

AUSTRALIA'S TRADE IN CRUDE PETROLEUM

INTRODUCTION

This article examines Australia's trade in crude petroleum over the past decade, and gives particular focus to the impact of recent increases in the international oil price.

A range of information on Australia's exports and imports of crude petroleum is provided in this article. These include the values, volumes and average unit values for merchandise exports and imports; chain volume measures; and details of trade with Australia's major trading partners.

The data in this article relate to SITC 333: *Petroleum oils and oils obtained from bituminous minerals, crude*. Oils other than crude are not included. Throughout the article, this commodity is referred to as crude petroleum. SITC 333 corresponds to Harmonised System (HS) 2709.00.

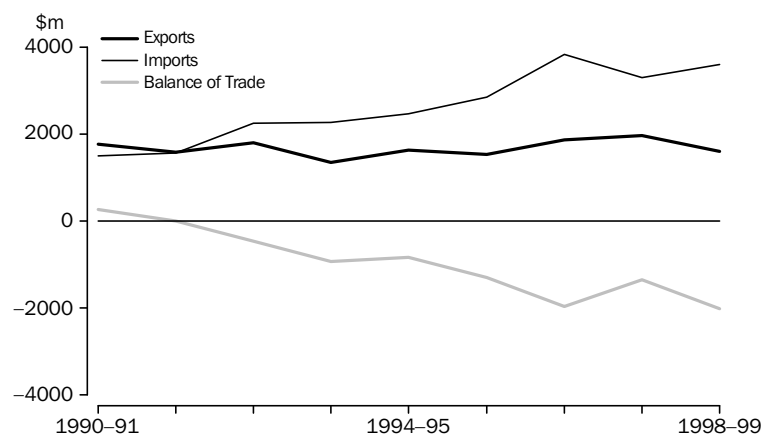
Exports and imports are both shown in this article on a free on board (fob) basis. Elsewhere in this publication, imports are shown on a Customs value basis. While the data are therefore not strictly comparable, the differences between the two bases for crude petroleum is negligible.

VALUE OF EXPORTS AND IMPORTS

Between 1990–91 and 1998–99, the value of exports of crude petroleum remained relatively stable, fluctuating between a low of \$1,350 million in 1993–94 and a high of \$1,973 million in 1997–98. Over the same period, the value of imports of crude petroleum rose from \$1,501 million to \$3,603 million (a 140% increase), with a peak of \$3,836 million in 1996–97.

While positive balances of trade occurred in 1990–91 and 1991–92, the balance of trade in crude petroleum has since been negative in all financial years, reaching a peak deficit of \$2,003 million in 1998–99.

GRAPH 1: ANNUAL VALUE OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM



Exports of crude petroleum have decreased as a proportion of total merchandise exports, from a peak of 3.4% in 1990–91, to a low of 1.9% in 1998–99. On the other hand, imports of crude petroleum have increased as a proportion of total merchandise imports, from a low of 3.1% in 1990–91 and 1991–92, to a peak of 4.9% in 1996–97.

VALUE OF EXPORTS
AND IMPORTS *continued*

TABLE 1: ANNUAL VALUE OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

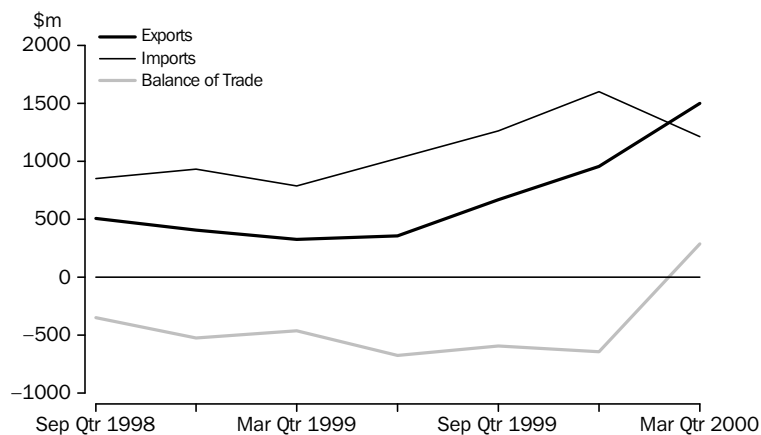
Financial year	Exports of crude petroleum	Proportion of merchandise exports	Imports of crude petroleum	Proportion of merchandise imports	Balance of trade
	\$m	%	\$m	%	\$m
1990-91	1 779	3.4	1 501	3.1	278
1991-92	1 590	2.9	1 577	3.1	13
1992-93	1 801	3.0	2 256	3.8	-455
1993-94	1 350	2.1	2 273	3.5	-923
1994-95	1 644	2.5	2 468	3.3	-824
1995-96	1 547	2.0	2 849	3.7	-1302
1996-97	1 876	2.4	3 836	4.9	-1960
1997-98	1 973	2.2	3 315	3.7	-1342
1998-99	1 600	1.9	3 603	3.7	-2003

In recent quarters there has been strong growth in the value of both exports and imports of crude petroleum. Over the four quarters to March quarter 2000, the value of exports of crude petroleum totalled \$3,491 million, 118% higher than the 1998-99 total. In the same period, the value of imports of crude petroleum totalled \$5,106 million, 42% higher than the 1998-99 total.

The value of imports fell in the March quarter 2000, but remained at an historically high level. In the March quarter 2000, the balance of Australia's merchandise trade in crude petroleum became positive for the first time in its recent history.

Increases in the international oil price are the main determinant for the trends observed. Other factors include the commencement of production from significant new fields, some switching by Australian refineries to source crude petroleum from domestic production rather than imports, and the fall in the exchange rate for the Australian dollar against other currencies.

GRAPH 2: QUARTERLY VALUE OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM



VALUE OF EXPORTS
AND IMPORTS *continued*

TABLE 2: QUARTERLY VALUE OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

Quarter	Exports of Crude Petroleum	Imports of Crude Petroleum	Balance of trade
	\$m	\$m	\$m
September 1998	506	851	-346
December 1998	410	933	-523
March 1999	328	791	-463
June 1999	356	1 027	-670
September 1999	672	1 262	-589
December 1999	960	1 602	-642
March 2000	1 503	1 215	288

VOLUME OF EXPORTS
AND IMPORTS

The unit of quantity used to record trade in crude petroleum is litres. Between 1990–91 and 1998–99 the volume of exports of crude petroleum increased by 3,649 million litres (42%). Import volumes grew much more strongly over the same period, rising by 19,894 million litres (245%). In 1990–91, Australia exported more crude petroleum (8,734 million litres) than it imported (8,132 million litres). Since that time, the volume of imports on a financial year basis has exceeded that of exports, with the gap generally growing over time.

GRAPH 3: ANNUAL VOLUME OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

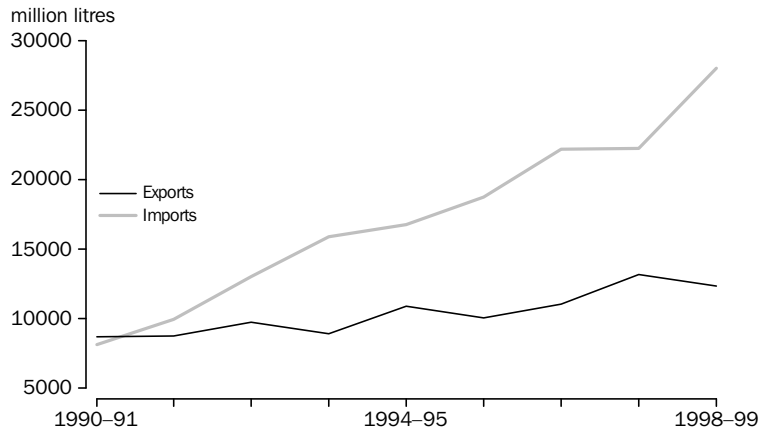


TABLE 3: ANNUAL VOLUME OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

Financial year	Exports of Crude Petroleum	Imports of Crude Petroleum
	million litres	million litres
1990-91	8 734	8 132
1991-92	8 794	9 975
1992-93	9 765	13 056
1993-94	8 940	15 897
1994-95	10 879	16 768
1995-96	10 074	18 752
1996-97	11 083	22 212
1997-98	13 189	22 257
1998-99	12 383	28 026



VOLUME OF EXPORTS AND IMPORTS *continued*

The volume of exports of crude petroleum decreased steadily during the first half of 1999, before registering strong growth. The March quarter 2000 volume was 5,809 million litres, the highest quarterly figure on record. After being steady for several quarters, the volume of imports of crude petroleum decreased in the March quarter 2000 to 4,792 million litres. This was the lowest quarterly figure since September quarter 1996.

GRAPH 4: QUARTERLY VOLUME OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

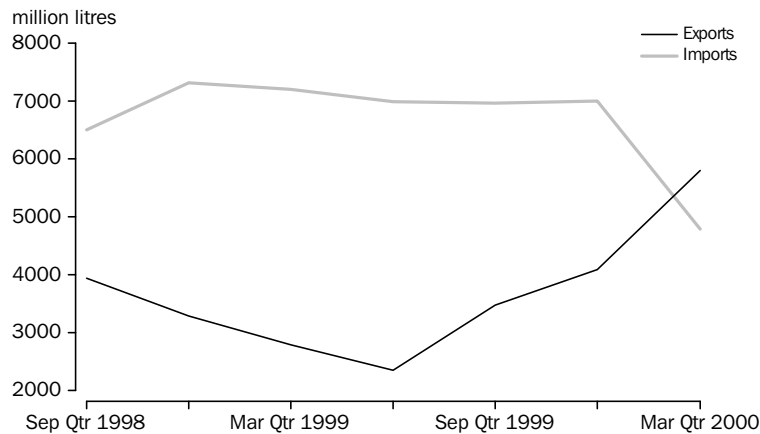


TABLE 4: QUARTERLY VOLUME OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

Quarter	Exports of Crude Petroleum	Imports of Crude Petroleum
	million litres	million litres
September 1998	3 943	6 506
December 1998	3 291	7 322
March 1999	2 791	7 202
June 1999	2 357	6 995
September 1999	3 477	6 965
December 1999	4 089	7 002
March 2000	5 809	4 792

AVERAGE UNIT VALUES FOR EXPORTS AND IMPORTS

Information on the prices paid and received for exports and imports of crude petroleum is not included on Customs records. However, by dividing the value of exports and imports by the respective trade volumes, a rough price measure (average unit value) can be derived. Use of average unit values calculated in this manner is often subject to a number of serious limitations as a measure of price change over time.

Users who are interested in price movements in export and import commodities should refer to *Export Price Index, Australia* (Cat. no. 6405.0) or *Import Price Index, Australia* (Cat. no. 6414.0). These indexes are currently being reviewed and an Information Paper on the review was issued in November 1999 — Information Paper: *Review of the Import Price Index and Export Price Index, 1999* (Cat. no. 6424.0).



AVERAGE UNIT VALUES
FOR EXPORTS AND
IMPORTS continued

In paragraphs 7.13 to 7.15 of the Information Paper the possible uses and limitations of average unit values are discussed. Paragraph 16.13 of the *System of National Accounts, 1993* (SNA93) makes similar comments.

Average unit values suffer from limitations as price estimators for commodities that are not homogeneous and are likely to be affected by changes over time in compositional mix or quality. For basic commodities in the mining and agricultural sectors, these limitations are generally considered to be less severe.

The average unit values (cents per litre) for exports and imports of crude petroleum decreased over the period 1990–91 to 1998–99, by 37% and 30% respectively. These movements largely reflect changes in international oil prices over this period.

GRAPH 5: ANNUAL AVERAGE UNIT VALUES OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

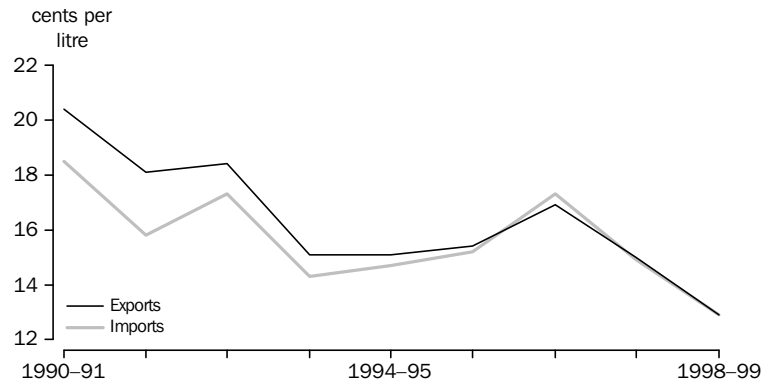


TABLE 5: ANNUAL AVERAGE UNIT VALUES OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

Financial year	Exports of Crude Petroleum	Imports of Crude Petroleum
	cents per litre	cents per litre
1990-91	20.4	18.5
1991-92	18.1	15.8
1992-93	18.4	17.3
1993-94	15.1	14.3
1994-95	15.1	14.7
1995-96	15.4	15.2
1996-97	16.9	17.3
1997-98	15.0	14.9
1998-99	12.9	12.9

International oil prices increased dramatically during the course of 1999 and this is reflected in the average unit values for quarterly exports and imports during this period. Between March quarter 1999 and March quarter 2000, the average unit value for exports rose from 11.8 to 25.9 cents per litre (119%). Over the same period, the average unit value for imports rose from 11.0 to 25.4 cents per litre (131%).



AVERAGE UNIT VALUES
FOR EXPORTS AND
IMPORTS *continued*

GRAPH 6: QUARTERLY AVERAGE UNIT VALUES OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

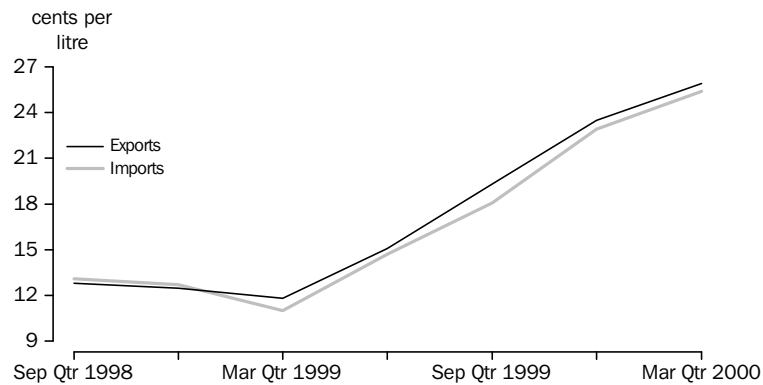


TABLE 6: QUARTERLY AVERAGE UNIT VALUES OF EXPORTS AND IMPORTS OF CRUDE PETROLEUM

Quarter	Exports of Crude Petroleum	Imports of Crude Petroleum
	cents per litre	cents per litre
September 1998	12.8	13.1
December 1998	12.5	12.7
March 1999	11.8	11.0
June 1999	15.1	14.7
September 1999	19.3	18.1
December 1999	23.5	22.9
March 2000	25.9	25.4

CHAIN VOLUME MEASURES FOR
EXPORTS AND IMPORTS

The various measures included in this article so far are either obtained directly from Customs records or derived from them. The measures used to assess volume and price changes suffer from a number of limitations, although these are considered to be relatively less significant for crude petroleum, than for many other commodities.

The ABS produces chain volume measures and price indexes which provide conceptually better measures of volume and price change. For exports and imports the measures normally published are at a more aggregated level of classification. For this article, previously unpublished chain volume measures and price deflators for crude petroleum are included.

Current price series for exports and imports reflect the influences of both volume and price changes. Chain volume measures provide estimates of the changes in the value of the series, after the direct effects of price changes have been eliminated i.e. they only reflect the volume changes.

The chain volume measures of exports and imports of crude petroleum appearing in this article are annually reweighted chain Laspeyres indexes referenced to current price values in a chosen reference year, currently 1997–98.



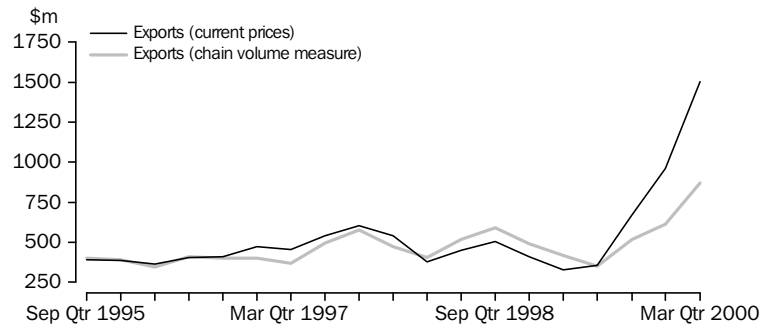
CHAIN VOLUME MEASURES
FOR EXPORTS AND IMPORTS
continued

For further information on chain volume measures refer to the Information Paper: *Australian National Accounts, Introduction of Chain Volume and Price Indexes* (Cat. no.5248.0), which was released in March 1998.

The series included in this article commenced in September quarter 1995. The series show broadly similar movements for values, volumes and prices, for both exports and imports of crude petroleum, to those outlined earlier in this article for the period most affected by the international oil price rise.

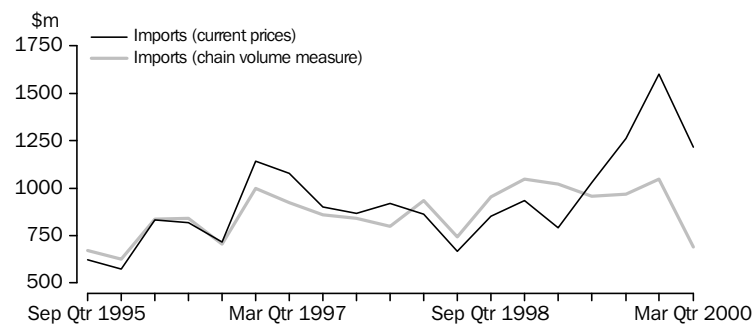
Between March quarter 1999 and March quarter 2000, the value of exports (current prices) rose 358%, the implicit price deflator for exports rose 119%, and the exports chain volume measure rose 108%. Over the same period, the value of imports (current prices) rose 54%, the implicit price deflator for imports rose 128%, and the imports chain volume measure fell 32%.

GRAPH 7: CHAIN VOLUME MEASURE FOR EXPORTS OF CRUDE PETROLEUM



Source: *International Merchandise Trade*, (Cat. no. 5422.0).
National Income, Expenditure and Product (Cat. no. 5206.0), unpublished working estimates.
Reference year for chain volume measures is 1997-98.

GRAPH 8: CHAIN VOLUME MEASURE FOR IMPORTS OF CRUDE PETROLEUM

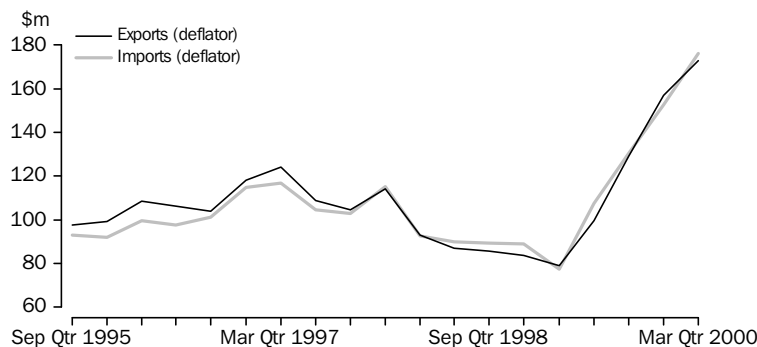


Source: *International Merchandise Trade*, (Cat. no. 5422.0).
National Income, Expenditure and Product (Cat. no. 5206.0), unpublished working estimates.
Reference year for chain volume measures is 1997-98.



CHAIN VOLUME MEASURES
FOR EXPORTS AND IMPORTS
continued

GRAPH 9: IMPLICIT PRICE DEFLATORS FOR EXPORTS AND IMPORTS OF CRUDE PETROLEUM



Source: National Income, Expenditure and Product (Cat. no. 5206.0), unpublished working estimates.
Reference period 1997-98=100.0.

TABLE 7: CHAIN VOLUME MEASURES AND IMPLICIT PRICE DEFLATORS FOR EXPORTS AND IMPORTS OF CRUDE PETROLEUM

	EXPORTS.....			IMPORTS.....		
	Current prices	Implicit price deflator(a)	Chain volume measure(b)	Current prices	Implicit price deflator(a)	Chain volume measure(b)
	\$m		\$m	\$m		\$m
September Quarter 1995	390	97.5	400	623	93.0	670
December Quarter 1995	387	99.2	390	574	92.0	624
March Quarter 1996	365	108.6	349	834	99.7	836
June Quarter 1996	405	106.3	411	818	97.6	839
September Quarter 1996	408	104.0	403	716	101.3	706
December Quarter 1996	473	118.0	401	1 143	114.7	998
March Quarter 1997	456	124.0	367	1 078	116.8	923
June Quarter 1997	540	108.7	494	899	104.5	859
September Quarter 1997	604	104.7	577	865	102.8	842
December Quarter 1997	539	114.2	472	919	115.0	799
March Quarter 1998	378	92.9	407	864	92.5	934
June Quarter 1998	452	87.1	518	667	90.1	741
September Quarter 1998	506	85.8	590	851	89.4	952
December Quarter 1998	410	83.5	492	933	88.9	1 049
March Quarter 1999	328	78.9	417	791	77.4	1 022
June Quarter 1999	356	99.4	353	1 027	107.4	956
September Quarter 1999	672	129.2	520	1 262	130.3	967
December Quarter 1999	960	156.9	612	1 602	152.7	1 049
March Quarter 2000	1 503	173.0	869	1 215	176.1	691

(a) Reference period 1997-98=100.0.

(b) Reference year for chain volume measures is 1997-98.

Source: National Income, Expenditure and Product
(Cat. no. 5206.0), unpublished working estimates.

MAJOR TRADING PARTNERS

In 1998–99, the 5 major countries of destination for Australia's exports of crude petroleum were the United States of America, Taiwan, Japan, Republic of Korea and Singapore. Taken together these accounted for 81% of exports to all countries. For the same period, the 5 major countries of origin for Australia's imports of crude petroleum were Indonesia, Viet Nam, Papua New Guinea, New Zealand and Saudi Arabia. Taken together these accounted for 80% of imports from all countries.

TABLE 8: MAIN DESTINATIONS FOR EXPORTS OF CRUDE PETROLEUM

Financial year	<i>United States of America</i>	<i>Taiwan</i>	<i>Japan</i>	<i>Korea, Republic of</i>	<i>Singapore</i>	<i>Total</i>
	\$m	\$m	\$m	\$m	\$m	\$m
1990-91	475	25	426	0	457	1 779
1991-92	144	16	633	44	209	1 590
1992-93	179	71	725	15	231	1 801
1993-94	159	68	499	50	234	1 350
1994-95	250	198	529	97	151	1 644
1995-96	146	337	335	106	144	1 547
1996-97	370	352	346	196	95	1 876
1997-98	513	304	334	217	170	1 973
1998-99	365	287	269	246	129	1 600

TABLE 9: MAIN SOURCES FOR IMPORTS OF CRUDE PETROLEUM

Financial year	<i>Indonesia</i>	<i>Viet Nam</i>	<i>Papua New Guinea</i>	<i>New Zealand</i>	<i>Saudi Arabia</i>	<i>Total</i>
	\$m	\$m	\$m	\$m	\$m	\$m
1990-91	357	0	0	202	267	1 501
1991-92	410	52	0	158	220	1 577
1992-93	363	188	400	168	245	2 256
1993-94	336	233	526	171	242	2 273
1994-95	350	202	618	158	383	2 468
1995-96	658	216	724	163	284	2 849
1996-97	869	312	730	363	434	3 836
1997-98	1 042	477	463	230	355	3 315
1998-99	1 245	765	435	234	203	3 603