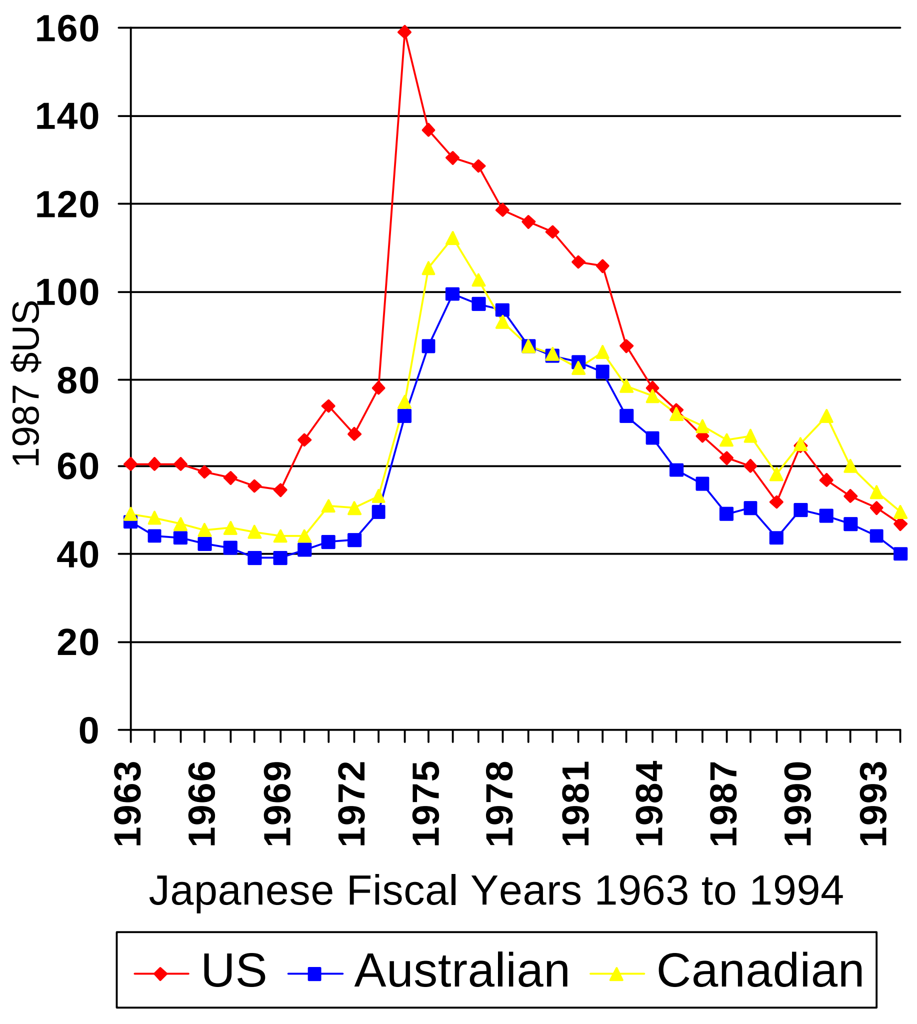
Factors explaining differences in prices in major coal importing markets

Cross sectional regression modelling of settlements in:

1) 1994 Japanese coking coal market.
2) 1996 Brazilian coking coal market.
3) 1995 Japanese utility thermal coal market.

CIF costs of US, Australian and Canadian premium coking coals



Reason for tiers in landed costs

Quality factors!

(ACA's submission

to the 1994 Taylor Commission Study)

Hedonic modelling can test this assertion.

Coal quality factors of significance for coke making and B/F operations

Rank	
(FC,Mmrf,CSR or -VM)	+
Plasticity	
(CSN, Fldy, Dilatation)	+
Ash	-
Sulfur	-
Moisture	-

1994 JSM Coking Regression Model

$$cif = 56.96 - 0.128\,VM + 0.363\,FY + 0.007A$$

(-2.35)* (2.73) (0.027)

$$- 0.642S + 6.45\,C1 + 15.17\,C2 - 7.48\,C3$$

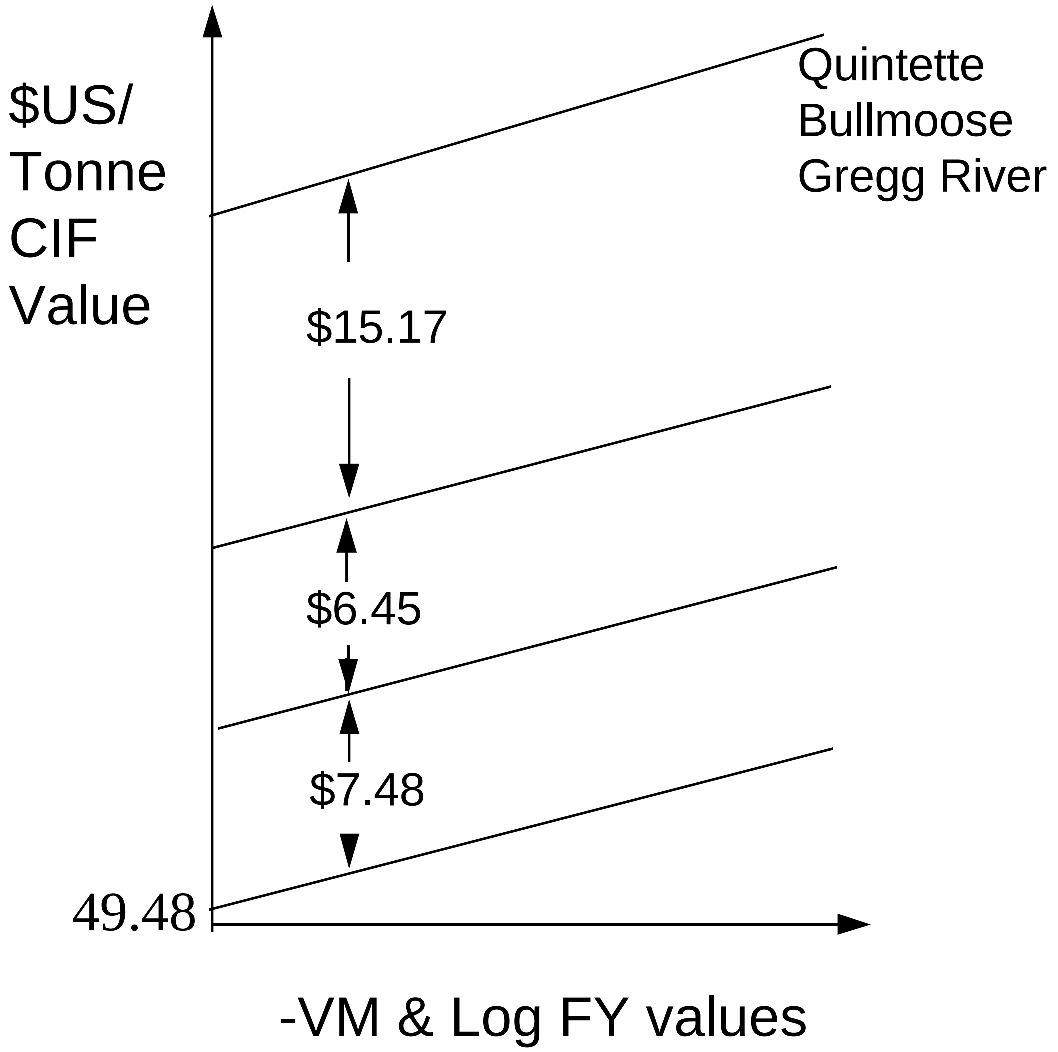
(-0.43) (8.22) (11.64) (-10.34)

C1 shift dummy, zero for Australian and lower tier Canadian brands and one for all other brands.

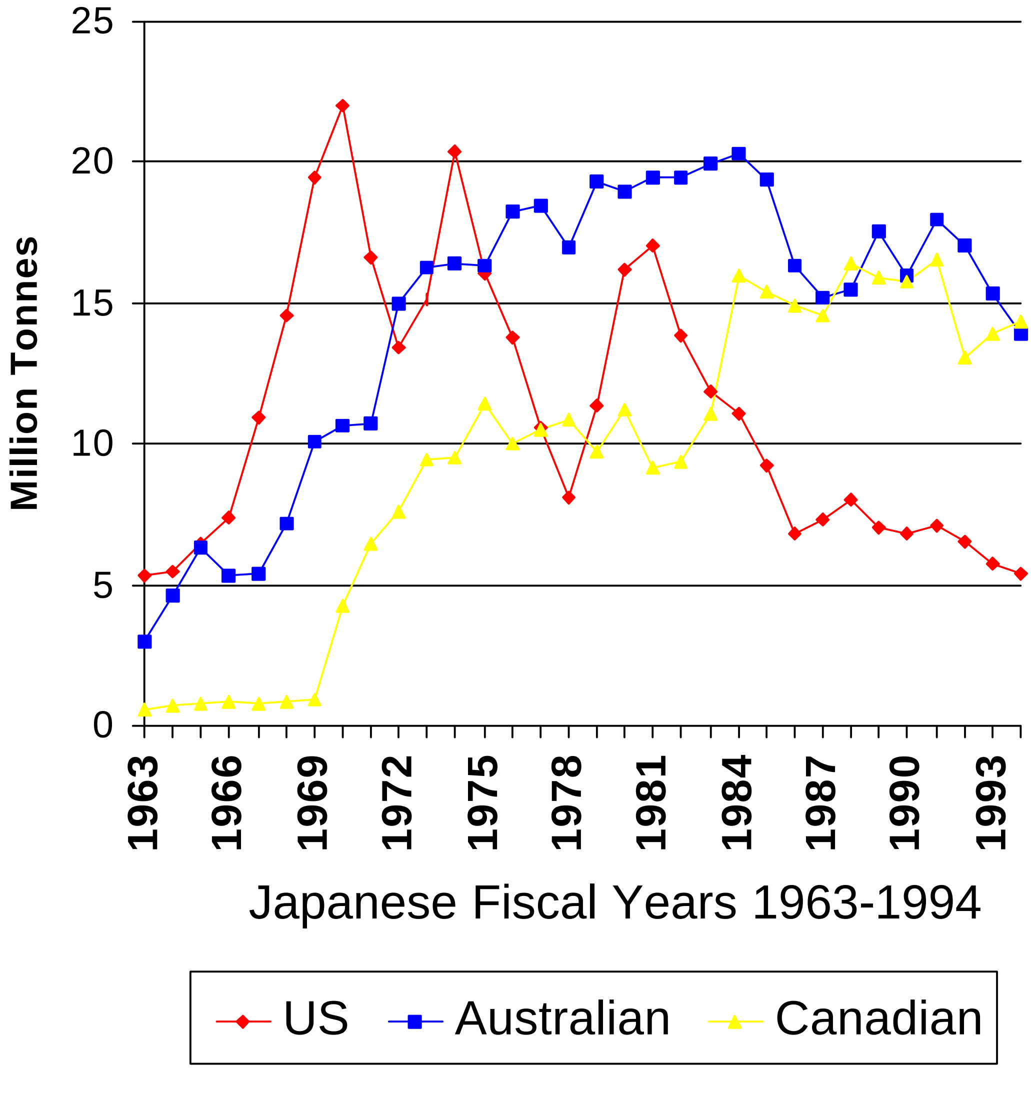
C2 shift dummy, one for Quintette, Bullmoose and Gregg River and zero for all other brands.

C3 shift dummy, one for semi-coking brands, zero for premium brands.

1994 JSM Market Model



JSM imports of US, Australian and Canadian premium coking coals

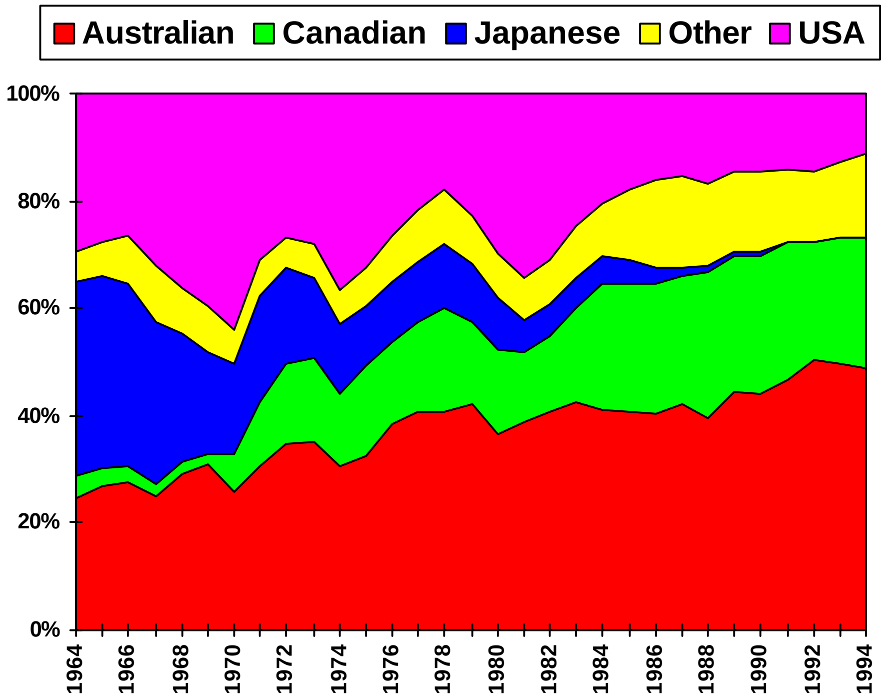


Cross sectional regression modelling results

Similar studies for the years 1973, 1977, 1983 and 1992 support findings obtained for 1994.

Results do not support the ACA's contention.

Japanese Coking Market Share Trends



1996 Brazilian Coking Regression Model

$$cif = 63.76 - .012\,VM + 0.877FY$$

$$+0.17A + 1.42S - 4.67C1$$

*** "t" values for H_0**

$F_{(5,43)} = 94.10$, $R^2 = 0.9163$

C1 , shift dummy, one for semi-coking brands, zero for premium brands

1995 Japanese Thermal Settlement Model

$$cif = 1.34 + 0.0074\,NAR - 2.08\,FR$$

(7.17)* (-3.05)

$$+3.92\,C1 + 5.49\,C2$$

(5.67)) (6.19)

* 't' values for H_o

$F_{(4,31)} = 45.60$, $R^2 = 0.8547$

* 't' values for H_o

$F_{(4,31)} = 45.60$, $R^2 = 0.8547$

Econometric modelling results suggest:

a) Quality is a minor explanatory factor in JSM coking markets.

b) No premium for low ash.

c) Market segmentation exists by source and category of coal.

d) US and some Canadian coking prices at premium levels.

e) US and Australian thermal brands at premium prices.

f) Indonesian brands priced well below other thermal coals.

Business strategy implications

1) JSM exercises buyer power and price discriminates against Australian and some Canadian producers.

2) Australia's market share in Japan seems limited to 50% due to JSM's supply diversification policies.

3)The presence of market distortion prevents adoption of low cost or differentiation as effective business strategies for coking coal exporters.

4)Distortion due to Japanese coking coal purchasing strategies affects settlements in Brazil, and in thermal markets.