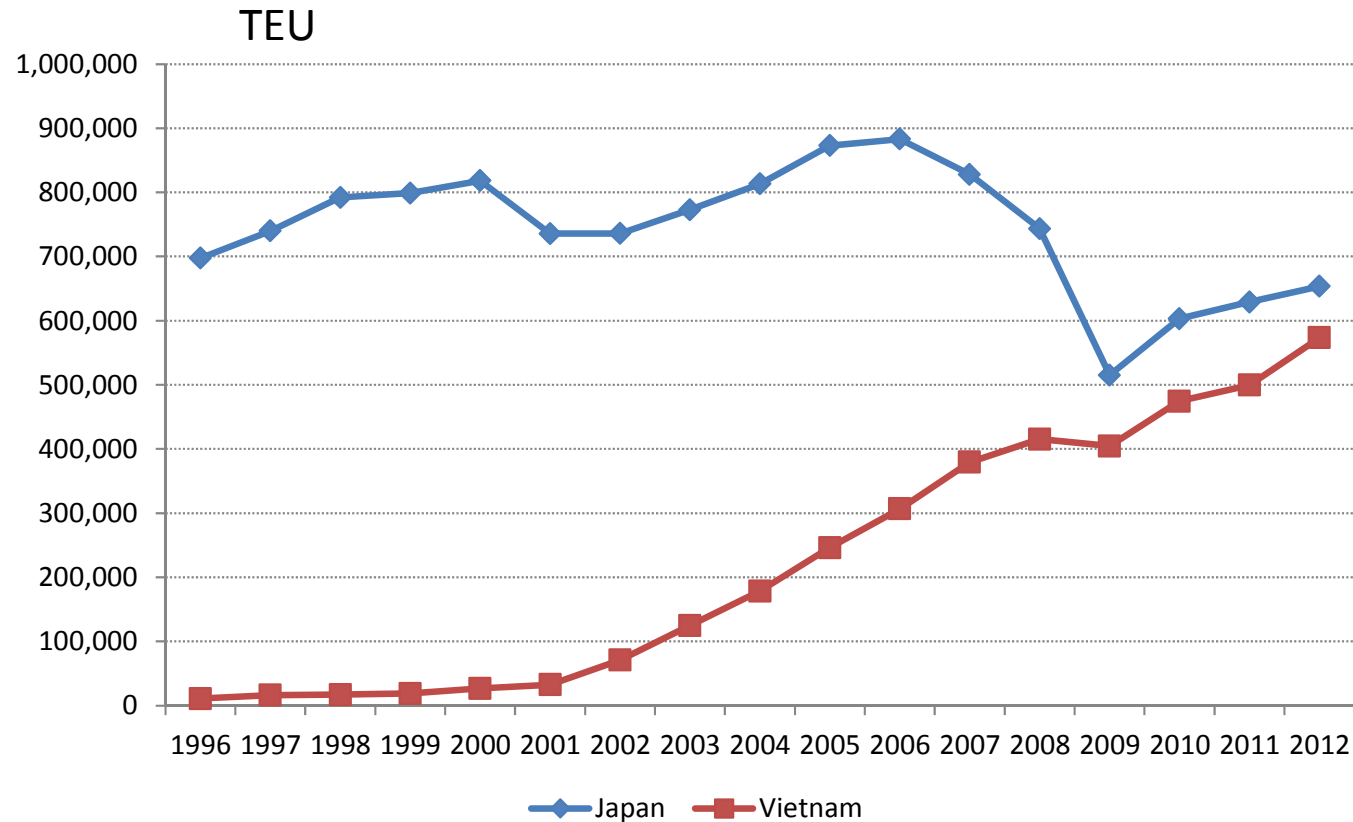Data Source：Drewry "Container Forecaster"

Cargo source goes to south.

Figure 4：Container Cargo Volume from Japan and Vietnam to U.S.（1996-2013,TEU）
Data Source : PIERS
Note) 2013 data does includes only from January to October.

In 2003, 80.2% of container cargo unloaded at USWC in 2012 it went down to 71.1% in 2012 .
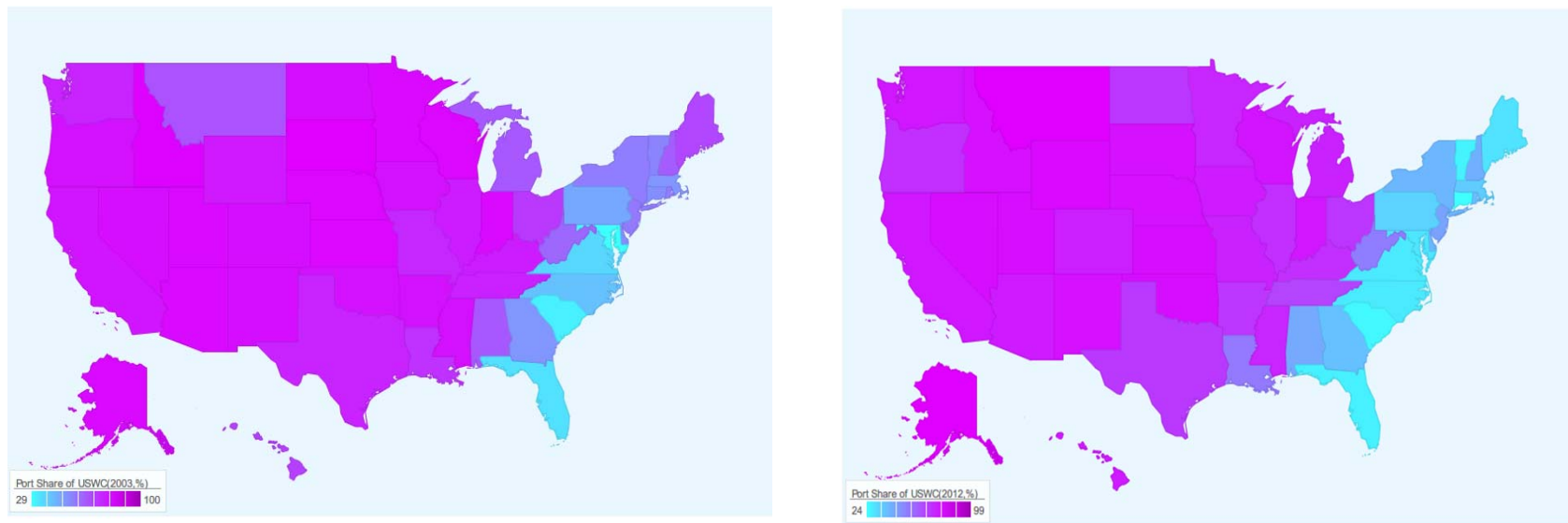

Figure 5：Port Share of USWC（2003(Left),2012(Right),%）

Data Source: Zepol"TradeIQ"

Conclusion

- Panama Canal is very important route for ocean-going shipping companies, however, Panama Canal Authority has repeatedly risen tolls since 2005.
- Shipping companies has been changing mind and switched to use Suez Canal for Asia-ECNA route due to certain reasons.
  - large ships cannot pass the Panama Canal
  - Cargo source went to south (China plus one)
- Transpacific Container cargo has principally increased, while port share of WCNA went down from 80.2%(2003) to 71.1%(2012).
- Shipping companies has begun to switch routes from Panama to Suez and deployment share for ASIA-ECNA route has increased from 15.4%(2008Q3) to 35.4%(2013Q3).
- 10% rise of Panama canal toll would cut down 11.1 % of Panama canal usage by Japanese Shipping Companies.