Regional Cooperation for Resolving the "Asian Premium"

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1. Introduction

- The phenomenon and 1986 as main reason of the Asian premium in historical Crude oil pricing system
- The international economic influence scale (10 billion dollars yearly) in Asia caused by the Asian premium

2. Factors behind the Asian premium

2-1. Crude oil prices and netback values

- Prices of crude oil and petroleum products in the international oil market in Singapore, Northwestern Europe and the U.S. Gulf

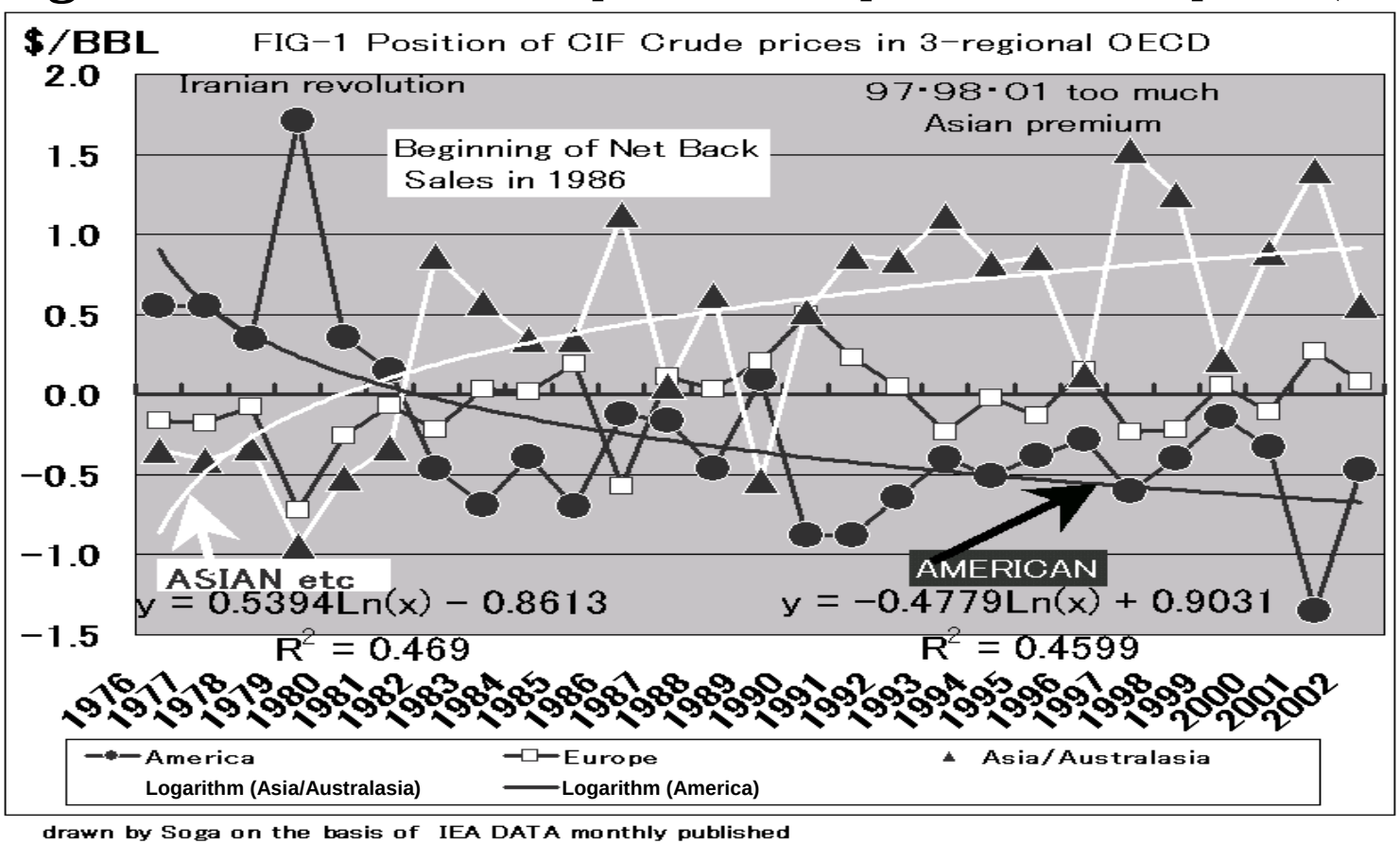
2-2. The Asian premium and petroleum product prices

3. Tasks for reducing the Asian premium, and measures for their achievement (Main Dish)

4. Tasks for the future

IEA data let us know there is the lowest crude price in Asia(CIF) in the world until 1982, maybe by the ship handling power.

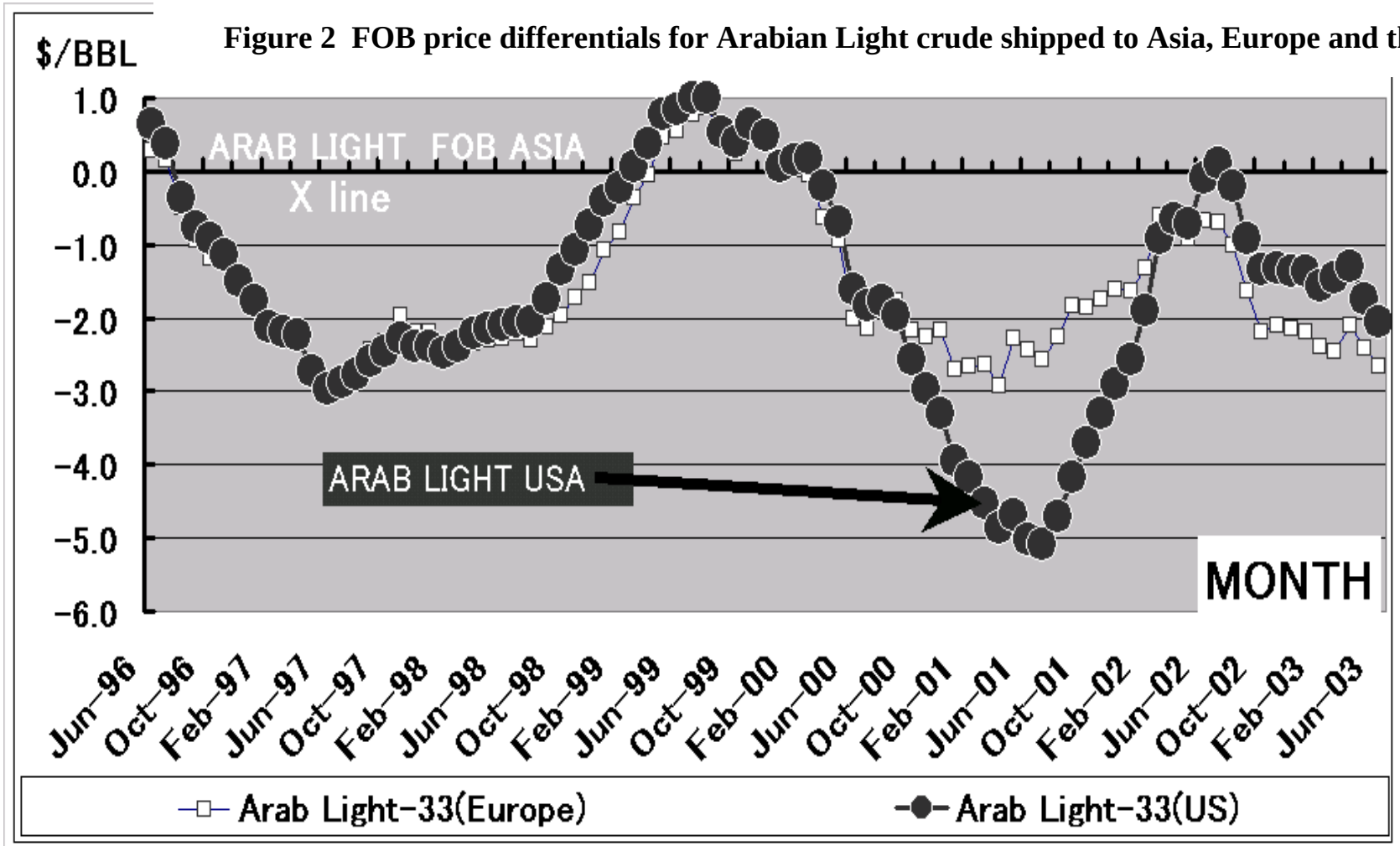
Figure 1 International comparison of imported crude oil prices (CIF)



Now again, the Asian equilibrium crude price must be hoped in Asian world with business including the ship handling power.

'New crude oil pricing decided by oil products market from 1986' had to begin to press the new business model in the refining industry.

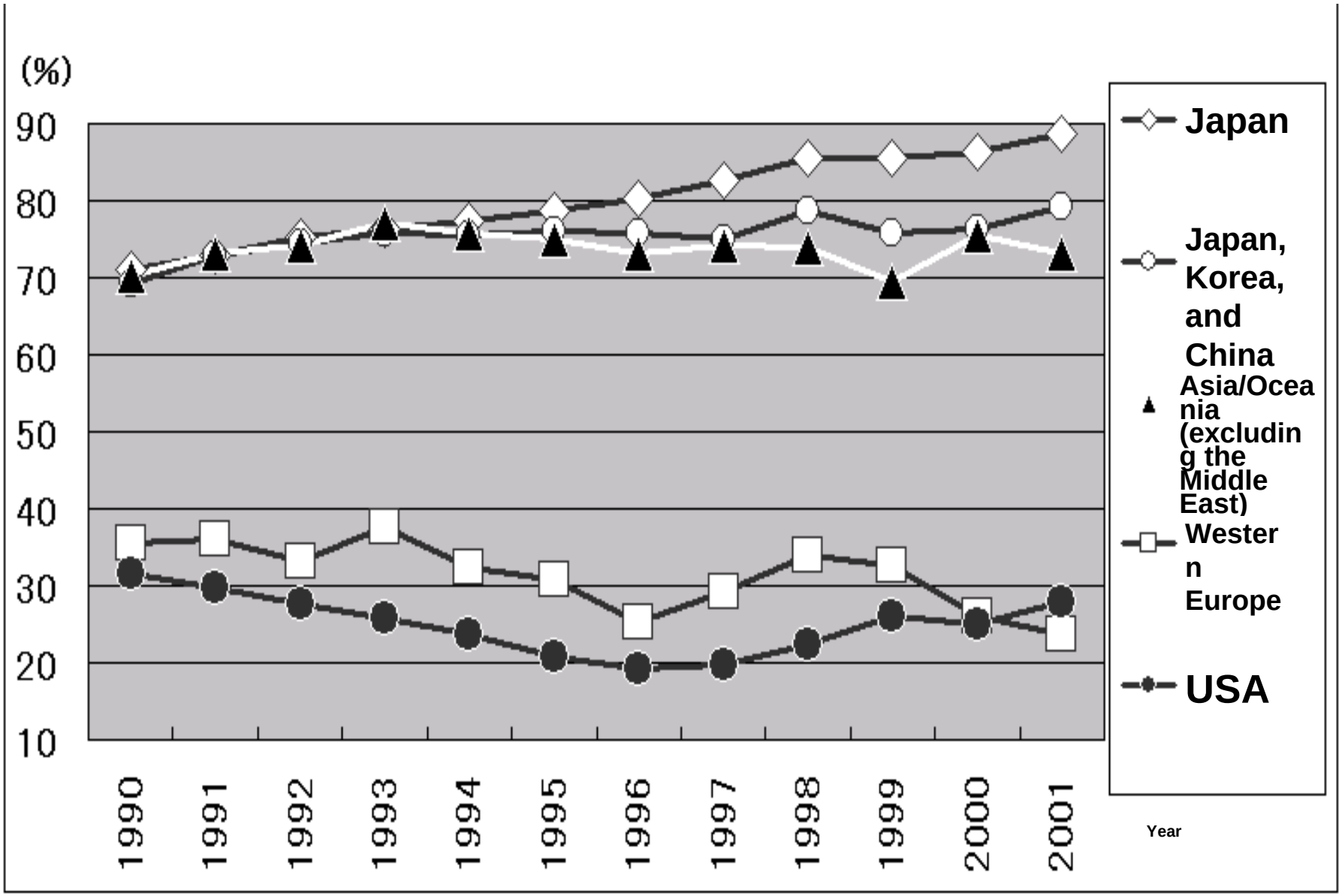
Figure 2 FOB price differentials for Arabian Light crude shipped to Asia, Europe and the U.S.



drawn by Soga on the basis of PIW weekly published

Now the refining industry in East Asia has the big chance to wake up to follow the West business model with more profit.

Figure 3 Degree of dependency on Middle Eastern crude oil in crude oil import by selected countries/regions



Added Figure) Degree of dependency on Main countries in crude oil import by Asia/Oceania (excluding the Middle East)

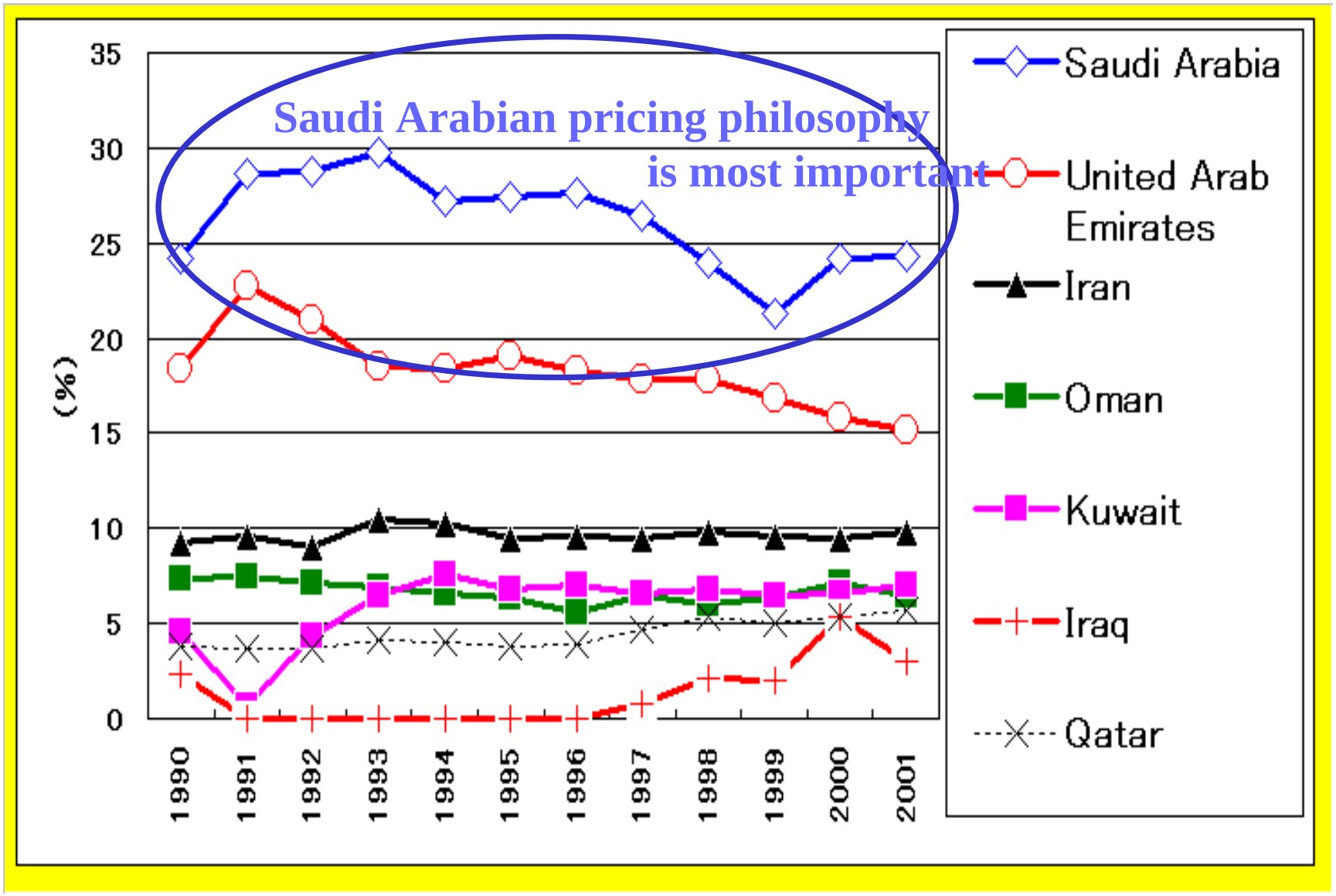
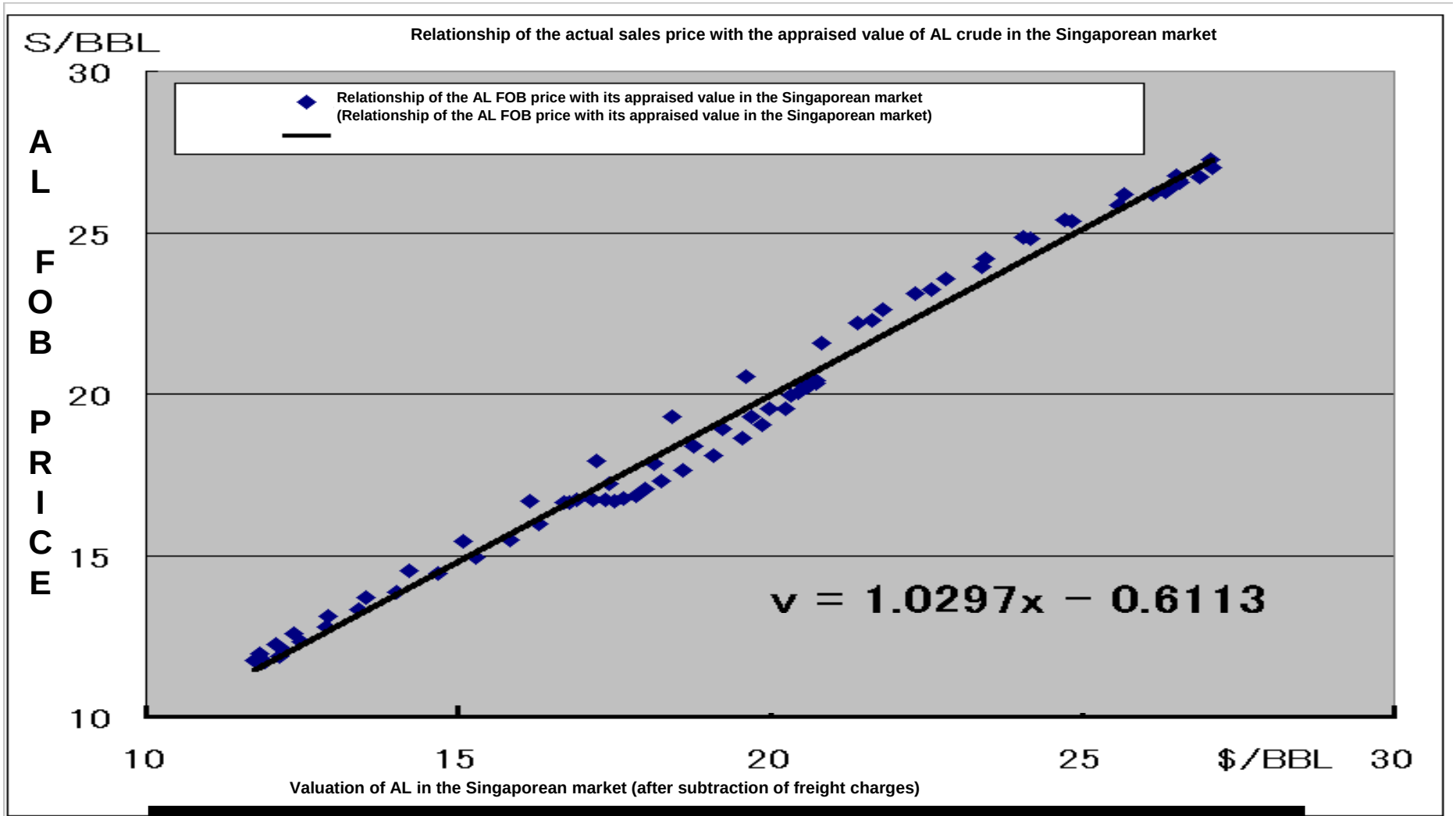


Figure 4 Relationship between appraised value of Arabian Light crude oil in the Singaporean market and the AL crude FOB price (January 1995 - March 2002)



Net Back Value (Market Value-Freight cost)

Figure 5 Relationship between appraised value of Brent crude oil in the Northwestern European market and the Brent crude FOB sales price (January 1995 - March 2002)

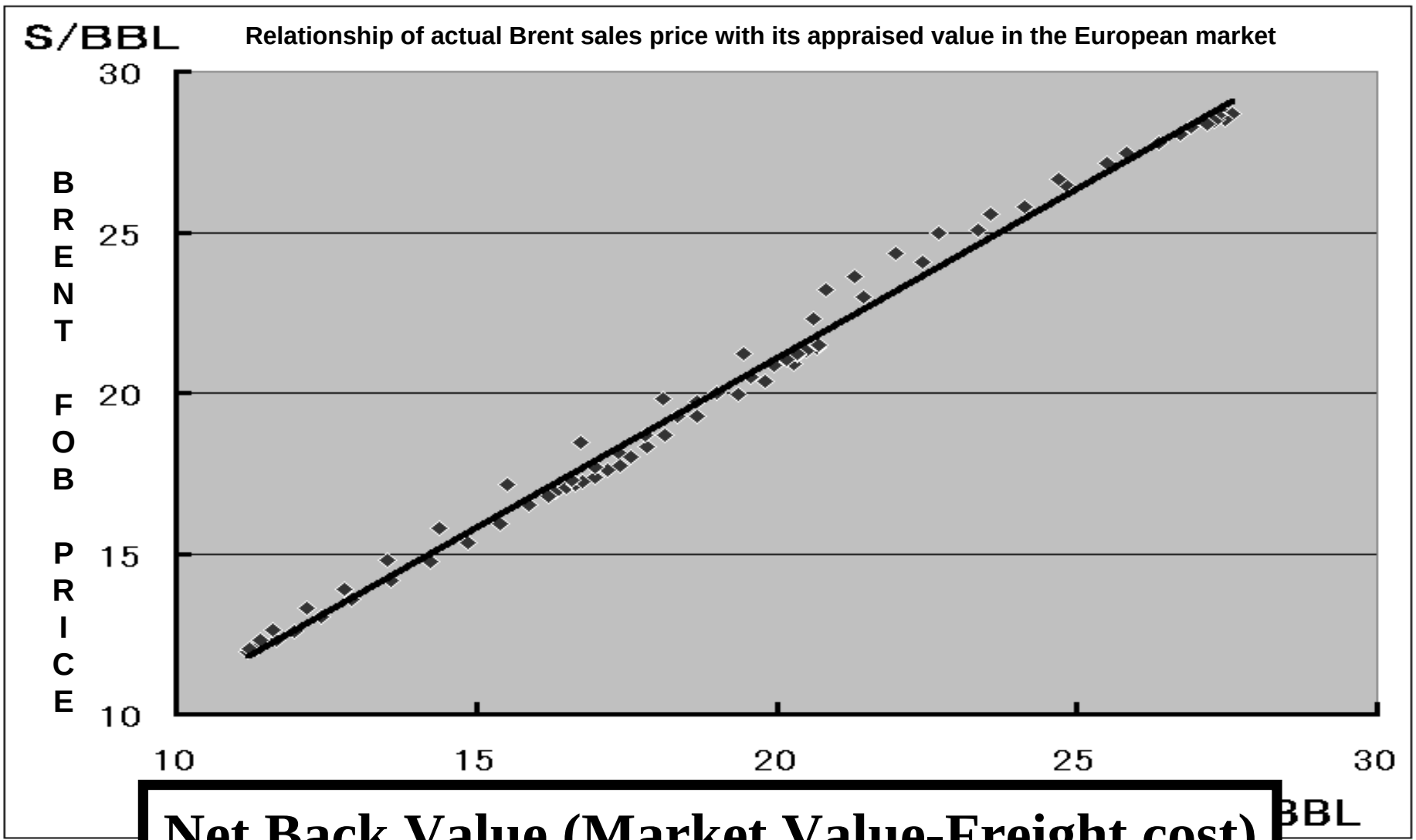
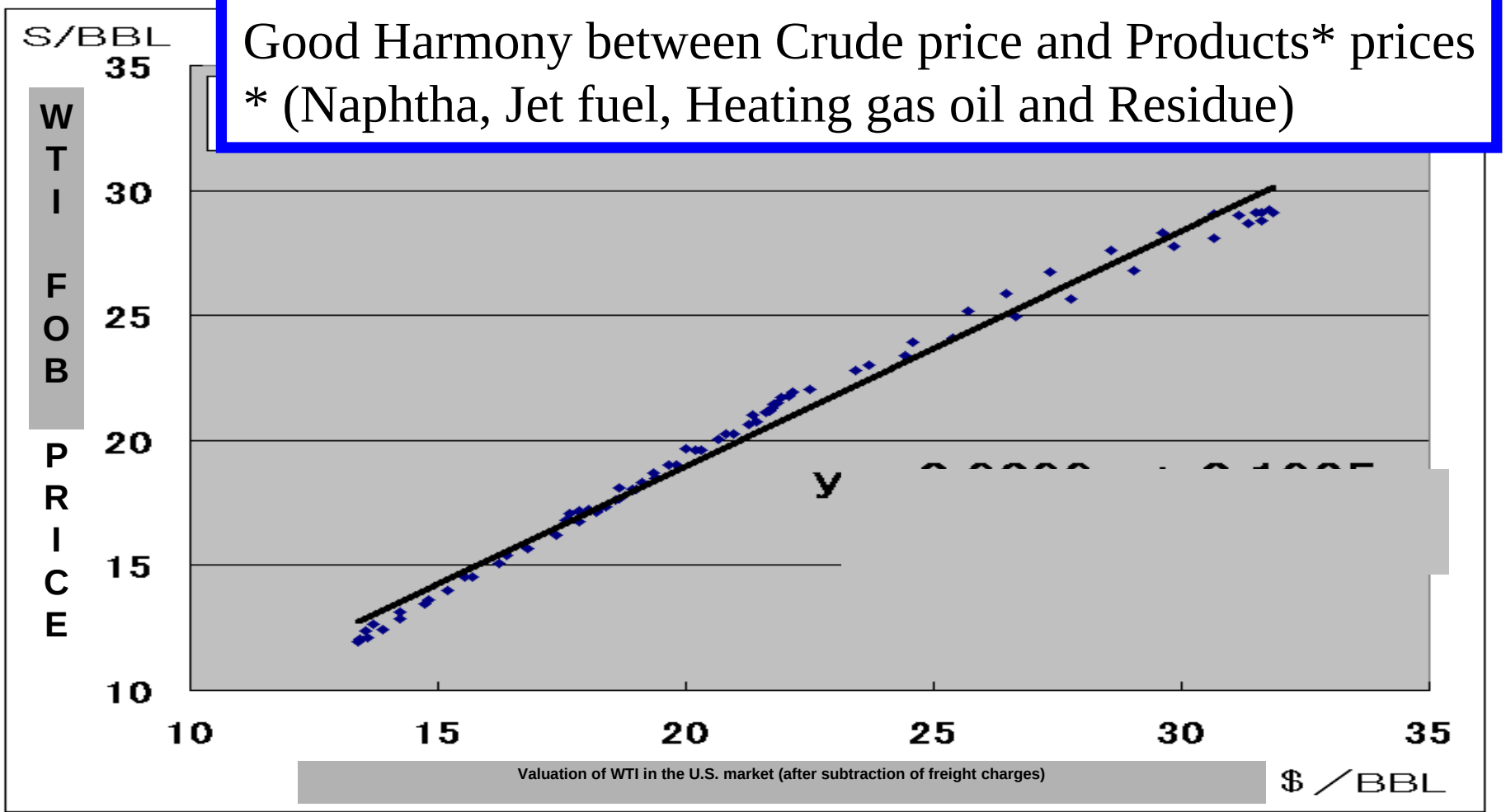


Figure 6 Relationship between appraised value of WTI crude in the US Gulf market and the WTI crude FOB sales price (January 1995 - March 2002)

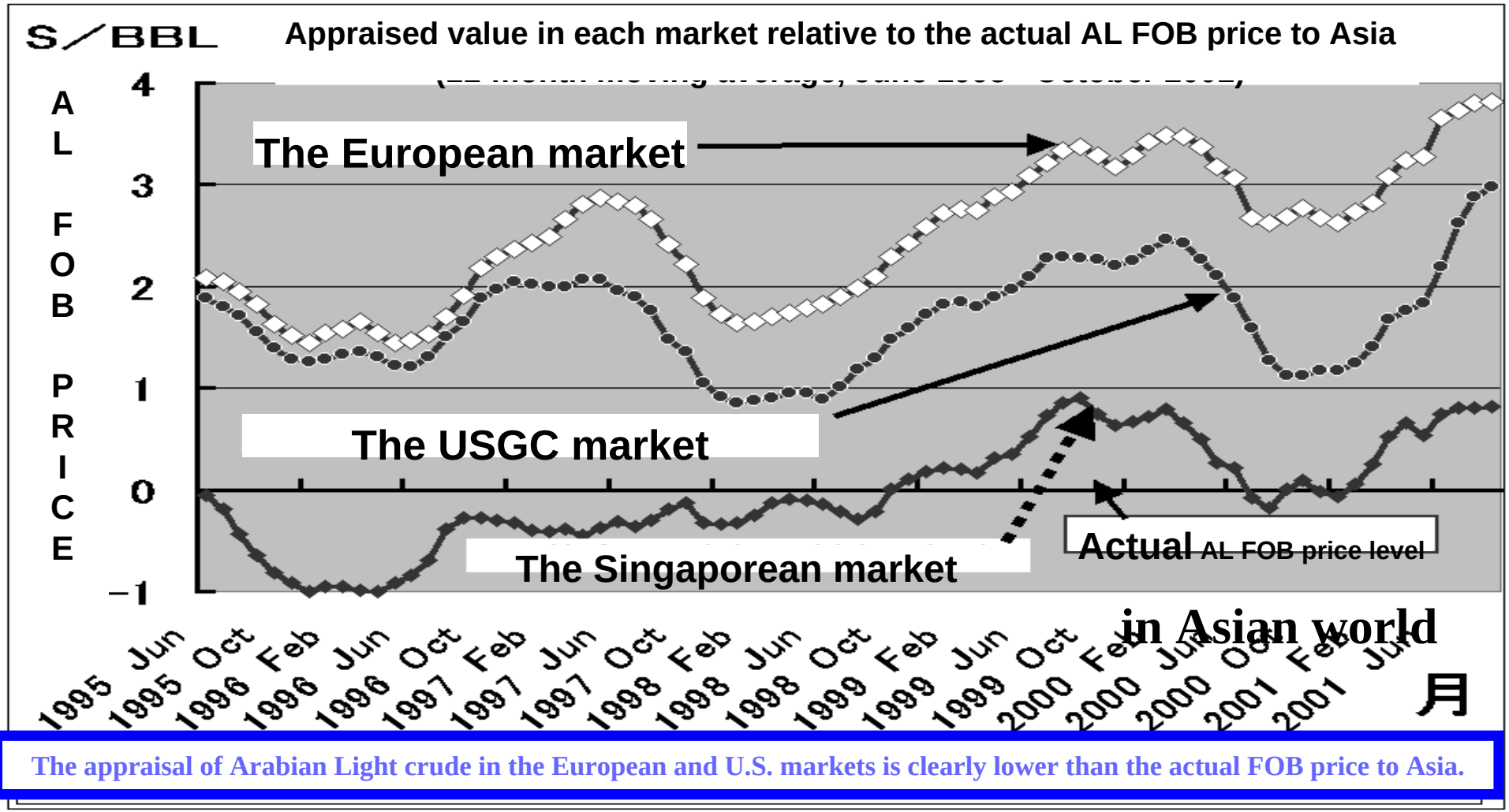
Good Harmony between Crude price and Products* prices
* (Naphtha, Jet fuel, Heating gas oil and Residue)



WTI prices on th

Net Back Value (Market Value-Freight cost)

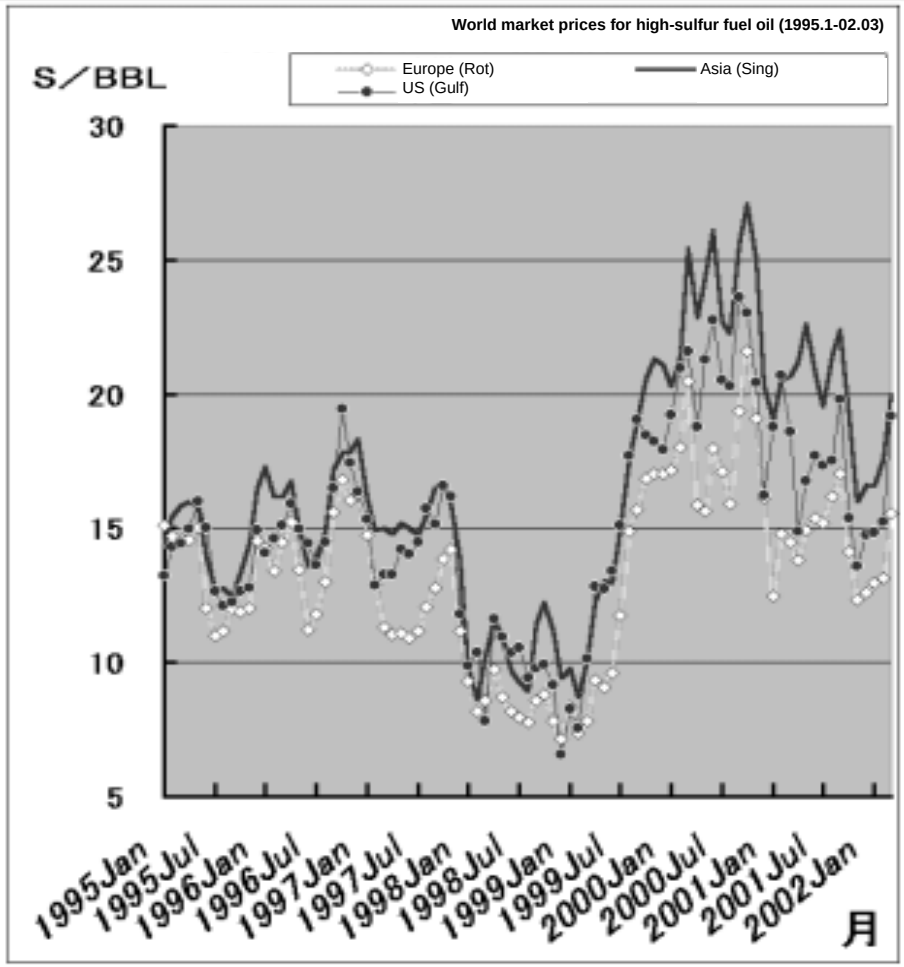
Figure 7 Status as regards excessively high appraisal values for Arabian Light (FOB basis) relative to real price levels in the world's three major petroleum markets

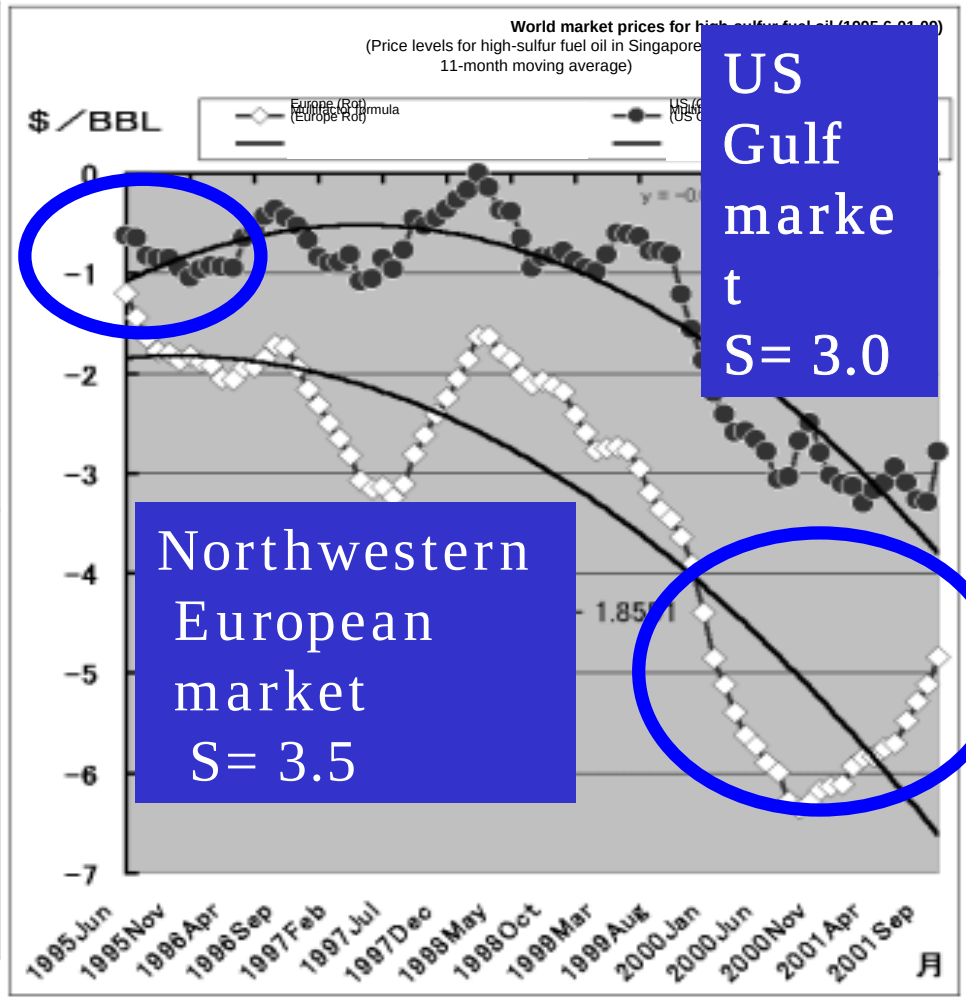


The appraisal of Arabian Light crude in the European and U.S. markets is clearly lower than the actual FOB price to Asia.

Prices for high-sulfur fuel oil in the Singaporean market have been sharply rising relative to those in the European and US markets; they were about $1/BBL higher, and have since become about $4-5/BBL higher.

Figure 8 World market prices for high-sulfur fuel oil (1995.1-02.03)



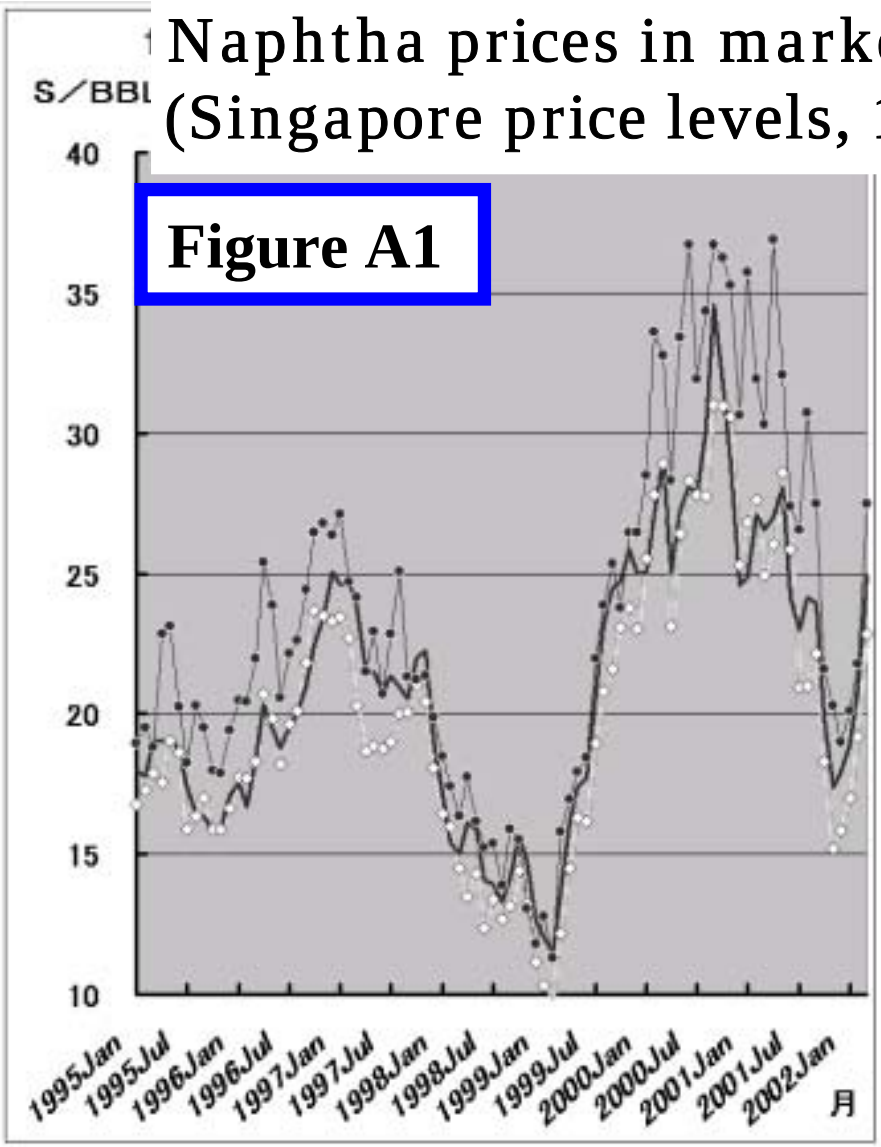


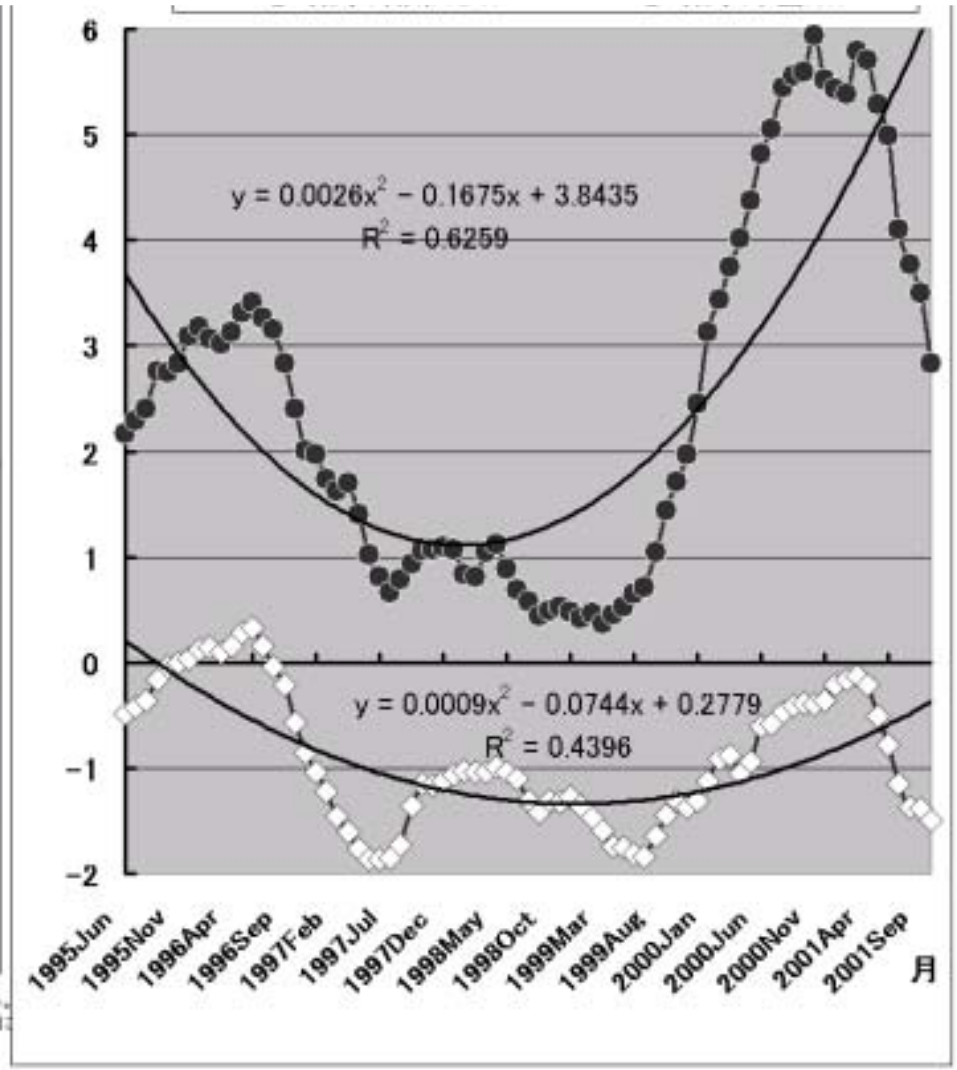
Prices for high-sulfur fuel oil in the Singaporean market have been sharply rising relative to those in the European and US markets; they were about $1/BBL higher, and have since become about $4/BBL higher.

Naphtha price in Singapore is not so high in the world.

Naphtha prices in markets of the world (1995.01-02.03)
(Singapore price levels, 11-month moving average)

Figure A1



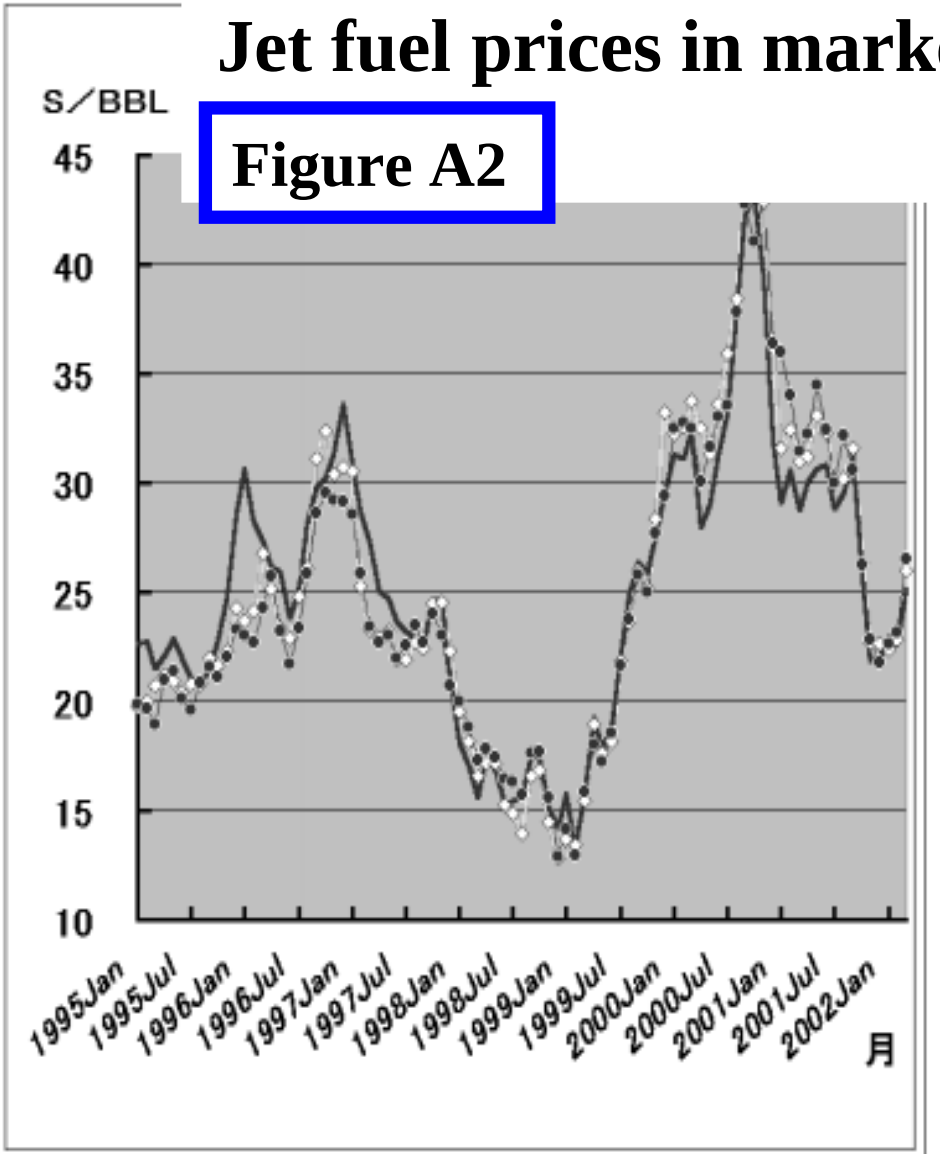


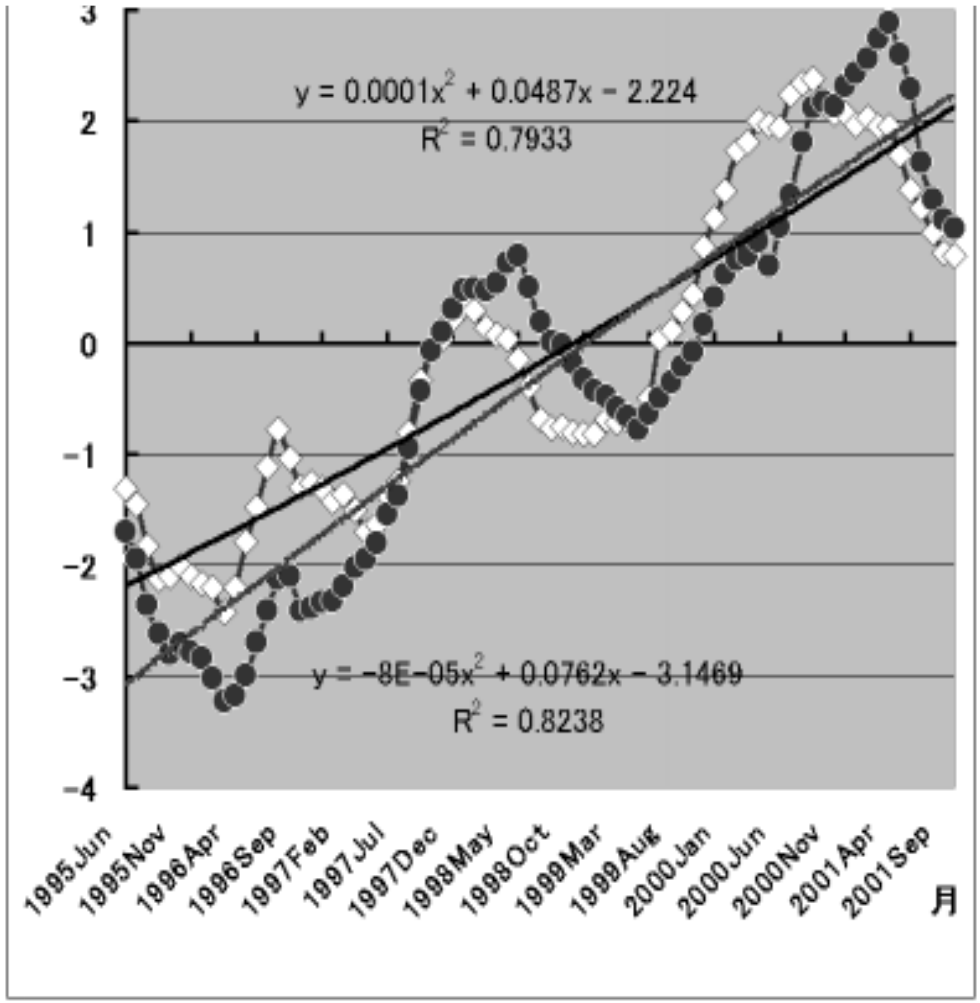
シンガポール市場のナフサ価格は欧州市場価格に対して1$/BBL程度高い水準で安定しているように見える。米国に対しては2$/BBL程度低い水準にあったが米国の天然ガス高騰の余波を受け2000年から2001年にかけて相対的に大幅な低水準となった。

Jet fuel price in Singapore is not so high in the world.

Jet fuel prices in markets of the world (1995.01-02.03)

Figure A2



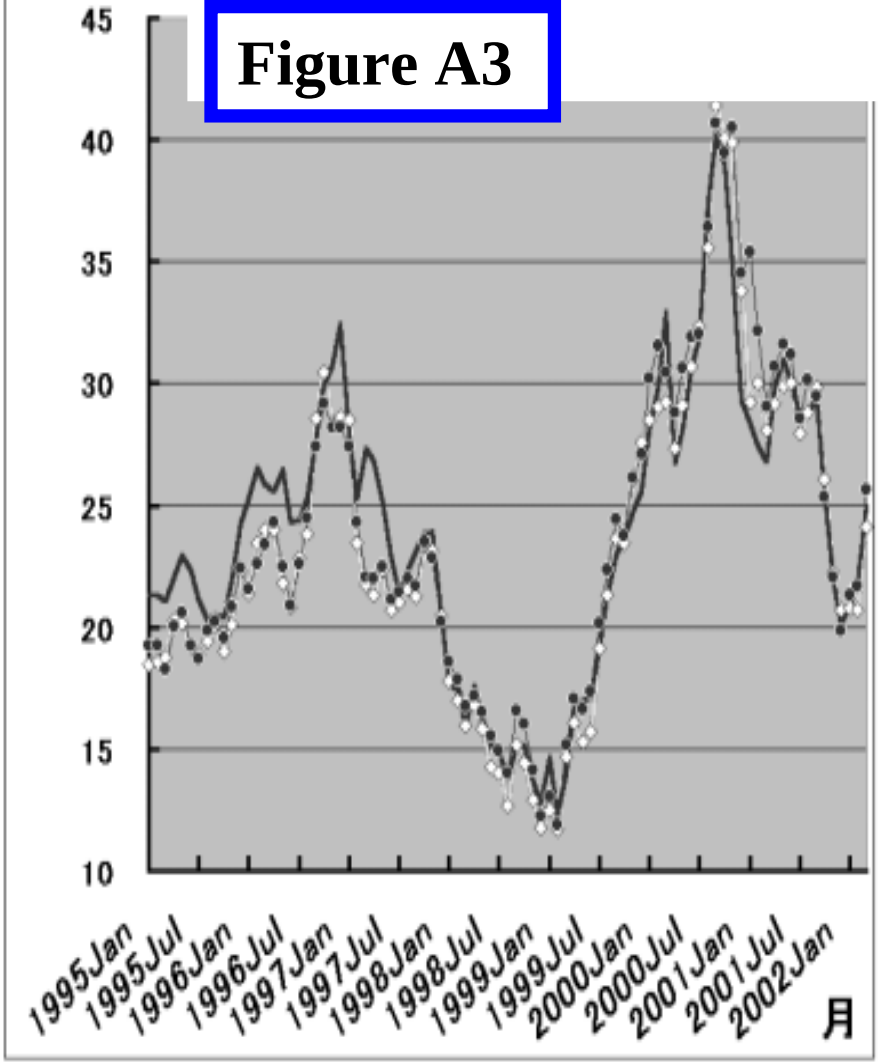


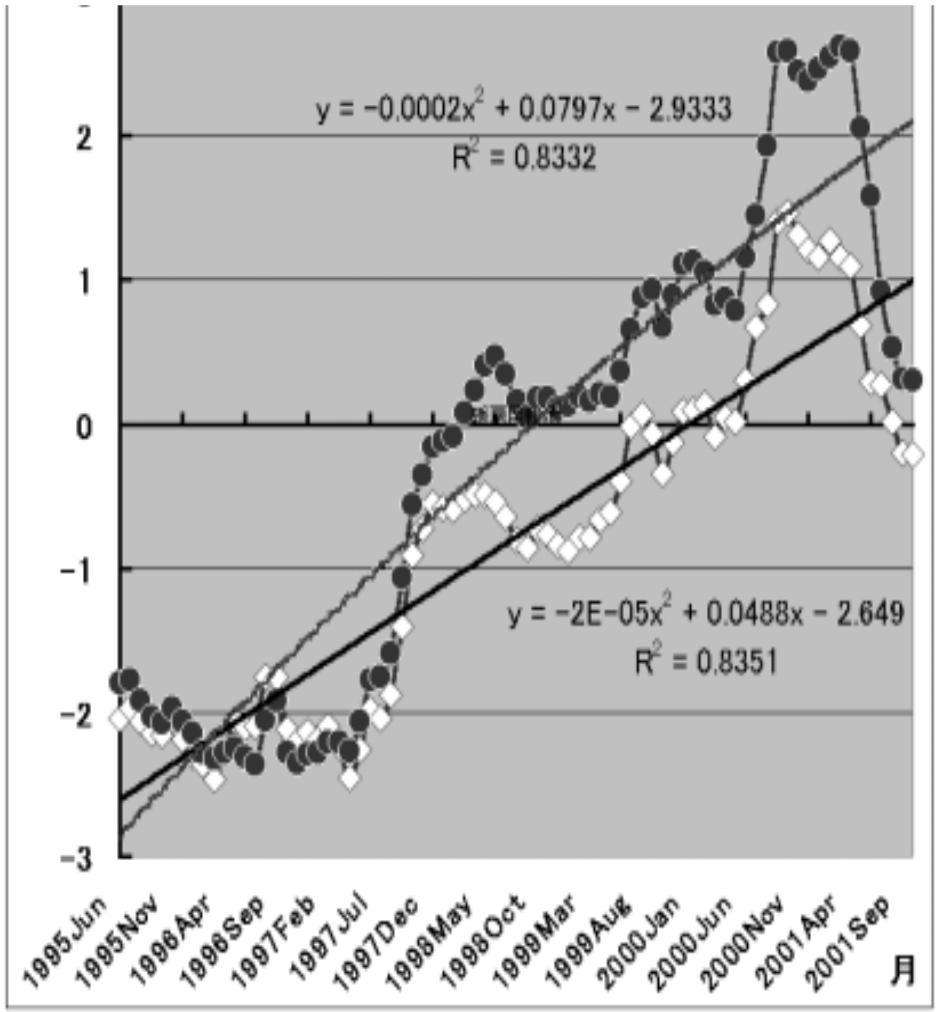
Prices for jet fuel in the Singaporean market exhibit considerable fluctuation relative to those in the European and US markets; they dropped from a level about $3/BBL higher to one about $2/BBL lower.

Heater-use gas oil price in Singapore is not so high in the world.

Heater-use gas oil prices in markets of the world (1995.01-02.03)

Figure A3



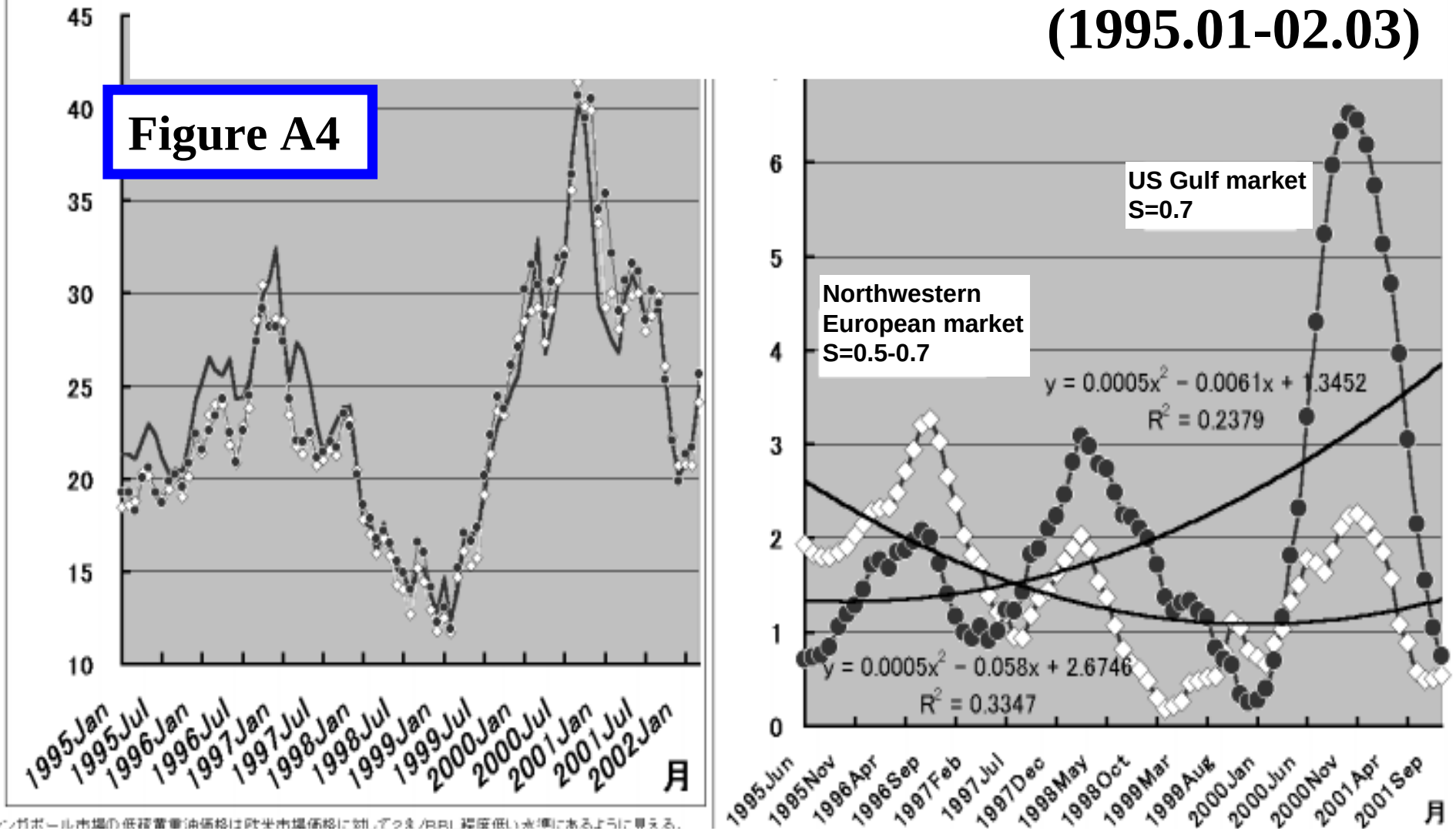


シンガポール市場の暖房用軽油価格は欧米市場価格に対して2$/BBL程度高い水準から1$/BBL程度低い水準へと相対的に下落しつつあるように見える。

Low-sulfur fuel oil price in Singapore is not so high in the world.

World market prices for Low-sulfur fuel oil (1995.01-02.03)

Figure A4



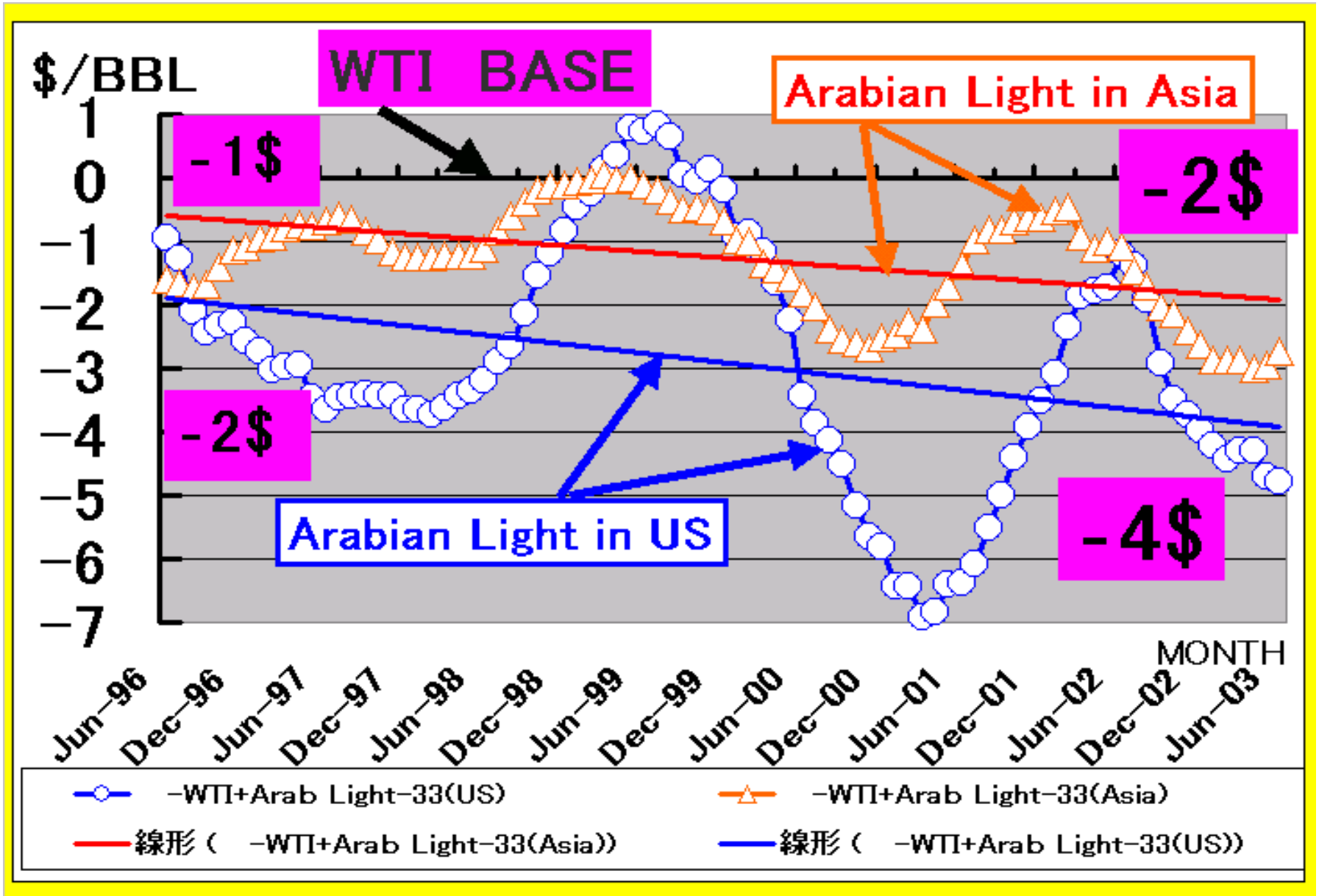
Prices for low-sulfur fuel oil in the Singaporean market appear to be about $2/BBL lower than those in the European and US markets. The jump in the prices in the US market in 2000 is due to disruption involving natural gas and other factors.

Various oil fractions share as Evaluation Factors

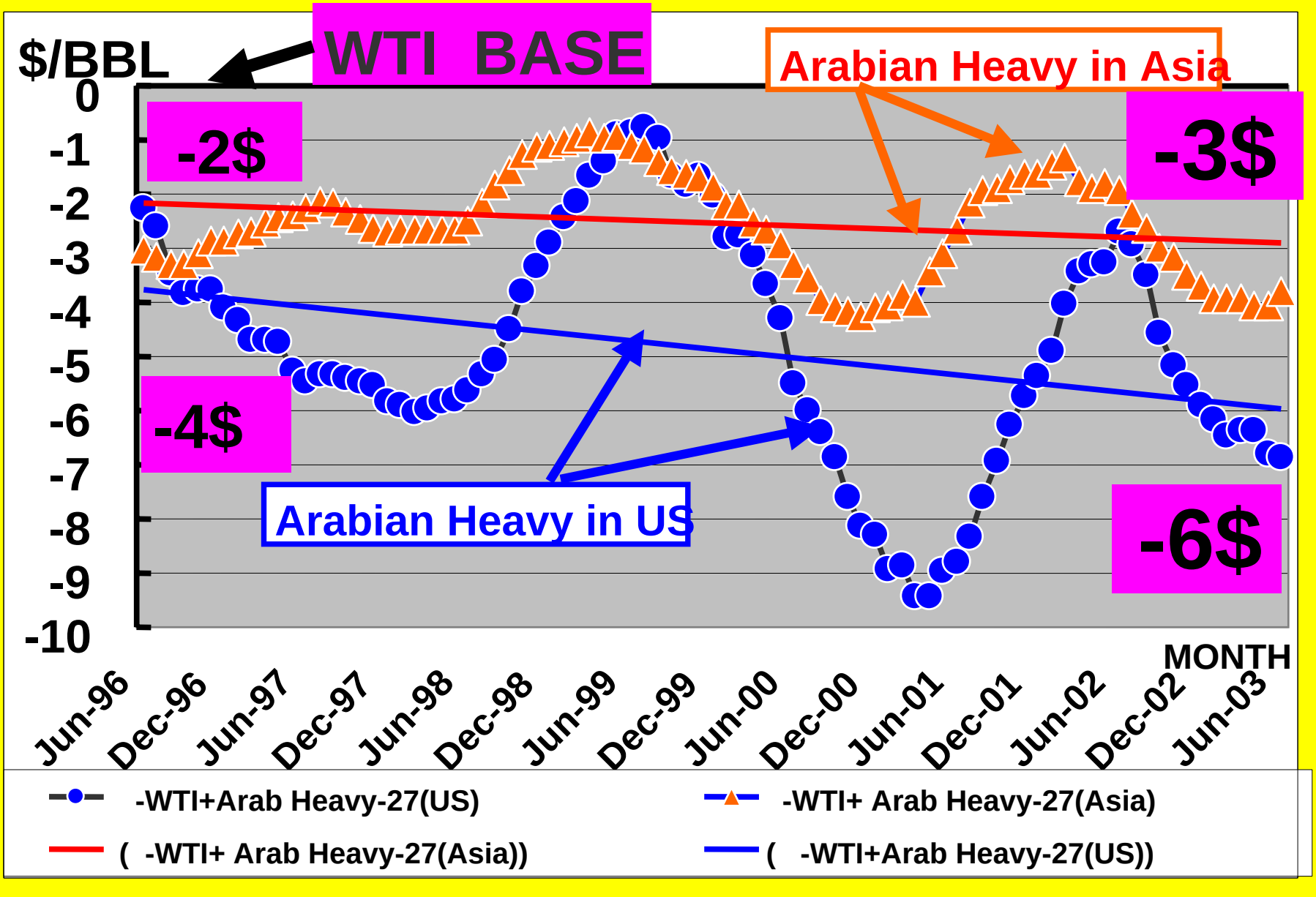
Table A1

Oil fractions	Estimated yield rates in crude cracking % with TP & VC			Note
	AL	BRENT	WTI	
NAPHTHA	19.4	25.4	29.3	VGO is the fraction theoretically obtainable in vacuum distillation within the temperature range of 343 - 549°C. Ultralow-sulfur VGO serves as feedstock for production of gasoline, kerosene, and lubricating oil, and has a high valuation.
JET/KEROSENE	18.5	22.4	19.3	
Heating GAS OIL	20.7	13.8	18.4	
Ultra-Low Sulfur VGO	0.0	23.7	20.1	
Low-Sulfur FUEL	0.0	10.6	8.9	
High-Sulfur FUEL	37.4	0.0	0.0	
TOTAL	96.0	95.9	96.0	

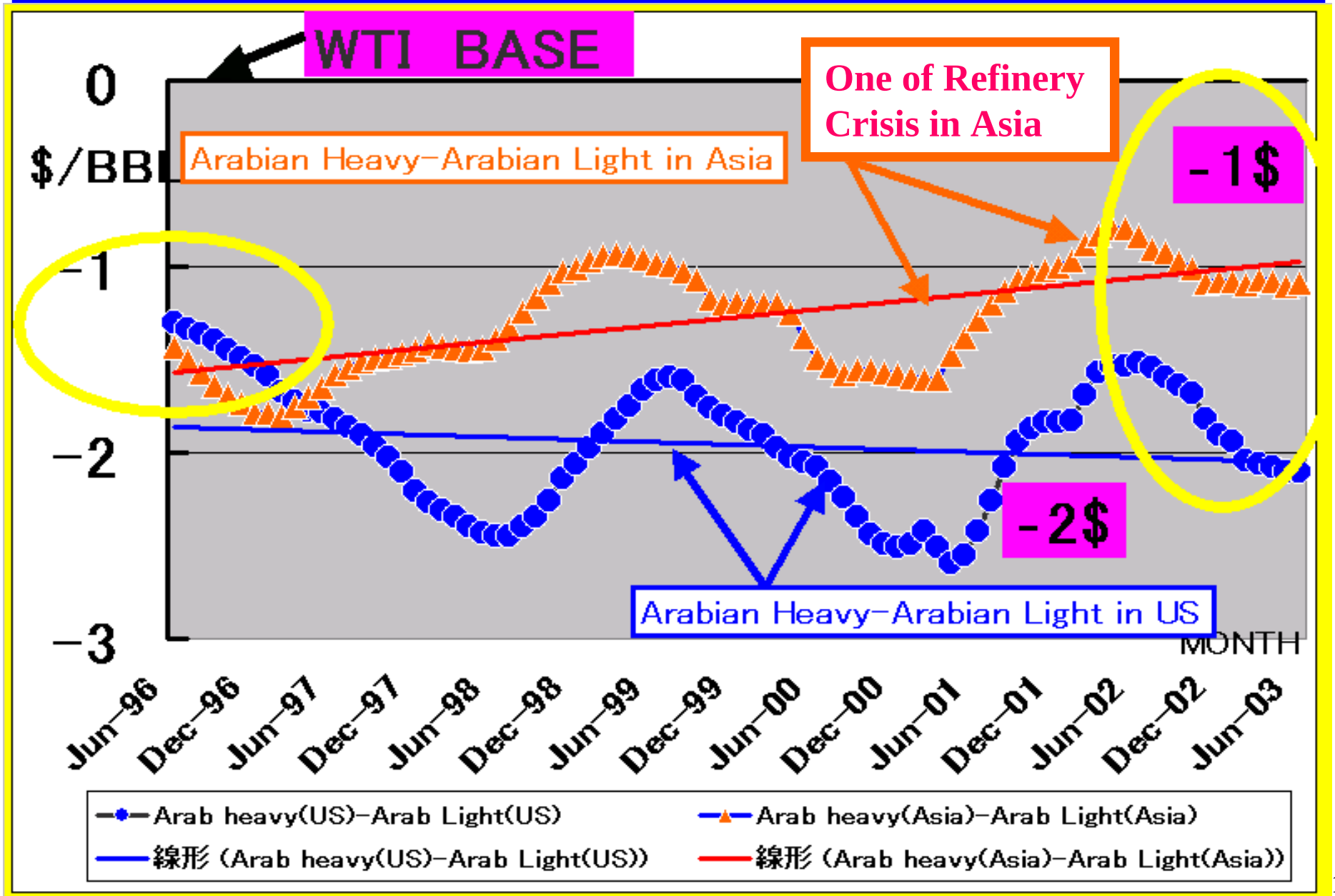
Added Figure: The AL price differential between US & Asia



Added Figure: The AH price differential between US & Asia



Added Figure: The differential between AL&AH



3. Tasks for reducing the Asian premium, and measures for their achievement

3-1. Tasks for reducing the Asian premium

- The demand for fuel oil in the Singaporean market, is about 0.4 MM Bbl/day. About 80 % of this total was occupied by bunker fuel for diesel engines on ships.
  Prices for bunker fuel consequently have a big influence on the determination of price levels for Middle Eastern crude shipments to Asia and are a major factor behind the relative rise in these levels recently.
- Prices for bunker fuel in Singapore also determine the level of prices for fuel oil burned in Asian factories.

Bunker- C fuel oil in Singapore should be supplied more to relax the price in Singapore.

3. Tasks for reducing the Asian premium, and measures for their achievement

3-2. Measures for achievement

The following three measures are thought to be workable options that could be taken by the East Asian oil refining industries to reduce the Asian premium.

(1)Reform of the market structure (some Billion$/Year)

Powerful refineries can supply products for transportation more including Bunker-C fuel. The power is generated by the own market in KCJ.

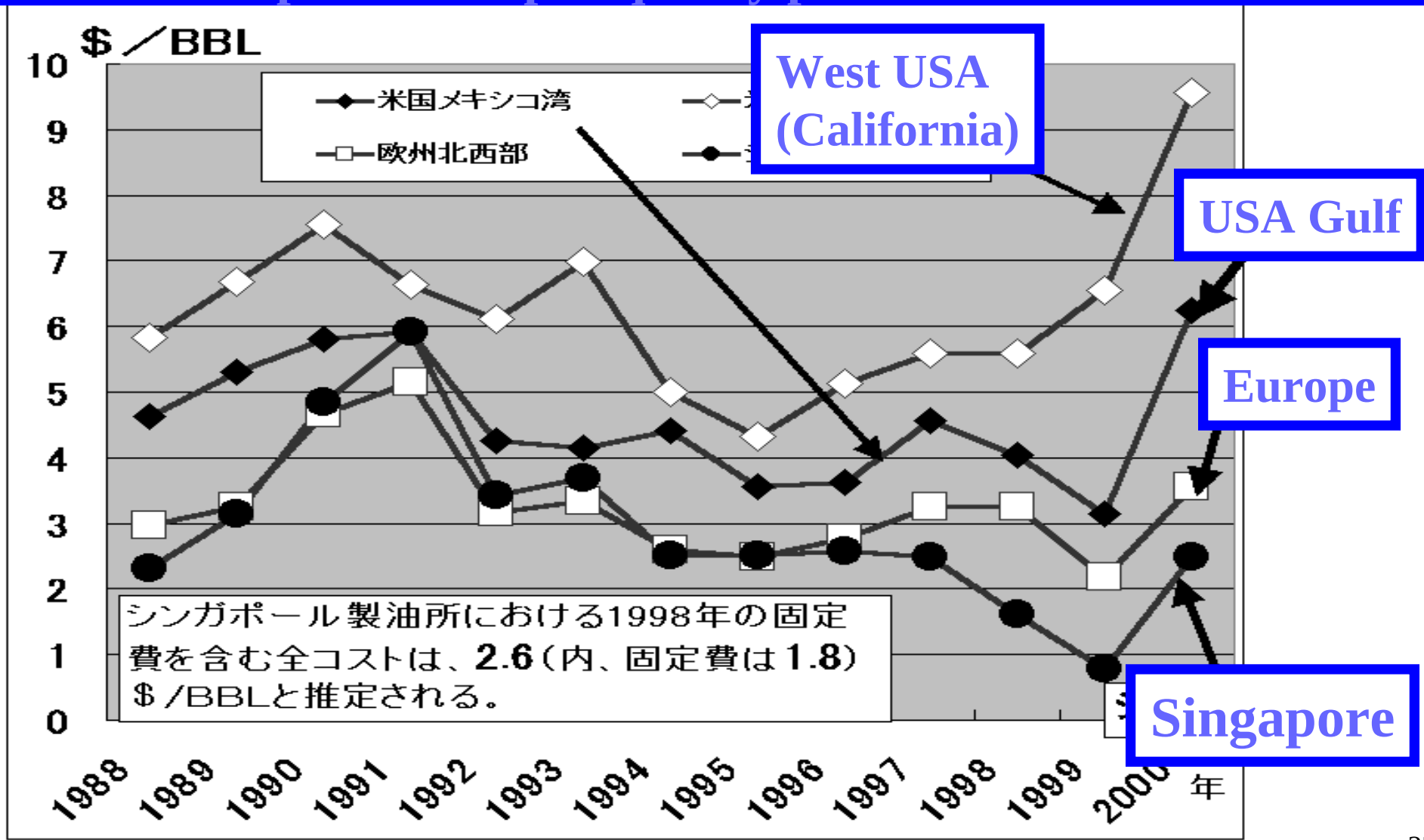
(Arriving at Main Dish)

(2)Promotion of oil trade within the Asian region

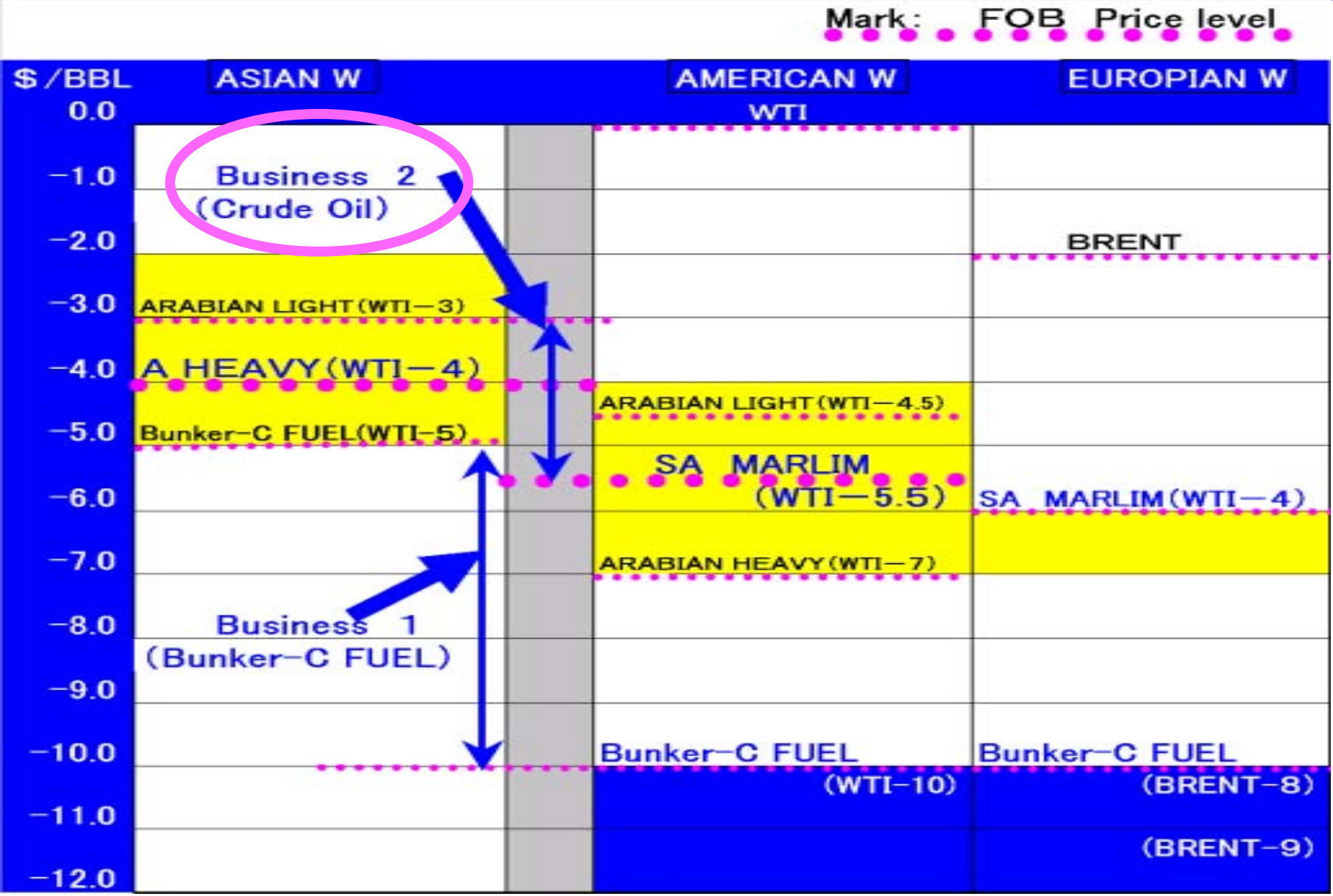
(3) Promotion of purchase of non-Middle-Eastern, heavy crude

(1) Reform of the market structure

Refinery margin depends on the market with more profit of super-quality products.



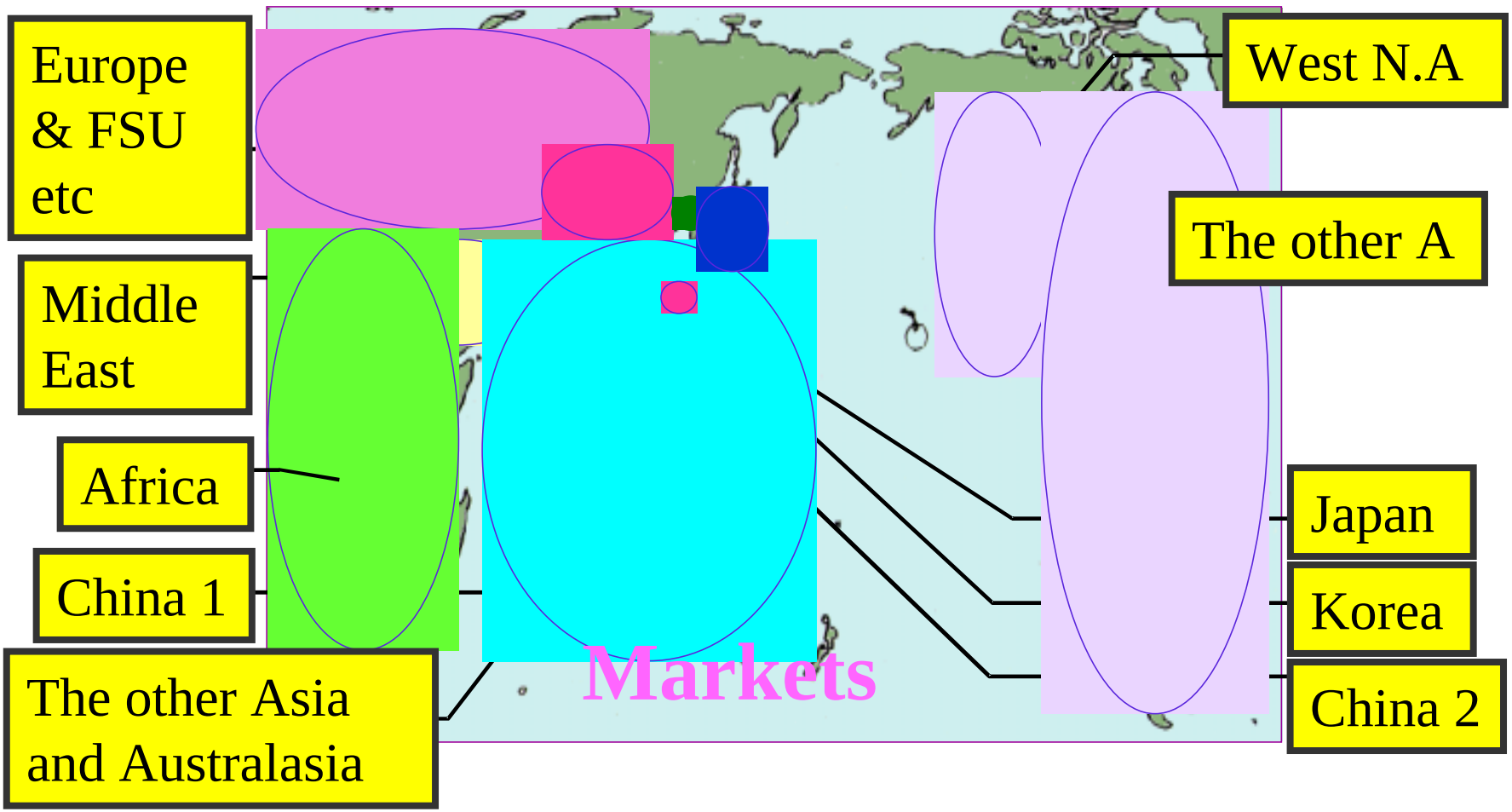
(2&3)Business 1 &2 can reduce the Asian crude premium.



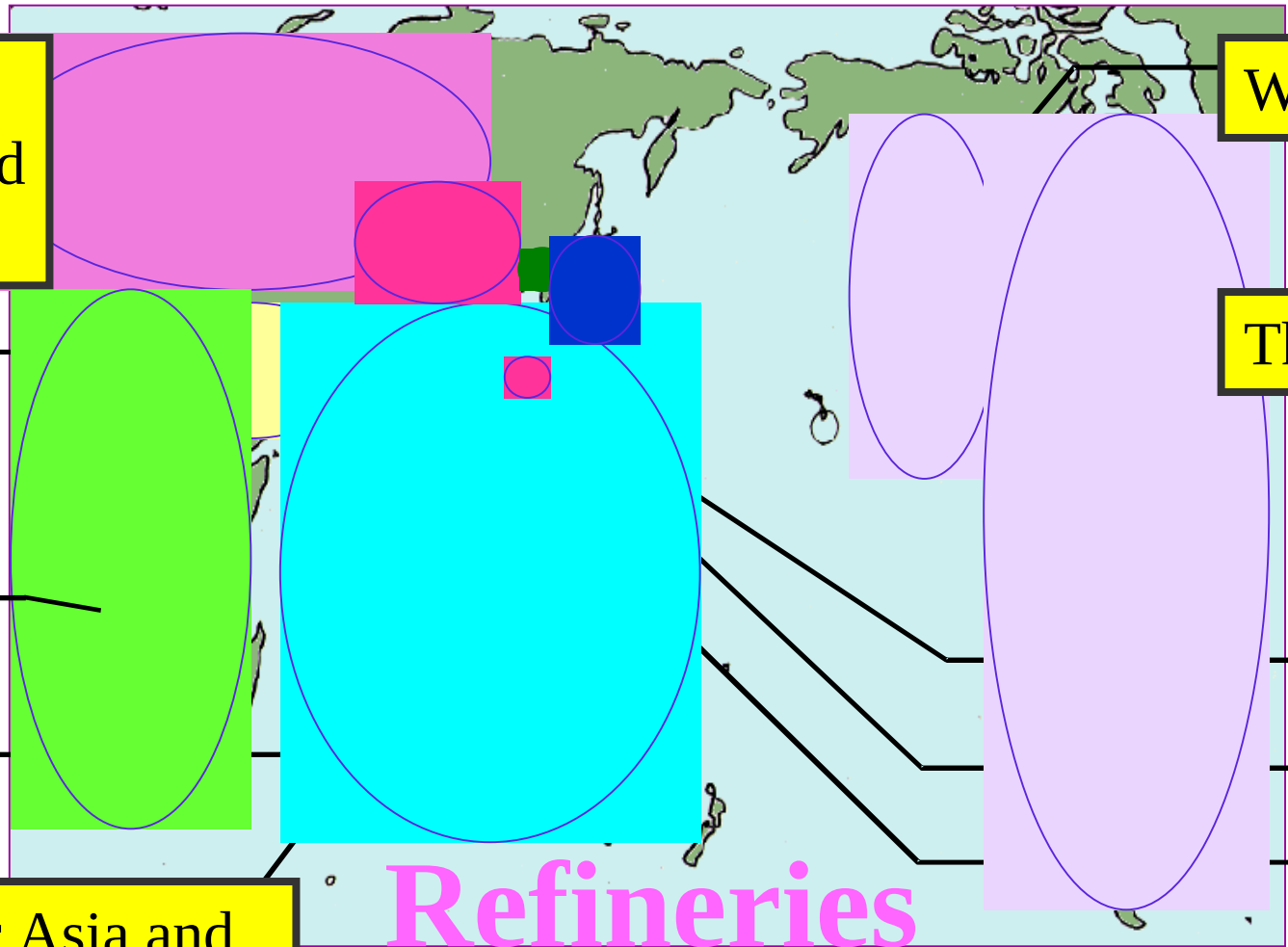
Consideration of Business 1 & 2 with the LP model including worldwide 9-refinerys, 10-markets and logistics system

1. 2001 WORK Presentation

LP refinery & logistics model structure --- 10 market



Consideration of Business 1 & 2 with the LP model including worldwide 9-refineries, 10-markets and logistics system



Europe , Africa and FSU etc

Middle East

Africa

China 1

The other Asia and Australasia

West N.A

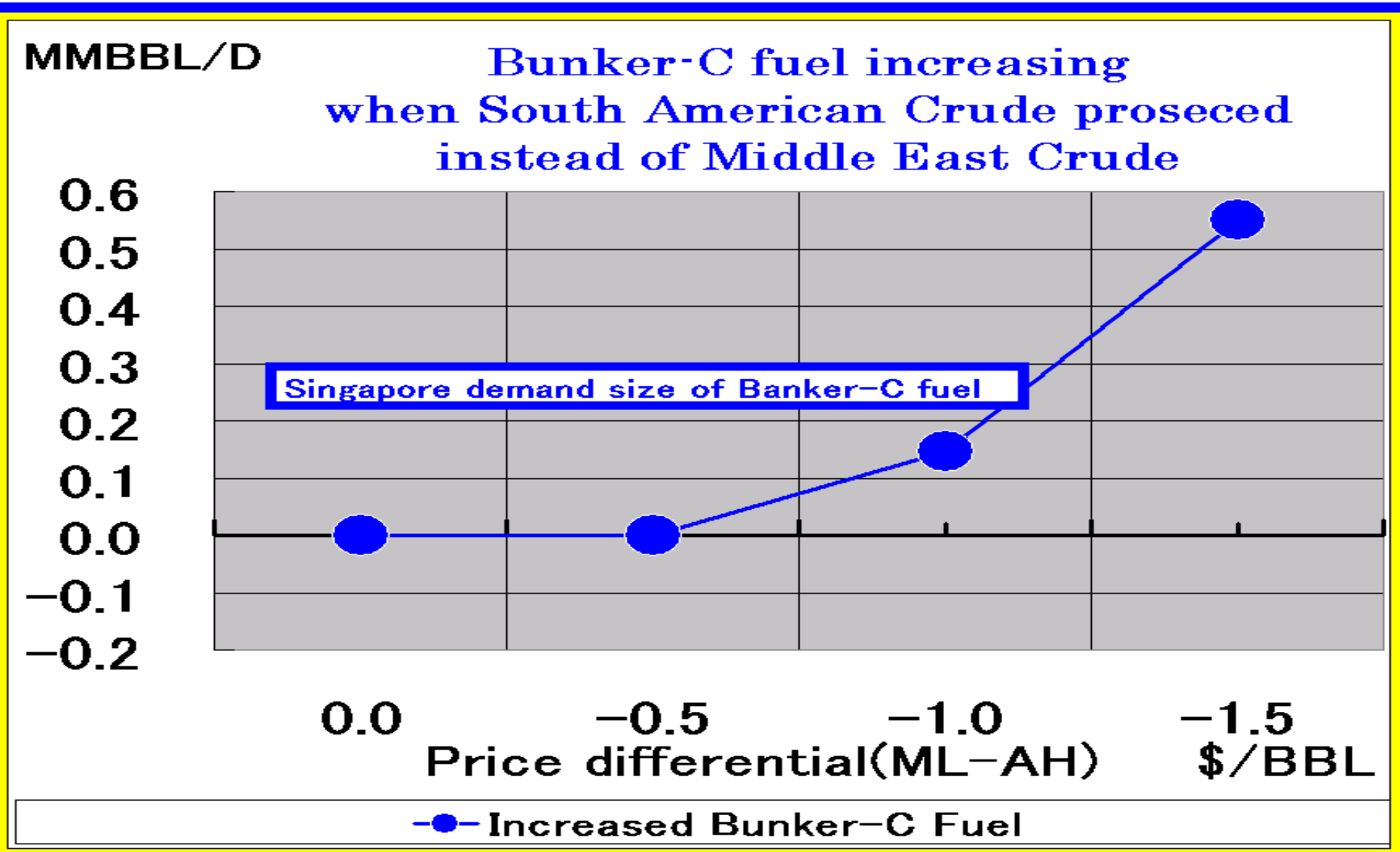
The other A

Japan

Korea

China 2

Promotion of purchase of non-Middle-Eastern, heavy crude will be able to relax Bunker-C fuel balance in Asia with oil products trade in East Asia more.



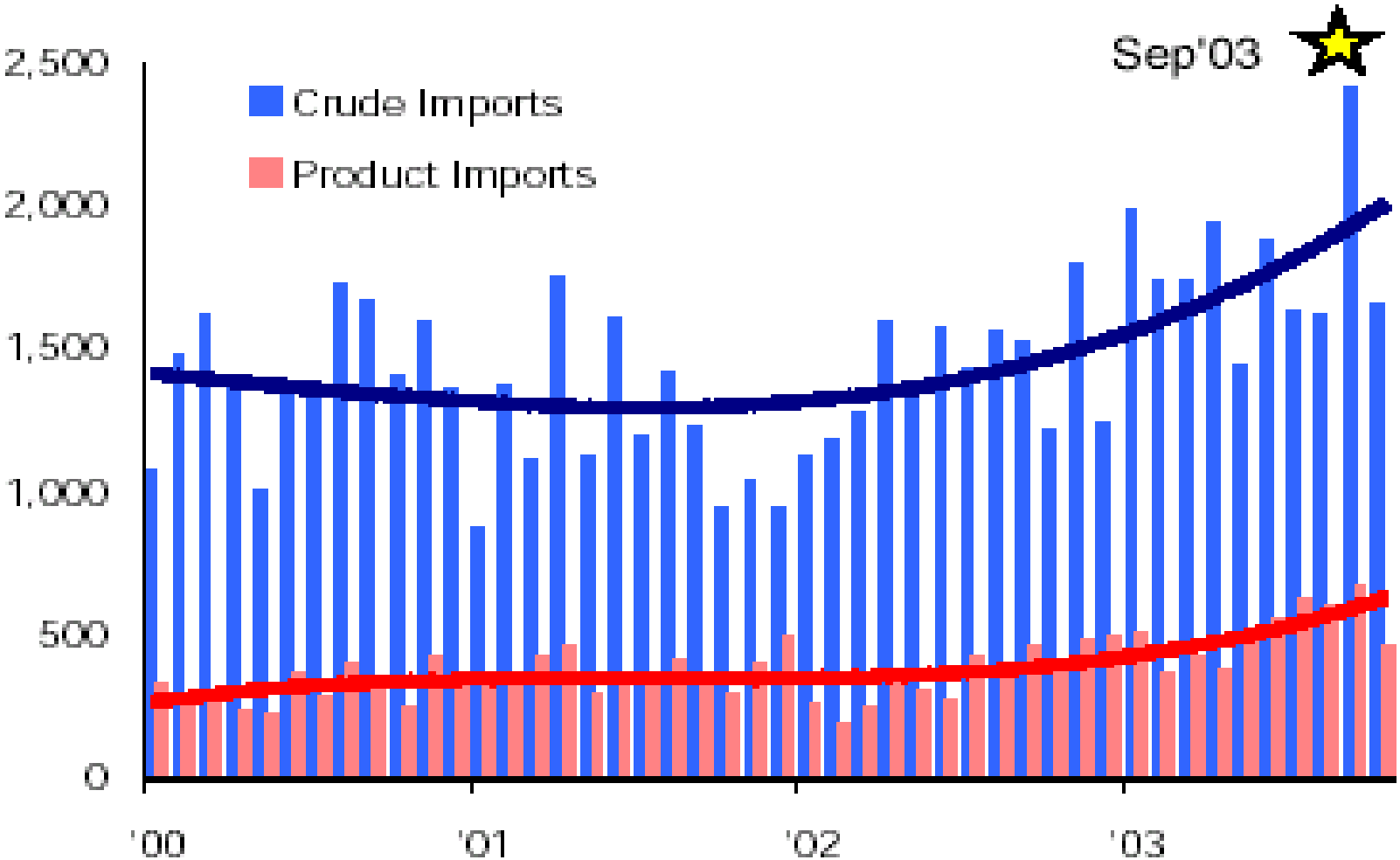
4. Tasks for the future (China and Okinawa)

- It would vital to launch a project of joint research on energy business by East Asian countries in order to build a base of mutually shared perspectives for international competitiveness.
- Korea,China and Japan should join with each other in interaction that looks ten or even 20 years into the future and is also aimed at correcting the Asian premium on Middle Eastern crude.
- Because Chinese crude oil price will be taken by KJ, so KJ will have to consider jointly the best future efficiency in Chinese energy condition.

Consideration of China with Okinawa crude terminal A

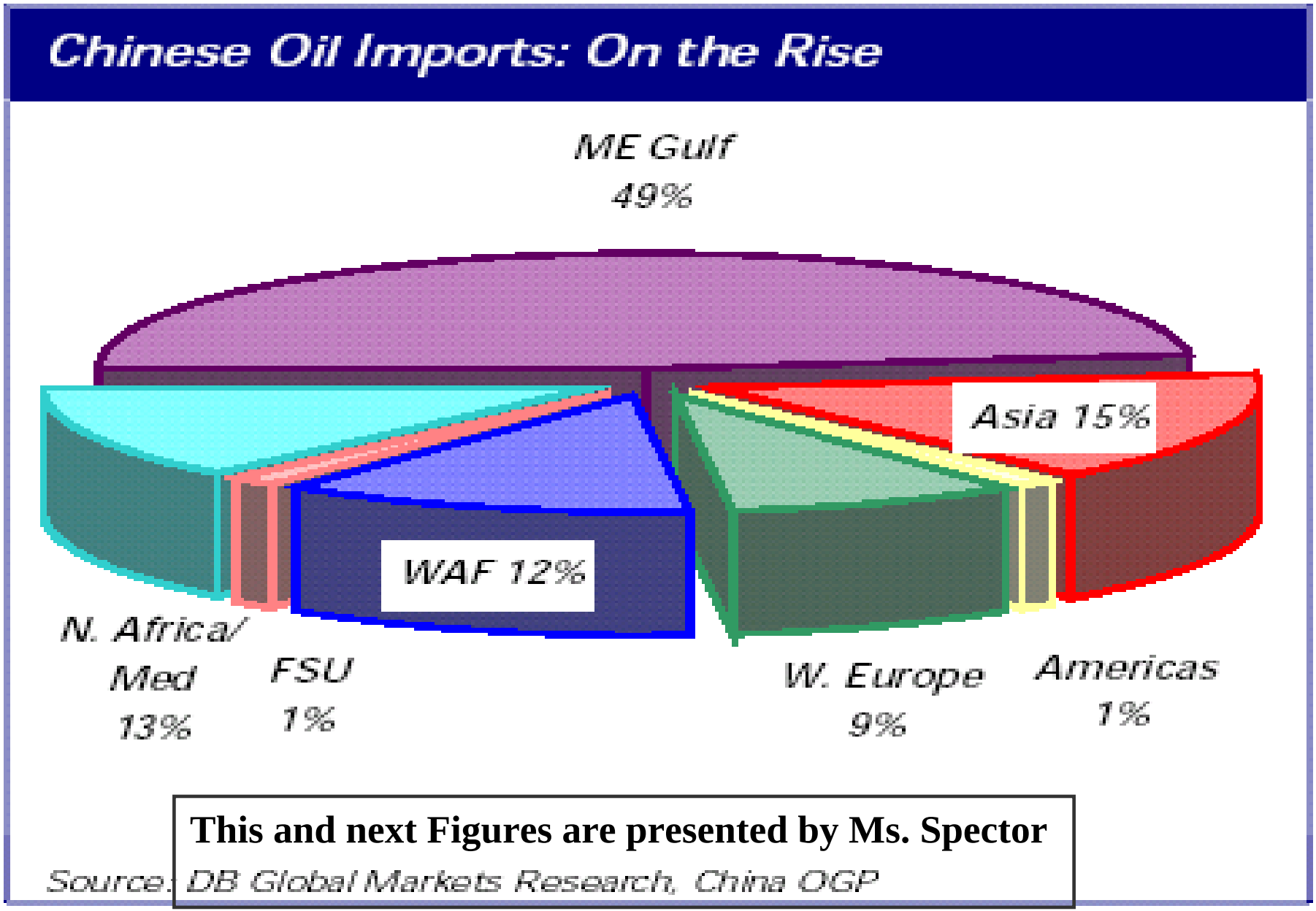
Inter regional movements of transport-related products and components.

Chinese Oil Imports: On the Rise



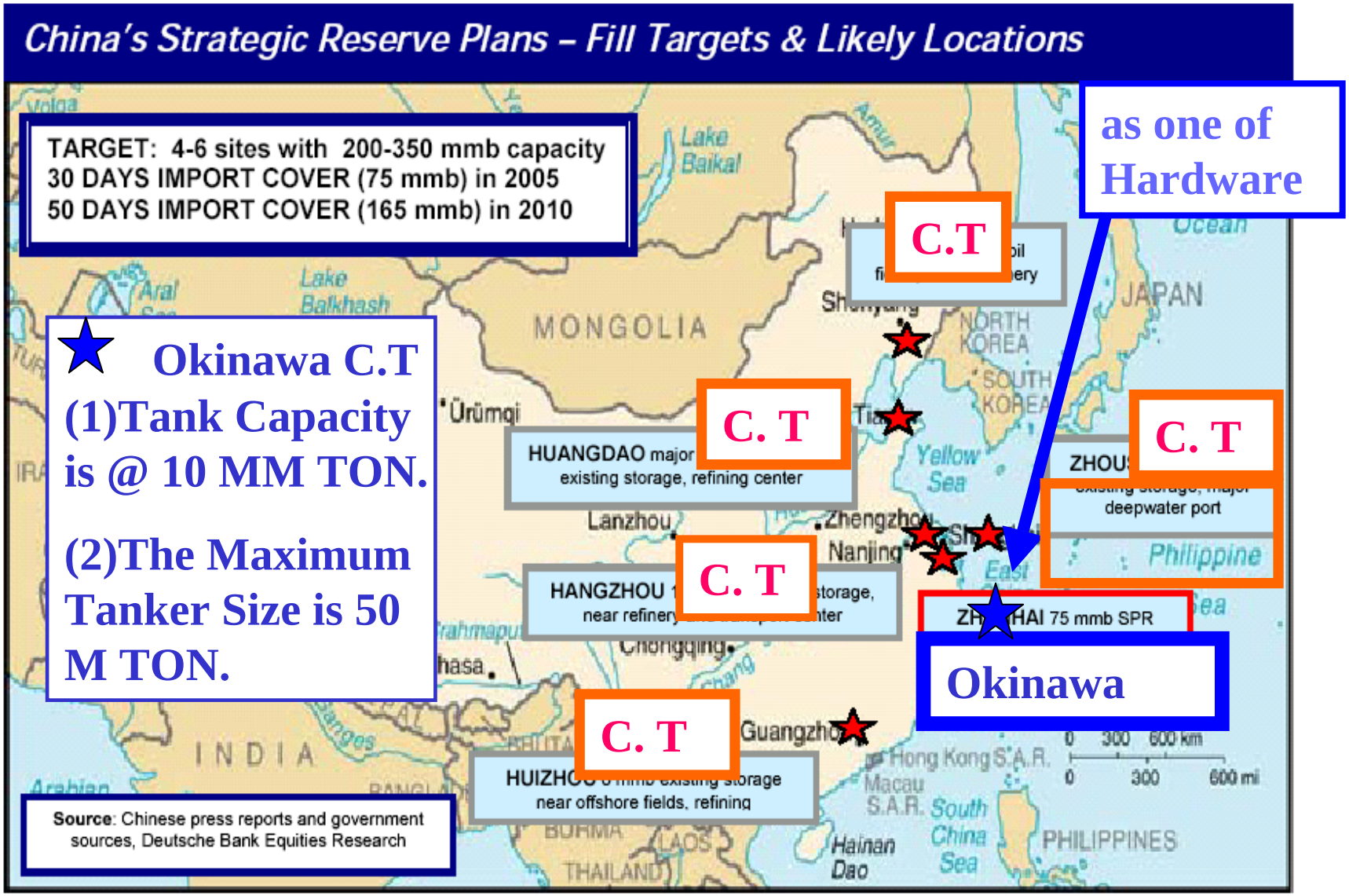
In '000 b/d. Source: DB Global Markets Research, China OGP

Consideration of China with Okinawa crude terminal B



This and next Figures are presented by Ms. Spector

Consideration of China with Okinawa crude terminal C



A project of joint international research should be undertaken to probe the optimal approach of utilizing these facilities to the benefit of East Asian. Soon 'Okinawa Institute of Science and Technology' which will establish as a graduate school newly, and I hope this school will be used for Asian energy solution discovery.