

# Southern Asia Ports, Logistics and Shipping 2006

*Liner trade growth and container terminal demand*



# Agenda

- ❑ **Elements of demand**
- ❑ **Evolution of liner services in South Asia**
- ❑ **Key mid term trends and supply and demand**

## Elements of demand

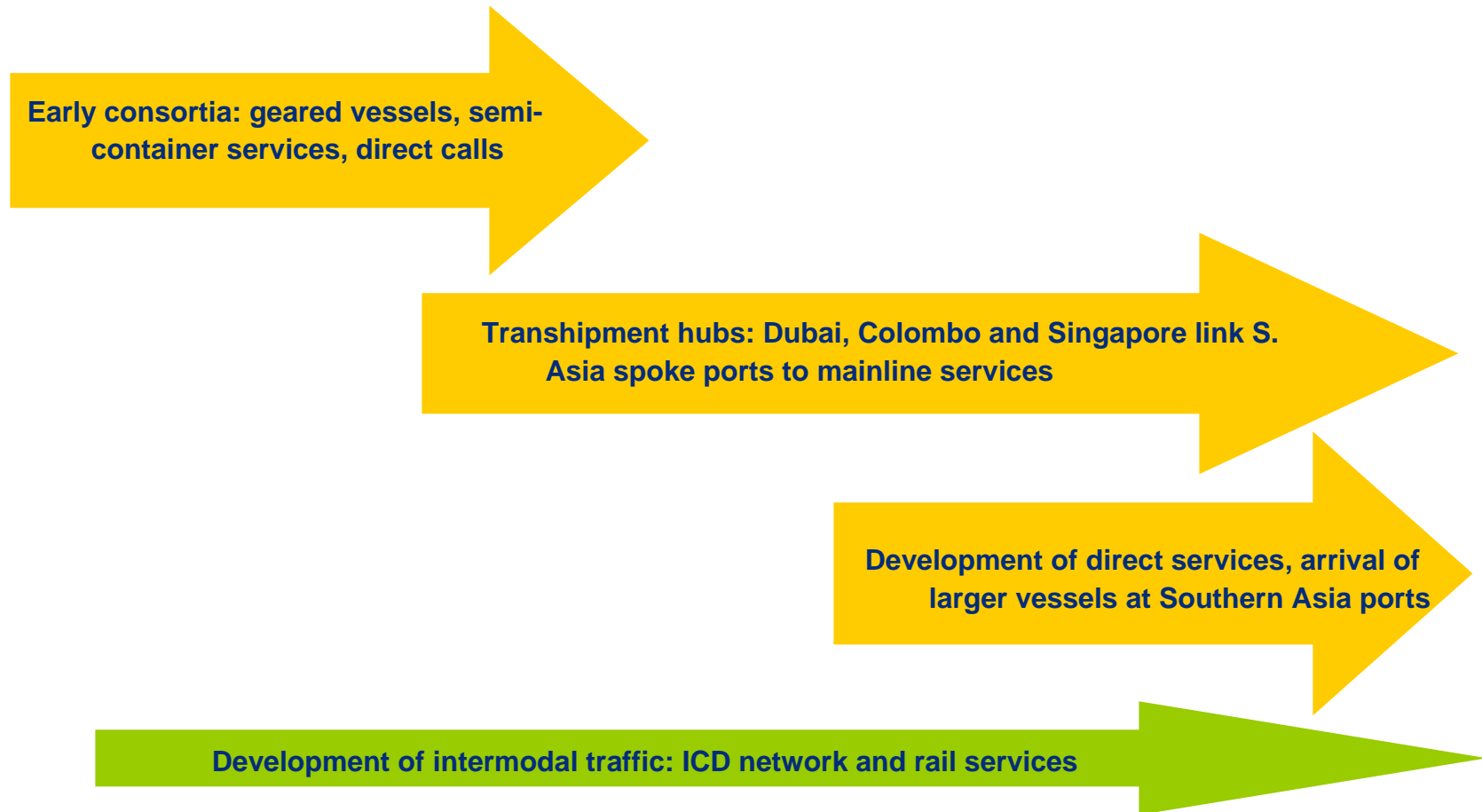
### Demand is not just volume:

- ❑ Ports and terminals act as interfaces between vessels and hinterland
- ❑ Ports and terminals act as transfer points within liner networks

### Demand means:

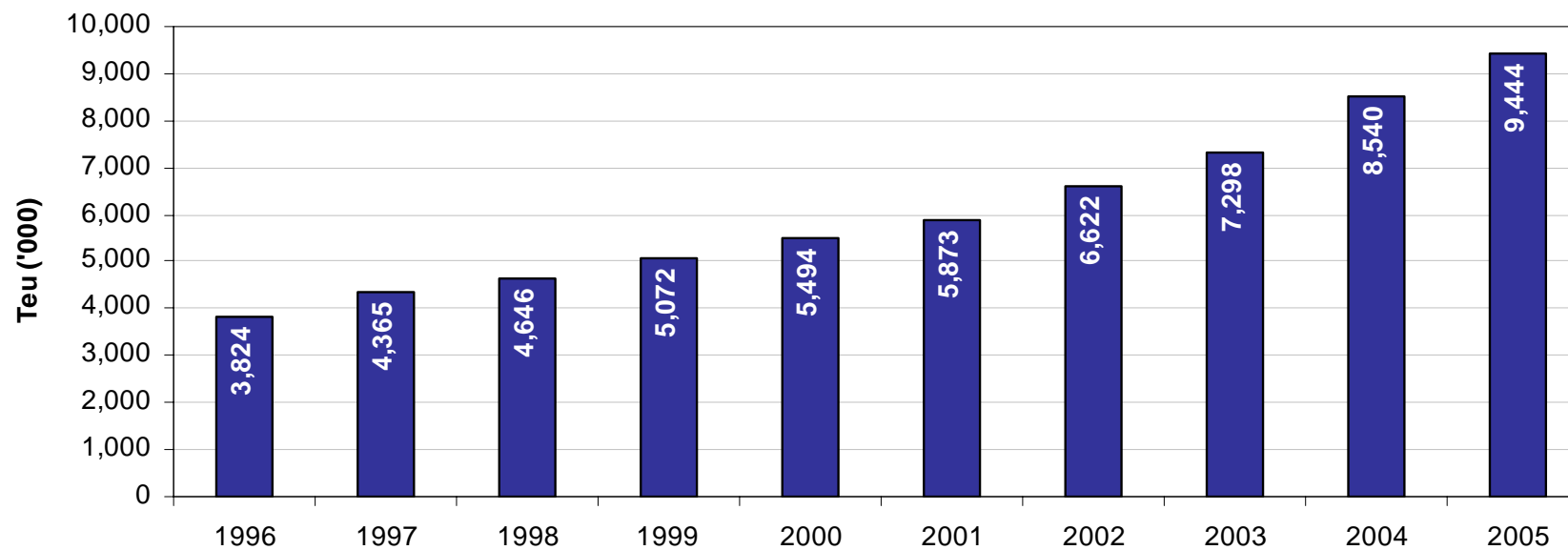
- ❑ Handling capacity
- ❑ Reliability – improves network efficiency and cost
- ❑ Hinterland links – drives down end-to-end cargo movement costs
- ❑ Ability to handle ever larger vessels – allowing lines to achieve economies of scale

## Liner service evolution in Southern Asia



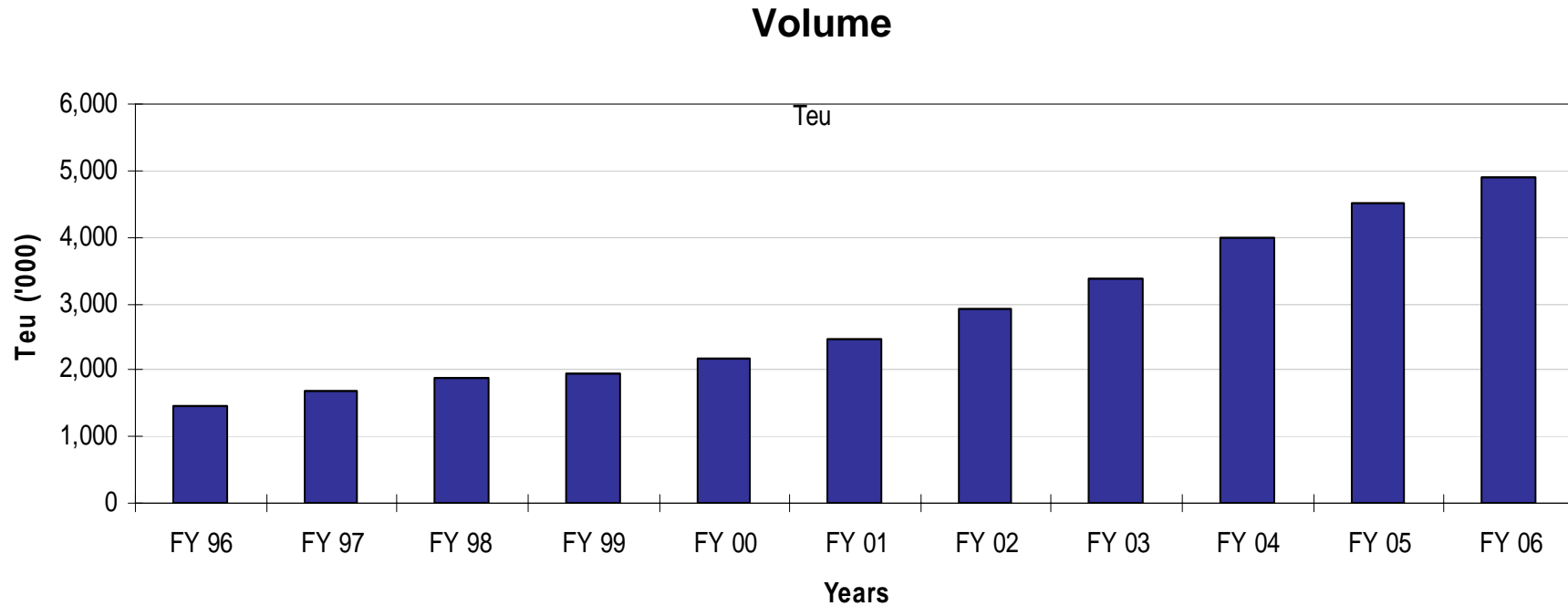
## Container traffic for South Asian ports

---



**Regional volume growth: 11% p.a. over past 10 years**

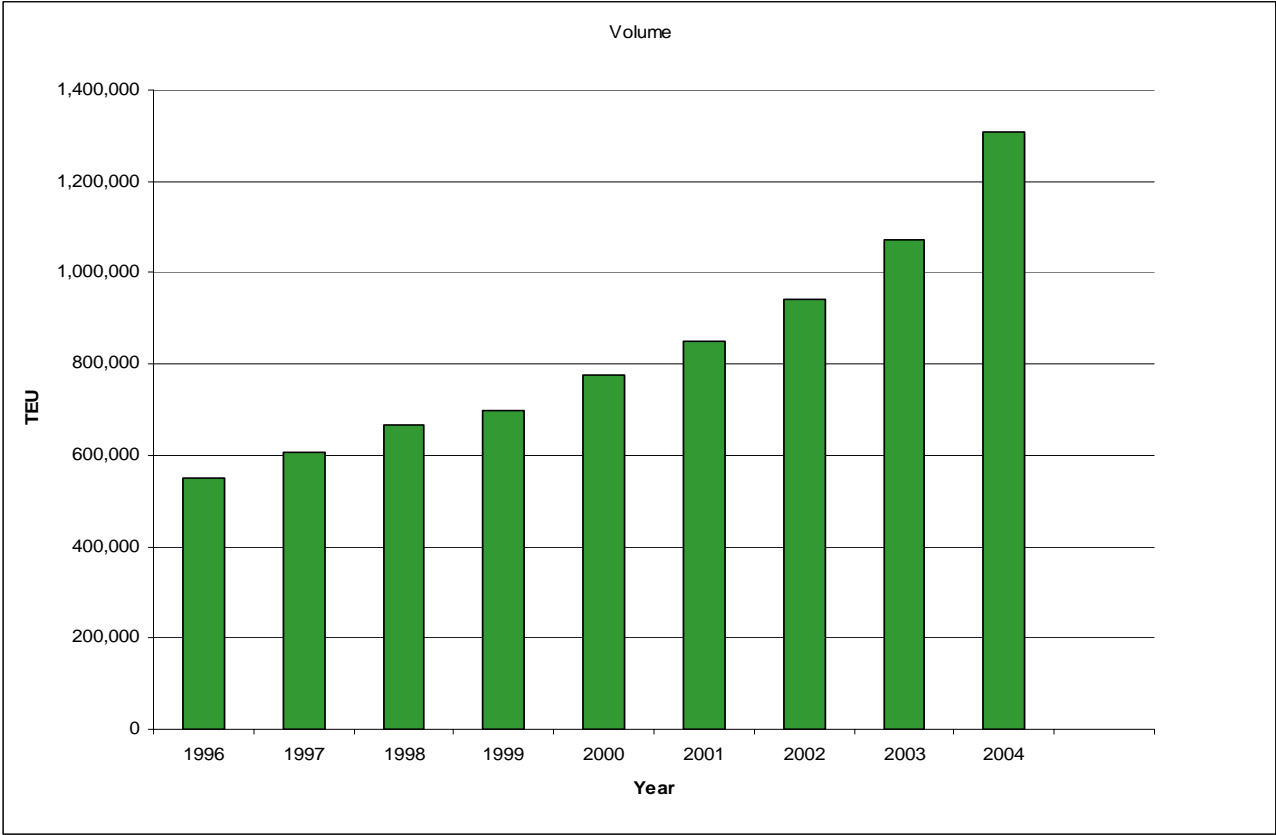
# India Container traffic growth



**Indian container traffic has registered a CAGR of 13.1% over last 10 years.**

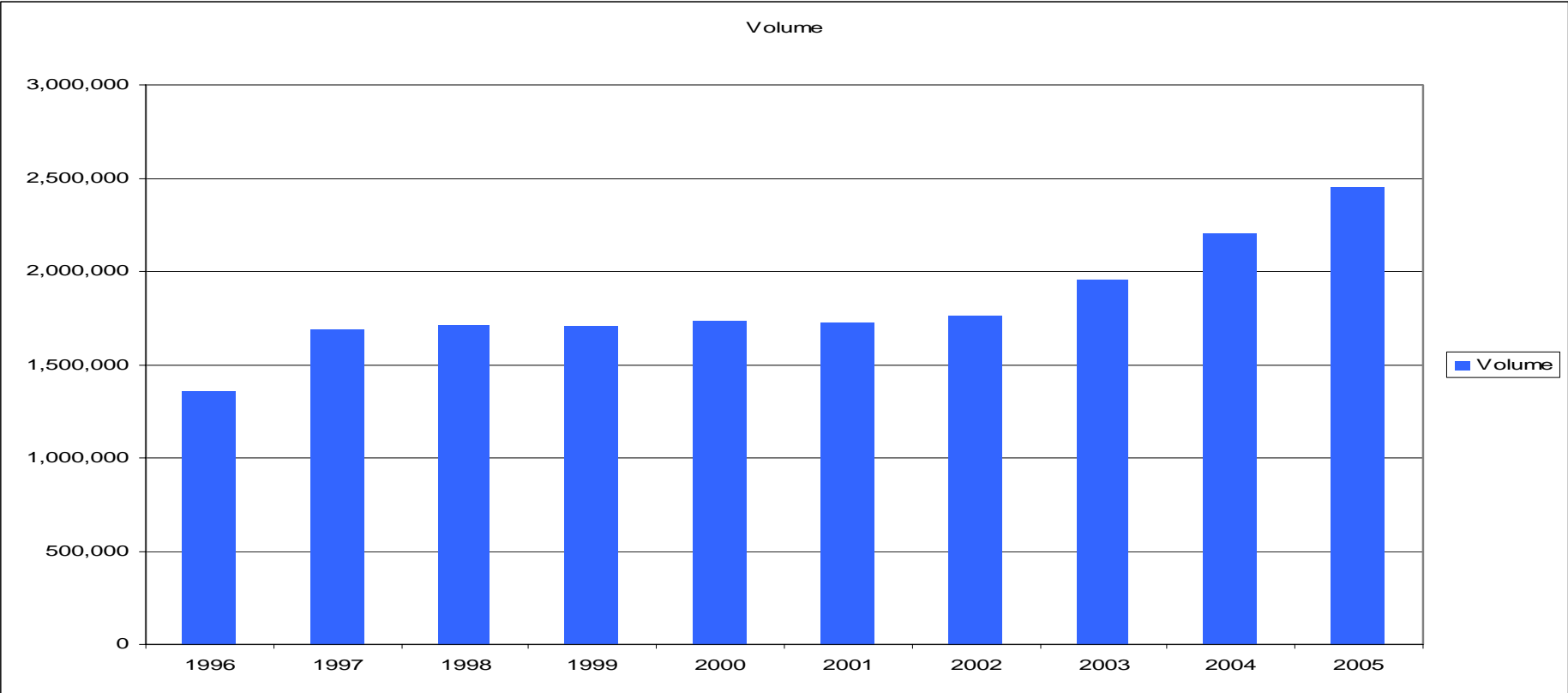
Note: 2005-06 traffic is estimated

# Pakistan traffic growth



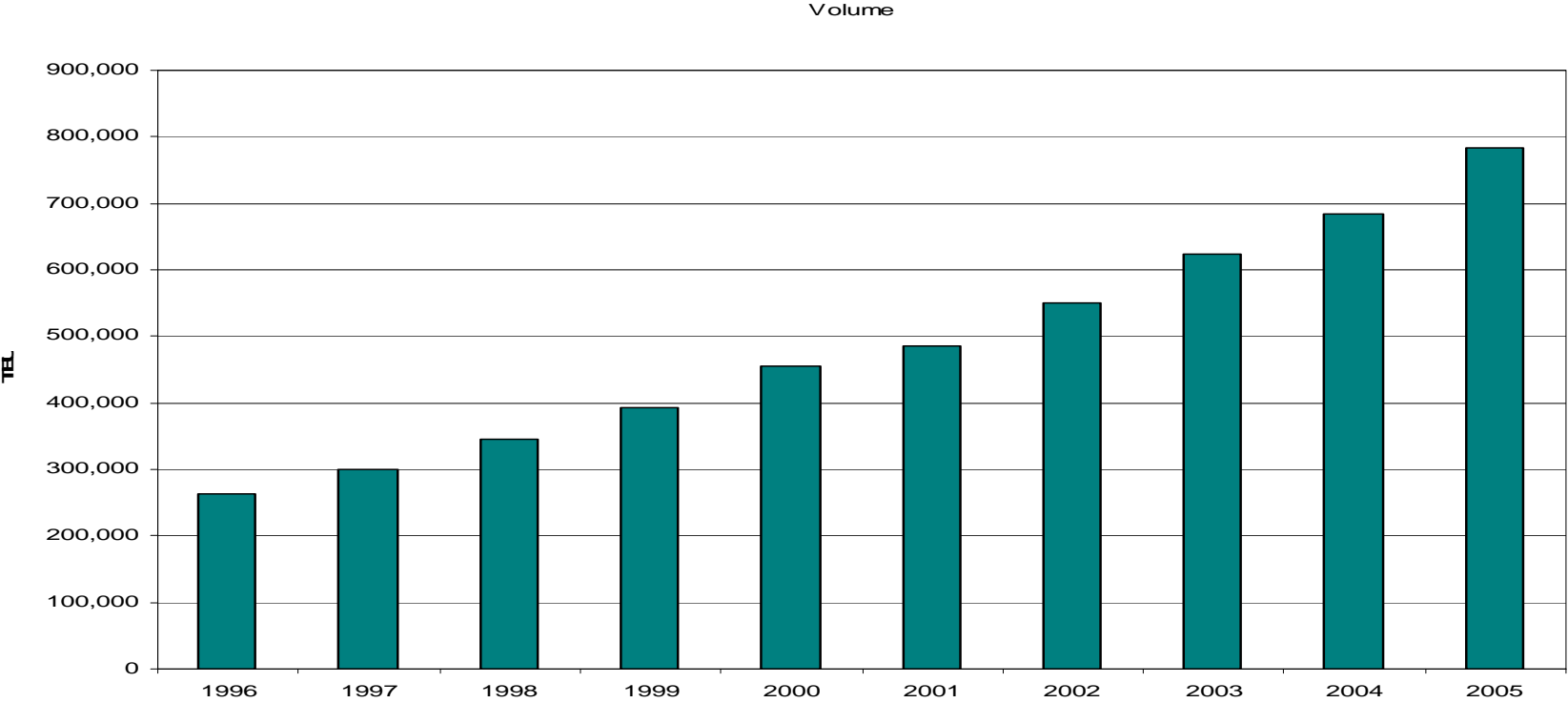
**Pakistan has registered 11% annual volume growth**

# Sri Lanka traffic growth



7% per year growth over the period

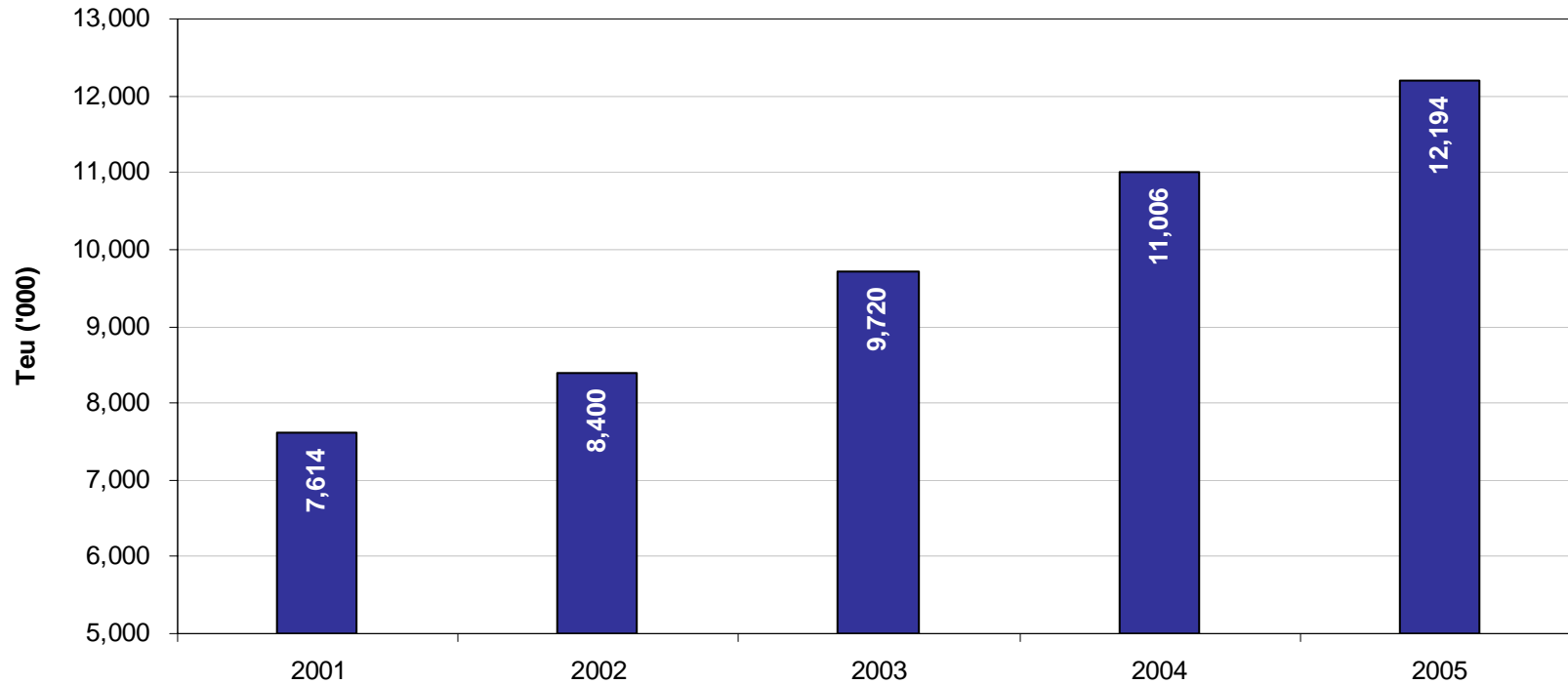
# Bangladesh traffic growth



13% per year growth over the period

## Container terminal capacity growth in South Asian ports

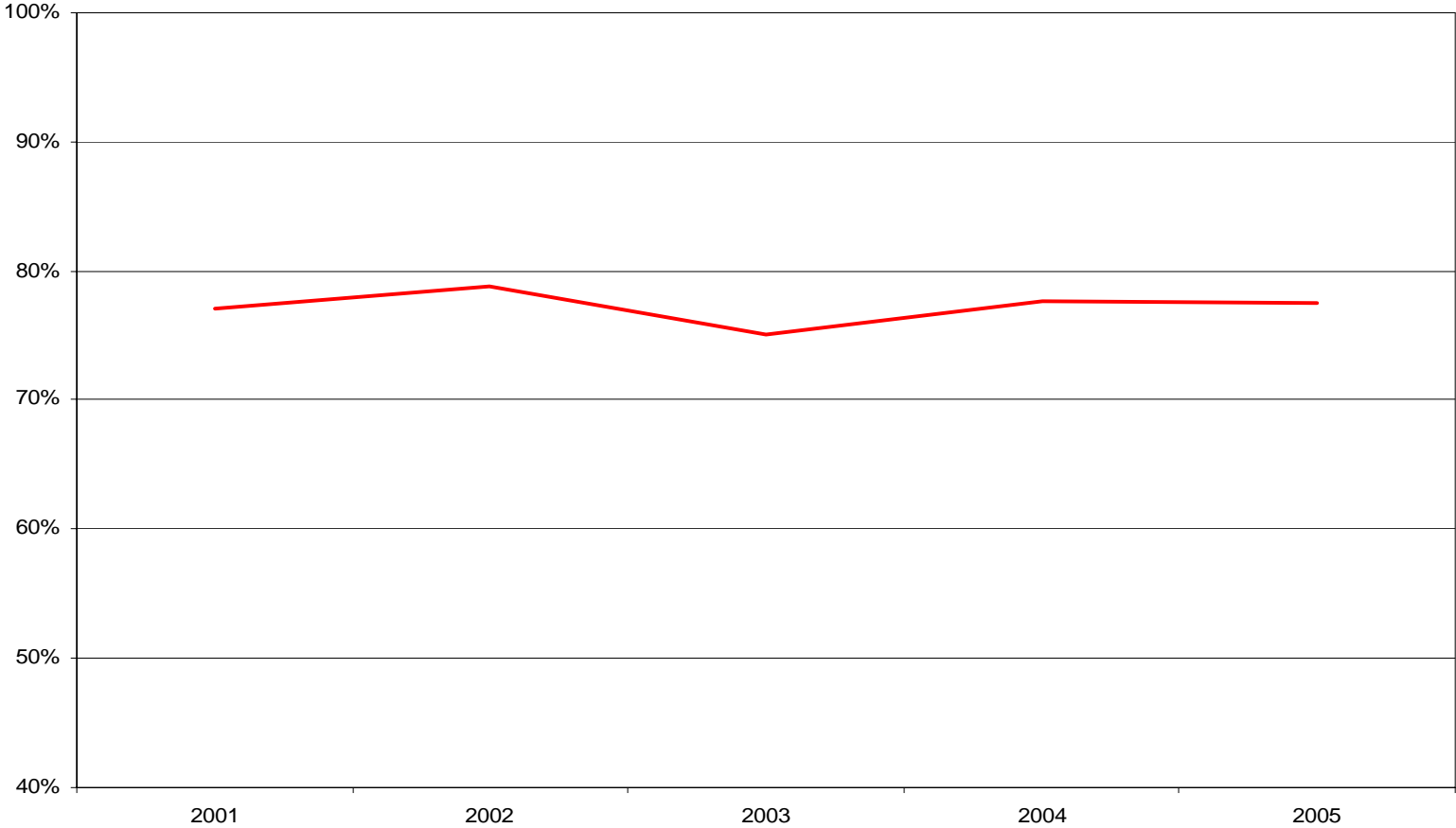
---



**Capacity growth 12% per year in the period**

# Capacity utilisation

Utilisation



## Overview of ports and facilities handling containers at the end of 2005-2006 ('000 teu)

Port	Landlord	Terminal Operator	2005/2006 Throughput ('000Teu)	2005/2006 Estimated Capacity ('000 Teu p.a.)	Utilization (%)	Quay Length (m)	No. of Cranes	Yard Area (ha)	Water Depth Range (m)
<b>Upper West</b>									
Kandla*	Public	Public	148	200	74%	545	Ships gear	11	10
Mundra*	Private	Private	312	500	62.4%	632	4	30	15-18
Pipavav	Private	Private	90	400	22.5%	375	3	10	11-13.5
<b>Greater Mumbai</b>									
Mumbai (Bombay)**	Public	Public	160	500	32%	656	2 & ships gear	4	9.1-9.7
Jawaharlal Nehru	Public	Public/Private	2670	2,200	121.4%	1,280	16	63	12-13.5
Mormugaon***	Public	Public	10	100	10%	902	1 mobile & ships gear	5	5-14
<b>Lower West</b>									
Cochin	Public	Public	185	250	74%	414	4	7	10.7
New Mangalore***	Public	Public	9	50	18%	1313	3 mobile cranes & ships gear	10	7-10.5
<b>Lower East</b>									
Chennai	Public	Private	710	850	83.5%	885	4	18	13
Tuticorin	Public	Public/Private	321	350	91.7%	370	2	8	11.9
<b>Upper East</b>									
Kolkata /Haldia	Public	Public	320	500	64%	1,466	2 & ships gear	34	8.3-12.2
Paradip***	Public	Public	2	50	4%	1,707	Ships gear	2	11.5-12.2
Visakhapatnam	Public	Private	47	200	23.5%	168	2	10	10.2

\* Proposed new facility under development

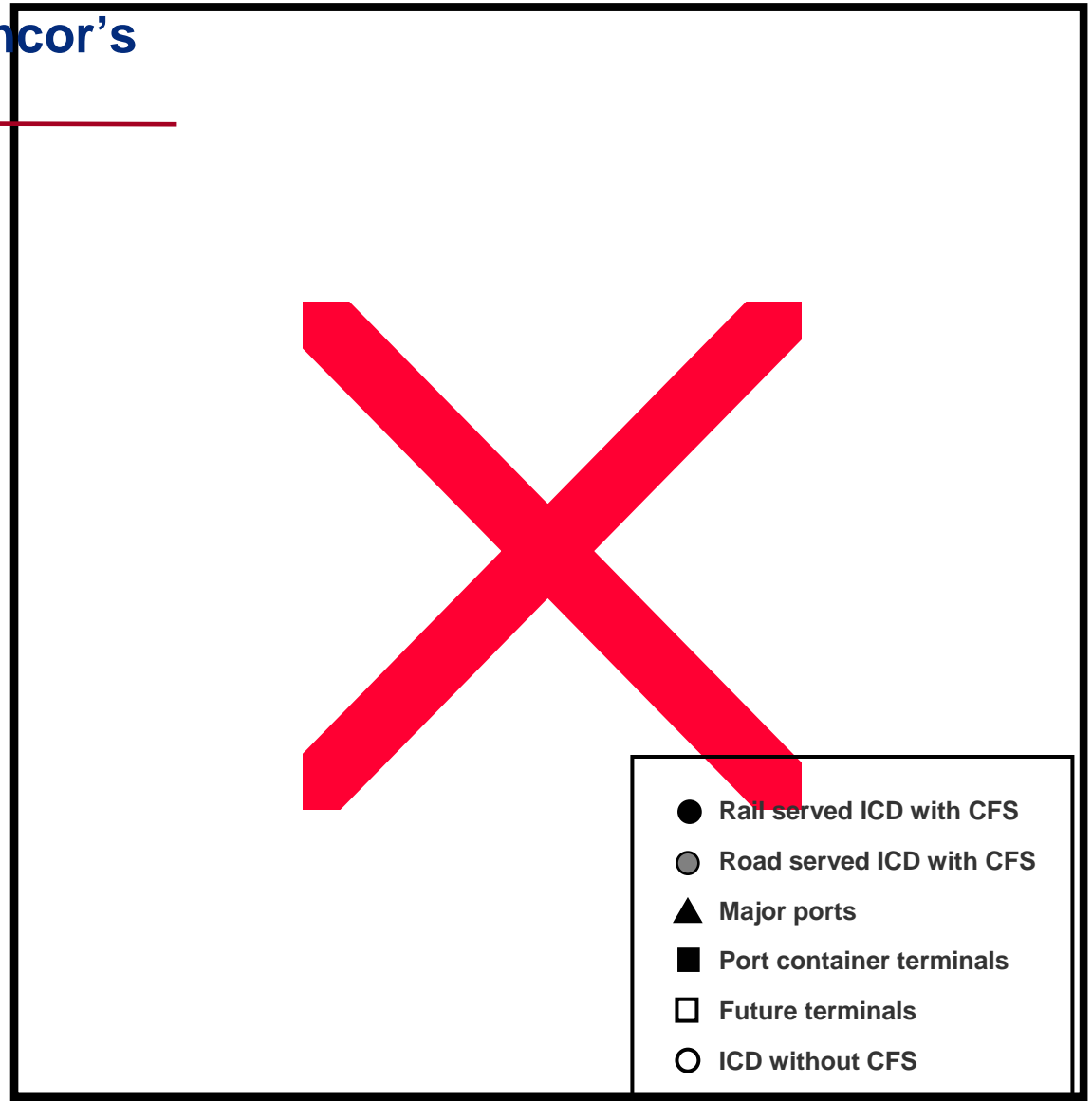
\*\* Includes boxes handled at general cargo berths

\*\*\* No dedicated container handling facility

## Links to the hinterland - current container logistics scenario in India

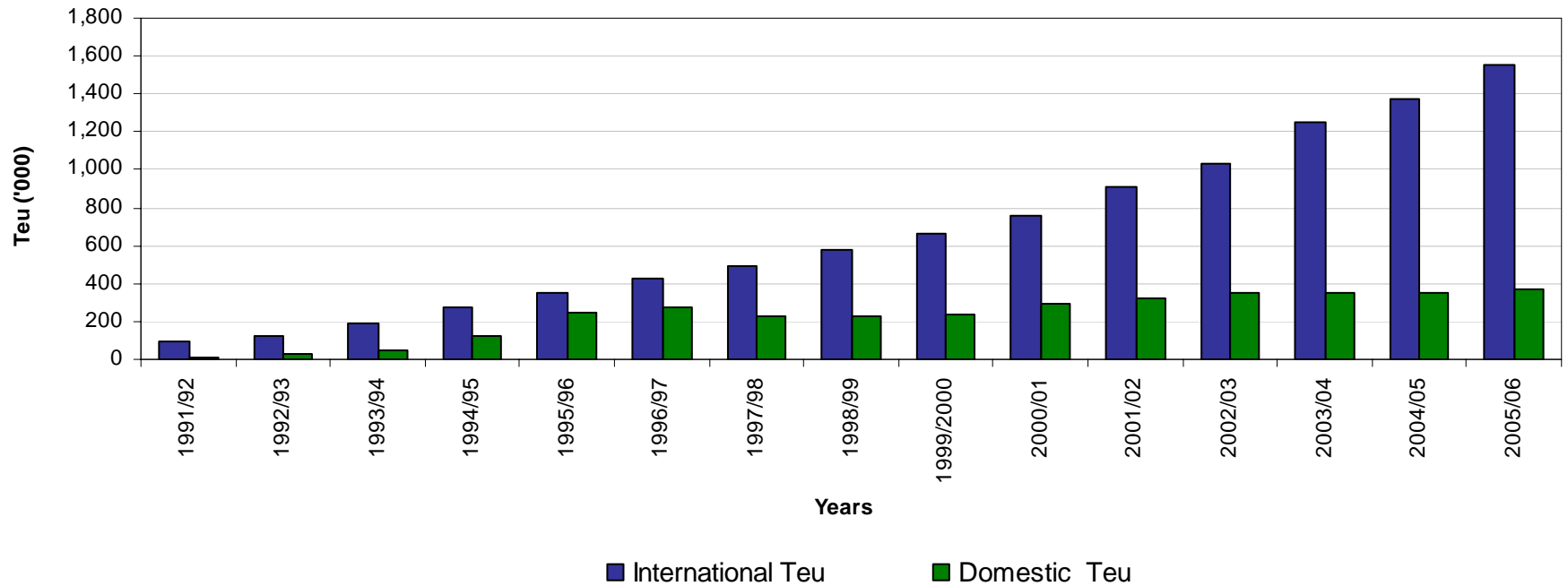
- ❑ Approximately 30% of EXIM containers move by rail and the remaining is handled by road.
- ❑ Till 2005 CONCOR had monopoly over rail transportation of containers.
- ❑ Domestic container movement is quite limited in India.
- ❑ Road transport is entirely in hands of private sector and highly fragmented
- ❑ Rising fuel prices is making road transport uneconomical over long haul

## Inland infrastructure - Concor's main ICD/CFS facilities



# Development of Concor's rail traffic

*Concor's rail traffic*



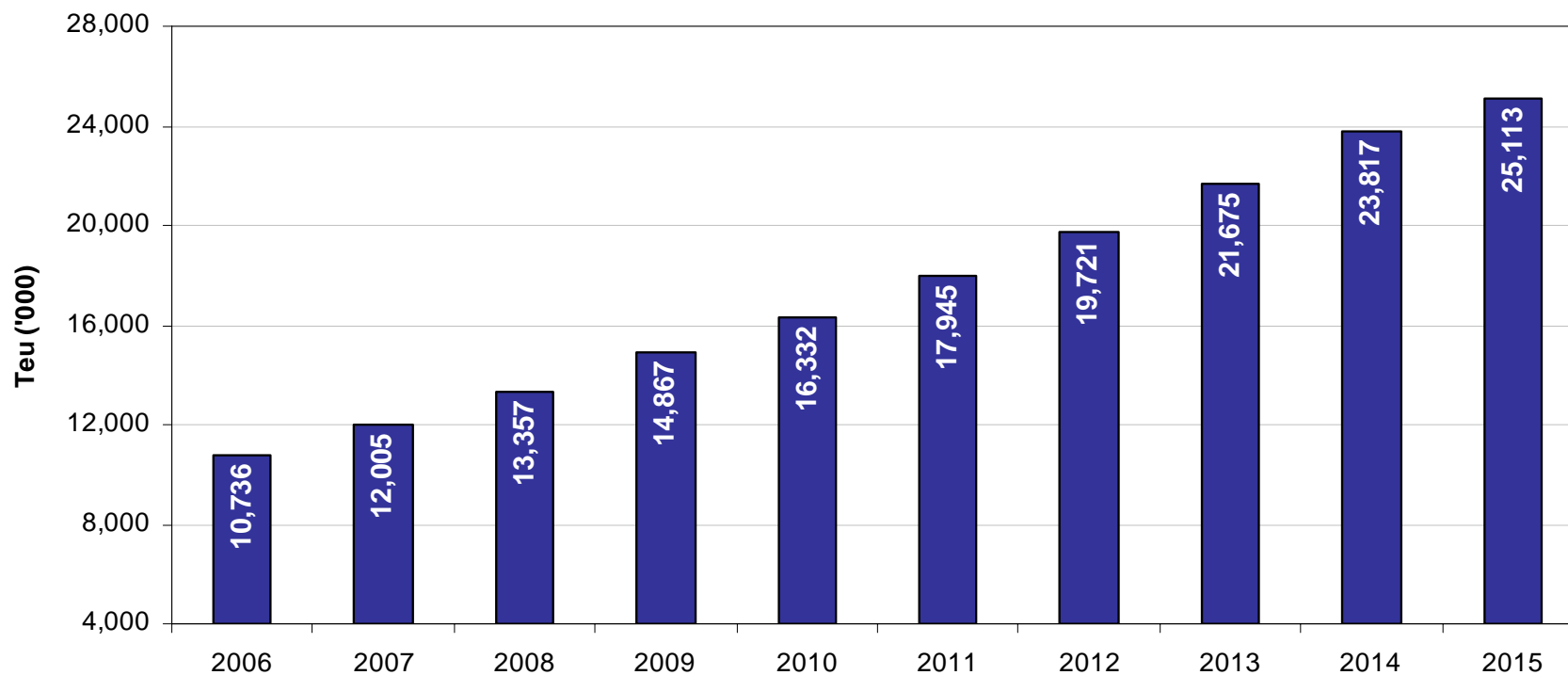
International traffic growth of 14% per year

## Key mid-term trends

- ❑ **Volume growth prospects**
- ❑ **Terminal capacity supply/demand**
- ❑ **Larger vessels**
- ❑ **New port development**
- ❑ **Increase in intermodal traffic**

## Container traffic forecast for South Asian ports

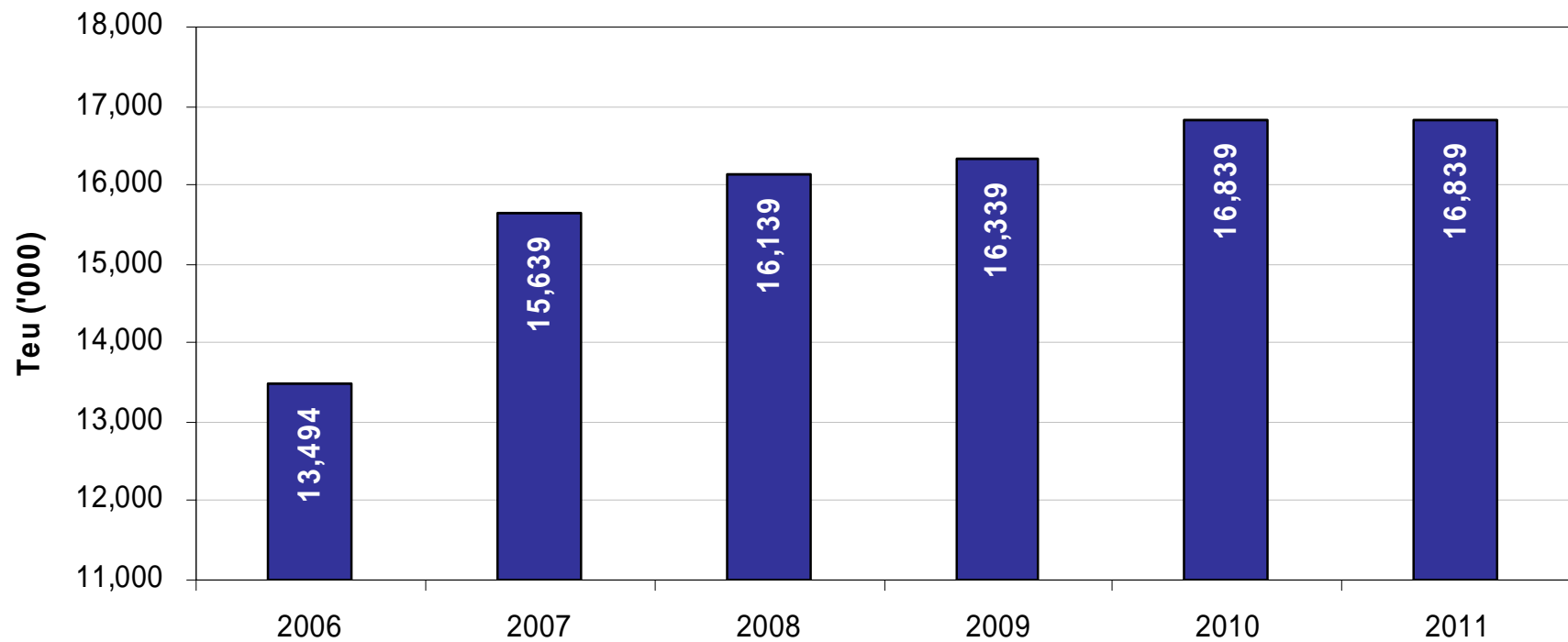
*Traffic forecast in Teu*



**CAGR forecast 10% based on regional GDP growth of 6%**

## Container terminal capacity development in South Asian ports – confirmed projects

---

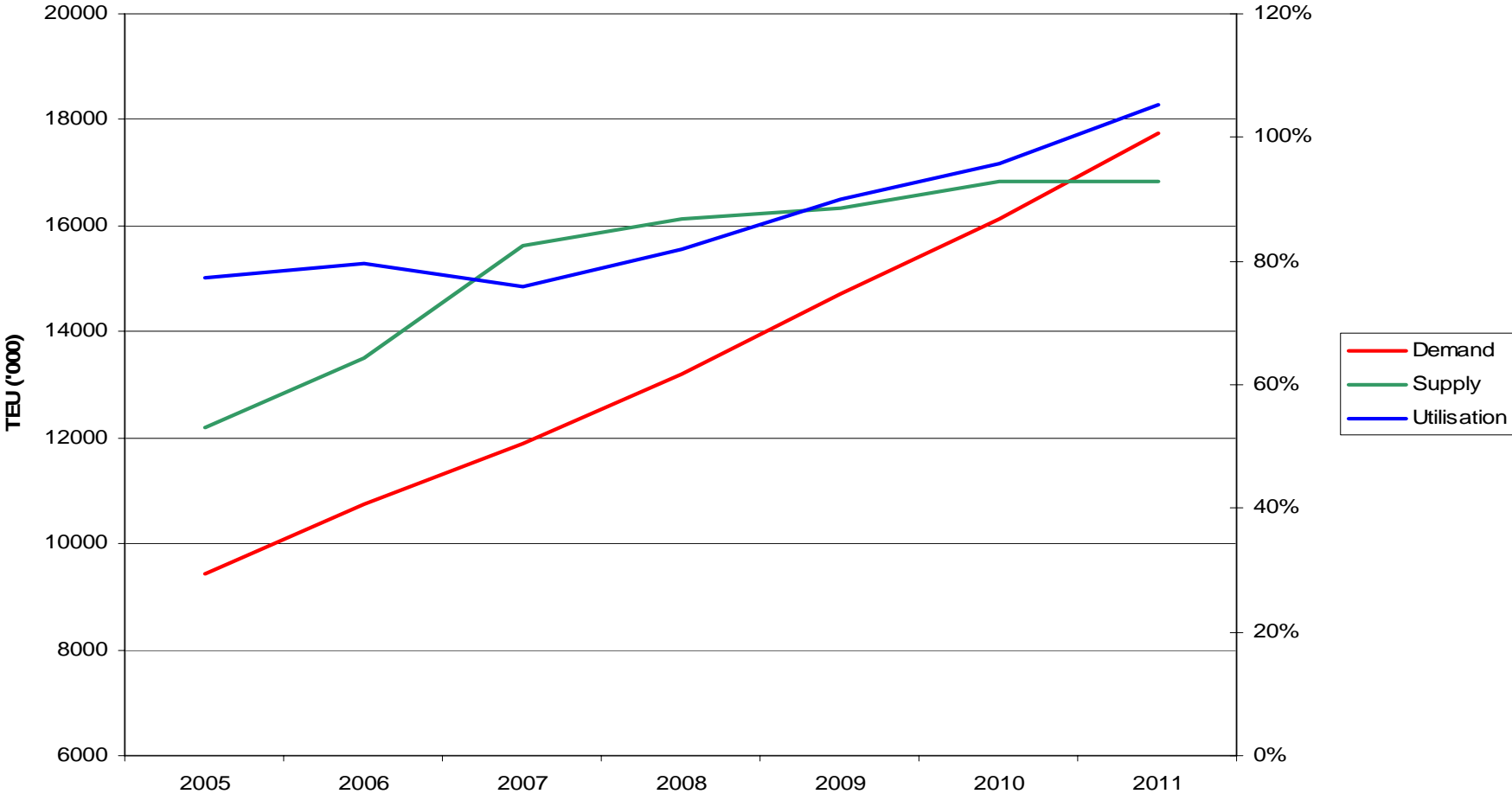


## Key developments – known capacity expansion

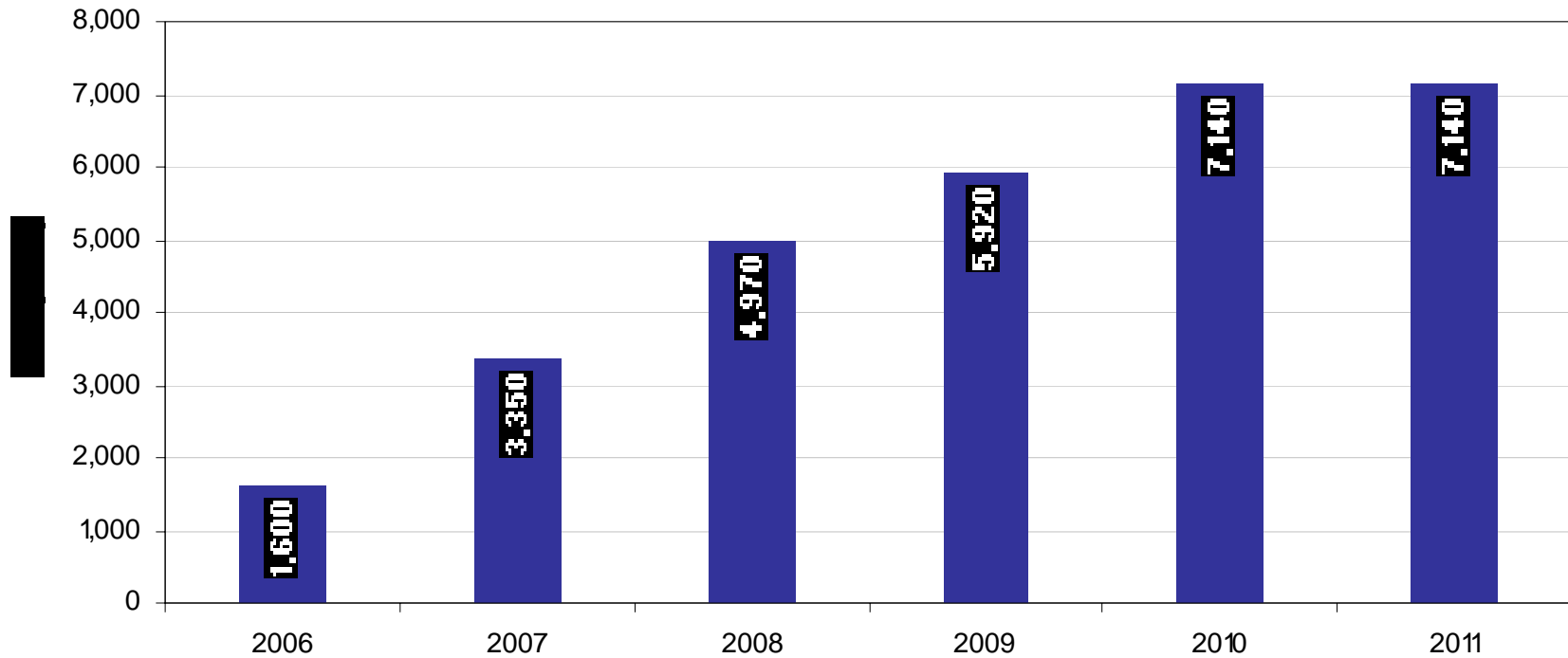
- ❑ **Bangladesh – New Mooring terminal**
- ❑ **Chennai expansion**
- ❑ **Vallarpadam development**
- ❑ **Pipavav expansion**
- ❑ **JNP 3<sup>rd</sup> terminal**
- ❑ **Kandla expansion**
- ❑ **Mundra expansion**
- ❑ **Karachi: KICT expansion**
- ❑ **Port Qasim expansion**

# Supply and demand – confirmed capacity

Supply and demand



## Container terminal unconfirmed capacity forecast for South Asian ports

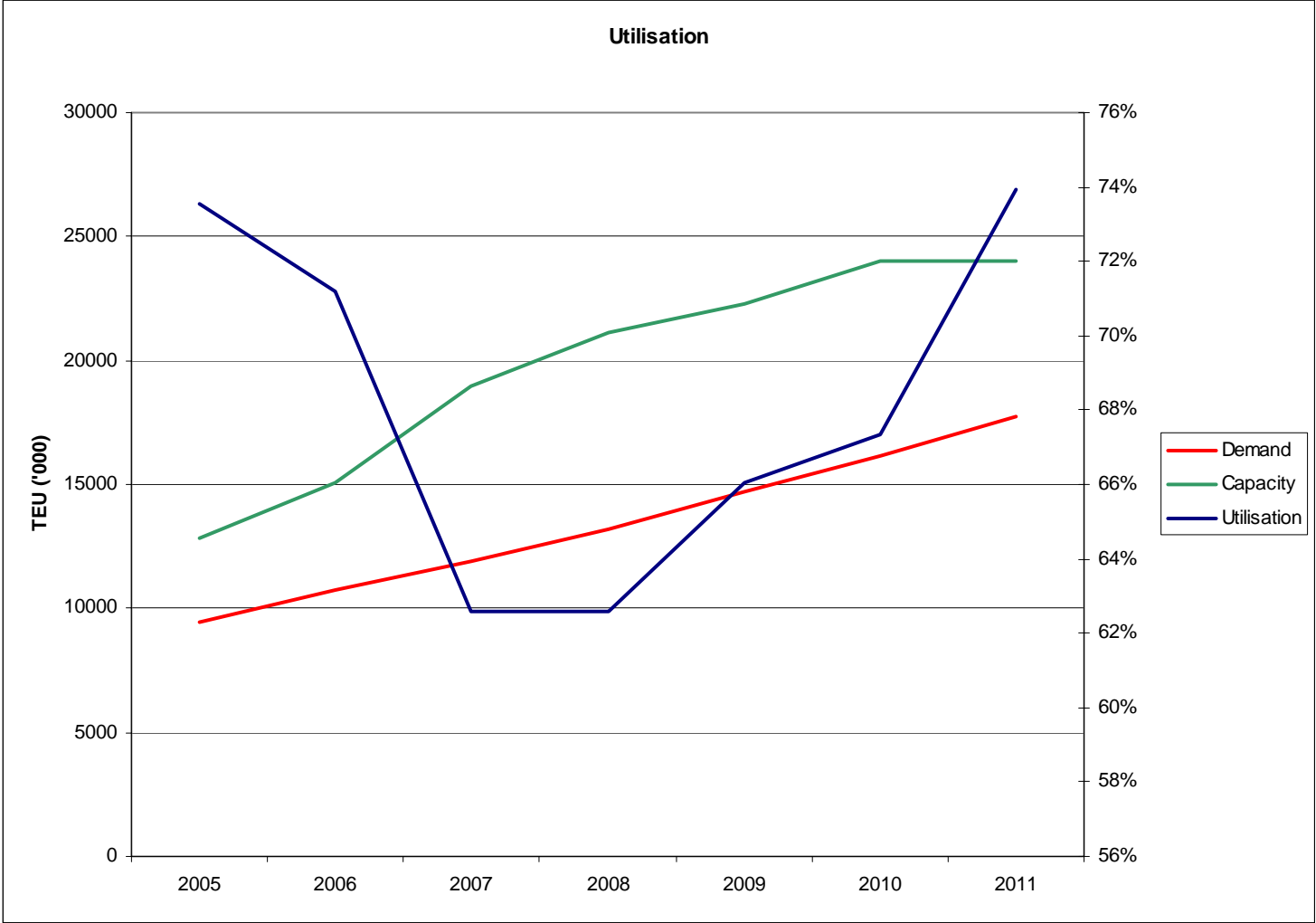


## Unconfirmed capacity additions

### Include:

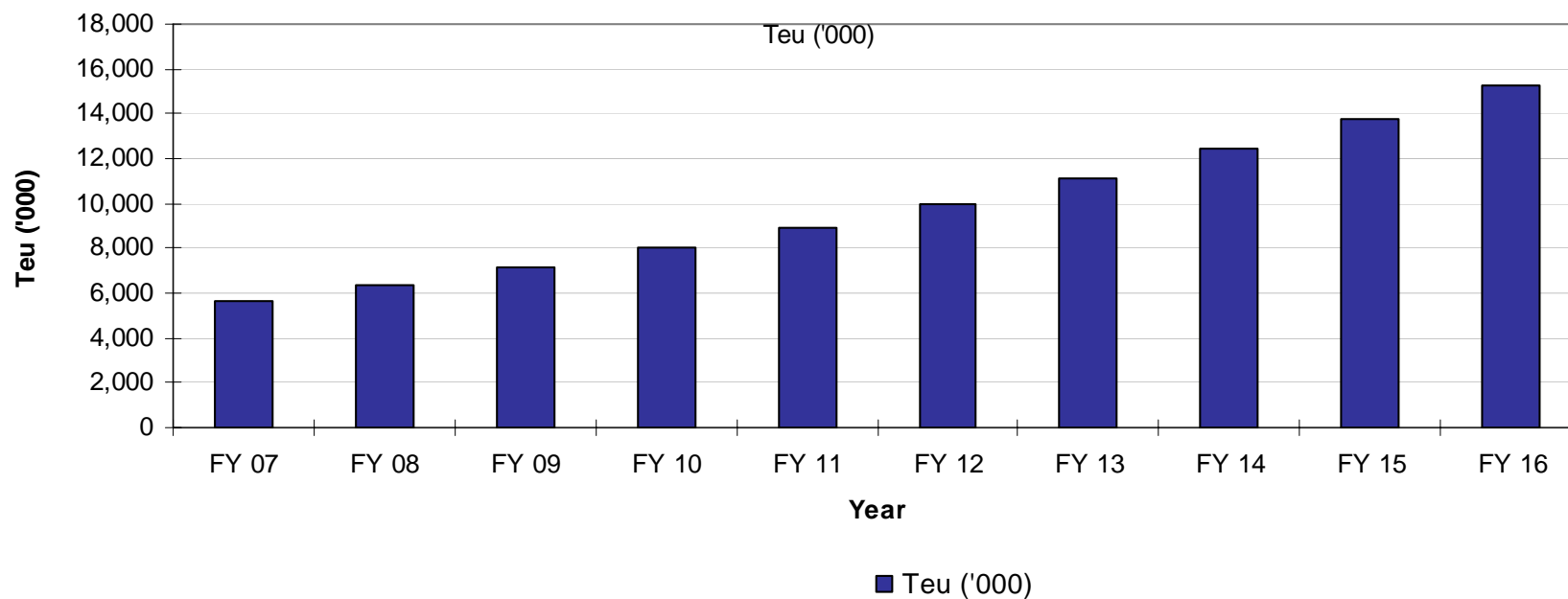
- ❑ **JNPT 4<sup>th</sup> terminal**
- ❑ **Mumbai offshore**
- ❑ **Rewas**
- ❑ **Kulpi**
- ❑ **Port Qasim 2<sup>nd</sup> terminal**
- ❑ **Colombo South**

# Supply and demand – with unconfirmed capacity



## Container traffic forecast for Indian ports

*Traffic forecast in Teu*



- Indian container traffic is expected to clock a CAGR of 12% over next 10 years.

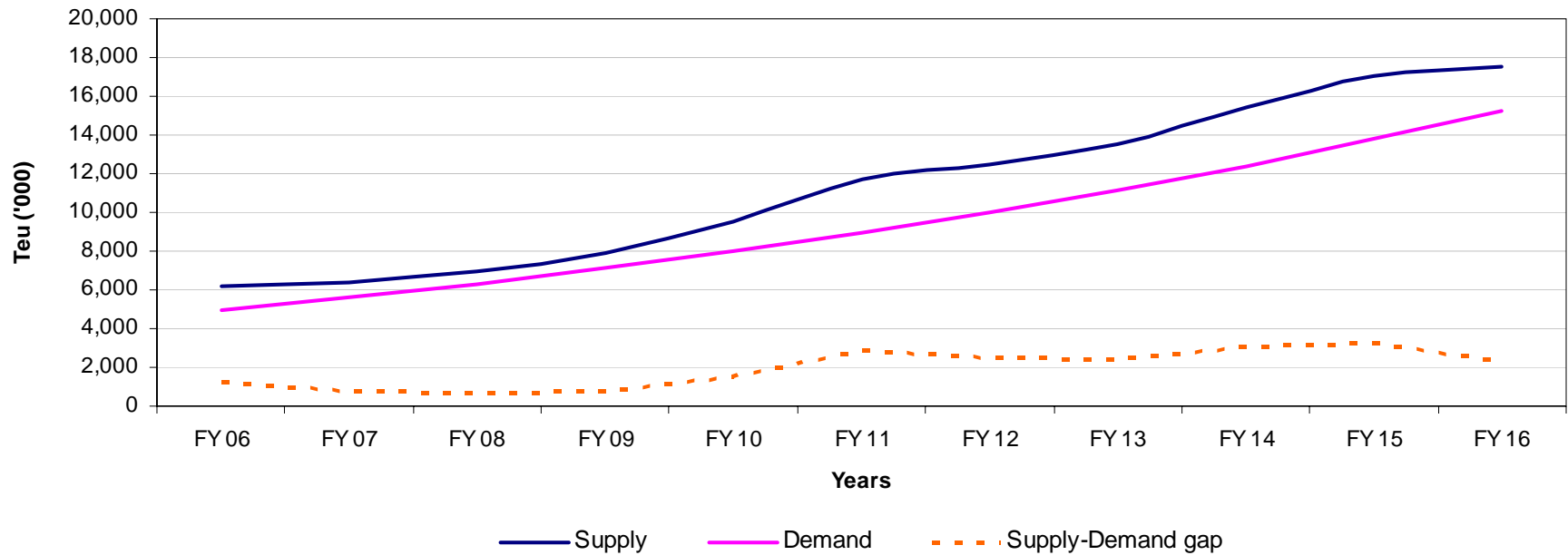
## Key growth factors in India

---

- ❑ Expected growth in trade: garments, textiles, handicrafts, leather products, auto components, electrical and electronic goods, engineering goods, processed and packaged food and agri – exports.
- ❑ Development of large SEZs and industrial parks
- ❑ Additional container handling capacity - higher container penetration in break bulk cargo
- ❑ Improved hinterland connectivity – more efficient movement of containers between ports and cargo centres.

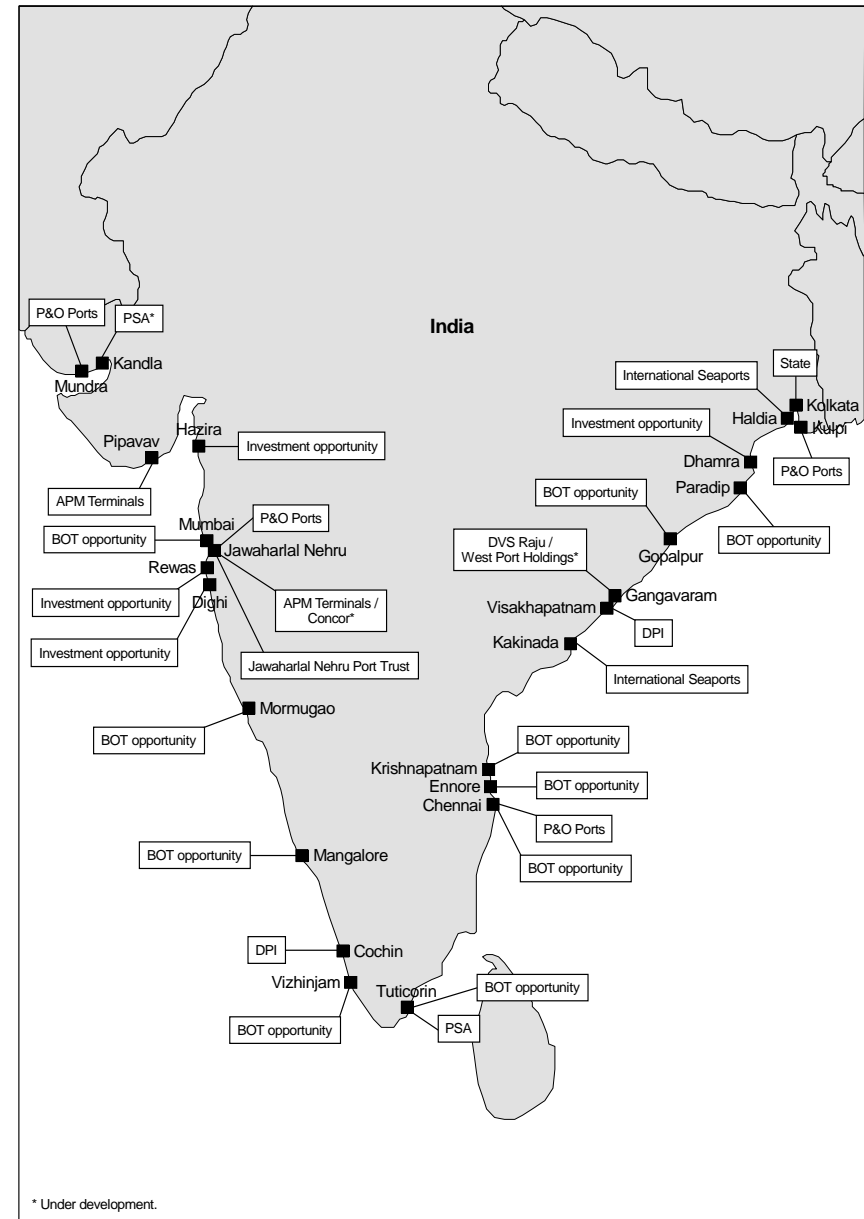
# India container terminal supply and demand to 2015

## Supply demand gap



# Ports currently handling or expected to handle container traffic in India

Coast / Region	Port
Upper West Coast	Kandla
	Mundra
	Pipavav
	Hazira*
Greater Mumbai	Mumbai
	JNP
	Rewas*
	Dighi*
Lower West Coast	Mormugao
	New Mangalore
	Cochin
	Vizhinjam*
Lower East Coast	Tuticorin
	Chennai
	Ennore*
	Kakinada*
Upper East Coast	Visakhapatnam
	Gangavaram*
	Paradip
	Dhamra*
	Kolkata
	Haldia
Kulpi*	



Source: Drewry Shipping Consultants Ltd

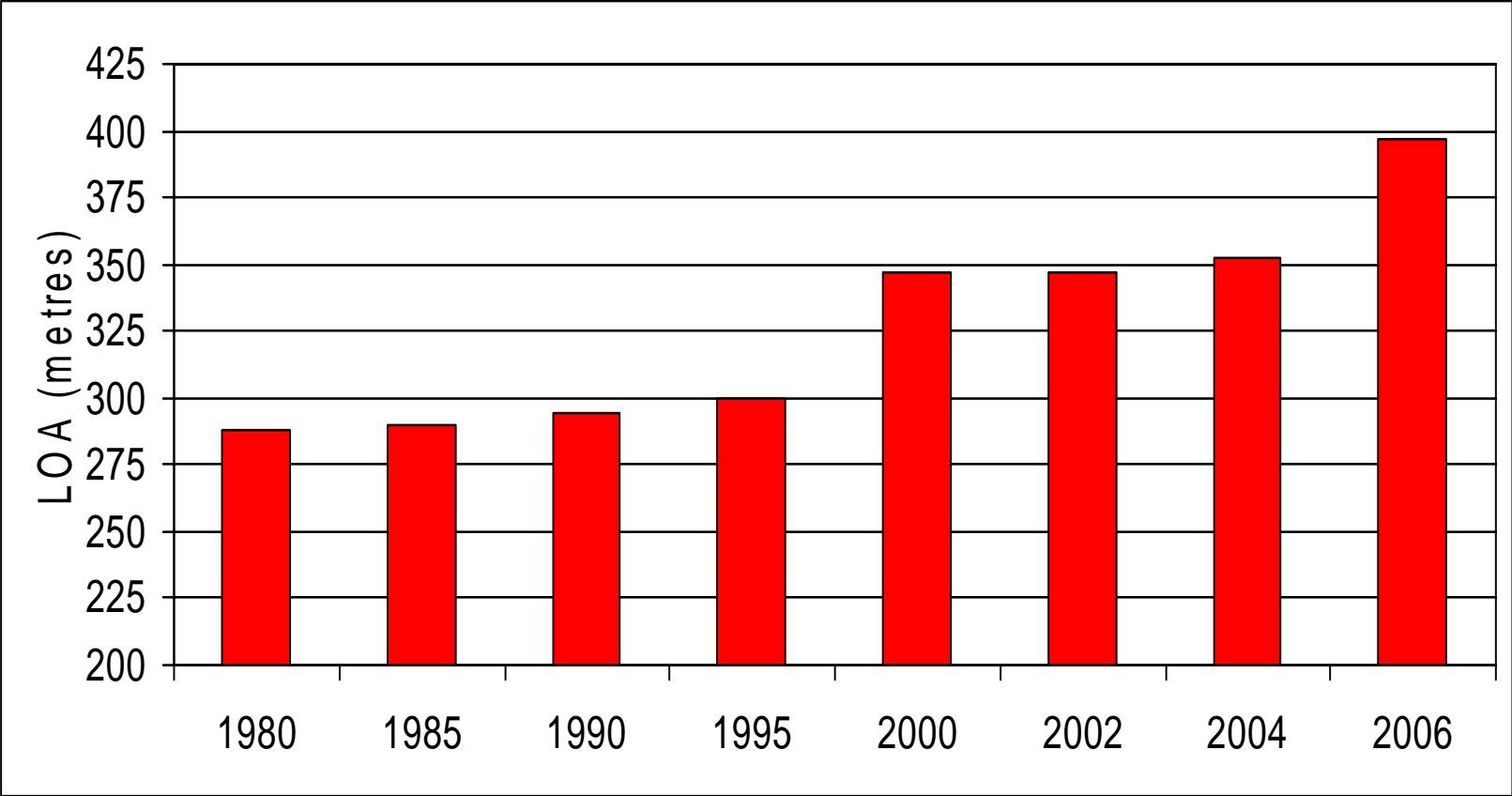
## Container terminal supply demand gap scenario difference till 2015

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Upper West</b>												
	<b>Supply</b>	1,100,000	1,100,000	1,350,000	2,000,000	2,850,000	3,700,000	3,950,000	4,200,000	4,550,000	4,900,000	4,900,000
Low	Hinterland traffic	508,278	688,066	865,823	1,061,779	1,313,625	1,545,784	1,770,186	2,078,255	2,391,498	2,702,192	3,041,270
	<b>Supply-Demand</b>	<b>591,722</b>	<b>411,934</b>	<b>484,177</b>	<b>938,221</b>	<b>1,536,375</b>	<b>2,154,216</b>	<b>2,179,814</b>	<b>2,121,745</b>	<b>2,158,502</b>	<b>2,197,808</b>	<b>1,858,730</b>
Base	Hinterland traffic	508,278	696,928	913,053	1,148,499	1,456,533	1,755,929	2,059,073	2,474,317	2,928,065	3,382,443	3,911,668
	<b>Supply-Demand</b>	<b>591,722</b>	<b>403,072</b>	<b>436,947</b>	<b>851,501</b>	<b>1,393,467</b>	<b>1,944,071</b>	<b>1,890,927</b>	<b>1,725,683</b>	<b>1,621,935</b>	<b>1,517,557</b>	<b>988,332</b>
High	Hinterland traffic	508,278	705,791	935,754	1,190,485	1,526,287	1,859,424	2,202,728	2,673,306	3,194,365	3,725,350	4,351,046
	<b>Supply-Demand</b>	<b>591,722</b>	<b>394,209</b>	<b>414,246</b>	<b>809,515</b>	<b>1,323,713</b>	<b>1,840,576</b>	<b>1,747,272</b>	<b>1,526,694</b>	<b>1,355,635</b>	<b>1,174,650</b>	<b>548,954</b>
<b>Greater Mumbai</b>												
	<b>Supply</b>	2,700,000	2,900,000	3,200,000	3,500,000	4,100,000	5,000,000	5,200,000	5,700,000	6,300,000	7,050,000	7,300,000
Low	Hinterland traffic	2,820,779	3,108,709	3,232,154	3,354,890	3,557,568	3,798,682	3,835,038	3,992,481	4,089,710	4,248,366	4,403,629
	<b>Supply-Demand</b>	<b>-120,779</b>	<b>-208,709</b>	<b>-32,154</b>	<b>145,110</b>	<b>542,432</b>	<b>1,201,318</b>	<b>1,364,962</b>	<b>1,707,519</b>	<b>2,210,290</b>	<b>2,801,634</b>	<b>2,896,371</b>
Base	Hinterland traffic	2,820,779	3,148,751	3,408,466	3,628,898	3,944,592	4,315,102	4,460,899	4,778,901	5,062,973	5,349,407	5,698,631
	<b>Supply-Demand</b>	<b>-120,779</b>	<b>-248,751</b>	<b>-208,466</b>	<b>-128,898</b>	<b>155,408</b>	<b>684,898</b>	<b>739,101</b>	<b>921,099</b>	<b>1,237,027</b>	<b>1,700,593</b>	<b>1,601,369</b>
High	Hinterland traffic	2,820,779	3,188,792	3,493,212	3,761,559	4,133,501	4,569,435	4,772,122	5,163,229	5,523,437	5,923,918	6,342,398
	<b>Supply-Demand</b>	<b>-120,779</b>	<b>-288,792</b>	<b>-293,212</b>	<b>-261,559</b>	<b>-33,501</b>	<b>430,565</b>	<b>427,878</b>	<b>536,771</b>	<b>776,563</b>	<b>1,126,082</b>	<b>957,602</b>
<b>Lower West</b>												
	<b>Supply</b>	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	650,000	1,400,000	1,650,000
Low	Hinterland traffic	202,194	233,939	259,342	297,378	333,272	383,264	443,950	507,676	569,505	631,649	715,352
	<b>Supply-Demand</b>	<b>197,806</b>	<b>166,061</b>	<b>140,658</b>	<b>102,622</b>	<b>66,728</b>	<b>16,736</b>	<b>-43,950</b>	<b>-107,676</b>	<b>80,495</b>	<b>768,351</b>	<b>934,648</b>
Base	Hinterland traffic	202,194	236,952	273,489	321,667	369,528	435,367	516,401	604,426	693,724	782,593	901,306
	<b>Supply-Demand</b>	<b>197,806</b>	<b>163,048</b>	<b>126,511</b>	<b>78,333</b>	<b>30,472</b>	<b>-35,367</b>	<b>-116,401</b>	<b>-204,426</b>	<b>-43,724</b>	<b>617,407</b>	<b>748,694</b>
High	Hinterland traffic	202,194	239,966	280,289	333,426	387,225	461,028	552,429	653,035	756,816	861,931	1,002,023
	<b>Supply-Demand</b>	<b>197,806</b>	<b>160,034</b>	<b>119,711</b>	<b>66,574</b>	<b>12,775</b>	<b>-61,028</b>	<b>-152,429</b>	<b>-253,035</b>	<b>-106,816</b>	<b>538,069</b>	<b>647,977</b>

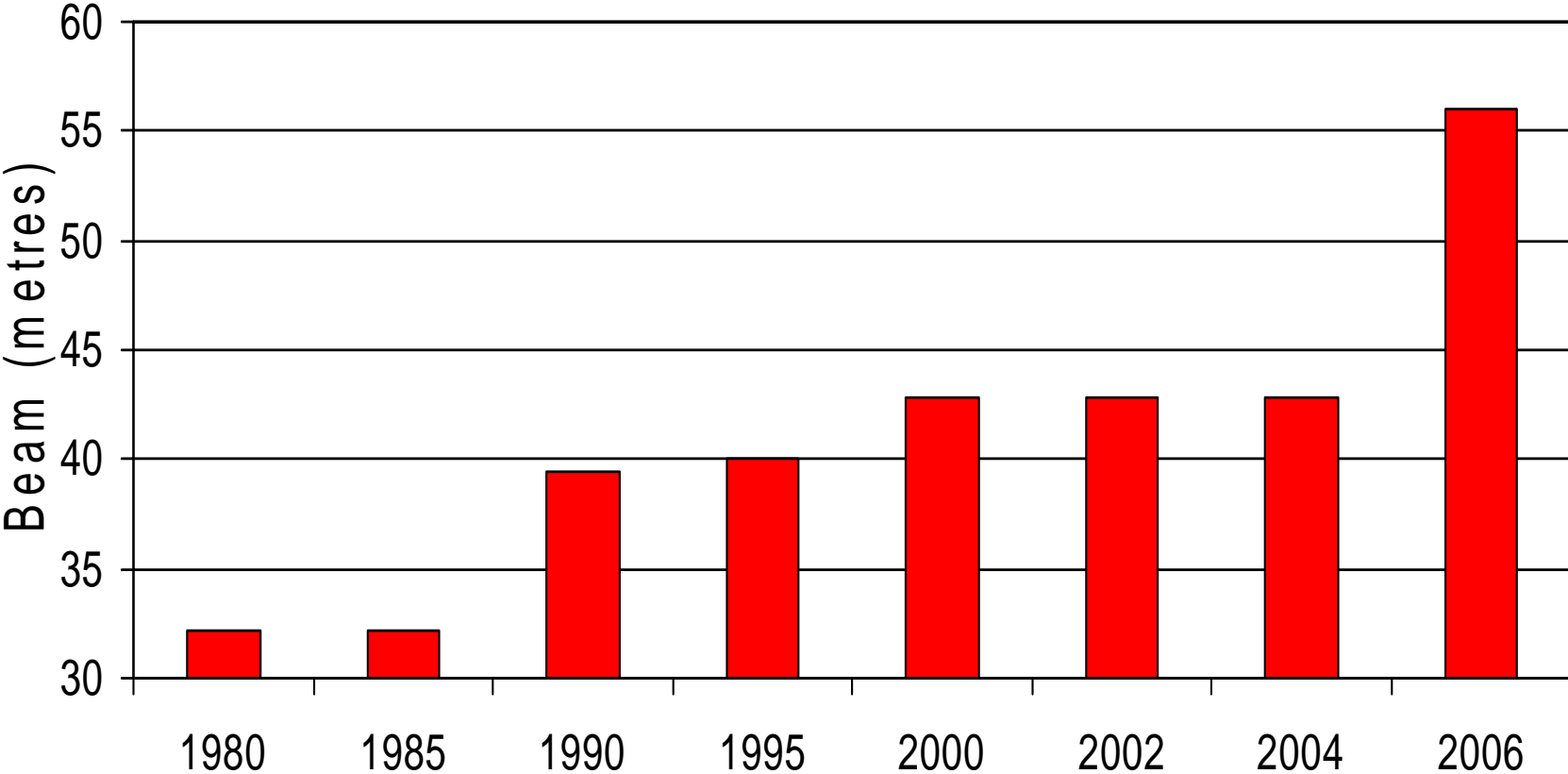
## Container terminal supply demand gap scenario difference till 2015 (cont'd)

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Lower East</b>												
	<b>Supply</b>	1,250,000	1,250,000	1,300,000	1,300,000	1,450,000	1,850,000	2,150,000	2,650,000	2,850,000	3,400,000	3,400,000
Low	Hinterland traffic	987,184	1,114,910	1,222,614	1,401,927	1,571,137	1,745,978	1,936,026	2,164,302	2,351,033	2,607,577	2,831,911
	<b>Supply-Demand</b>	<b>262,816</b>	<b>135,090</b>	<b>77,386</b>	<b>-101,927</b>	<b>-121,137</b>	<b>104,022</b>	<b>213,974</b>	<b>485,698</b>	<b>498,967</b>	<b>792,423</b>	<b>568,089</b>
Base	Hinterland traffic	987,184	1,129,271	1,289,306	1,516,428	1,742,059	1,983,339	2,251,977	2,576,762	2,863,835	3,230,703	3,568,057
	<b>Supply-Demand</b>	<b>262,816</b>	<b>120,729</b>	<b>10,694</b>	<b>-216,428</b>	<b>-292,059</b>	<b>-133,339</b>	<b>-101,977</b>	<b>73,238</b>	<b>-13,835</b>	<b>169,297</b>	<b>-168,057</b>
High	Hinterland traffic	987,184	1,143,631	1,321,363	1,571,864	1,825,488	2,100,237	2,409,090	2,783,990	3,124,293	3,558,227	3,966,772
	<b>Supply-Demand</b>	<b>262,816</b>	<b>106,369</b>	<b>-21,363</b>	<b>-271,864</b>	<b>-375,488</b>	<b>-250,237</b>	<b>-259,090</b>	<b>-133,990</b>	<b>-274,293</b>	<b>-158,227</b>	<b>-566,772</b>
<b>Upper East</b>												
	<b>Supply</b>	750,000	750,000	750,000	750,000	750,000	850,000	850,000	850,000	1,350,000	1,350,000	1,350,000
Low	Hinterland traffic	344,055	361,746	379,425	400,960	354,470	298,533	474,947	498,165	619,508	761,332	934,338
	<b>Supply-Demand</b>	<b>405,945</b>	<b>388,254</b>	<b>370,575</b>	<b>349,040</b>	<b>395,530</b>	<b>551,467</b>	<b>375,053</b>	<b>351,835</b>	<b>730,492</b>	<b>588,668</b>	<b>415,662</b>
Base	Hinterland traffic	344,055	366,405	400,122	433,708	393,033	339,118	552,456	593,103	754,634	943,265	1,177,216
	<b>Supply-Demand</b>	<b>405,945</b>	<b>383,595</b>	<b>349,878</b>	<b>316,292</b>	<b>356,967</b>	<b>510,882</b>	<b>297,544</b>	<b>256,897</b>	<b>595,366</b>	<b>406,735</b>	<b>172,784</b>
High	Hinterland traffic	344,055	371,064	410,070	449,563	411,855	359,105	590,999	640,801	823,266	1,038,892	1,308,765
	<b>Supply-Demand</b>	<b>405,945</b>	<b>378,936</b>	<b>339,930</b>	<b>300,437</b>	<b>338,145</b>	<b>490,895</b>	<b>259,001</b>	<b>209,199</b>	<b>526,734</b>	<b>311,108</b>	<b>41,235</b>
<b>India Grand Total</b>												
	<b>Supply</b>	6,200,000	6,400,000	7,000,000	7,950,000	9,550,000	11,800,000	12,550,000	13,800,000	15,700,000	18,100,000	18,600,000
Low	Hinterland traffic	4,906,426	5,548,951	5,998,590	6,563,327	7,167,597	7,814,165	8,505,994	9,246,250	10,038,324	10,885,843	11,792,689
	<b>Supply-Demand</b>	<b>1,293,574</b>	<b>851,049</b>	<b>1,001,410</b>	<b>1,386,673</b>	<b>2,382,403</b>	<b>3,985,835</b>	<b>4,044,006</b>	<b>4,553,750</b>	<b>5,661,676</b>	<b>7,214,157</b>	<b>6,807,311</b>
Base	Hinterland traffic	4,906,426	5,620,424	6,325,809	7,136,552	7,988,960	8,922,952	9,998,283	11,124,223	12,421,954	13,777,482	15,260,208
	<b>Supply-Demand</b>	<b>1,293,574</b>	<b>779,576</b>	<b>674,191</b>	<b>813,448</b>	<b>1,561,040</b>	<b>2,877,048</b>	<b>2,551,717</b>	<b>2,675,777</b>	<b>3,278,046</b>	<b>4,322,518</b>	<b>3,339,792</b>
High	Hinterland traffic	4,906,426	5,691,897	6,483,090	7,397,442	8,371,557	9,448,873	10,695,833	12,018,855	13,551,698	15,174,224	16,965,470
	<b>Supply-Demand</b>	<b>1,293,574</b>	<b>708,103</b>	<b>516,910</b>	<b>552,558</b>	<b>1,178,443</b>	<b>2,351,127</b>	<b>1,854,167</b>	<b>1,781,145</b>	<b>2,148,302</b>	<b>2,925,776</b>	<b>1,634,530</b>

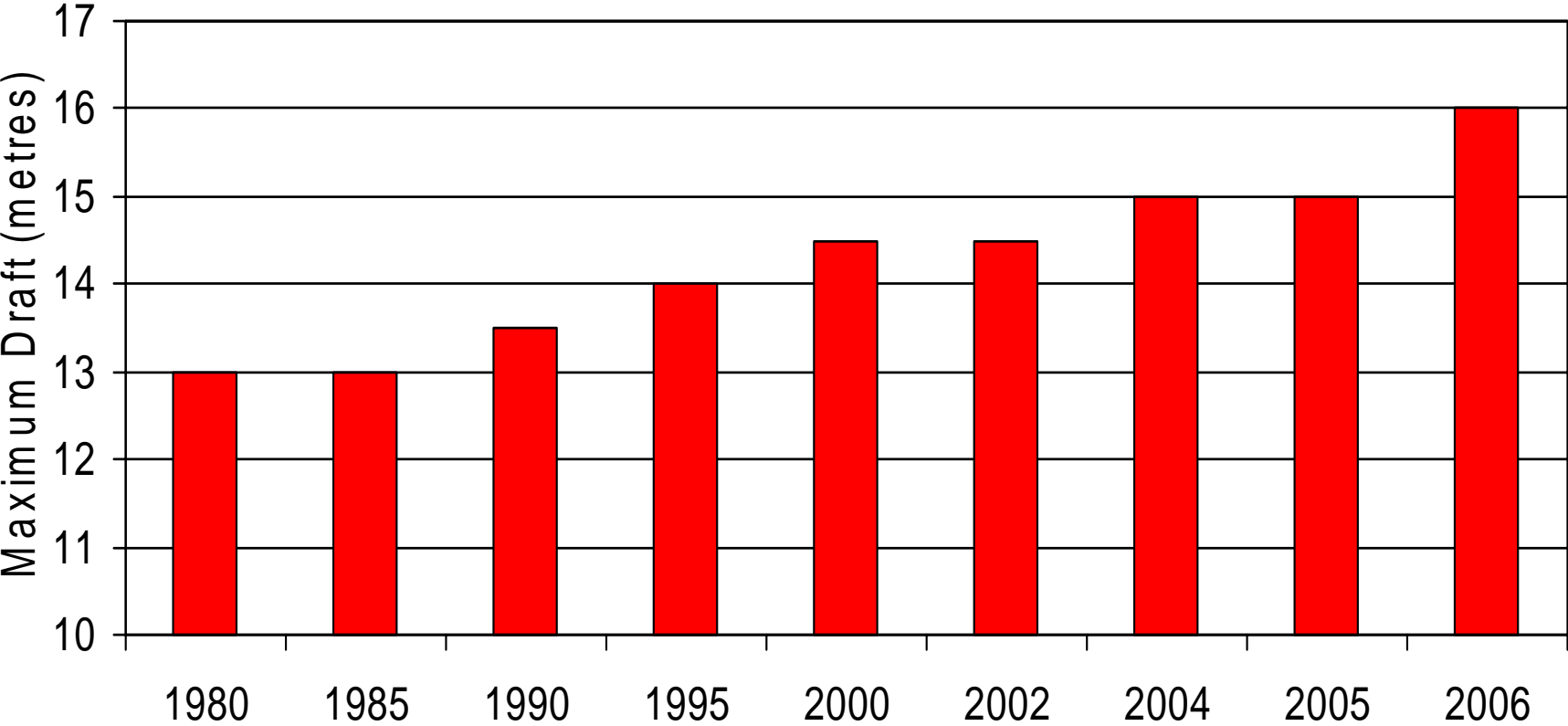
# Growth in containership size – maximum length



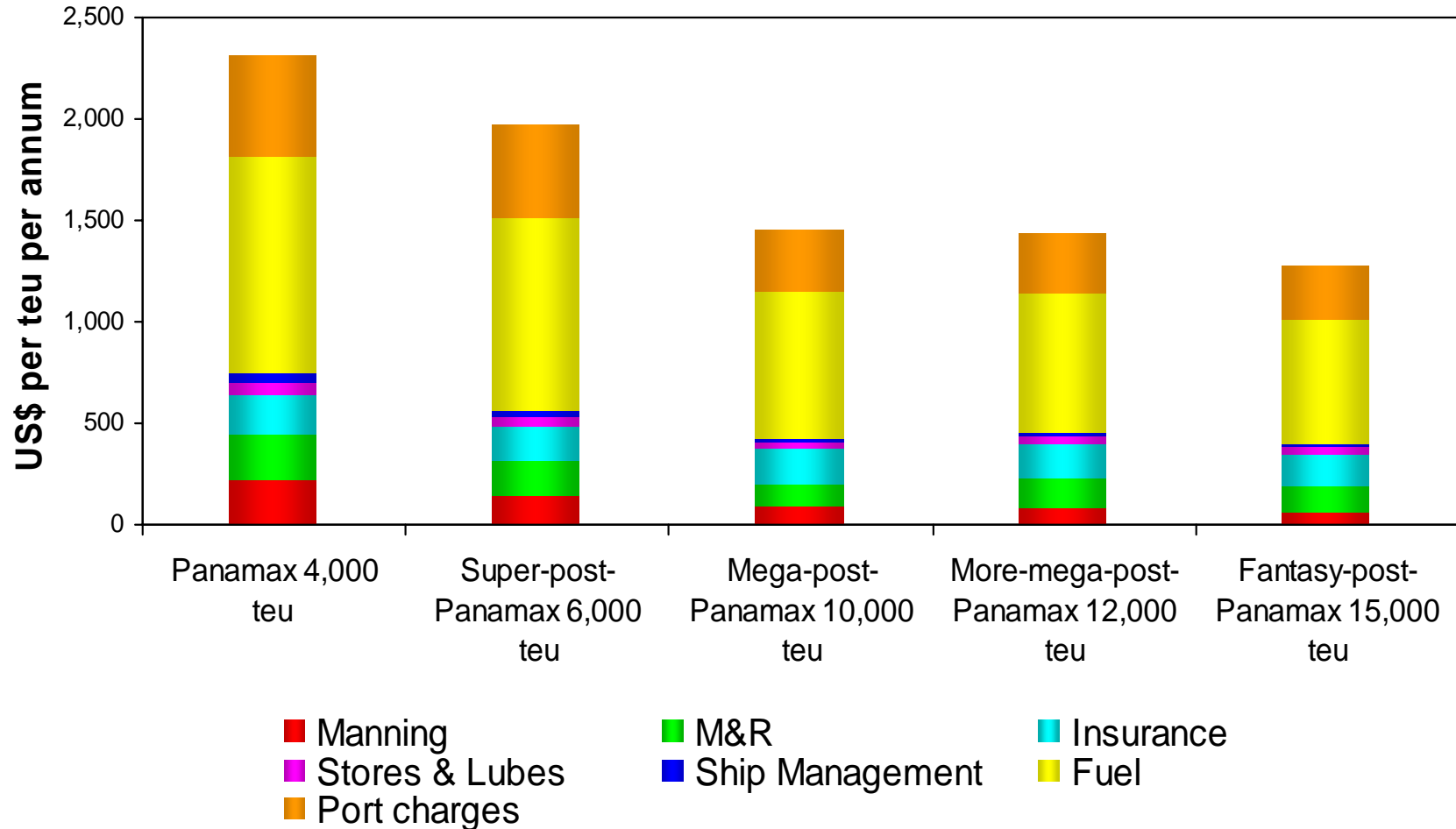
# Growth in containership size – maximum beam



# Growth in containership size – maximum draft



# Vessel economies of scale

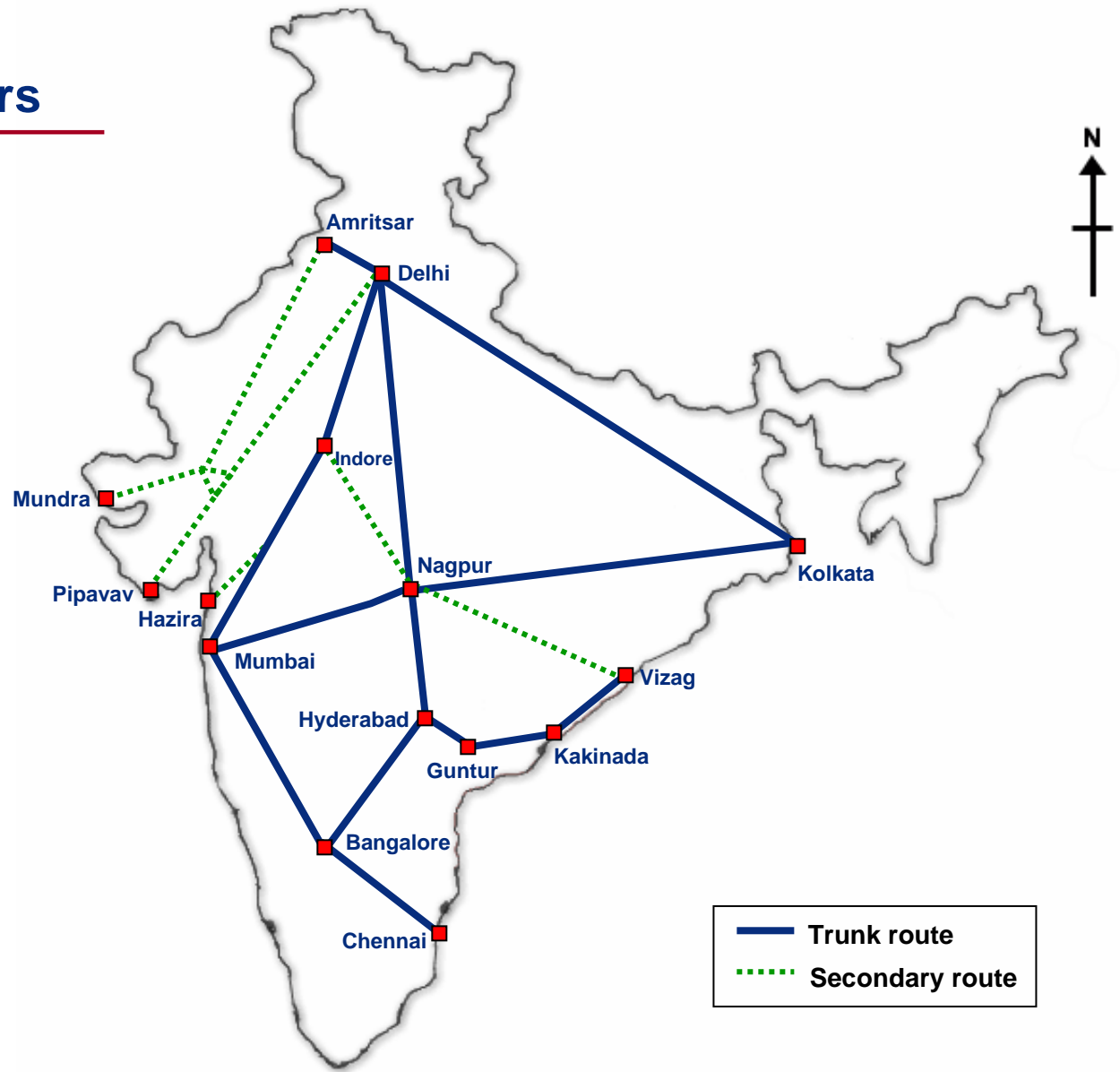


## Links to the hinterland - emerging opportunities

---

- ❑ Indian Railways in January 2006 invited expression of interest from firms that would be interested in operating private container trains.
- ❑ CFS and ICD operators, along with port companies and shipping lines are considering to enter into train operations for transporting containers.
- ❑ All the players will be required to build connecting infrastructure and develop or ally with ICDs having sufficient traffic to form train loads.
- ❑ Building of infrastructure and traffic availability will be the principal attributes which will determine future competitors of CONCOR.

# Major transport corridors



## Conclusions

- ❑ **Port and hinterland infrastructure a key enabler for economic growth**
- ❑ **Rapid growth in container volumes in prospect**
- ❑ **Infrastructure challenge is understood and being grasped, growing private sector role**
- ❑ **No time to lose – action this day**