



# **SA's EXPERIENCE IN THE COMPILATION OF MINERAL ACCOUNTS**

- Background
- Physical accounts
- Resource rent
- Monetary accounts
- Problems experienced
- Challenges



## Background

- Physical & monetary accounts (1980-2001)
  - Gold (39 mine operations)
  - Platinum (12 mine operations)
  - Coal (62 mine operations)
- Mining industry: R67 301 million to the total GDP (R983 448) in 2001 (7%)
- Discussion document – July 2002
- Official statistics – September 2004



Measure of stock = Ecn proven reserves



451,3 – 456,8

# Gold: Physical account for South Africa

Year	Opening stock (tons)	Prod (extrac) (tons)	Disco (tons)	Other volume change (tons)	Closing stock (sub-soil assets) (tons)	Volume sold (tons)	Net change invent (tons)	Closing stock (inc inv) (tons)	Years to deplt
1999	36 328,3	451,3	N/A	-	35 877,0	456,8	-5,5	35 871,5	79
2000	35 877,0	430,9	N/A	-	35 446,1	407,6	23,3	35 469,4	82
2001	35 446,1	394,8	N/A	-	35 051,2	388,0	6,8	35 058,0	89

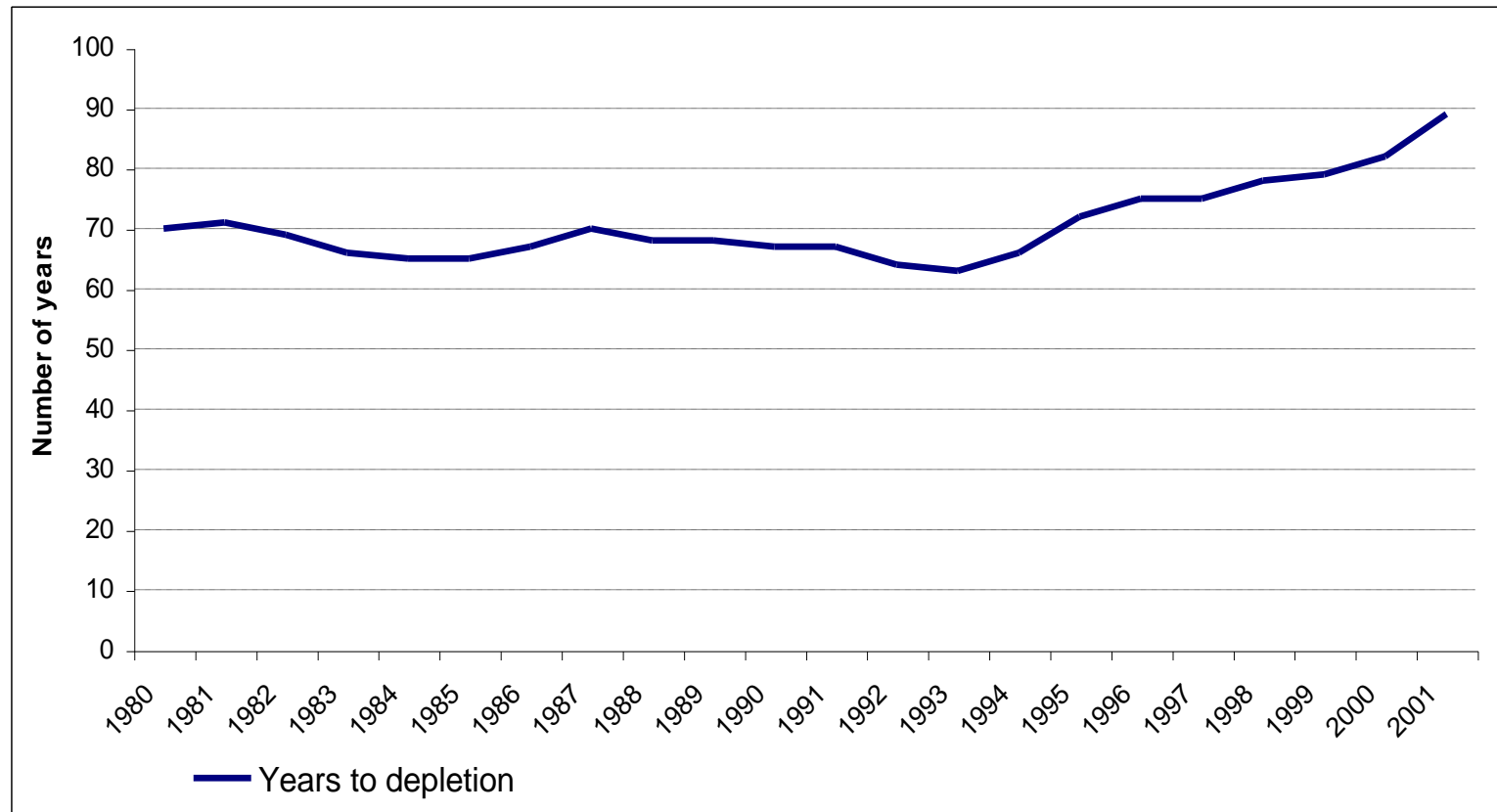
35 877,0 – 430,9

35 446,1 + 23,3

35 058,0 / 394,8



## Gold: Estimated number of years to depletion for South Africa





## Resource Rent

- measure of the scarcity value of extractive resources as their finite stocks are reduced with extraction
- 1<sup>st</sup> step in developing monetary accounts
- value of output (@ producer prices) *minus* production costs

Nominal profit -

Average LT nominal interest rate

*Minus* prevailing interest inflation rate

*Equal Rate of return to capital*

*Multiply* fixed capital stock in mining

*Equal estimates of nominal profits*

Incl cost of II; compensation of employees; consumption of fixed capital and nominal rate on fixed capital investment (opportunity cost)

- average costs were used to calculate resource rent



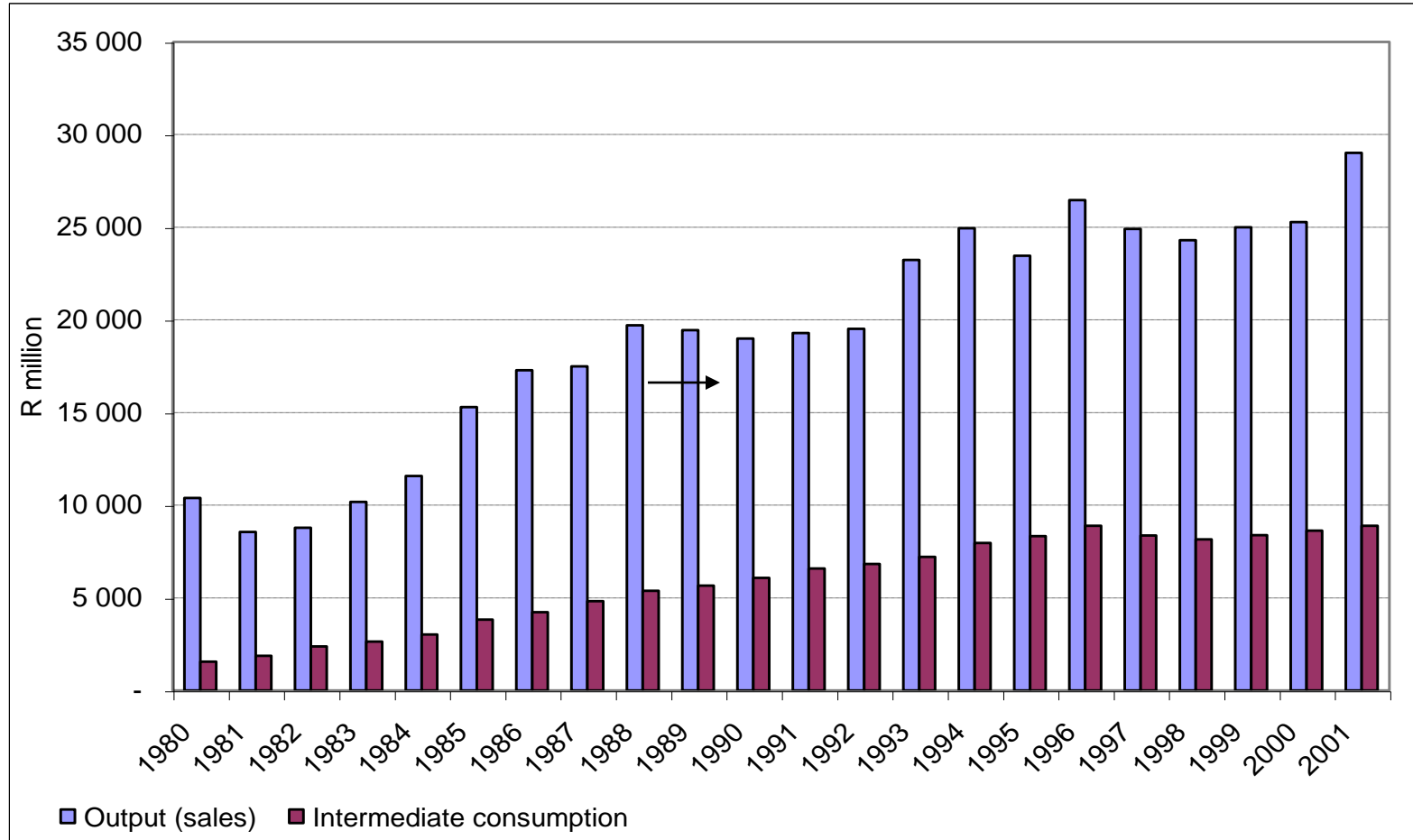
**Gold: Resource rent and other calculations for SA at current prices (R million)**

	1999	2000	2001
<b>Output (sales)</b>	24 990	25 272	29 011
<b>Intermediate consumption</b>	8 387	8 627	8 878
<b>Consumption of employees (total)</b>	9 100	9 809	10 904
<b>Consumption of employees (male)</b>	8 902	9 586	10 674
<b>Consumption of employees (female)</b>	198	223	229
<b>Consumption of capital</b>	4 370	4 734	5 113
<b>Opportunity cost of capital (SDR 3%)</b>	1 917	2 002	2 087
<b>Opportunity cost of capital (SDR 5%)</b>	3 195	3 337	3 478
<b>Resource Rent (SDR 3%)</b>	1 216	100	2 029
<b>Resource Rent (SDR 5%)</b>	-102	-1 198	638
<b>Unit rent (R / tonne)</b>	2 397	318	5 286
<b>Unit rent (R / tonne)</b>	-227	-2 779	8 810

Tot rent / volume of depletion for spec year



## Gold: Output and intermediate consumption: 1980–2001 (R million)





## Monetary accounts

Full environmental accounting used to calculating monetary accounts for SA.

This represents an attempt to accommodate all entries of the more comprehensive physical resource account in the 1993 SNA with monetary values assigned





## Gold: Monetary account for SA current prices (R million)

Year	Opening stock	Depletion	Reevaluation	Closing stock
1999	28 090	3 441	5 080	36 611
2000	36 611	261	-33 833	3 038
2001	3 038	4 389	55 335	62 762

Unit rent \* volume of depletion

Value of opening stock

*Less* value of the depleted stock

Valued at the change in the present value

*Plus* value of new discoveries, additions and other volume changes

Valued by discounting for one year less

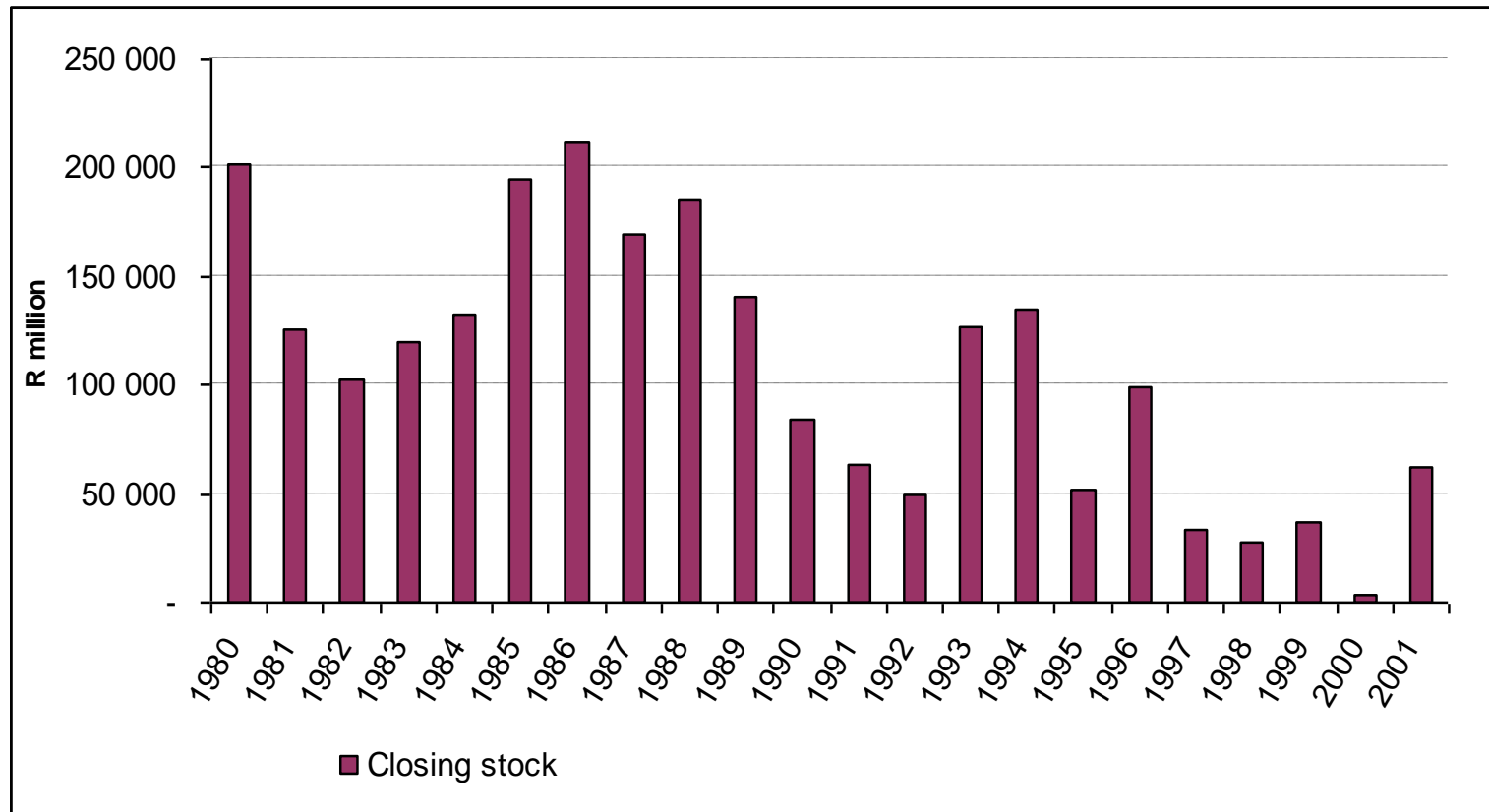
*Plus* any reevaluation due to time passing

*Plus* nominal holding gain

Calculated as a residual



## Gold: Value of closing stock for SA @ current prices (R mil)





# Problems experienced

- Data sources
- Presenting figures in nominal values (Monetary)
  - change measuring unit (R) to more stable currency
  - use a GDP deflator
  - present values as a ratio to GDP
- Social Discount Rate (SDR)
- Output = sales (data constraints NE SNA)



# Challenges

- International guidelines
- Staff with relevant skills/knowledge/experience
- Educating users
- Data
  - Extensive/comprehensive – required
  - Regular – trends
  - Published figures
- Feeding into policy issues



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