

PROJECT: Marginal depreciating asset
KEY RESULTS

Rate of return (after 47% tax)	5.41%	Net present value (discounted at 6.71%)	-41.5
Total income tax paid	183.3	Present value of tax (discounted at 6.71%)	149.4
Total royalties paid	0	PV royalties (discounted at 6.71%)	0
Total tax and royalties paid	183.3	PV tax and royalties (discounted at 6.71%)	149.4
Rate of return (before tax)	10%	Before tax NPV (discounted at 10%)	0
Effective tax rate (real)	65.6%		
Total investment	1000.0	Total depreciation (after balancing adjust)	485.6

TABLE 1: CASH FLOW SUMMARY

<u>Period</u>	<u>Net receipts</u>	<u>Invest't & sale</u>	<u>Depreciation</u>	<u>Debt interest</u>	<u>Debt Princ'l</u>	<u>No-prof rovals</u>	<u>Prof rovals</u>	<u>AdVal rovals</u>	<u>Unit rovals</u>	<u>Annual loss</u>	<u>Accum loss</u>	<u>Tax income</u>	<u>Tax payable</u>	<u>Cash flow</u>
0	0	1000	0	0	0	0	0	0	0	0	0	0	0	-1000
1	224.5	0	150	0	0	0	0	0	0	0	0	74.5	35	189.5
2	196.6	0	127.5	0	0	0	0	0	0	0	0	69.1	32.5	164.1
3	172.1	0	108.4	0	0	0	0	0	0	0	0	63.7	29.9	142.1
4	150.7	0	92.1	0	0	0	0	0	0	0	0	58.5	27.5	123.1
5	131.9	-514.4	7.6	0	0	0	0	0	0	0	0	124.3	58.4	587.9

- (1) Inflation (i) is 3%, post-inflation 'going' interest rate (r) is 10% and constant decline in asset value with no inflation (s) is 15%.
- (2) With asset costing \$1000 at start of Year 1, Net Receipts at end Year 1 = $\$1000 \times [r - (i - s(1+i))] = \224.5 . See Mayo (1984), Appendix 2.
- (3) Net Receipts decline at the rate $i - s(1+i)$ per year or $[0.1 - 0.15 \times (1 + 0.03)]$ or 12.45%. See Mayo (1984), Appendix 2.
- (4) Asset value also declines at the rate $i - s(1+i)$ per year, so Depreciation in Year 1 = $\$1000 \times 0.1245$, in Year 2 = $\$(1000 - 124.5) \times 0.1245$, etc.
- (5) With nominal interest in the tax base, the investor's after-tax discount equals the 10% interest rate reduced by the 47% tax rate to 5.3%.
- (6) With regular declining balance depreciation allowed, real effective tax rate is 65.6%, after tax return is 5.4% and after-tax NPV is -\$41.5.