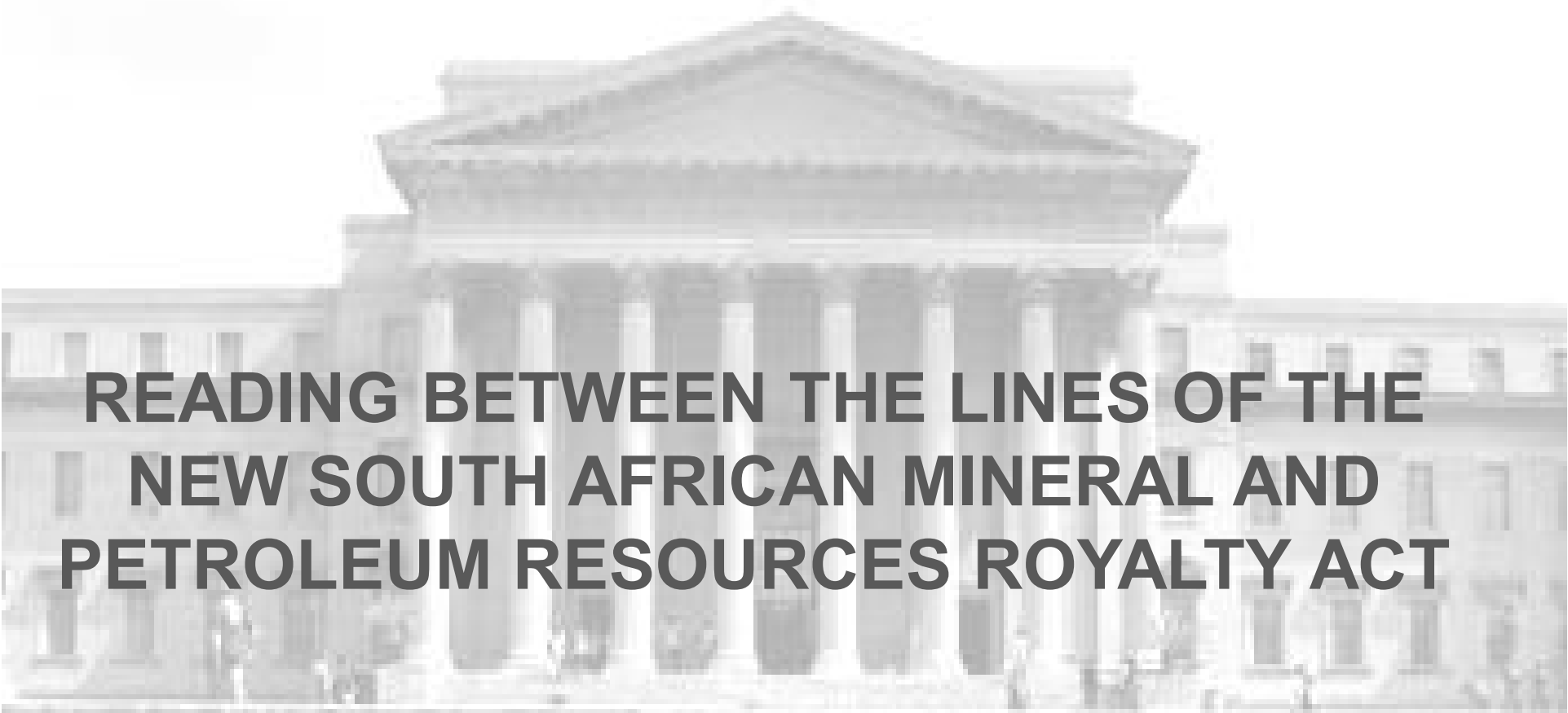


PRESENTATION TO SACMA: FT CAWOOD



READING BETWEEN THE LINES OF THE NEW SOUTH AFRICAN MINERAL AND PETROLEUM RESOURCES ROYALTY ACT

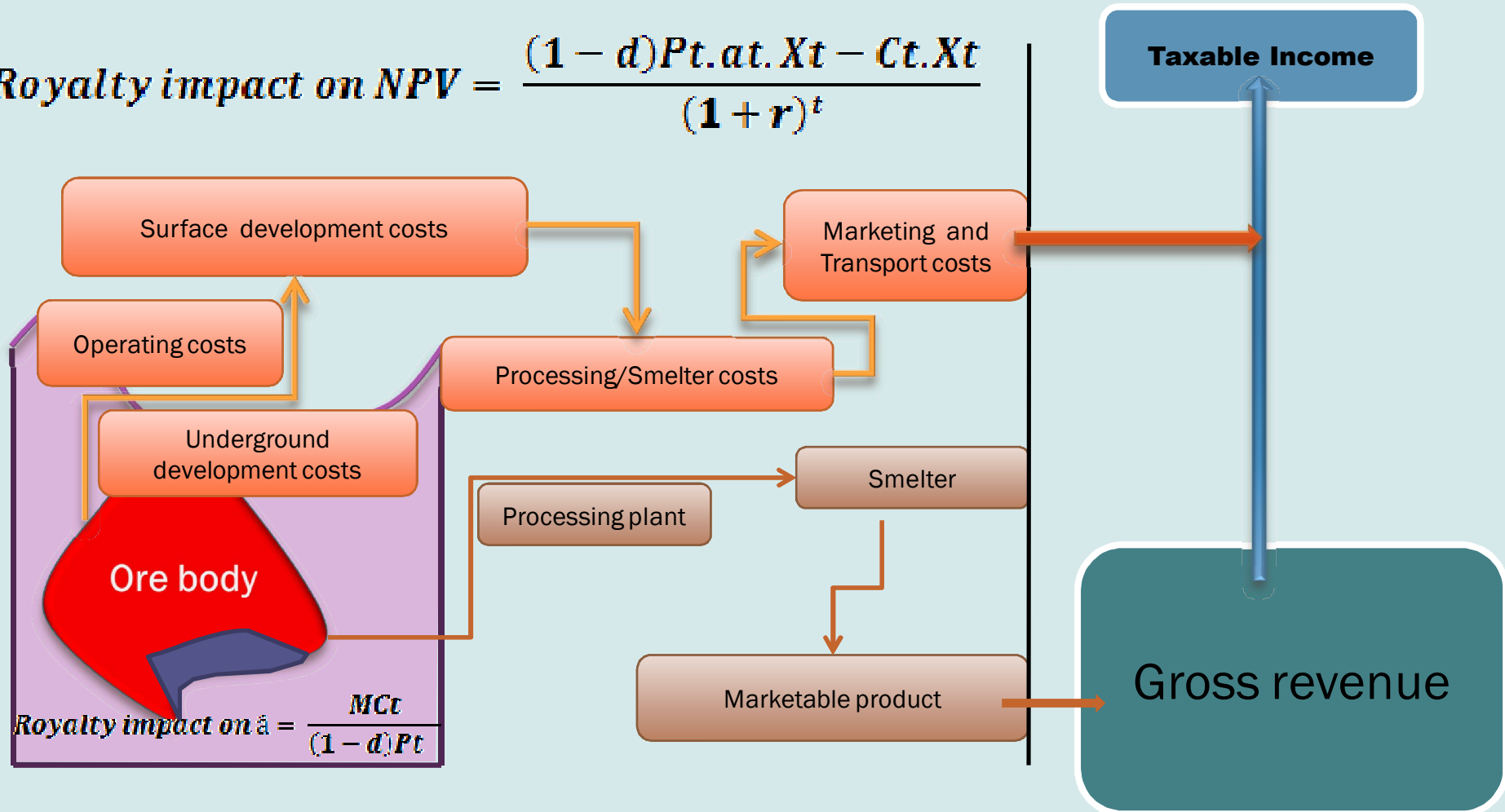
A Technical Perspective on its Meaning

Structure

- × Nature of the mining business
- × Theory of mineral royalties
- × The past system of royalties in South Africa
- × Economic rents
- × Formula fundamentals
- × Main Royalty Act provisions
- × What does the Royalty Act mean?
- × Issues to look out for

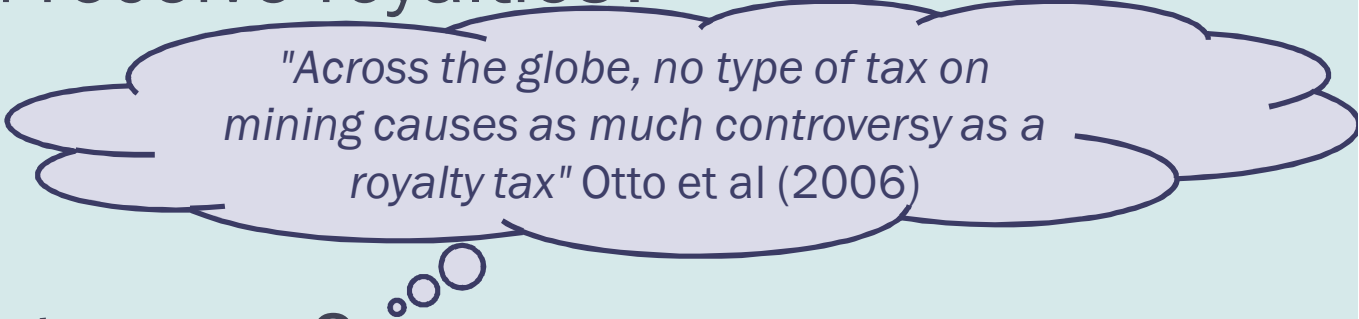
Converting natural wealth into capital

$$\text{Royalty impact on NPV} = \frac{(1 - d)Pt.at.Xt - Ct.Xt}{(1 + r)^t}$$



Theory of mineral royalties

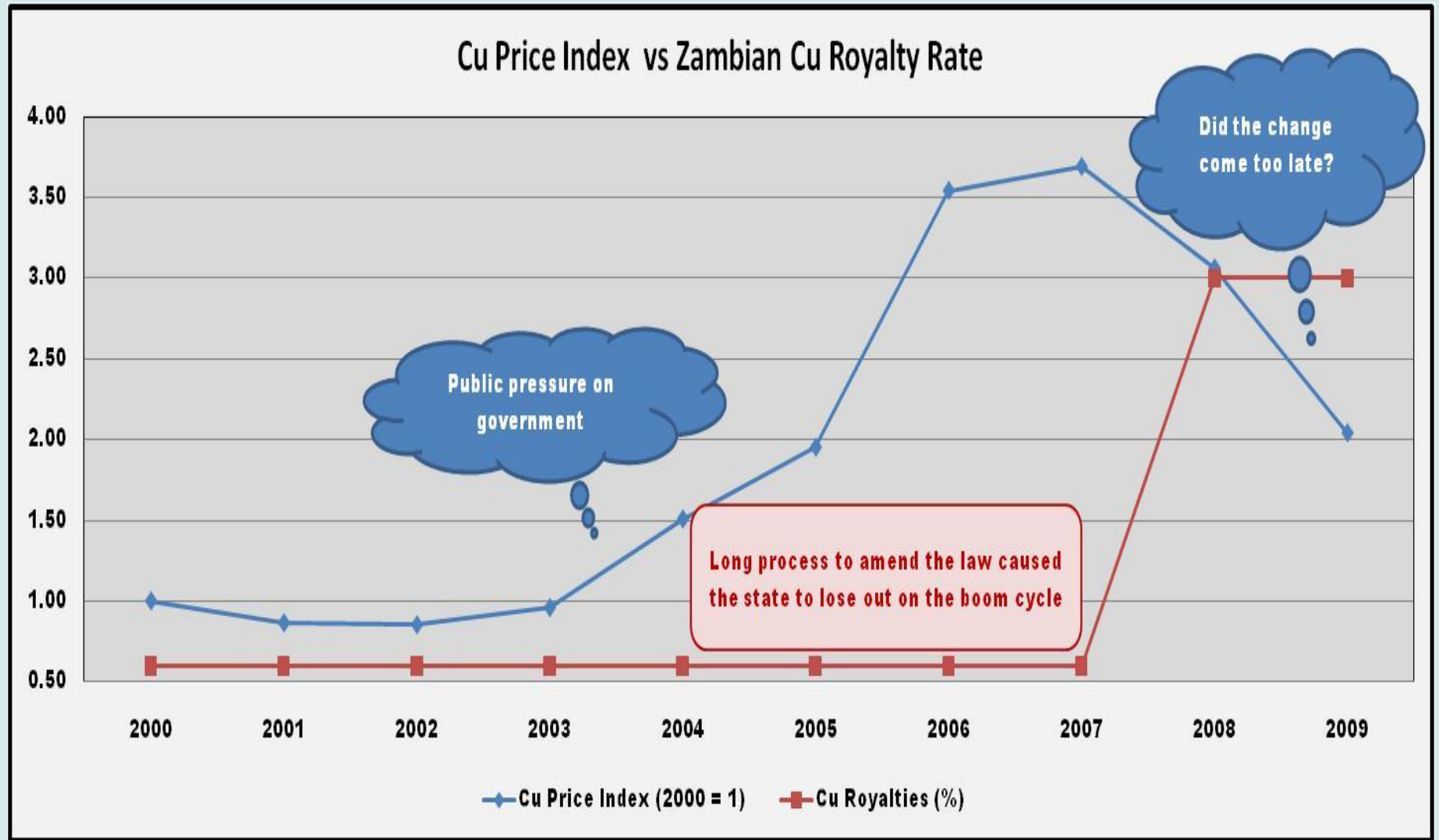
- ✗ What are mineral royalties?
- ✗ Who should receive royalties?



"Across the globe, no type of tax on mining causes as much controversy as a royalty tax" Otto et al (2006)

- ✗ Why the controversy?
- ✗ What are the design considerations?
- ✗ What are the options?
- ✗ What are the alternatives?

A case for royalties targeting rents



Historic mineral royalties in SA

- ✖ Before 1900: 1 – 2.5% of sales value
- ✖ Early 1900s: (Gold) lease consideration
- ✖ Late 1900s: Multiple schemes (negotiable)
- ✖ MPRDA (2002): State custodianship over minerals
- ✖ 2003/6 Royalty Bills: Specific rates on gross sales
- ✖ 2007 Royalty Bill: Formula based on NSR
- ✖ The Act: Dual formula on gross sales

Principles of Formula

- ✖ A formula is appropriate if we are after rents
- ✖ 1st step– Fix the royalty base
- ✖ 2nd step - Fix the minimum rate (a) e.g. 1%
- ✖ 3rd step - Fix the maximum rate (a+b) e.g. 3%
- ✖ 4th step– Use profitability (PBT) to ‘slide’ the rate between (a) and (a+b) e.g. x-factor of gold formula
- ✖ Then (b) = rent premium, i.e. max 2% in example
- ✖ $Y\% = (a+b)$ the royalty rate

Structure of the Formula

× $Y\% = (a+b)$, where $a = \frac{\text{X-ratio} \times \text{Factor (F)}}{100}$ and $b = \text{max rate}$

× x-ratio = PBT ÷ Sales revenue over the period

× Factor (F) based on principle that max profitability (100%) results in max rate (e.g. 3%)

× Solving for F in Formula $3 = 1 + \frac{100}{F}$, i.e. $F = 50$

× For a rate between 1 and 3%, $Y\% = 1 + \frac{x\%}{50}$

× For a rate between 1 and 5%, $Y\% = 1 + \frac{x\%}{25}$

The Royalty Act

- ✖ Money Bill for administration by SARS
- ✖ Promulgated in 2008 - effective from 1/3/2010
- ✖ Imposes a royalty on the (first) transfer of minerals
- ✖ Mineral resource is as defined in Section 1 of the MPRDA - includes petroleum
- ✖ Transfer means disposal, export, consumption, theft, destruction or loss of a mineral resource
- ✖ Rollover relief available for transfers of going concerns that include minerals that have already been won, e.g. mineral resources in stockpiles - S9

Royalty Act Formulae

- ✖ The two formulae target rents
- ✖ A royalty base of gross sales
- ✖ The minimum rate in both formulae = 0.5%
- ✖ The maximum rates (a+b) are 5 and 7%
- ✖ EBIT '*slide*' the rate between (a) and (a+b)
- ✖ The maximum rent premium (b) = 4.5 & 6.5%
- ✖ $Y\% = (a+b)$
- ✖ Royalty amount for (12-month) assessment period
= Rate (Y%) x Base (gross sales)

The scheme

- ✖ One of two formulae is used to calculate the rate
- ✖ This choice requires an assessment on refinement
- ✖ Both formulae are payable on a base of gross sales

- ✖ Refined rate

$$Y_r \% = 0.5 + x/12.5$$

- ✖ Unrefined rate

$$Y_u \% = 0.5 + x/9.0$$

- ✖ The reduced rate for refined products

compensates for the additional cost of refinement

SLIDING-SCALE RATE CALCULATION (ROYALTY AND GOLD FORMULA)					
Profitability (%)	Gold Lease Rate (y = 15 - 90/x)	Gold Tax Rate (y = 43 - 215/x)	The Formula (y = 1 + x%/50)	Unrefined Royalty (%)	Refined Royalty (%)
-10	0.0	0.0	0.8	0.5	0.5
0	0.0	0.0	1.0	0.5	0.5
5	0.0	0.0	1.1	1.1	0.9
10	6.0	21.5	1.2	1.6	1.3
20	10.5	32.3	1.4	2.7	2.1
30	12.0	35.8	1.6	3.8	2.9
40	12.8	37.6	1.8	4.9	3.7
50	13.2	38.7	2.0	6.1	4.5
60	13.5	39.4	2.2	7.0	5.0
Average	7.6	22.8	1.5	3.1	2.4

Classification according to definition

- ✗ Impacts on both base (sales value) and the royalty rate
- ✗ Refined minerals in Schedule 1 (Comprehensive beneficiation)
 - + Gold refined once processed to at least 99,5 per cent purity;
 - + Others are PGM 99,9%; Copper 99.0%
- ✗ Unrefined - Schedule 2 (Raw/Limited beneficiation)
 - + Coal interesting because of the provision for several grades
 - + It implies coal cannot be refined, but reduction of gross sales value is possible
 - + Others are Chrome (37% to 46%); Iron ore (61% to 64%)
- ✗ Dual Schedule Minerals (In both schedules e.g. platinum)
 - + Mineral viewed as refined if beneficiated to or above the refined condition; otherwise view as unrefined
 - + Also depends on the ratio of refined sales to total sales

Calculation of the Royalty Base

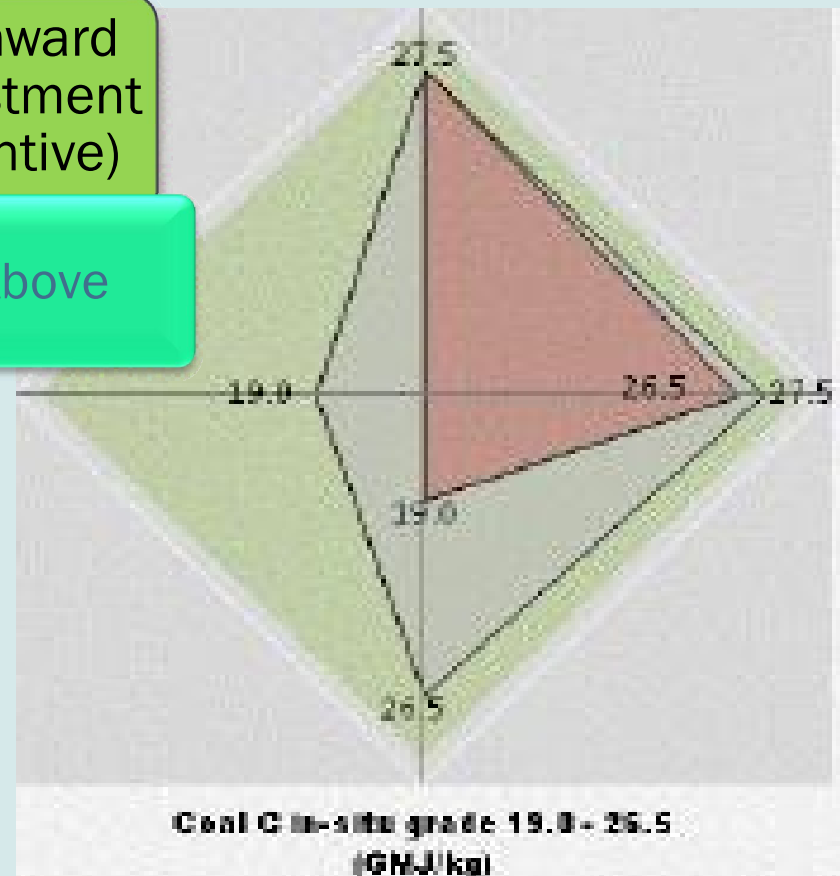
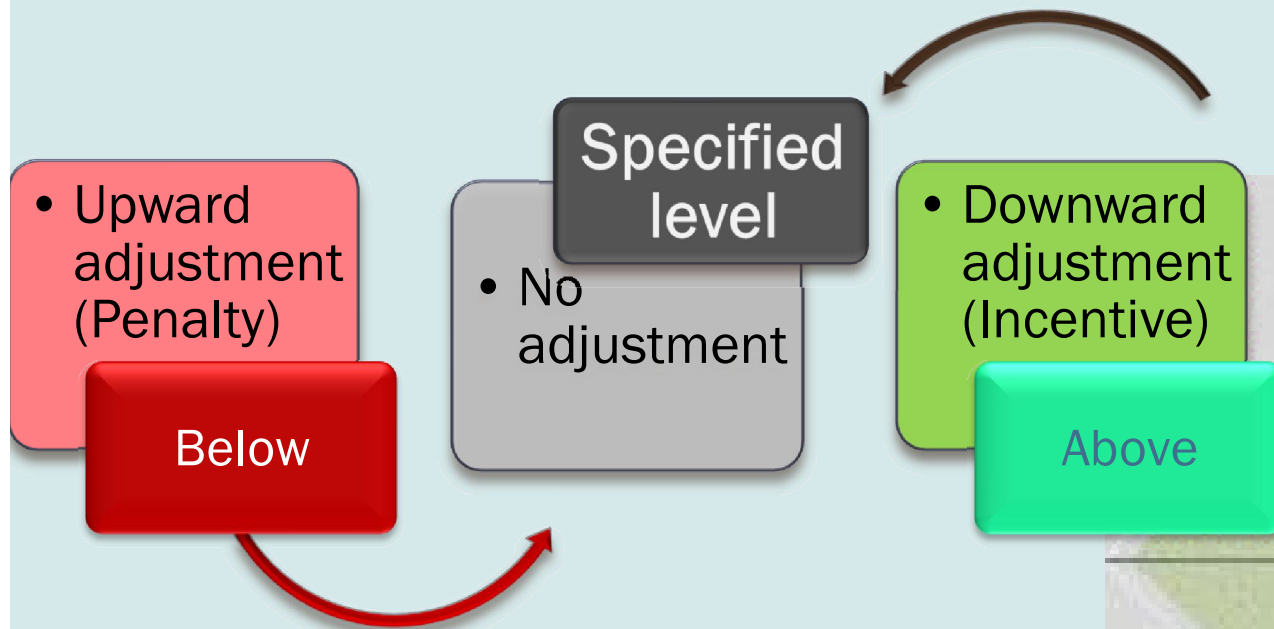
1	Smelting
2	Refining
3	Processing
4	Primary crusher
5	DMS plant, sintering
6	Recovery
7	Sorting
8	Transport & insurance
9	Throughput
10	Security
11	Port, shipping & insurance

Non-deductible expenses in blue
Deductible expenses in red

Calculation of EBIT

- ✖ Earnings before Interest and Taxes
- ✖ As done for financial reporting purposes (but only earnings attributable to the winning and recovery of mineral resources are considered)
- ✖ EBIT for refined and unrefined minerals is not the same and the two EBITs are separately defined
- ✖ Complex, but cater for mine/industry specifics

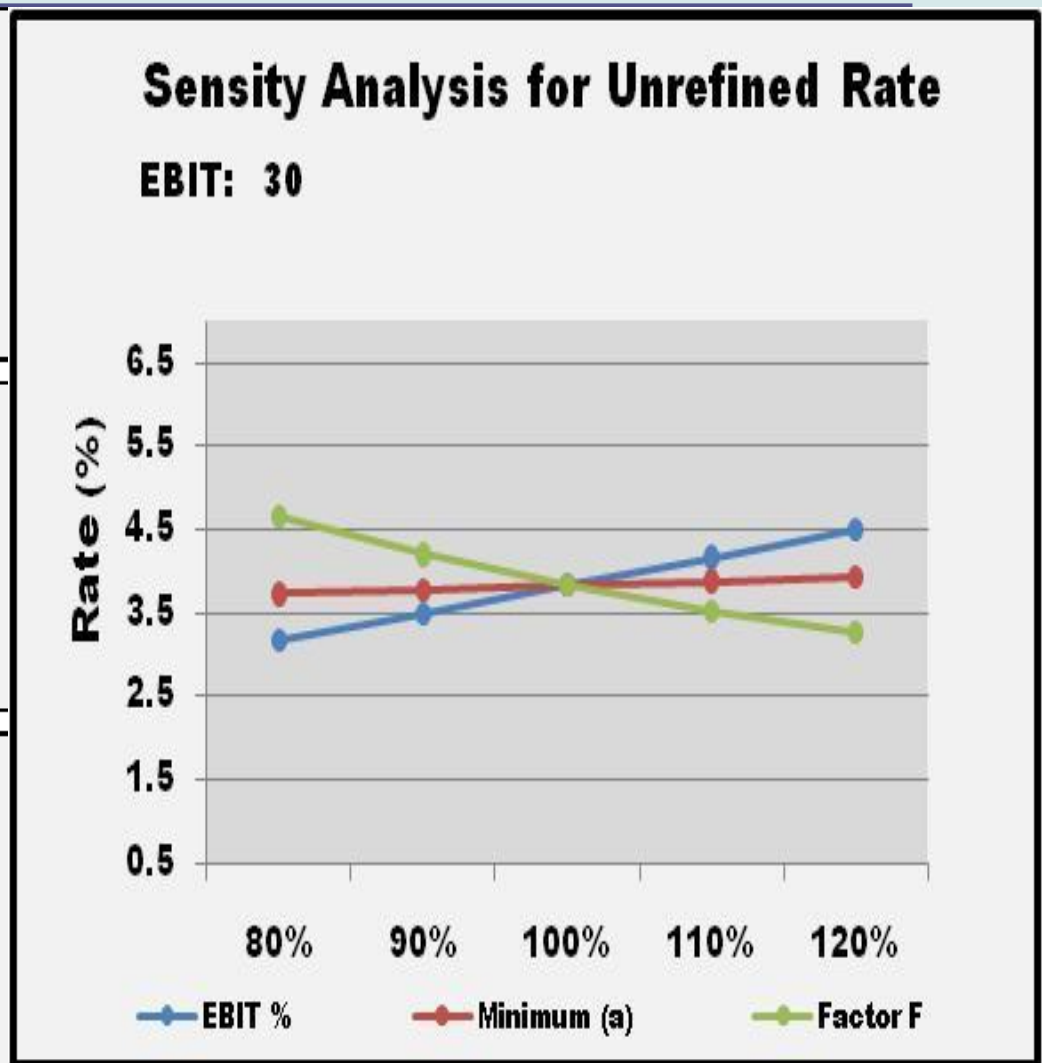
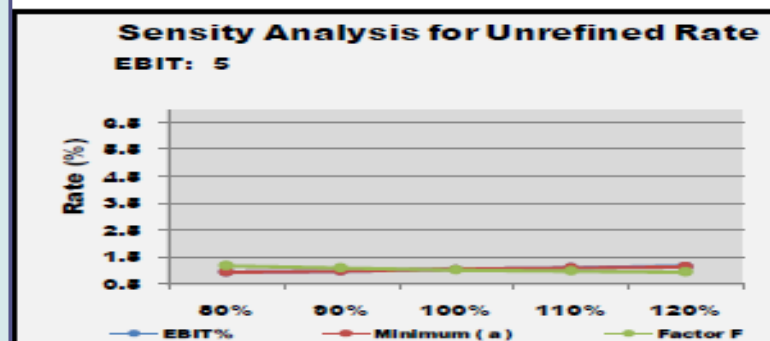
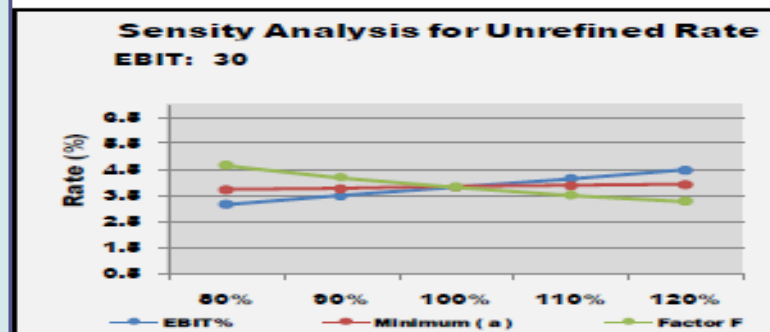
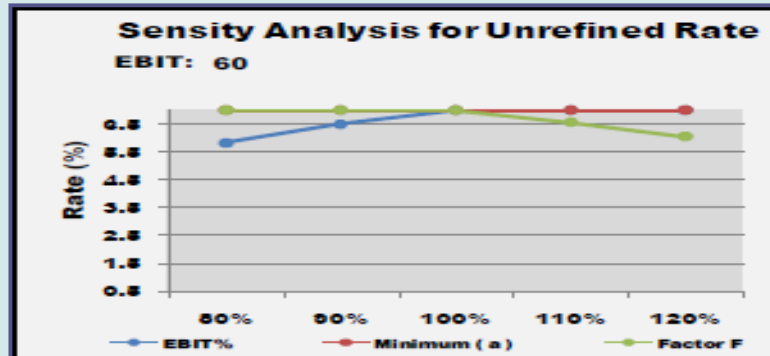
An issue to watch out for



✖ Gross sales adjustments

Another issue to watch out for

- ✗ Impact varies under different EBITs

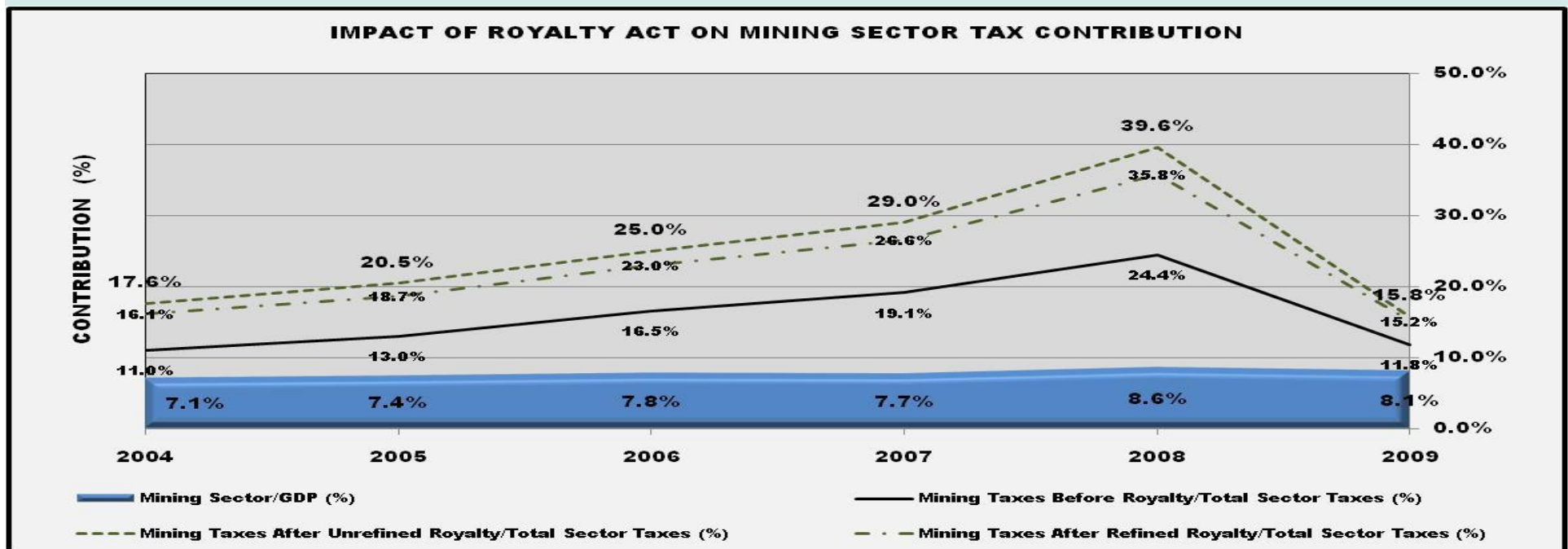


Impact on reporting

- ✗ The decision on, and justification for, which ‘in situ resource grade’ to use for the purpose of adjustment
- ✗ Technical sign-off(s) on the quantity and quality for the range of mineral products e.g. coal mines
- ✗ Technical and accounting input to the adjustments to revenue for products outside the specified conditions
- ✗ Mine-specific definitions and methods for calculating gross sales, EBIT and the royalty amount
- ✗ Adjustment of transfer pricing protocols for valuation of non-arm’s-length gross sales values
- ✗ Auditor’s alignment of the royalty parameters with financial reporting standards

What does the Act mean to the State?

- ✖ Mineral and petroleum taxes account for about 17% of total corporate taxes, while its contribution is about 8%
- ✖ Expect about a 7% rise in mining's contribution to company taxes and a 50% rise in the tax bill in boom times – assuming taxes from other industries remain constant
- ✖ Mining WILL play an even role in future because of the Act



What does the Act mean to Industry?

✗ Impact is difficult to predict

✗ The wide range in profitability

is indicative of the cyclic nature and need to spend capital

✗ The gaps between the lines show that the impact is significant during times of high profitability, while less significant during times of low profitability

IMPACT OF ROYALTY ACT ON PROFITABILITY
(UNREFINED COAL)



THANK YOU – ANY QUESTIONS?

News flash from Wits Mining

Graduation evening is

7 November

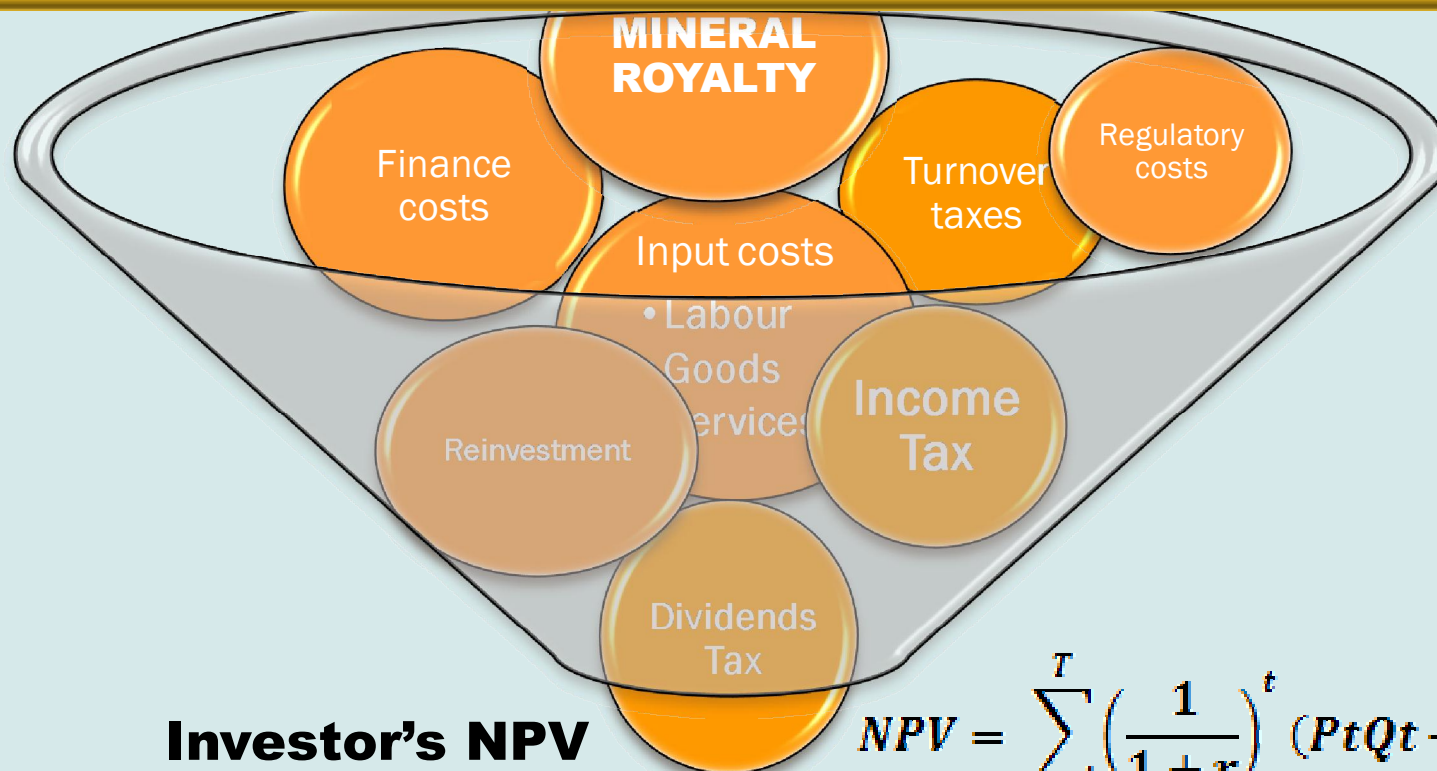
***60 of the 74 final year students
passed this year***

40 are male and 20 female

Ore body



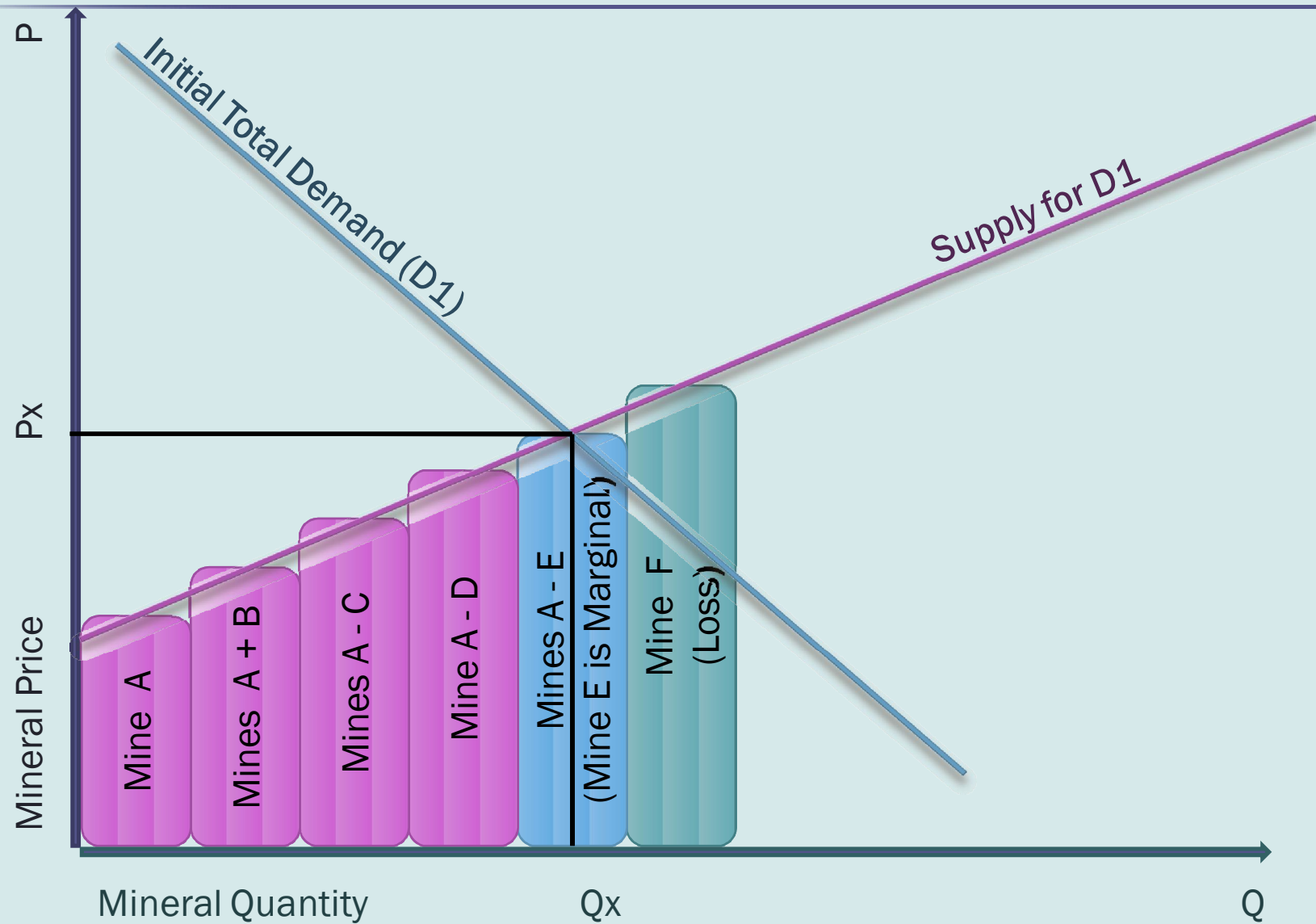
Converting ore body into a valuable product, which is exchanged for cash



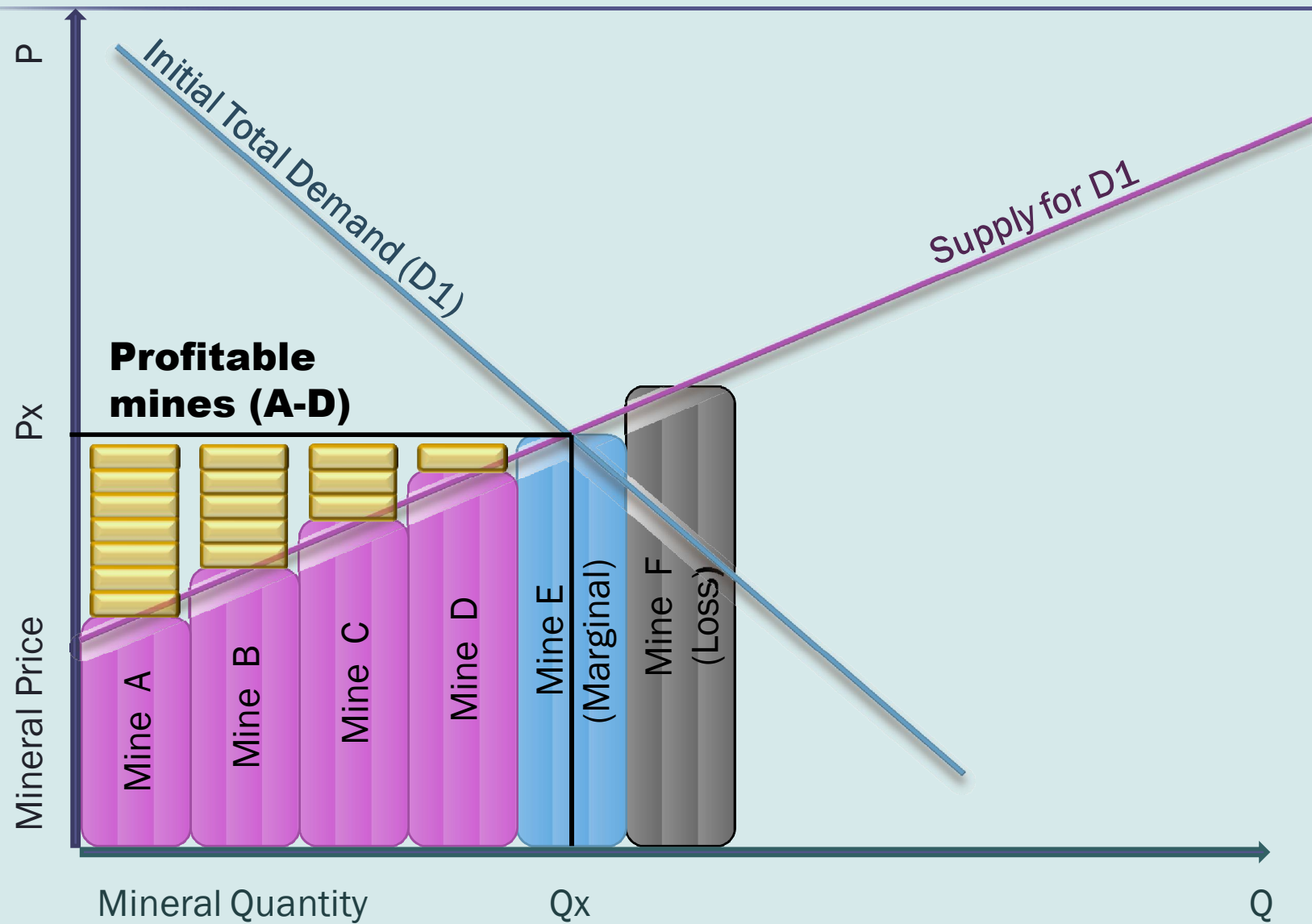
Investor's NPV

$$NPV = \sum_{t=0}^T \left(\frac{1}{1+r} \right)^t (P_t Q_t - C_t Q_t - K_t)$$

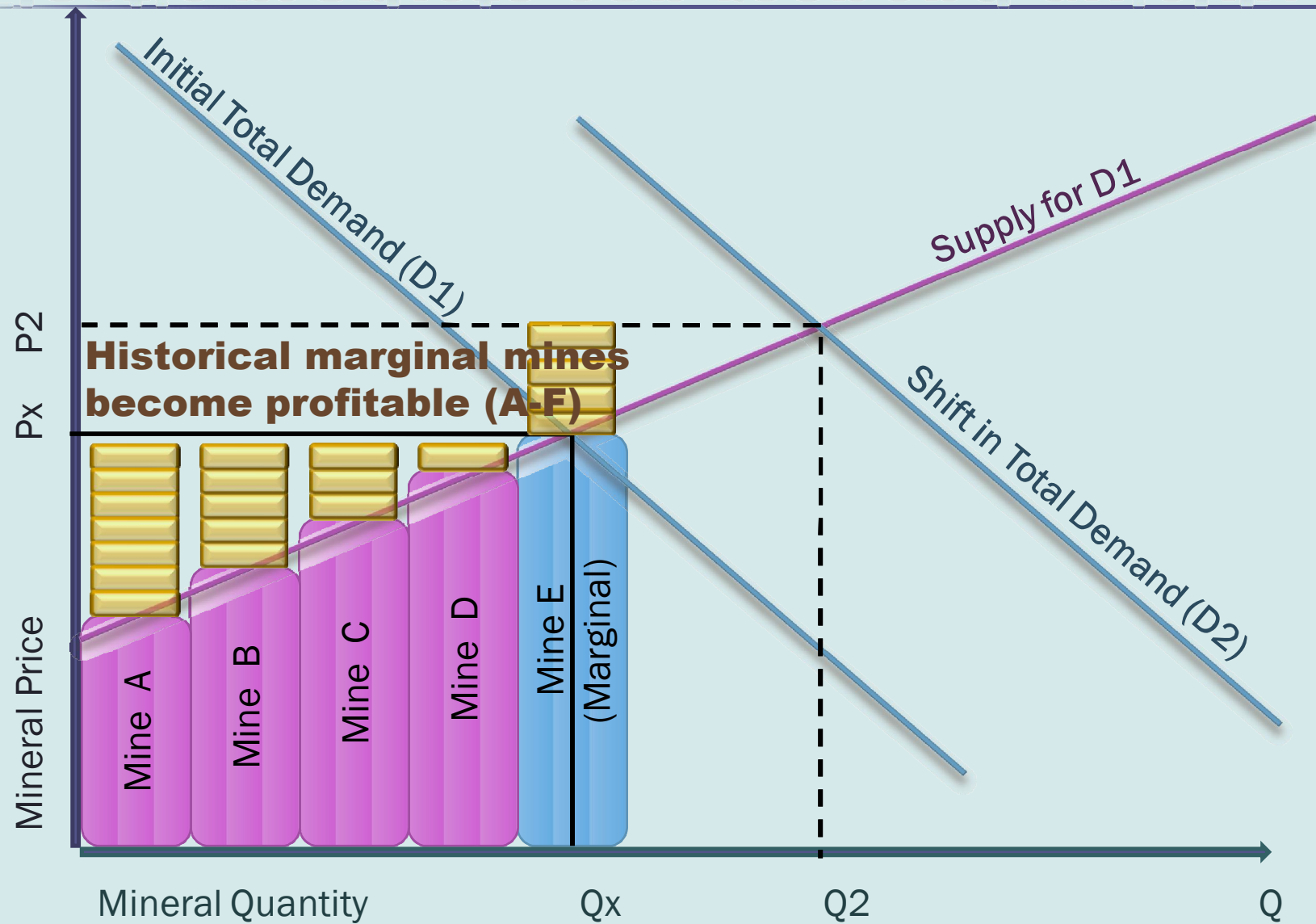
Understanding mineral rents



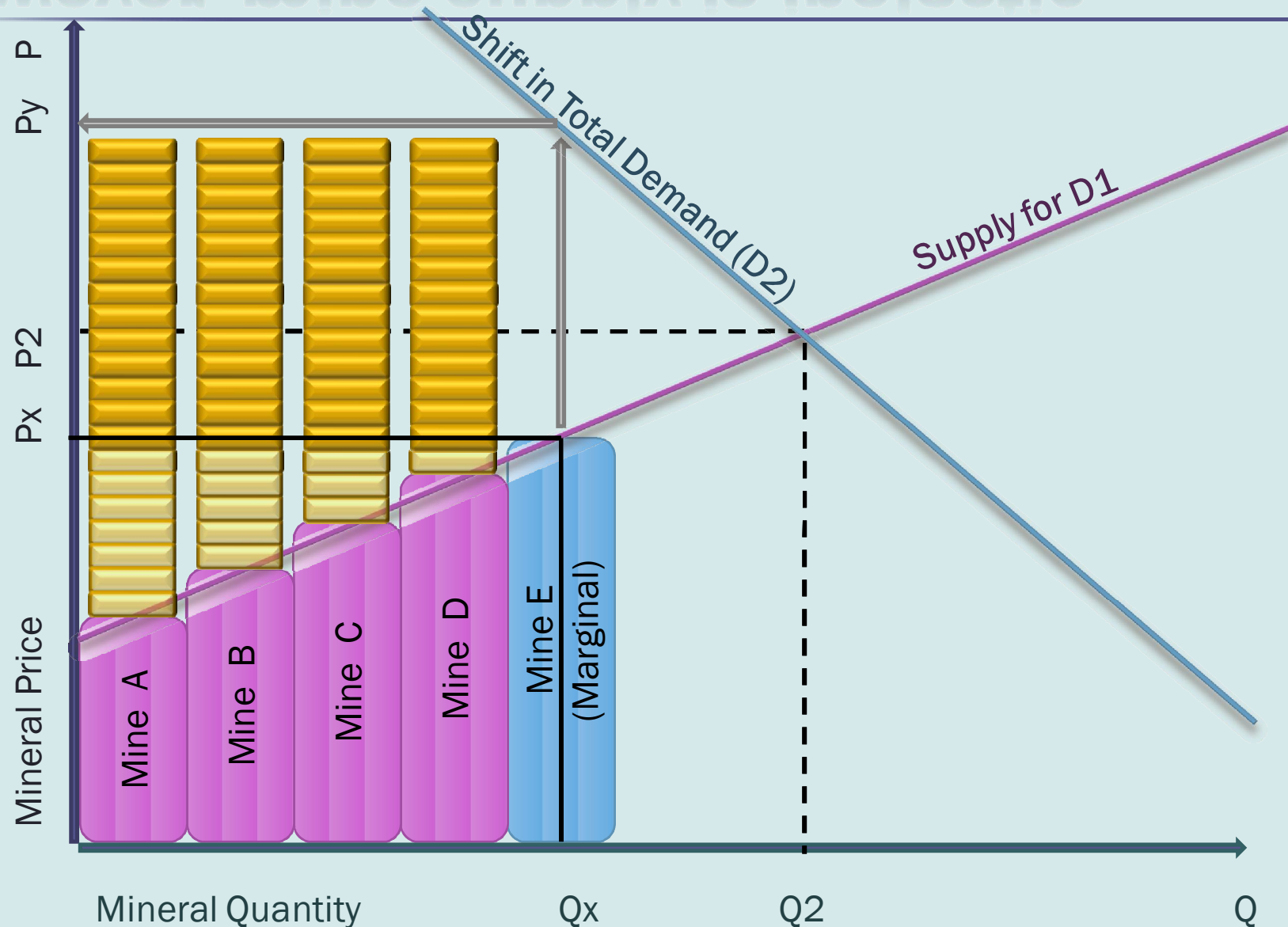
Not all mines are equal



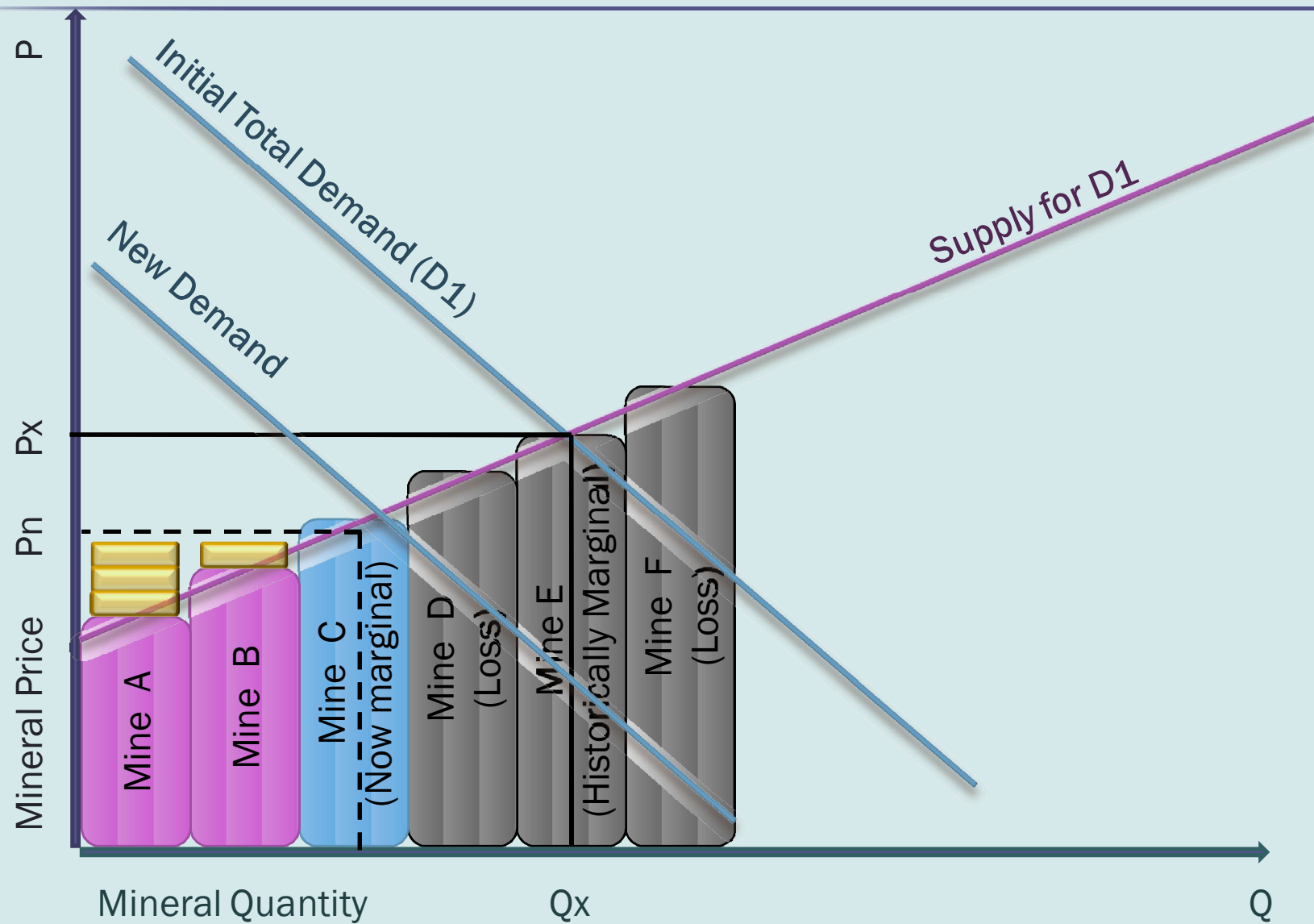
Elastic markets can respond quickly



However, mine supply is inelastic...



But ... rents can just as easily evaporate



The intent of the Formula

Table 1 Sliding rate caused by the parameters of the formula

Profitability or x-ratio	$Y\% = 1 + \frac{X}{50}$	$Y\% = 1 + \frac{X}{25}$	Remarks
0 %	1 %	1 %	Minimum rate
25%	1.5 %	2 %	
50%	2%	3 %	
100%	3%	5 %	Maximum rate