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### **ADDING VALUE TO MINERALS**

In the Department's appearance before the Committee, Mr Nairn asked whether the proportion of minerals activity that is going through to further processing is increasing or not. I undertook to provide some further information on this question.

Unfortunately, there is no short answer to Mr Nairn's question. As Dr Ferber, pointed out at the hearing, the level of processing over time has increased for some commodities (alumina, aluminium, synthetic rutile), decreased for some (iron, copper, zinc) and remained static for others (eg titanium dioxide). This is illustrated on Chart 3, page 38 of the Department's submission.

To get a figure for the minerals sector as a whole it is necessary to consider turnover, value added or industry gross product rather than production in tonnes since a tonne of gold is considerably more valuable than a tonne of iron ore. Turnover, value added and industry gross product are considered on pages 43 to 49 of the Department's submission. In particular, Table 15 on page 43 shows that mining turnover (in constant dollars) has grown by 177% over the 28 years for which data was available. On the other hand, turnover in metal production has grown by only 75% over the same period. This suggests that the proportion of minerals being further processed has fallen over time.

However, there are two complications. Firstly, the ABS classifies gold processing done at or near the mine with gold mining and secondly, as noted in the Department's submission, a very large number of investments in processing have or will come on stream in 1998/99 and 1999/2000. At today's prices, these investments are expected to increase turnover in mineral processing by some \$3.7 billion.

The Table below shows turnover for mining and processing with and without gold. Estimates for 2000/01 are included to demonstrate the large number of investments that have recently or will soon come on stream. Including gold with mining shows that turnover is expected to grow by 194% in the 3 2 years to 2000/01. In comparison, metal production is expected to grow by 108%. Under this scenario, mining has grown more than processing.

If gold is excluded, mining has still grown faster than metal production in the 29 years to 1997/98. However, by 2000/01, the recent burst of mineral processing investments will have increased metal production much more than mining and the figures for the 32 years to 2000/01 shows almost equal growth for both mining and processing.

If gold is included with metal production, processing has increased faster than mining even without taking into account the recent spike in mineral processing investments.

**TURNOVER IN MINING AND METAL PRODUCTION  
(IN MILLIONS OF CONSTANT 1997/98 DOLLARS)**

	1968/69	1996/97	1997/98	2000/01 estimates	Change 1968/69 to 1997/98	Change 1968/69 to 2000/01
Mining including gold	5099	14142	14497	15000	184%	194%
Mining excluding gold	4909	9431	9370	10000	91%	104%
Metal production	11043	19291	19000	23000	72%	108%
Metal production plus gold	11232	24002	24126	28000	115%	149%

Another way of looking at the data is to consider the ratio of processing turnover to mining turnover. The results are shown in the table below. Again, the results depend on where gold is classified and the end year. If gold is classified with mining, the ratio of processing to mining has fallen. If gold is included with metal production, the ratio has risen over time. If gold is excluded from both mining and processing, the ratio of processing to mining has fallen in the 29 years to 1997/98 but it is expected to be higher for 2000/01 than it was 32 years ago. If gold turnover is split 50:50 between mining and metal production, the ratio of processing to mining turnover has fallen.

**RATIO OF METAL PRODUCTION TURNOVER TO MINING TURNOVER**

Ratio processing/mining	1968/69	1996/97	1997/98	2000/01 estimate
Gold included with mining	2.2	1.4	1.3	1.5
Gold included with metal production	2.3	2.5	2.6	2.8
Gold excluded from both	2.2	2.0	2.0	2.3
Gold split 50:50 to mining & metal	2.2	1.8	1.8	2.0

I hope this information is helpful.

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22 November 1999