Suez Canal Pricing Forecast
2005 - 2025

FINAL REPORT

Prepared on behalf of:

The Autoridad Del Canal de Panama

**** * * For Internal ACP Use Only * * ****

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Executive Summary

The Suez is a 100-mile long sea level Canal connecting the Red Sea to the Mediterranean Sea. It was opened for commercial ship traffic in 1869 and has been closed six times throughout its history, the longest outage occurring in 1967 when the Canal was shut for eight years.

The Canal was nationalized by the Egyptian government in 1956 and is managed and operated by the Suez Authority. Logically, the geographic advantage of the Canal is in vastly shortening a vessel's steaming time traveling in east-west directions as compared to having to take the circular route around Africa's Cape of Good Hope. By the Authority's calculations, the Canal saves 86% of the distance between the eastern Mediterranean Sea and Saudi Arabia and 23% of the distance between the Netherlands and Japan.

With the obvious exception of oil tankers, the Suez Canal has historically not been a significant trade route for the US. Today, about six out of every ten containership transits through the Suez involve the Asia/India – Europe trades. A small number of these services originating in the Indian subcontinent continue on to US ports after discharging in Europe.

While much has been said in the media about the "Suez option" for direct Asia – US trades, only one service by the Grand Alliance offers a roundtrip to the US East Coast via the Suez. Less than one percent of the cargo on this service originates in North Asia.

The advent of near-term Suez Canal services to the U.S. can be explained by the boom in shipbuilding – according to BRS-Alphaliner, in the next four years carriers are building twice as many post-Panamax ships (564) as they are Panamax vessels (242) and they need to be deployed quickly and profitably.

There are many "ifs" regarding new Suez services primarily related to timing. Carriers need to cascade vessels out of existing trades, but only when the even larger 7,000 and 8,000 TEU vessels are available. Second, the use of a post-Panamax vessel at US East Coast ports requires a level of "readiness" that most of these ports have not experienced. Carriers plan to call only two or three ports and they will need deep water, longer berths and more container yard space to accommodate the bigger ships.

Even more important, an Asia – US Suez service requires at least one or two more vessels to maintain a weekly rotation than a similar service via the Panama Canal. A 2005 confidential survey conducted by R. K. Johns & Associates for the Panama Canal indicated that container carriers plan to launch one new Suez

- US service in 2006 and three more in 2007, using vessels in the 5,500 to 6,500 TEU range.

The Suez Authority is not likely to offer these new US services any special considerations. Since 1987, the Authority has maintained a flexible pricing strategy defined to include rebates for various ship types and trade routes for which the Canal believes it faces a competitive alternative route. Rebates have historically been granted on specific voyages where the vessel calls a single load and discharge port. The exception has been LNG ships, where the Canal has attempted to competitively price its transits to capture the Qatar LNG export trade. The Suez Authority has not granted a rebate to containerships on any trade lane.

For the most recent fiscal year ended June 2005, Suez Canal revenue totaled $US 3.29 billion from 17,334 vessel transits. In the second half of 2005, Canal transits are growing seven percent, while revenue is advancing nearly twice as fast at thirteen percent – a clear indicator that ships continue to increase in size. Containerships account for just under 40% of the Canal's traffic and a slightly higher percentage of its net tonnage and revenues.

Containerships pay the highest fee per net tonnage category of vessels, approximately 10% more than oil tankers. The Suez Authority charges ships based on their volumetric cargo carrying capacity, which is closely related to the vessel's gross registered tonnage. To capture revenue for containers above-deck, the Canal maintains a surcharge on tolls based on the number of tiers of boxes. For example, an average sized Panamax containership with five tiers above-deck will pay a 10% surcharge on its net tonnage fee.

Canal toll rates were increased 3% in February 2005, the first general hike in fees in nine years. The increase was universal for all ship types. The Suez Authority has not adhered to any pattern in the timing or magnitude of previous increases. Carriers readily admit that they do not conduct an open dialogue with the Suez Authority regarding toll policy and that the Canal only provides a few months advance notice of fee changes.

An average Panamax containership (4,300 TEU) is now paying in tolls (excluding ancillary fees) about $US 56 per TEU per transit at full capacity. In comparison, a smaller containership (2,200 TEU), which is more prevalent on shorter Suez rotations such as the Middle East / India trade with the Mediterranean, is paying just under $US 174,000 per transit, which equals $US 80 per TEU of capacity. An 8,000 TEU vessel, the newest generation of post-Panamax ships being deployed in the Asia – Europe trades, will be charged nearly $US 400,000 per transit, or the equivalent of $US 50 per TEU.

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However, given the dynamics of the import merchandise trade from Asia to the Europe and the US, most vessels operate at 90% capacity utilization, which effectively inflates the per TEU charge by ten percent.

Another factor creating volatility in Suez tolls is the fact that the Authority charges in “Special Drawing Rights” of the International Monetary Fund (SDR). Since the US dollar is the international standard currency for maritime transport, any fluctuation in the SDR/dollar rate will impact the calculation of the “effective” dollar toll charge. When the dollar looses value, as it has in the past few years, carriers effectively pay more per transit even if the toll rate in SDRs remains constant.

It is projected that the Suez Authority will not raise nominal toll fees before 2015. Canal traffic is strong and is forecast to expand at or above estimated world trade growth of 4% to 5% over the next decade. Higher oil prices have been a boon to tanker transits and the introduction of a large number of post-Panamax containerships is a plus for the Canal due to the growing trade between Europe, the Indian subcontinent and Asia. Assuming the dollar remains weak, the Canal is contributing two-fold to Egypt – higher revenue from traffic growth and more foreign currency. Since the Canal contributes 5% to 7% of the funds for government spending from its “surplus”, the government’s influence in promoting the need for toll increases should not be discounted. With the outlook for a stronger Egyptian economy and growth in Suez revenues, any government-mandated toll policy change seems unwarranted and unlikely.

By 2015, based on past practice, the Suez Authority is likely to raise tolls. This could also be the case again in 2025. Without access to the Canal’s financials or planning strategy, it is difficult to forecast the size of a rate hike. Again, based on historical precedent, a 5% increase is possible in both years.

Factoring in both the opportunity for cyclical changes in the SDR/dollar rate and the expectation of two nominal toll increases in 2015 and 2025, the average “effective” toll per TEU increases less than 2% per year over the 25-year forecast period.

Container Vessel Transit Fees at the Suez Canal

The cost for each one-way transit of the Suez Canal is comprised of approximately 8 separate charges for each laden vessel. The actual canal toll charge represents about 90-95% of the total transit cost. Other charges are labeled differently, depending on the transit agency invoicing method. According to Leth Suez Agency, these fees include:

Service	Description
Sundries & paperwork	Fixed fees
Port Authority dues	A % of SCNRT
Light dues	A % of SCNRT
Pilotage	Fixed tariff rate set by Suez Authority
Mooring & projector	Fixed tariff rate set by Suez Authority
Bank charges	Variable
Customs & quarantine	Fixed tariff rate set by Egyptian government
Escort tug	Negotiable for ships under 70,000 SCNRT

The following excerpt from the book, "The Colombo Bay", which chronicles an Asia to U.S. voyage of this Grand Alliance vessel, provides a concise description of the Suez transit cost structure.

> *The government-run Suez Canal Authority levies tolls based on a ship's net tonnage, the gross tonnage minus deductions for the space occupied by the accommodations, machinery, navigation equipment, and bunkers but not by cargo and passengers. The charge is highest for the first 5,000 tons, then decreases as the tonnage rises. Add-ons are plentiful, including pilot and port fees, pay for an electrician to operate a searchlight on the bow at night, surcharges for deck cargo such as boats, and penalties for showing up late for convoy formation. I was disinclined ever again to complain about the $6 toll on the George Washington Bridge after Jeremy [ship's captain] reported that the cost of getting the Colombo Bay's 45,429 net tons through the canal was roughly $250,000 per transit, not including today's $25,000 war and terrorism insurance surcharge.*

Richard Pollak
"The Colombo Bay" published January 2004, Simon & Schuster

The Suez Authority charges for each tier of containers on deck any vessel, which becomes a significant added cost for Panamax and post-Panamax containerships. Carriers also pay their transit agency a fee to administer their canal passage, which averages about $500 per passage.

The main transit charges are the toll fee and the deck container surcharge, which are based on the vessel's "Suez Canal net registered tonnage" (SCNRT). The Suez Authority classifies all vessels into 8 types with containerships categorized with car carriers. The other classifications are crude oil tankers, petroleum product tankers, dry bulk carriers, LNG ships, LPG ships, special floating units and other miscellaneous ship types.

Each vessel type is charged a separate tariff with the following fees applicable to container vessels as of February 1, 2005.

Suez Canal Containership Toll Fee Structure

Currency	1st. 5,000 SCNRT	Next 5,000	Next 10,000	Next 20,000	Next 30,000	Rest
SDRs*	7.43	4.22	3.47	2.49	2.49	1.88
US dollars	10.89	6.19	5.09	3.65	3.65	2.76

** Special Drawing Rights of the International Monetary Fund*

Dollar conversion rate: $1.466/SDR

SCNRT is a measure of the vessel's cargo carrying capacity, and as a benchmark, is roughly equal to half the ship's deadweight tonnage. A SCNRT certificate is required for transit and is issued by recognized maritime class registry societies such as the American Bureau of Shipping, Bureau Veritas and Det Norske Veritas. As noted in the chart, the larger the vessel, the lower the tonnage fee becomes on the margin. For example, a smaller 2,200 TEU ship with approximately 29,000 SCNRT would be paying an average per ton fee of $US 5.64 per SCNRT. A post-Panamax 8,000 TEU vessel with over 83,000 SCNRT faces an average rate of $US 4.12 per SCNRT.

For deck containers, the Suez Authority charges a premium on toll fees regardless of vessel size as follows:

- 2% cumulatively for each tier of containers, inclusive of the 5th tier (2% for the 1st tier, 4% for 2 tiers, 6% for 3 tiers, 8% for 4 tiers, 10% for 5 tiers)
- 14% for 6 tiers
- 1% additional for each added tier above the 6th
- (15% for 7 tiers, 16% for 8 tiers, etc.)

Since the early 1970's, the Suez Authority has calculated its toll rate in SDRs to mitigate significant swings in foreign currency values (a more detailed discussion of SDRs is included in the report section, "Suez Canal Transit Statistics"). The Suez Authority accepts 9 different currencies for payment of dues – U.S. dollar, Sterling pound, Euro, Japanese yen, Canadian dollar, Swedish kroner, Danish kroner, Norwegian kroner or Swiss franc. However, all three of the leading transit agencies, Leth Suez, Gulf Agency Company and Rafimar Agency, secure payment in U.S. dollars.

Actual Carrier Toll Charge Examples

With only one exception, all carriers contacted for this report indicated that they pay the published rate for transiting the Suez Canal. All carriers calculated their toll charge in U.S. dollars. Examples of actual costs for one-way transits provided by carriers were closely aligned to a sample toll calculator that is available publicly through any of the three transit agencies mentioned above. [For example, ***http://lethsuez.com/calculator_suez.htm***]

The small differences between actual and calculated cost can be attributed to daily fluctuations in the SDR/U.S. dollar rate. (The carrier information requested did not include the actual date of transit or the direction).

Actual one-way transit fees ranged from $US 188,000 for a 2,199 TEU vessel to $US 366,000 for a 6,258 TEU vessel, inclusive of the deck tier surcharge and all ancillary fees. It should be noted that if carriers paid late fees, they are excluded from these actual figures.

Transits through the Suez are conducted in convoys – two per day in each direction. The Suez Authority requires vessels to arrive five hours prior to the scheduled start of the convoy. For an additional late fee of up to 10% of the toll charge, vessels are permitted to join the convoy up to two hours before departure, if traffic conditions permit.

Suez Transit Convoy

Photo courtesy of Gulf Agency Company, 2004

The international financial language of container shipping is most often measured in TEUs (twenty foot equivalent unit container size). Carrier freight rates, port fees, railroad haulage, truck drayage and the Panama Canal toll charge for containerships are all quoted in U.S. dollars per TEU terms. The following chart converts the Suez Canal toll charge in an equivalent manner.

Suez Canal TEU Toll Rates by Vessel Size

Vessel Capacity	Source	Tiers Above Deck	Average Toll Rate $US/TEU	Adjusted Rate based on 90% utilization
2,199	Carrier	4	$79	$87
3,600	Calculated	4	$64	$70
4,300	Calculated	5	$56	$61
4,639	Carrier	5	$66	$67
6,200	Calculated	5	$54	$60
6,258	Carrier	5	$56	$61
8,000	Calculated	6	$50	$53

(90% utilization assumes one less tier above deck)

As pointed out above, with a graduated toll charge schedule, the average rate per TEU will be lower for larger vessels, especially those above 70,000 SCNRT. To partially compensate for this margin discount, the Suez Authority charges a higher "per-tier" rate for the sixth tier of on-deck containers. Generally speaking, only the new post-Panamax vessels are configured to carry 6 tiers of containers above deck.

Based on both actual carrier costs and estimates from transit agency calculators, container vessels pay between $US 50 and $US 80 per TEU to transit the Suez Canal, excluding ancillary fees[1]. Smaller container ships would likely pay an even higher per-TEU rate, although they have been excluded from this analysis since they are not commonly used in long-haul deployments from Asia to either Europe or America.

Listed vessel capacity is a nominal or design figure not often achieved in actual use. Using PIERS data on actual container lifts for similarly sized vessels calling at American ports as a benchmark, ships deployed out of Asia with import merchandise usually sail 90% full. Therefore to gain a more accurate TEU rate for a Suez transit, the design capacity figures were adjusted down by 10%. Additionally, lower utilization would result in a container stowage plan with one less above-deck tier required as compared to a fully loaded ship.

At normal 90% utilization for import voyages, carriers pay 6-10% higher per TEU charges to transit the Suez as compared to full capacity deployment. A Panamax ship of 4,300 TEU capacity would pay $US 61 per TEU in one-way tolls. The largest post-Panamax ships of 8,000 TEU capacity would pay $US 53 per TEU per transit.

One carrier member of the Grand Alliance confirmed that the 'AEX' service has a contract or "settlement" with the Suez Authority that entails a combination of a fixed fee and a per-TEU charge for each transit, both listed in US dollars as opposed to SDRs.[2] This carrier further stated that the settlement applied only to the 'AEX' service and that their Asia-Europe services paid transit fees according to Suez Authority published SDR rates.

The fixed fee accounts for approximately 35% of the transit cost and the variable TEU charge 65%, based on the Grand Alliance's use of vessels in the 4,000 TEU range. Currently, the Grand Alliance is paying a $US 10 premium in TEU terms with its settlement rate compared to published fees (SCNRT converted to TEUs).

Assuming the settlement includes ancillary charges and considering daily fluctuations in the value of the SDR, it is reasonable to conclude that the Grand Alliance is paying close to market rates for its transits. Even if the Grand Alliance deployed post-Panamax ships in the 'AEX' service, their settlement rate does not result in a material discount to current published tolls.

It should be noted that carriers view canal fees as one of many cost variables in an entire transit plan when determining vessel deployments. While the Asia –

[1] *Ancillary fees vary based on vessel size. However, for most Panamax and post-Panamax ships the fee will add on average $US 2 to $US 3 per TEU per transit.*

[2] *The carrier did not specify if the settlement covered only the transit toll or included ancillary fees.*

Europe container trade has no economical alternative routing to the Suez, the Asia – US trades can be served via multiple routes.

A 2004 confidential study by R. K. Johns & Associates for the Panama Canal indicated that, on average, containership operators saved between 16%-17% on a slot cost basis by deploying the newer generation 8,000 TEU post-Panamax ships on all-water trades from Asia as compared to a 4,000 TEU Panamax vessels.

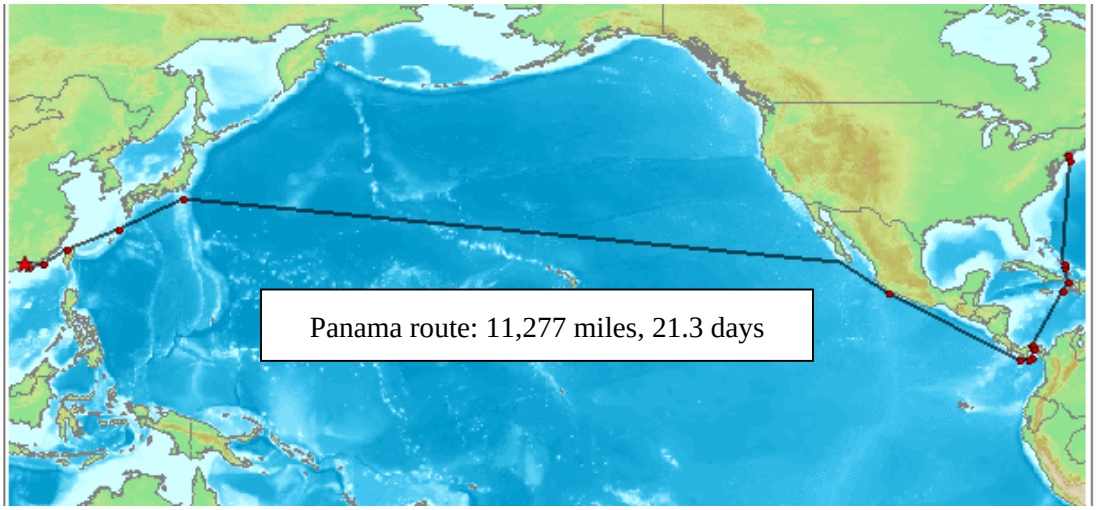
Strictly measured on vessel size economics, carriers could benefit from deploying post-Panamax ships between Asia – US via the Suez. However, market economics also require carriers to maintain weekly service. Doing so via the longer route through the Suez Canal requires a minimum of at least one or two additional vessels as compared to a Panama Canal rotation. Additional ship assets raise overall deployment costs, which quickly negate the potential slot cost savings from use of post-Panamax ships in the longer Suez rotation to the US from Asia.

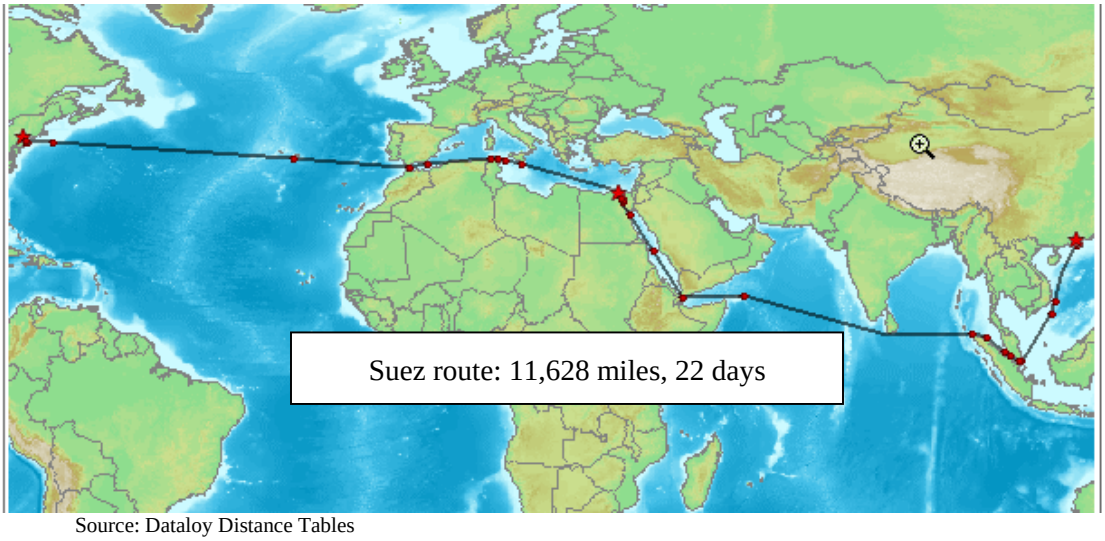
Carriers acknowledged in the 2004 study that they will benefit from deploying larger vessels via the Panama Canal after expansion, both from a slot cost basis and by removing the need for extra ships as compared to the Suez route.

Suez Canal Container Services to the U.S. East Coast

Traditionally, it is believed that Singapore serves as the geographical splitting point when choosing the fastest all-water deployment to the U.S. East Coast. North Asia cargo moves most quickly via the Panama Canal while carriers using ports in Southeast Asia take the western route via the Suez Canal. Technically, measured in nautical miles, the non-stop distance between Hong Kong and New York via the Suez Canal is only 350 miles longer than a transit via the Panama Canal – less than one day's difference for a modern containership traveling at 22 knots.

Hong Kong to New York Transit Times and Distances
(in nautical miles at 22 knots)





Source: Dataloy Distance Tables

Compelling reasons exist why carriers have held to tradition in turning Suez services at Singapore. First, both canals must compete with the shortest Asia-U.S. route via the West Coast, which accounts for over 70% of the total container trade from the Far East. Additionally, large market volume in both South and North Asia warrant numerous, separate services and the Suez route offers considerable intermediate port call load and discharge cargo opportunities in the Indian subcontinent and the Mediterranean.

In more direct competition with the West Coast direct services, Panama Canal deployments via the Pacific offer very few in-transit stops besides a local Panama port and the Southeast U.S. ports of Savannah, Charleston and Norfolk. According to the Port Authority of New York/New Jersey, they have 24 all-water services from Asia/India, of which 17 use the Panama Canal.

The Grand Alliance (Hapag Lloyd, NYK Line, OOCL and P&O Nedlloyd) offers the only direct container service, 'AEX' via the Suez Canal from Southeast Asian ports to the U.S. East Coast on a roundtrip rotation. Other carriers serve this trade with transshipment deployments requiring vessel transfers in the Indian subcontinent or at Mediterranean ports or with westbound round-the-world (RTW) services through the Suez Canal that return to Asia via the Panama Canal. The leaders among these alternative service providers are Maersk with its U.S. East Coast 'MECL' service connecting in Oman to its AE7 service to Asia and Norasia's RTW service with partners Zim, China Shipping and CMA-CGM.

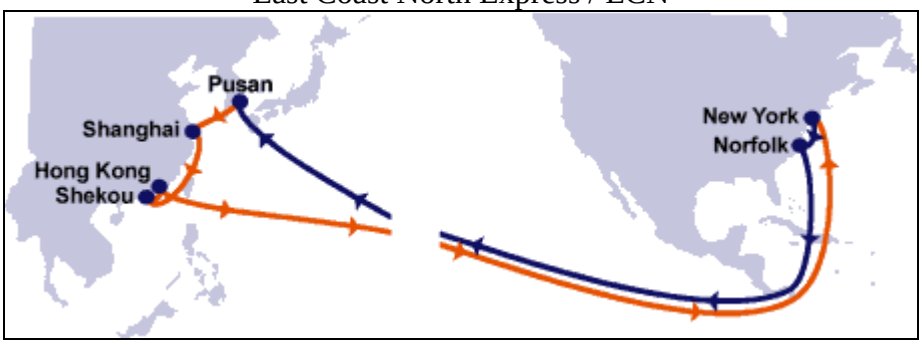
In July, China Shipping added a second westbound RTW weekly service, 'AMAX' using 10 of its own vessels. China Shipping reportedly will continue to contribute one vessel of the 13 in Norasia's RTW service, as well.

The Grand Alliance

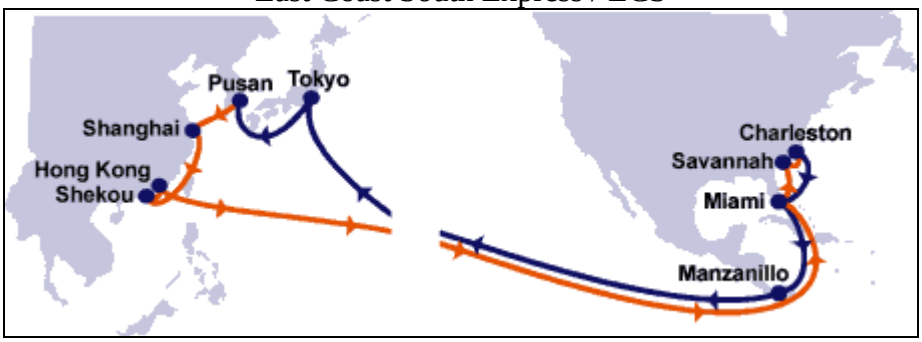
The Grand Alliance is the market share leader from Asia to the U.S. East Coast with four separate weekly services. This carrier group offers three services via the Panama Canal – the 'PAX' pendulum service between Asia-North America-Europe, that includes four East Coast port calls, the 'ECS' service to Miami, Savannah and Charleston and the 'ECN' service to Norfolk and New York. The fourth service, 'AEX' Suez service includes port calls at Halifax, New York, Norfolk and Savannah.

Grand Alliance Services: Asia – United States

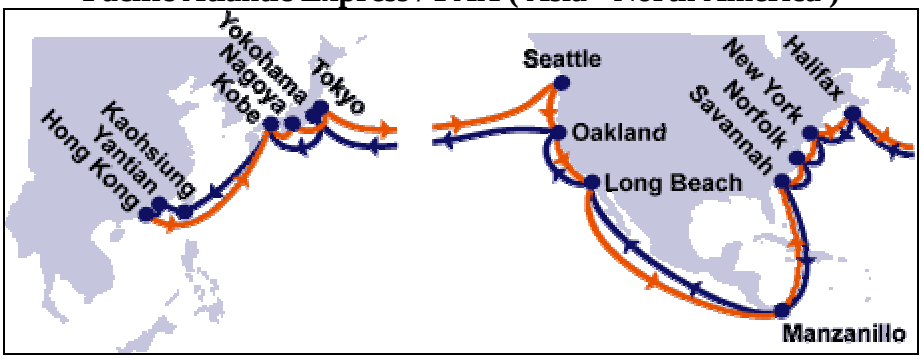
East Coast North Express / ECN



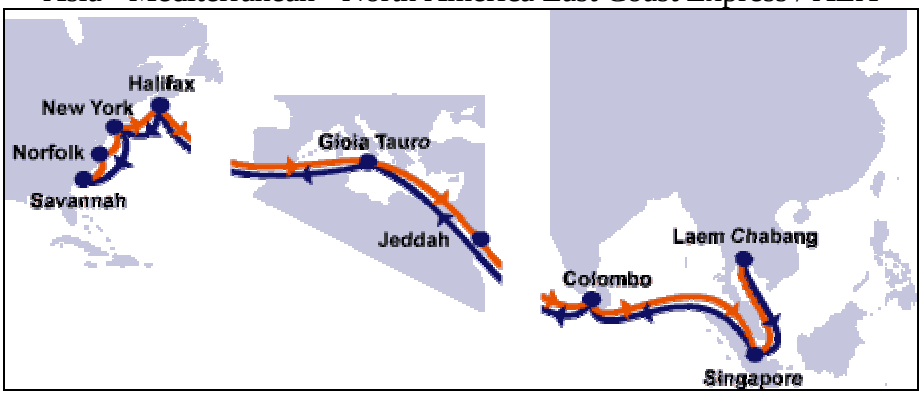
East Coast South Express / ECS



Pacific Atlantic Express / PAX (Asia - North America)



Asia - Mediterranean - North America East Coast Express / AEX



Combined, these four services account for 18% of the all-water TEU volume from North Asia to the East Coast, 32% of the lifts from South Asia and 15% of the boxes from the Indian subcontinent.

Top 5 Carrier/Alliance Shares of All-Water Trades to the U.S. East Coast

Carrier/Alliance	North Asia	South Asia	India Subcontinent
CKYH	27%	17%	No Direct Service
Evergreen	8%	7%	3%
Grand Alliance *	**18%**	**32%**	**15%**
Maersk	10%	19%	31%
New World Alliance	13%	14%	1%

** includes P&O Nedlloyd*
(source: PIERS Global Container Report, 2nd Quarter 2005).

As of July, the Grand Alliance 'AEX' Suez service utilized 9 Panamax vessels to maintain a weekly rotation. The largest ship deployed is the P&O Nedlloyd Delft at 5,047 TEU capacity. The smallest ship in the service is NYK's Sophia Britannia at 3,808 TEU. The average weekly capacity is 4,474 TEU.

Vessel	Owner	TEU Capacity
Antwerpen Express	Hapag Lloyd	4,800
Dresden Express		4,039
Hoechst Express		4,639
Paris Express		4,639
Sophia Britannia	NYK	3,808
Colombo Bay	P&O Nedlloyd	4,230
Newport Bay		4,230
Repulse Bay		4,230
P&O Delft		5,047

(source: CompairData, July 2005)

With four deployment options from Asia to the U.S. East Coast, the Grand Alliance has not promoted the 'AEX' Suez service as a preferred route for China-origin cargo. To move Chinese-origin cargo via the Suez, the Grand Alliance would have to transship the containers at Singapore, adding a minimum four days. For example, a Hong Kong to New York Grand Alliance routing via the Suez requires 29 days. As shown below, the extra 7 days transit compared to the 'ECN' service to New York via the Panama Canal and the added costs of transshipment work against the economics of such a rotation. The 'PAX' service offers a Hong Kong to New York routing landbridged at Seattle although the vessel continues through the Panama Canal with direct calls at East Coast ports.

Grand Alliance Hong Kong to New York All-Water Transit Times

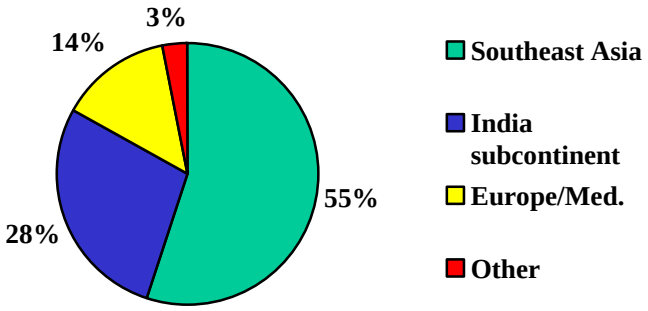
Grand Alliance Service	Days	In-transit Port Calls
ECN	22	0
AEX Suez *	29	4
PAX	31	9

* transship at Singapore

A sampling of PIERS data (February, April and June 2005) reveals that less than 1% of the 'AEX' Suez service containers originated in China or Hong Kong, while the 'ECN' and 'ECS' services regularly load about 75-80% of their containers in China.

The Grand Alliance promotes its 'AEX' Suez service as a preferred route for Southeast Asia cargo with about 50-60% of the containers originating in Indonesia (14%), Malaysia (11%), Philippines (1%), Singapore (3%), Thailand (20%) and Vietnam (5%).

Regional Share of U.S. Import Containers
On the Grand Alliance AEX Suez Service

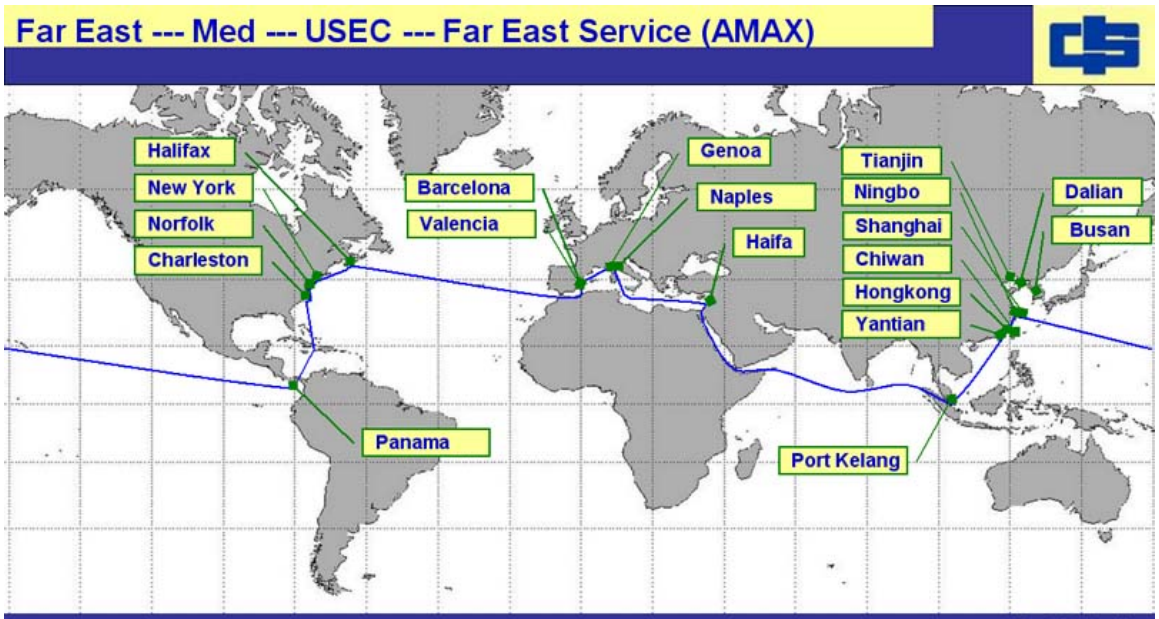


(source: PIERS Feb., April & June 2005)

Round the World Services

China Shipping has recently launched the second RTW service with direct Chinese port calls using the Suez Canal to reach the U.S. East Coast. The 'AMAX' service utilizes ten vessels of 4,250 TEU each to maintain a weekly rotation. The service will include a total of 19 global port calls in Asia, the Mediterranean region and the North American East Coast. China Shipping is operating this service without partners.

China Shipping Round-the-World Service



Port Rotation

Rotation	NGB	SHA	CWN	HKG	YTN	PKG	SUZ	HAF	NAP	GOA	BCN	VLC	HAL	NYC	ORF	CHS	PNM	NGB	SHA
	Ningbo	Shanghai	Chiwan	Hongkong	Yantian	Port Kelang	Suez	Haifa	Naples	Genoa	Barcelona	Valencia	Halifax	New York	Norfolk	Charleston	Panama	Ningbo	Shanghai
Transit Day	TUE / WED	WED / THU	SAT / SUN	SUN / MON	MON / MON	FRI / FRI	SUN / MON	TUE / WED	FRI / SAT	SAT / SUN	MON / TUE	TUE / WED	TUE / MON	THU / FRI	SAT / SUN	MON / TUE	SAT / SAT	TUE / WED	WED /
F.E. - MED-USEC	0	0	2	3	4	8	17	19	22	24	25	26	33	35	37	39	44		
MED - USEC								0	2	3	5	6	13	15	17	19			
USEC - F.E.													0	1	3	5	10	27	29

China Shipping is also a vessel-share partner with Norasia, Zim and CMA-CGM in another RTW service that offers Chinese-U.S. East Coast port pair service. This service offers a similar total number of global port calls, but bypasses Mediterranean ports for North European ports of Felixstowe, Rotterdam and Hamburg. Due to the longer transit times to serve Europe, this service requires the use of 13 vessels. Ship size has varied, but generally is in the 2,500 to 3,000 TEU range.

According to China Shipping, in the 'AMAX' service 1,500 TEU of each vessel's 4,250 TEU capacity is being reserved for Asia to East Coast cargo. Another 2,000 TEU slots are allocated to the Mediterranean to East Coast trade. While ship manifest statistics are not yet available for this service, it is likely that most of the Asian slot set-asides will not be filled with Chinese origin cargo. PIERS data for the Norasia RTW service indicates that 95% of the containers were imported from Europe, with about 4% from the Indian subcontinent. No containers originated in Asia.

Besides the two RTW services, China Shipping offers five weekly services from North Asia to the West Coast and two to the East Coast and one to the Gulf Coast via the Panama Canal. As shown below, transit times on both RTW services to the East Coast are not competitive with China Shipping's 'AAE1' all-water service via the Panama Canal.

China Shipping Services
Hong Kong to New York All-Water Transit Times

Service	Days	In-transit Port Calls
Norasia/Zim RTW	56	10
AMAX RTW	32	8
AAE1 (Panama)	28	3
AAE3 (Panama)	31	7

Transshipment Suez Canal Services

While not serving Asia proper, two notable transshipment services advertise "Suez service to the East Coast". Maersk operates the 'MECL' service and the partnership of APL, CMA-CGM and CP Ships offers the 'INDAMEX' service. Both of these services take Asian cargo on a transshipment basis at a Middle Eastern port, adding to the overall transit time to the East Coast.

The 'MECL' service deploys 7 4,300 TEU vessels in a weekly rotation between 6 ports. The furthest eastern reach in Asia is Tanjung Pelepas Malaysia. Chinese cargo on this service would have to be transshipped, with a total transit time of no less than 36 days to New York.

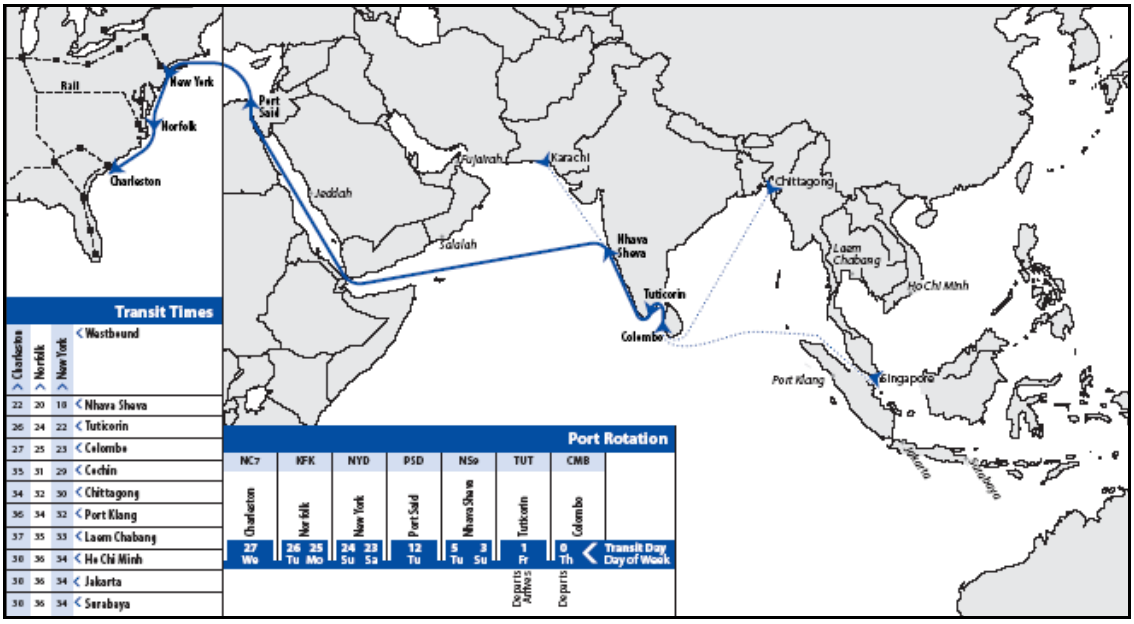
The 'INDAMEX' service calls at 7 ports and operates with 6 vessels ranging in size from 1,400 TEU to 3,800 TEU. None of the three operators offer transshipment service beyond Singapore, which requires 32 days to New York. Assuming a feeder ship connection could be made, the Hong Kong to New York transit time would be similar to the 'MECL' service at 36 days, minimum.

Owing to the longer transit times and required transshipment in the Middle East, Asian cargo does not play a big role in these Suez services. PIERS data indicates that on average, Southeast Asia, the Indian subcontinent and the Middle East account for 11%, 21% and 68% of the containers headed for the U.S. East Coast, respectively.

Maersk's MECL Service

Port	Arrives		Departs		Transit
AE7 Service (———)					
Tanjung Pelepas, Malaysia	Sun	1500	Mon	1100	--
Salalah, Oman	Sun	0900	Mon	0700	6
MECL Service (- - - - -)					
Salalah, Oman	Sat	1300	Sun	1700	--
Charleston, SC	Tue	1300	Wed	0600	29
Norfolk, VA	Thu	0800	Fri	0100	31
Port Elizabeth, NJ	Fri	2300	Sun	0500	32

The INDAMEX Service
(APL, CMA-CGM & CP Ships)



Future Suez Canal Services to the U.S. East Coast

A recent confidential survey of leading container carriers by R. K. Johns & Associates revealed plans for the introduction of 4 new all-water services from Asia to the U.S. East Coast via the Suez Canal in 2006-2007. These services appear to be unique as compared to current services for several key reasons:

- Deployment of post-Panamax ships in the 5,500 – 6,500 TEU range
- Very limited in-transit port calls in the Indian subcontinent, Middle East or Mediterranean regions
- Inclusion of a direct port call in China
- Discharge at only 2 or 3 U.S. East Coast ports

While plans are preliminary at this stage and can change, these carriers are expecting both trade dynamics and vessel operating economics to be favorable enough to warrant serving North Asia to the U.S. East Coast via the Suez Canal.

North Asia offers a larger import cargo base than South Asia and faster growth, which is fueling an unprecedented growth in container carrier services utilizing all deployment options. Since 2000, led by China, the volume of containers from North Asia to the U.S. (overall) has advanced at an annual average rate of 22%. The flow of containers from South Asia has grown by 10% yearly.

Today, container volume from North Asia is four times the size of trade from South Asia. Carriers first answered this growth with added services and larger ship deployments to the U.S. West Coast. Congestion ensued and carriers are turning to more Panama Canal services to handle the import boom. The same survey of carrier interest in Suez services indicated plans for the launch of 11 new strings to the U.S. East Coast via the Panama Canal between 2006 and 2008.

While carriers are building a significant number of Panamax ships, they are also rapidly adding to their post-Panamax fleets. The Suez option is an already established route for these larger vessels for Asia – Europe services and additional direct services to the U.S. East Coast is a logical extension. Geographically, by limiting intermediate port calls, the Suez route can become transit-time competitive to the Panama Canal route.

No carrier surveyed indicated they would offer a non-stop Suez service. However, it is possible that with only 2 in-transit port calls, the one-way voyage time from China to New York via the Suez could be reduced to about 26 days. This would still require the deployment of a ninth vessel to maintain a weekly service as compared to the 8 ships used in most Asia- Panama-U.S. East Coast services.

On a round-trip TEU slot cost basis, two separate carrier surveys by R. K. Johns & Associates drew similar conclusions – the Suez Canal route is about $200 more expensive compared to the Panama Canal route to the U.S. East Coast despite the economies of scale achieved in using post-Panamax ships. Carriers acknowledge that Suez services with competitive transit times to the Panama Canal alternative will be priced the same. Therefore with higher costs related to deployment of added vessels, the driving factor for introducing Suez services is not in the operating margin, but in more complete fleet utilization of post-Panamax newbuilds.

Carrier Expectations of Future Suez Canal Toll Changes

The consensus opinion regarding how the Suez Authority will manage future toll policy can be summarized in the words of an executive at Leth Suez Agency, "it is impossibly hard to say". The canal's administrators have been called "different", "inflexible", "unoriginal", "monopolists", "acting with a military mindset" and "certainly not strategic thinkers" by critics and by clients such as OOCL, Maersk, NYK and United Arab Shipping.

The Suez Authority adds to the toll policy confusion by not conducting public hearings. For example, each year's transit dues schedule is only announced in a Suez Canal Authority Circular publicly issued in November or December of the prior year.[3]

In late 2004, prior to the announced 2005 toll increase of 3%, an executive of United Arab Shipping said, "I think the Suez Canal is doing pretty well". Reached again for this report the executive added, "As ship sizes increase and volumes of East-West trade improve to Europe and America, the canal has to be reaping the benefits".

In June 2005 following the Panama Canal's announcement of a series of planned rate increases for coming years, *Fairplay* wrote, "Opportunity knocks for the Suez Canal but managers have not exploited it". That same article quoted an unnamed carrier as saying, "We have not seen anything from the Suez Canal Authority to capitalize on the worlds angry reaction to Panama's hikes … the Suez Authority has always adopted a low-profile, case-by-case toll policy". It should be noted that when told of "an alliance's settlement rate", no carrier or transit agency was aware of any special toll deals.

All carriers interviewed for this report acknowledged that a Suez Canal toll increase is likely between 2005 and 2025. However, no carrier has budgeted a

[3] *The 2005 Suez rate increase was the first in 9 years, somewhat mitigating the need for public debate. The last two-year consecutive rate increase at the Suez Canal occurred in the early 1980s.*

specific amount or projected the timing of any toll increase. One carrier offered the opinion that future Suez Canal toll increases would be spread out over many years, as long as a decade apart and would not be presented as "multiple year or back-to-back rate escalations like the 3-tier toll increase we are experiencing at the Panama Canal".

It is not necessarily a dichotomy that carriers expect a Suez toll increase but are not budgeting accordingly. Carriers' customer pricing contracts are usually negotiated yearly, allowing for near-term recovery of added unplanned vessel operating cost increases such as fuel price hikes and a toll increase.

For example, the Suez is predominantly the main route for the Asia-Europe trade priced under the Far East Freight Conference (FEFC). The FEFC conducts multiple rate negotiations with customers throughout the year. This year, the FEFC intends on imposing a "peak season" surcharge for higher costs associated with terminal congestion, empty repositioning, container leases and February's Suez toll increase.

The Potential for a Suez Rebate Program for the Asia – U.S. East Coast Container Trade

In the U.S., even the mention of a shipping "rebate" will draw the attention of the Federal Maritime Commission (FMC). Legally, carrier/shipper and carrier/port contracts monitored by the FMC forbid rebating. However, the Suez Canal Authority has a specific procedure for carriers to request rebates from its published transit tariff. Of potential interest to container operators, beginning in 1987 the Suez Authority has offered a rebate for long-haul transits. According to the Gulf Agency Company Transit Guide:

> *"The Authority has been granting rebates to owners/operators whenever they are able to prove that the voyage cost via the Suez Canal is more expensive than proceeding via Africa's Cape of Good Hope or an alternate route"*.

On the surface, the Asia-Suez-U.S. East Coast route would qualify for the long-haul rebate based on the average $200 per TEU added cost of deployment via the Suez compared to the Panama Canal.

However, an executive at the Leth Suez Agency does not foresee the Suez Authority setting a precedent by granting such rebates to containership operators. A rebate committee meets daily and uses a complicated formula when evaluating each transit request to its alternative route on such criteria as travel distance, SDR rates, bunker prices, charter rates, vessel speed and port calls. The critical factor for containerships is the port calls, with the Authority

defining the total route distance as starting at the last port of operation prior to the Suez Canal and first port of operation after the waterway transit.

Assuming all containership operators plan in-transit port calls between Asia and the U.S. East Coast via the Suez, especially in the Indian subcontinent or Mediterranean, the actual distance between "last and first" ports would be minimal. Equally important, such port calls would not be possible on a Panama route and hence the Suez is the most efficient long-haul route, which negates the need for a rebate.

The "last & first" port issue is most probably the reason why the 1999 Marketing Alliance between the Port of New York/New Jersey and the Suez Authority has not resulted in any significant introduction of new carrier services from Asia. According to a port authority press release:

> *"The agreement calls for a joint study of options to divert existing trans-Pacific container trade through the Suez Canal, including cost comparisons and identification strategies to increase revenue and traffic volumes for Asia-North America trade through the canal. Joint marketing activities are also proposed."*

In 1999, then President of Cho Yang, Mr. Ed Kelly said of the New York – Suez effort, "Panama Canal tolls are half those of the Suez Canal, but I predict an increase in Suez services because you can reach multiple trades with calls in the Mediterranean, the Indian subcontinent and West Asia". Mr. Kelly's logic did foretell the introduction of new services such as Maersk's MECL service and the INDAMEX service, but the Suez Authority did not bend its long-haul rebate policy for these fledging services.

Earlier this year during carrier interviews, R. K. Johns & Associates was told that both the Port of New York/New Jersey and the South Carolina State Port Authority have again approached the Suez Authority regarding rebates for the introduction of new Asia – U.S. East Coast container services. Both port authorities declined to comment for this report.

However, Peter Zantal, general manager of strategic analysis at the Port of New York/New Jersey was quoted in the *Journal of Commerce* in July 2005 saying, "It would be very nice if the Suez Canal could equalize the tolls with the Panama Canal and for the higher voyage costs of a container ship going from South China to the U.S. via the Suez, which comes out to about a half day longer trip". Peter cited the example of the Suez Authority's discount for LNG ships.

The Suez Authority offers a 35% rate reduction from published tariffs for LNG vessels primarily due to the hull design resulting in a large SCNRT configuration relative to tank capacity. Two transit agencies contacted for this report indicated that the Panama Canal route was not a factor in the LNG rebate program.

In 2004, the Suez Authority ruled on a total of 320 rebate requests[4]. Of these, discounts were granted in less than 25% of the cases. Single port-to-port voyages starting or finishing at a U.S. port accounted for 45 requests. 13 of these were granted rebates ranging from 5% to 29% of the published tariff for dry bulk vessels carrying minerals, petroleum coke or fertilizer to/from Gulf Coast ports. Five requests specific to the Port of New York/New Jersey to various locations in the Middle East were all denied.

A check of all rebates requested and granted by the Suez Authority over the past 5 years indicates that no grants were issued for laden containerships on any trade route.

China Shipping, who introduced its own RTW Suez service this year, would not comment on its toll charges. China Shipping chose Savannah over Charleston for its East Coast rotation (Halifax, New York, Norfolk & Savannah).

Suez Canal Transit Statistics

The Suez Authority publishes sparse details of its transit activity or financial performance. However, despite this lack of clarity the OECD concluded in its 2005 African Economic Outlook, "The Suez Canal is generating substantial profits".

This positive opinion seems to be echoed by the media and by other international government organizations that monitor Egypt's economy.

> *"Data are confusing and non-transparent …As Suez Canal transit rates are based on IMF special drawing rights (SDRs), the dollar's 10% depreciation against the SDR over the past two years has also been a contributing factor in the increasing revenues. How long the present high level of revenues can be maintained depends in part on events in Iraq and dollar-SDR exchange rate movements."*
>
> U.S. Embassy Egypt Report, 2003

The Suez Canal set a financial record in calendar year 2003 with revenue of $US 2.61 billion from 15,667 transits, surpassing the previous high of $US 1.97 billion in 1993[5]. In 2004, following the prior year's 33% gain, the Suez Canal sustained its expansion with revenue growing 18% and transits increasing 8%.

[4] *A list of 2004 rebate requests was obtained from Leth Suez Agency. This list may not be al- inclusive.*
[5] *Calendar year statistics have been estimated from the Authority's fiscal year that ends in June.*

Generally, the Suez Authority will comment on its fiscal year performance that runs July through June. The most recent fiscal year performance benchmarks are as follows:

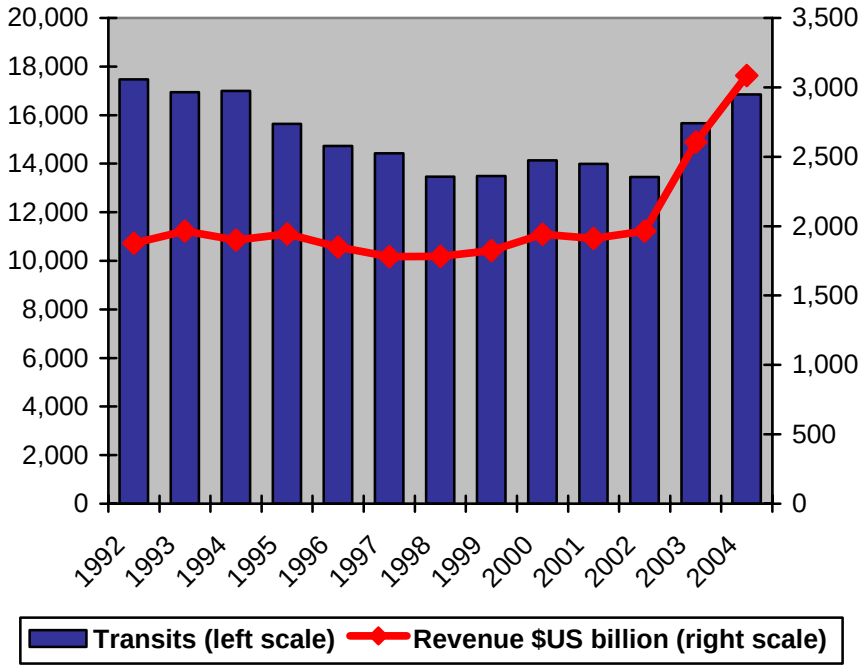
Suez Canal Fiscal Year-over-Year Performance Changes

	FY2001	FY2002	FY2003	FY2004	FY2005
Transits	5%	-6%	9%	11%	7%
Net tonnage	16%	-5%	14%	16%	12%
Revenue	3%	-4%	23%	22%	17%

Commenting on the canal's recent improved performance, the Chairman, Admiral Ahmed Fadel, indicated that the gains in 2002-2003 were related to tolls paid by US-led coalition military ships involved in the Iraqi war. He added that the 2004 upturn was boosted by growing global trade and the use of bigger container ships. As reported by Aljazeerah news service, the Chairman singled out booming trade with Asian economic giants China and India as leading the canal's growth and pointed out that Southeast Asia accounted for 40% of Suez traffic.

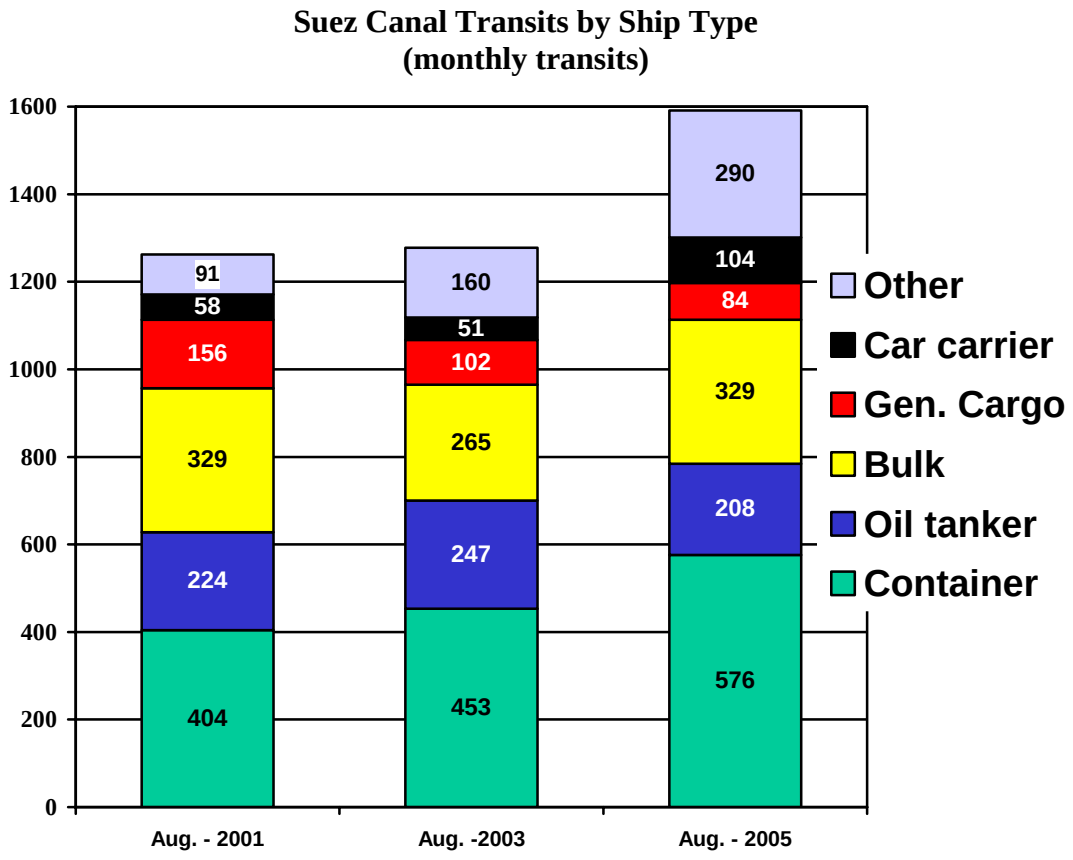
Through August 2005, canal revenue is up 13.5% on a year-to-date basis, while the number of transits grew 5%. The Suez Authority attributes this continued robustness to "an active container trade and the fact that the rise in fuel prices has encouraged ships to take the shortest route via the Suez" (Arab Press Digest).

Suez Canal Transits & Revenue
Calendar Years 1992 - 2004



The Suez Authority does not regularly publish transit statistics by type of vessel except for two general categories – oil tankers and "other ships". Over the past decade, oil tankers have held a steady 20% share of total transits. However tanker share of the canal's total net tonnage (ship carrying capacity) has declined from 35% in 1990 to less than 25% today. Oil tankers using the canal have not noticeably increased is size since there is a 62-foot draft limitation, which prevents transits by the very large crude carriers (VLCCs) with drafts up to 72 feet.

Two of the three transit agencies contacted for this report track their customer activity in more detail. Using their data as a proxy for all transits, containerships have steadily accounted for an increasing share of both transits and net tonnage. In 2000, container vessels held a 32% share of total transits. In 2004, the share had risen to 35%, with an even higher 39% share of net tonnage.



In the July – September 2005 period, containership transits through the Suez Canal have averaged 19 per day. If this pace is sustained, for the year, container vessels will account for 38% of all transits.

The Suez Canal Authority[6]

After nationalizing the canal in 1956, the Suez Authority has fostered a multifaceted mission for operating the waterway, including the provision of a safe passage, protection of the environment, modernizing navigation through maintenance and investment and contributing a growing source of revenue to the Egyptian government.

The canal's role in the Egyptian economy has been enhanced following the downturn in tourism after September 11, 2001. For the most recent fiscal year ended in June, Canal revenue in U.S. dollars was the third largest foreign currency earner at roughly $US 3 billion compared to oil/gas at $US 5 billion and tourism at approximately $US 4 billion.

Perhaps more important than its contribution to the country's balance of payments, the Suez Canal's "surplus" or profits after operations and investment is a major source of government revenue. In its report, "Egypt Economic Trends – 2004", the U.S. Embassy highlighted the fact that the canal surplus of $US 687 million in fiscal year 2002-2003 accounted for 3.7% of government revenue.

Based on Egypt's 2003 population estimate of 71 million, the Suez Canal is contributing just under $US 10 per capita to the country.

According to the proposed Egyptian State budget for fiscal year 2004 –2005, the Suez surplus was projected at LE 7.19 billion (about $US 1.2 billion at the current LE 5.8/dollar exchange rate), which equaled 5.7% of the government's revenue. At this higher profitability, the Suez Canal is contributing the equivalent of $US 16 per capita.

Looked at in terms of Suez financials, the surplus is a transfer of about 30% of canal revenue to the government.[7] During the 1990s when the Egyptian currency was loosely pegged against the dollar, Canal profits to the government averaged 46% of revenue. After loosing about 40% of its value against the dollar in 2002 – 2004, the Egyptian currency has again fluctuated in a narrow band, which has helped boost the surplus share in percentage terms. The budgeted $US 1.2 billion transfer for the just-completed fiscal year represents 38% of the Canal's revenue of $US 3.29 billion.

It should be noted that the lack of transparency regarding the Suez Authority extends to its costs of operations and employment. Labor figures are unavailable. However, it is known that the Authority maintains a payroll for

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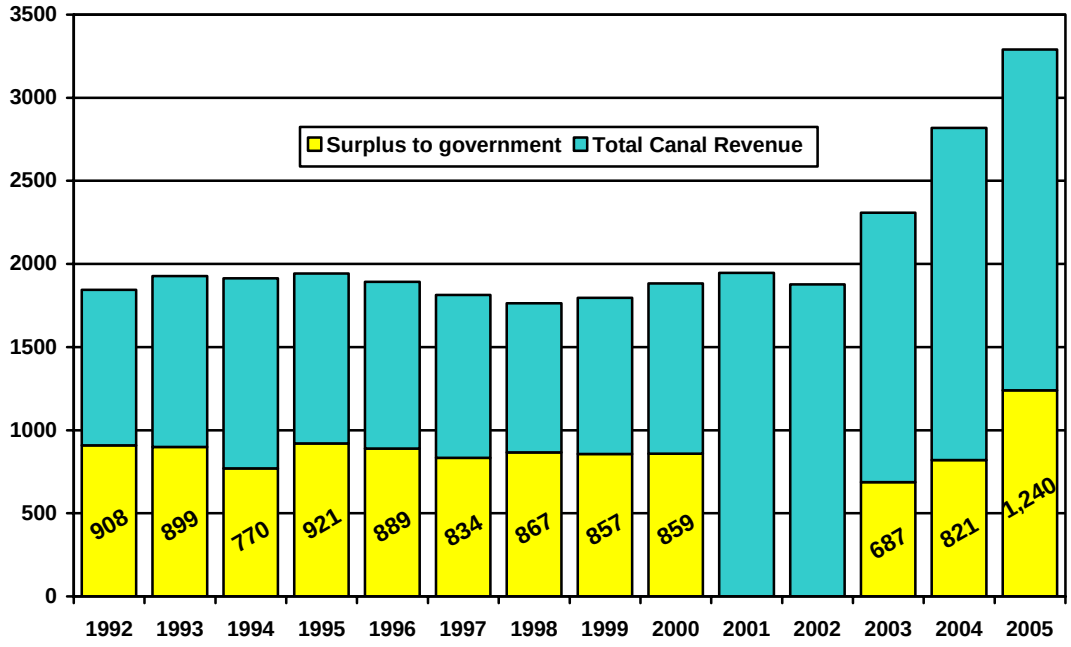
6 *As of this writing, a personal interview has been requested with the Director of Planning and Research for the Suez Canal Authority. If the interview is granted, this section of the report will be updated accordingly.*

7 *While Canal revenues are reported in US dollars, the surplus transferred to government accounts is only reported in Egyptian pounds. The average fiscal year exchange rate was used to calculate the surplus in US dollar terms.*

staffing local hospitals, road maintenance crews, banks, water treatment plants, a shipyard and reportedly, a poultry farm. In 2001, the Authority announced it had sold 75% of such businesses, however financial and employment data remain unavailable.

Suez Canal Revenue & Government Transfers
(In US Million Dollars, Fiscal Years 1992 – 2005)



FY '01 – '02 Surplus figures are unavailable

Immediately following the September 11th tragedy, the *Al-Ahram Weekly* magazine published an interview with the Suez Authority's Chairman.

> *"The government's strategy was long ago designed to augment Suez Canal fees to improve the balance of payments. We fear our hopes of doubling transit revenue every decade have been dashed".*

Prior to 2002, the Canal had last raised fees in 1996 with a resultant decline in transits and revenue. The standalone negative impact of the fee increase may be overstated since in 1997, the Southeast Asian economic crisis most likely had an even more dramatic effect on transits owing to the region's importance to the Canal.[8]

[8] *Following September 11th, the war risk insurance premium on Canal transits increased dramatically and was cited by the Suez Authority as contributing to the downturn in traffic. Premium increases varied, although it was generally reported that the weekly surcharge jumped .04% (of the value of the vessel). The media reported various fee increases, with as much as a $100 temporary surcharge per container. Within months, the Suez Authority worked quickly on security enhancements to get the surcharge reduced in*

Suez Canal Pricing Strategy and Forecast 2005 – 2025

As with transit statistics, there is very little public information on the Suez Authority's operating budget or capital plans that would provide details on revenue and toll assumptions and projections.

In the past, the Egyptian government funded significant capital improvements at the Canal. While not specifically tied to a toll increase program, one such large investment did parallel several general rate increases. In the early 1980s, a vehicle tunnel was built under the Suez with a concurrent dredging program to allow ships up to 58 feet of draft. The program was extended to reach 62 feet draft access, and the combined project cost was estimated at $US 1.3 billion. It was noted in a US Embassy report that this cost was well above the income generated through tolls. It was further remarked that the Suez Authority raised transit fees yearly between 1981 and 1985, with annual increases ranging from 2% to 6.5%.

In 2001, the Suez Authority announced a 3-staged project to widen the Canal from 345 meters to 400 meters and dredge the waterway from 62 feet to 66 feet and then to 72 feet by 2010. The original price tag for the full expansion was $US 441 million, to be financed by the Egyptian government. Earlier this month, the United Press International reported the Authority's Chairman as saying the development phase for dredging from 62 feet to 66 feet would cost the Suez Authority $US 200 million, although a start date was not announced. Government funding for the project was not announced, per se and no consideration was given to a toll increase to cover the cost of this project.

In February 2005, the Suez Authority did raise the transit fee 3% for all ship types and net tonnage categories. It was the first toll increase in 9 years. In a press release, the Authority's Chairman said:

> *"The decision of increasing the fees comes after an extensive study to the global trade traffic, the volume of the cargo transported and exchanged between the different marketplaces, the economical factors affecting the volume of the financial transactions, the maritime transport market and the costs of using the alternative routes instead of the Suez Canal".*

What is important about this toll increase explanation is what was not stated – no tie in to recent or planned Canal capital improvement projects, or any reference to the impact of currency fluctuations on transit pricing.

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half. The Canal transit is now included in the normal insurance plan although calling at selected Egyptian ports still requires a premium.

In 2002, Canal Chairman Fadel was interviewed by executives from Leif Hoegh & Co. for their news magazine. The following is excerpted from the third issue of 2002:

What is the price policy in the Suez Canal today in order to optimize traffic?

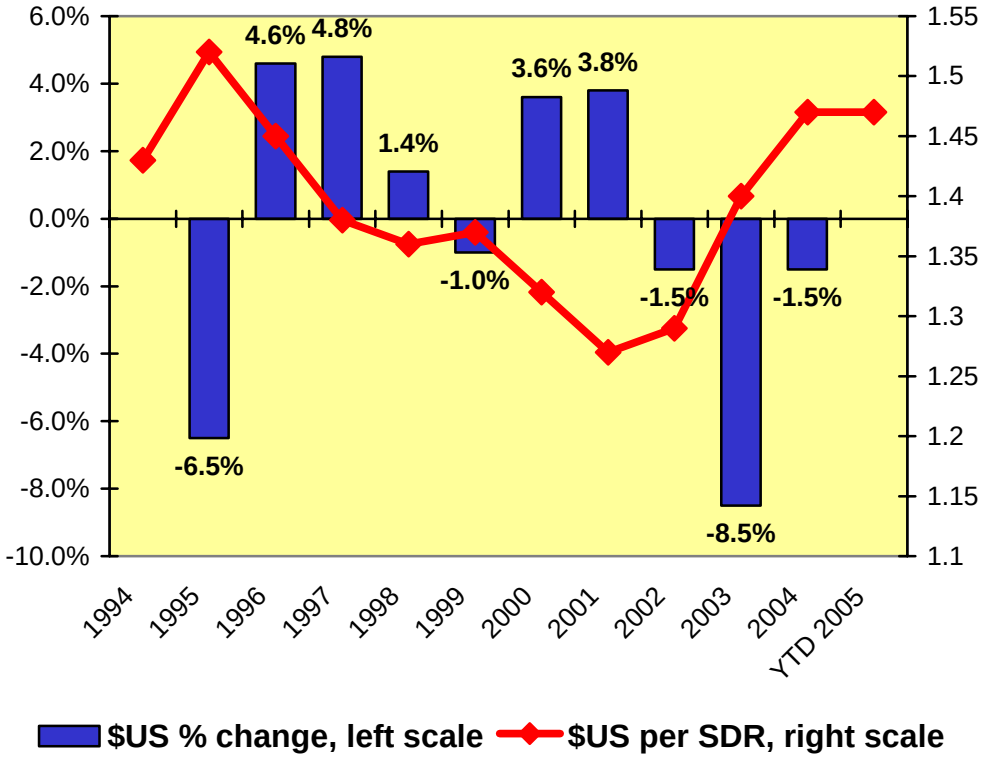
"You see – we study everything concerning this matter carefully, 365 days a year. A basic principle is: if you can take an alternative route, we should be cheaper than this route. Not only cheaper, but 100% safe and we provide good service. For 2002, we decided in November 2001 that, based on our calculations, canal fees should stay unchanged from the 2001 level.

So we study a lot of aspects: world economy, world sea trade, world directions for ship construction, fuel costs, time charter prices, SDR-value, etc. High technology is developing also on board vessels and in shipbuilding and we must consider the cost of running every kind of ship through the canal. If you ask about anything, you will find it in our equation – really".

It is significant that the Suez Authority recognizes the effect of the SDR rate on its pricing policy. The most recent US dollar value cycle from "strength-to-weakness" has lasted about 10 years. Prior cycles in the past 3 decades have been shorter, averaging about 6 years in duration.

The last Suez toll increase in 1996 occurred at about the same time the dollar began to appreciate against the SDR, effectively offsetting the toll rise. The dollar continued to gain value for the next five years, through 2001. With no change in the SDR toll rate during this period, the actual dollar rate dropped a cumulative 12%. In other words, carriers paying their transit toll in dollars received an average annual rate reduction of a little more than 2% per year from 1996 through 2001.

Effect of Paying Suez Tolls in US$ per SDR



As the above chart indicates, the dollar began to weaken against the SDR in 2002. While the toll rate remained fixed, carriers again began to pay more for transits in dollar terms. The cumulative effect between 2002 and 2005 wiped out the gains of the previous 5 years. While the dollar/SDR rate has held steady in 2005, the Canal increased the toll fee 3%.

There is no consensus among international economists regarding the future value of the dollar. Many factors influence the currency including the US economic outlook vis-à-vis developed nations like Japan and major trading blocs such as Europe. Additionally, global pressure on China to float its currency will impact the dollar. While the US economy is likely to average 3+% GDP growth in the long term, such strength will continue to draw in imports, worsening the current account deficit and putting pressure on the dollar.

For this report's forecast of toll fees, it is assumed that the dollar will stay relatively weak through a cycle ending near 2010. Thereafter, it is assumed that a typical upturn in the dollar's value will ensue through 2025. As experienced in the past decade, the dollar's value tends to be equalized over the long term.

It is reasonable to assume that the Suez Authority is aware that even without further toll fee increases, the dollar's expected slow depreciation for the next several years results in a growth in the Canal's dollar denominated revenues.

The Suez Authority will likely benefit from higher revenues resulting from increased transits, as well over the forecast period. Transits are projected to continue to expand at a pace in line with world trade growth of approximately 5% yearly. The Suez Authority's dredging program will attract larger oil tankers, assuming the demand for, and price of oil continue to increase. Container ship transits should also rise, perhaps even faster than trade growth through 2010. The number of Panamax and post-Panamax ships in service is expected to double by the end of this decade based on the current orderbook and known deliveries. While the Asia- US East Coast trade is a potential new one for the Suez, the Canal can expect to see further growth in services from the more established trades between Asia/Middle East and Europe and the Indian subcontinent/US.

Another factor for the Suez Authority will be the expected improvement in other Egyptian government sources of revenue. The OECD and World Bank agree that Egypt's economy is on a healthy long-term growth track owing to stronger oil exports, higher overseas work remittances, a rebound in tourism, lower inflation and a leveling in interest rates and the exchange rate. In its September 2005 "Egypt Economy: Ten Year Outlook" the *Economist Intelligence Unit* (EIU) cites many positives for the country including "a geographical competitive advantage, as it links Africa, Asia and Europe … with the Suez Canal as a key conduit for trade". The EIU is forecasting the Egyptian real GDP to grow, on average annually, 4.7% to 5.1% between 2005 and 2030 (See Appendix II for the complete EIU economic report). **A well-rounded economy puts less pressure on Suez surpluses to account for a growing share of government spending**.

The Suez Authority has indicated that it will continue a program of Canal capital improvements to boost transits. Besides dredging, navigational enhancements will be implemented to speed transits, increase the number of convoys, modernizing systems support and normal maintenance will be maintained. **It is assumed that the cost of these programs can be paid through normal operating revenues without the need for a toll fee increase.**

Various discussions in recent years have identified a major 5-year project to create a bypass channel in the middle of the Canal for two-way transits.

Currently, only about 40% of the Canal's length permits two-way transits. The Economist Intelligence Unit reported in 2001 that this project would cost $US 1.5 billion, however no specific development plan or timetable has been announced.

Clearly, if such a large expansion project were undertaken, it would be very likely that the Suez Authority would increase toll fees to provide funding. **For this report, it is assumed that a bypass channel project will not be undertaken before 2025**.

Based on the above assumptions that the Suez Authority will see revenue growth from a combination of the dollar's gradual weakening, increased transits and larger vessels generating higher net tonnage, **it can be concluded that Canal users will not likely face a toll increase before 2015.** However, with the dollar likely to remain weak, the "effective" toll converted from SDRs to dollars will show a gradual increase.

Looking ahead towards 2015 – 2025, the Suez Authority is likely to implement toll fee increases on a 10-year cycle, mirroring past experience. It would be reasonable to assume that an increase would be forthcoming by 2015 and again by 2025. Judging from the recent past, it is projected that these increases will be no more than 3% to 5% each.

Accounting for the dollar's change against the SDR and with two 5% rate increases, a post-Panamax ship of 6,300 TEU currently paying $US 55 per TEU per transit is likely to see that fee rise to $US 60 per TEU by 2010 as a result of the dollar's weakness, remain fairly steady until a toll increase in 2015 increases the fee to approximately $US 65 per TEU. By 2025, with another rate increase, the TEU equivalent fee could reach $US 70. Overall, that would equate to an approximate average increase of less than 2% per year throughout the forecast period, 2005 – 2025.

It should be noted that this forecast is for the "effective" toll calculated in a TEU per transit method accounting for both a nominal rate increase imposed by the Suez Authority and the currency effect of SDR/dollar exchange rate fluctuations.

Possible Change in Containership Toll Charges to a TEU Calculation

One Suez transit agency has indicated that the Suez Authority is studying the effect on tolls of a switch for containerships from a net tonnage calculation to a "per TEU" charge. This is not a surprising response to the recent, similar change at the Panama Canal. Additionally, newer vessel design has resulted in a higher percentage of containers above deck, which does not contribute to the ship's net tonnage or Suez base rate.

In 2004, the Suez Authority revised its on-deck tier container charge as a method to capture more of the container carrying capacity as a surcharge. Since 1994, the charge for the first 3 tiers of containers above deck was a 6% premium on the net tonnage fee. The surcharge increased to 8% for the fourth tier, 10% for the fifth tier and was capped at 14% for ships with 6 or more tiers of containers.

The revised surcharge lowers the premium for the first 3 tiers, but removes the cap by adding 1% per tier to the fee above the 6th tier (15% for 7 tiers, 16% for 8 tiers, etc.).

In its annual report, the American Bureau of Shipping provides a concise recap of the issue faced by the Suez Authority regarding container ships:

> *"[Containership] Designers are making a strong effort to minimize a vessel's registered gross tonnage to limit port and other operational charges. This has posed new challenges regarding on-deck stack heights, bridge visibility and cargo protection".*

As an example, the Grand Alliance's Panamax ships (4,250 TEU) were built in the early 1990s, each approximately 50,000 gross registered tonnage (GRT). The newest China Shipping Panamax vessels in its RTW service were built in 2004-2005. Each of these vessels carries the same 4,250 TEU, but the ship design is only 40,000 GRT. They carry about 63% of their containers on-deck.

Using the Suez transit calculator for both of these ship types, the older vessels are paying about $US 56 per TEU per transit. The newer vessels are paying about $US 50 per TEU per transit, or at least a 10% discount.

Faced with the prospect of newer and bigger containerships using the Canal with a larger percentage of boxes on-deck, it appears prudent for the Suez Authority to investigate a per-TEU fee structure. It is not known if they would take the same opportunity to increase fees for containerships, as it would set a precedent in that all prior toll rate changes were applied equally across all ship types.

Conclusions

The Suez Authority operates efficiently, but secretively. It was not uncommon when speaking with Canal customers and their agents to hear that they know little about the mechanics of toll charges and less about the Authority's plans and strategy. Unlike the Panama Canal's recent experience with considerable media and customer attention on toll increases, the Suez's 3% rate hike earlier this year appears to have been unchallenged. The Suez Authority announces annual toll fees two to three months in advance of implementation, and without debate. This policy is not likely to be modified; assuming toll changes remain measured and intermittent.

There is no reason to suspect that the Suez Authority will not continue to be guarded about its toll policy. It is also the author's belief that the Suez Authority will focus more on oil tankers than on containerships. Being a critical waterway in the Middle East almost makes that a must. The Canal's past expansions and probable future endeavors center on capturing a growing share of the ULCC market.

Containerships are the largest users of the Suez Canal but do not pose a challenge to the Authority. Even the largest post-Panamax vessels can transit the waterway unrestricted. Additionally, of nearly 20 containership transits per day, the majority are deployed between Asia/India and Europe. According to CompairData, carriers offer over 50 weekly services in this trade, all of which would use the Suez Canal. That equates to about six out of every ten weekly transits in each direction. This trade is vibrant and forecast to contribute significantly to Suez revenues in the future.

While the Asia/India – Europe trade has few alternative routes to the Canal any noticeable transit fee increase could eventually curtail trade volume or push carriers to find alternatives. While not strictly a like-for-like comparison, the Suez charges about 25% to 30% more for a transit than the Panama Canal. That becomes less defensible if rates rise too quickly.

The Suez Authority has not followed a set pattern on past toll fee changes. Increases have been infrequent and no higher that five to six percent at a time. There is no reason to believe they will break from tradition. Therefore, we are projecting only two toll price increases – in 2015 and 2025, or about at the same intervals as in the past. The same logic applies to our projection of only a five percent increase in these years – the past is likely to be the best gauge of the future.

The only area where we see a possible new convention by the Suez Authority is in the toll unit of measure for containerships. Even here, the precedent was set by the Panama Canal Authority in basing containership transit fees on the

number of TEUs as opposed to the vessel's tonnage. Containership design has advanced where more boxes are configured above-deck than below. The Suez Authority can make a case to better "capture" this part of the service by switching to a per-TEU price.

The risk in switching, of course, is that such TEU pricing makes it easier to compare canal transit costs between Panama and the Suez. To mitigate this issue, the Suez Authority, in the short term, may continue to adjust its on-deck surcharge. After a few years during which the Panama Canal fees are increased, the Suez Authority may then implement the change.

With or without a per-TEU pricing change, we believe the Suez Canal will continue to cost more per transit than the Panama Canal throughout the forecast period.

An alternative scenario would foresee the Suez Authority eventually matching the toll increases at the Panama Canal. By 2007, the Panama Canal will charge $US 54 per TEU per transit, or approximately a 28% premium over today's toll fee. To obtain a similar structure, the Suez Authority would first have to switch to the TEU pricing model and then break from tradition and impose a fee increase on containerships only, raising the fee above $US 70 per TEU per transit. This would be unprecedented on both measures and perhaps viewed as a monopolistic response, therefore we do not put a high probability on this scenario.

Appendices:

Appendix I: Suez Canal Statistics, 1995 – 2005

Appendix II: Economist Intelligence Unit Ten-Year Egypt Forecast & Discussion

Suez Canal Traffic

Calendar Year

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Jan - Aug 2004	Jan - Aug 2005
Number of Vessels	15,051	14,731	14,430	13,471	13,490	14,141	13,986	13,447	15,667	16,850	11,076	11,835
Oil Tankers	2,471	2,310	2,256	2,137	1,986	2,563	2,764	2,474	2,799	3,258	2,072	2,284
Other ships	12,580	12,421	12,174	11,334	11,504	11,578	11,222	10,973	12,868	13,592	9,004	9,551
S C Net Tons (millions)	360	355	369	386	385	439	456	445	549	621	404	436
Oil Tankers	97	81	78	90	68	105	117	94	119	142	92	95
Other ships	263	274	291	296	317	334	339	351	430	479	312	341
Revenue ($US millions)	$1,943	$1,849	$1,780	$1,764	$1,824	$1,942	$1,911	$1,964	$2,606	$3,085	$2,000	$2,270

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Economist Intelligence Unit The Economist

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Country ViewsWire Egypt September 2005

Egypt economy: Ten-year growth outlook

	2005-09	2010-20	2021-30	2005-30
Population and labour force (% change; annual av)				
Total population	1.90	1.46	1.14	1.42
Working-age population	2.58	1.85	1.26	1.76
Working-age minus total population	0.67	0.38	0.12	0.34
Labour force	2.75	2.42	1.88	2.28
Growth and productivity (% change; annual av)				
Growth of real GDP per head	3.0	3.6	3.5	3.5
Growth of real GDP	5.0	5.1	4.7	4.9
Labour productivity growth	2.7	2.6	2.7	2.7
Growth of capital stock	3.0	4.5	4.8	4.3
Total factor productivity growth	2.5	2.0	1.8	2.0

Download the numbers in Excel

Initial conditions: Liberalisation of the centrally planned, state-dominated economy created by the architect of republican Egypt, Gamal Abdel Nasser, has been a cautious, gradual affair, prone to periodic reverses. The process, launched by the former president, Anwar Sadat, and broadened by the current president, Hosni Mubarak, has resulted in a broadly two-tier economy. Private companies, many of them using foreign technology and business practices, staffed by employees with Western-level incomes and consumption to match, account for a relatively small (if rising) proportion of Egypt's output. Most of the rest of the population is employed by the government in (often inefficient) state-owned enterprises or in its vast bureaucracy, or by the private sector in small and medium-sized enterprises or in the large informal economy. Skill levels among these employees are limited, incomes are low and most depend to a large extent on state subsidies.

There is significant scope for a rapid acceleration of growth through the upgrading of skills levels, improvements in efficiency (for example, through computerisation, which remains poorly developed) and the facilitation of a more business-friendly environment. Conversely, failure to reduce the government's still central role in the economy could result in an unsustainable deterioration in the already weak public finances. Egypt's geographical location is a notable competitive advantage, as it links Africa and Asia and is close to Europe. The Suez Canal is a key conduit for trade between the countries of Europe and the Mediterranean basin and southern Asia. Some 95% of Egyptians live on 5% of the land, or an area less than one-tenth the size of France (which has a smaller population). Such high population density has some advantages: distribution is relatively simple and access to labour unproblematic. However, it also potentially brings social frustrations.

Demographic trends: Demographic trends are broadly favourable to growth prospects in Egypt, in that the working-age population will continue to increase more rapidly than the overall population throughout the forecast period. However, the "working-age minus total population" growth rate will slow markedly to just 0.4% in 2010-20 and 0.1% in 2021-30, from 0.7% in the five-year outlook period (2005-09). The gradual decline will be achieved through a decline in the fertility rate, as long-standing family planning programmes make gradual progress, but far more substantially by growth in the proportion of the population accounted for by pensioners, as better healthcare enables life expectancy to rise to 77 in 2030 from 71 now. This will cause the proportion of pensioners to increase to 7.9% of the population by 2030 from 4% now, bringing higher pension costs.

Moreover, rapid growth in the workforce will present its own problems. Egypt needs annual real GDP growth of some 6-7% to absorb the 600,000 or so job seekers currently entering the workforce each year. The government has in reality long since abandoned its Nasser-era pledge to employ new graduates, and significant improvements to the business environment will be necessary if Egypt is to absorb this number of workers. Growth in the overall population—to 105m by 2030 from about 73m now—will put huge pressure on infrastructure, in particular in cities, where the population will rise faster, as job market pressures ensure a continuation of the long-established trend of urban drift. This level of population growth will also put stress on housing and raise the already high population density. The government will feel compelled to press ahead with projects to develop areas of desert beyond the Nile Valley to alleviate this. A number of projects of this nature are under way. However, the economic feasibility of the projects embarked on thus far is

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questionable and there is a risk that they could prove a damaging drain on state resources. In addition, despite desert reclamation projects, the amount of land available for cultivation has remained more or less constant, as land has been lost to industrial and urban expansion. Egypt, which was a net food exporter as recently as the early 1970s, has now become one of the world's largest food importers, and, unless reclamation proceeds far quicker than now seems possible, the volume of food that the country has to source from abroad will only grow.

External conditions: Egypt is set to become a leading exporter of natural gas by the end of the decade and will supplement this revenue with continued (albeit declining) sales of oil. However, Egypt remains highly import-dependent and the health of the economy will rest largely on its success in developing non-oil exports. The external economic environment seems supportive of such a drive, in terms of both allowing Egypt access to external markets and forcing it to open up its long-protected domestic market and raise competitiveness. Egypt is a member of the World Trade Organisation and has concluded an Association Accord with the EU, which allows it immediate enhanced access to the markets of EU member states and will force it to phase out tariffs on imports—a process that should be completed by 2019. Egypt is also hopeful of securing a free-trade agreement with the US that would bring an immediate liberalisation of the bilateral trade regime. Besides this, Egypt is a member of African and Middle Eastern trade bodies: these could become more significant as time progresses if Egypt manages to improve the quality of its output (to raise its competitiveness in richer Arab markets) and as purchasing power strengthens in African states.

The political environment is likely to be less benign. There is a range of conflicts in the region that show little sign of resolution, notably between Israelis and Palestinians and in Iraq. A deterioration in either conflict carries significant potential to antagonise Egypt's domestic polity. Egypt has a well-established role as a mediator in such disputes, but any escalation of tension within the region could prove damaging to tourism, Egypt's most important industry. The issue that carries the greatest potential for antagonism is over the Nile, on which Egypt depends for its entire water supply. Upstream states have pressed increasingly assertively for a revision of colonial era accords that give Egypt the right to nearly all the water and do not allocate any of the river's resources to most riparian states. Egypt recognises begrudgingly that the current arrangement is unfair, but the matter is highly sensitive and outside arbitration may be required to bring about a solution.

Institutions and policy trends: There are significant weaknesses in Egypt's institutional and political effectiveness. Legislative improvements have been made to the business environment, but enforcement is poor because of a slow (and, at the lower levels, suggestible) commercial court system and a highly opaque, slow and sometimes corrupt bureaucracy.

The current set-up militates against the kind of decision-making needed to make the necessary reforms. Egypt remains dominated by the presidency, although a degree of accountability is provided by the parliament. Yet the parliament tends to be short-termist, populist and reactionary—at least over economic matters—largely because it does not have to take responsibility for strategy. This makes the president risk-averse. Unless the recent decision to allow multi-candidate presidential elections results in broader democratisation—which remains to be seen—thereby forcing the political system to take greater collective responsibility, this will remain a barrier to fundamental reform. Besides this, Mr Mubarak, who has ruled for one-quarter of a century, is a cautious politician who has advocated incremental change. Given the extent of the concentration of power in the hands of the president, the prospects for reform on his demise—the president is 77 years old—depend largely on the approach of his successor. There is certainly pressure for a change in direction—a new cabinet of younger-generation liberals are eager to open Egypt up and initiate far-reaching reform. The recognition among at least some influential figures within the ruling elite that reform is needed should result in steady if unspectacular progress.

Long-term performance: Given the current relatively low level of efficiency in the domestic economy, there is significant potential for productivity growth and therefore relatively strong real GDP growth. Some factors are in place that should support this: an external economic environment that should stimulate demand and raise the competitiveness of domestic industries; Egypt's prime location as a base to export to Asia, Africa and Europe; and a plentiful and potentially low-cost workforce. However, success will depend on a major improvement to Egypt's institutional and political effectiveness: above all the willingness to make and follow through on bolder policies that carry short-term negative consequences; following through on governmental promises for the state's withdrawal from economic activity; raising the efficiency of the bureaucracy; and the development of a more effective commercial legal system. Progress is likely to be patchy rather than rapid. Consequently, we forecast real GDP growth per head of 3.5%, marking only slow catch-up with developed economies.

Income and market size

Income and market size	2005	2010	2020	2030
Population (m)	74.7	81.8	94.4	105.7
GDP (US$ bn at market exchange rates)	90	130	286	617

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GDP per head (US$ at market exchange rates)	1,200	1,580	3,030	5,830
Private consumption (US$ bn)	63	89	200	431
Private consumption per head (US$)	850	1,090	2,120	4,070
GDP (US$ bn at PPP)	298	434	939	1,951
GDP per head (US$ at PPP)	3,990	5,300	9,940	18,460
Exports of goods & services (US$ bn)	26	36	75	149
Imports of goods & services (US$ bn)	26	37	79	161
Memorandum items				
GDP per head (at PPP; index, US=100)	9.5	10.1	12.1	14.2
Share of world population (%)	1.2	1.2	1.3	1.3
Share of world GDP (% at market exchange rates)	0.2	0.2	0.3	0.4
Share of world GDP (% at PPP)	0.5	0.5	0.6	0.7
Share of world exports (%)	0.2	0.2	0.2	0.2

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