Taxable Income

Lecture notes for PET 472
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Taxable Income

\[
\text{Taxable Income} = \text{Net Revenue} - \text{Gross operating expenses} - \text{state/local production taxes} - \text{depreciation} - \text{depletion}
\]

Federal Taxes = Taxable Income * Federal Tax Rate
Operating Expenses

Field Personnel
• Time of pumper, roustabouts etc dedicated to lease
• Typically expressed as $/month

Utilities
• Expendables such as electric or gas costs
• Typically accounted as $/KW or $/mmbtu, however usually expressed as $/month

Workovers
• Costs for remedial expense type work; e.g., rod parts, pump changes
• Typically incur cost as $/event where one workover per year.

Water disposal
• Costs incurred for water hauling and disposal.
• Expressed as $/bbl. Sensitive to method: truck hauling and disposal is $0.50–1.00/bbl; but disposal directly into a SWD well or injection well is $0.05 – 0.15/bbl.
Operating Expenses

On a per barrel basis:

$2 (excellent)
$3 (good)
$6 (poor)

On a monthly basis:

$/month/well

- Flowing well: $500-$1000
- Pumping well: $1000
- High volume wells: $1500-$2000 (subs, GL)
- Gas wells: <$500
Net operating Revenue = Gross Operating Expenses + Sales Taxes

\[(\text{bopd}) \times (\text{oilprice}) \times (\text{NRI}) + (\text{mcf}) \times (\text{gasprice}) \times (\text{NRI})] \times (1 - \text{Advol}) \times (1 - \text{Sev}) = (\text{GOE}) \times (\text{WI})\]

where,

NRI = net revenue interest in lease (less royalty)
WI = working interest in lease
GOE = gross operating expenses, $/day
Oilprice = sales price, $/bbl
Gas price = gas price, $/mscfd
Advol = local tax rate on revenue, tax $/revenue$, decimal
Sev = state tax rate on revenue, tax $/revenue$, decimal
Depreciation

Asset depreciation

Economic
  - physical
  - functional

Accounting
  - Book
  - Tax

For calculating taxes to IRS
Depreciation

• Depreciable property must be:
  – Used in business or held for production of income
  – Have a definite service life
  – Something that loses value over time

• Cost basis
  – Represents the total cost that is claimed as an expense over the asset’s life; i.e., the sum of the annual depreciation expenses.
• Modified Accelerated Cost Recovery System developed by IRS and approved by Congress to provide a simple and rapid depreciation method.
  – Guidelines were set which created several classes of assets, each with an arbitrary life called a recovery period – not related to useful life.

  – Prescribed depreciation rates for each class

  – Under MACRS the salvage value of a property is always treated as zero.
## Depreciation

<table>
<thead>
<tr>
<th>Recovery Period</th>
<th>ADR* midpoint class</th>
<th>Asset</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-year</td>
<td>ADR &lt; 4</td>
<td>Special tools for manufacture of plastic products, fabricated metal products and motor vehicles</td>
</tr>
<tr>
<td>5-year</td>
<td>4&lt;ADR&lt;10</td>
<td>Autos, light trucks, high-tech equipment, equipment used for R&amp;D, computerized telephone switching systems</td>
</tr>
<tr>
<td>7-year</td>
<td>10&lt;ADR&lt;16</td>
<td>Manufacturing equipment, office furniture, fixtures</td>
</tr>
<tr>
<td>10-year</td>
<td>16&lt;ADR&lt;20</td>
<td>Vessels, barges, tugs, railroad cars</td>
</tr>
<tr>
<td>15-year</td>
<td>20&lt;ADR&lt;25</td>
<td>Waste-water plants, telephone distribution plants or similar utility property</td>
</tr>
<tr>
<td>20-year</td>
<td>25&lt;ADR</td>
<td>Municipal sewers, electrical power plant</td>
</tr>
<tr>
<td>27.5-year</td>
<td></td>
<td>Residential rental property</td>
</tr>
<tr>
<td>39-year</td>
<td></td>
<td>Nonresidential real property including elevators and escalators</td>
</tr>
</tbody>
</table>

* ADR: Asset Depreciation Range, published by IRS
Depreciation

• Half year convention
  – Assumes assets in place by midyear, thus only half year depreciation in first year
  – Full year depreciation in subsequent years
  – Remaining half year’s depreciation taken in the final year

• Depreciation methods
  – Declining balance to straight line
## Depreciation

### MACRS

<table>
<thead>
<tr>
<th>Year</th>
<th>Class 3</th>
<th>Class 5</th>
<th>Class 7</th>
<th>Class 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>33.33</td>
<td>20.00</td>
<td>14.29</td>
<td>10.00</td>
</tr>
<tr>
<td>2</td>
<td>44.45</td>
<td>32.00</td>
<td>24.49</td>
<td>18.00</td>
</tr>
<tr>
<td>3</td>
<td>14.81</td>
<td>19.20</td>
<td>17.49</td>
<td>14.40</td>
</tr>
<tr>
<td>4</td>
<td>7.41</td>
<td>11.52</td>
<td>12.49</td>
<td>11.52</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>11.52</td>
<td>8.93</td>
<td>9.22</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>5.76</td>
<td>8.92</td>
<td>7.37</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>8.93</td>
<td>6.55</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>4.46</td>
<td>6.55</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td>6.56</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>6.55</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>3.28</td>
</tr>
</tbody>
</table>

*Bold represents year switch from declining balance to straight line*
Depletion

If you own mineral property such as oil, gas geothermal or standing timber, you may be able to claim a deduction as you deplete the resource. A capital investment in natural resources needs to be recovered as the natural resources are being removed and sold. The process of amortizing the cost of natural resources in accounting periods is called depletion. The objective of depletion is the same as that for depreciation; i.e., to amortize the cost in a systematic manner over the asset’s useful life.

There are two methods to determine depletion: cost depletion and percentage depletion. These methods are used for book as well as tax purposes. In most instances, depletion is calculated by both methods and the larger value is taken as the depletion allowance for the year. For most oil and gas wells, only cost depletion is allowable.
Depletion

- Same concept as units-of-production method
- Generally more favorable for taxpayer

\[ D = B \left( \frac{P}{P + R} \right) \]

- D – annual cost depletion allowance, $
- P – oil or gas production sold or for which payment was received during the tax year.
- R – remaining reserves at the end of the tax year
- B – “adjusted basis” of property
Peters oil purchases a waterflood at $3 per recoverable barrel. If reserves are 146,000 BO, then the initial investment is $438,000. Calculate the annual cost depletion allowance for the production schedule below.

<table>
<thead>
<tr>
<th>Year</th>
<th>P, Mstb</th>
<th>Depletion allowance, D, $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>46</td>
<td>138</td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>105</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>21</td>
</tr>
</tbody>
</table>

Sum = $438,000
Depletion

- Requires no starting basis

- Simply percentage deduction based upon net income from the sale of production from the property

- Allowed to small independents only….1000 bopd or 6000 mcfd, net

- Depletion rate for oil and gas wells, 15%

- Sum limited to 50% of a company’s taxable income from the property excluding the depletion deduction.
### Depletion Percent Depletion Example

<table>
<thead>
<tr>
<th></th>
<th>A, $M</th>
<th>B, $M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net revenue (less royalty)</td>
<td>973</td>
<td>973</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>438</td>
<td>876</td>
</tr>
<tr>
<td>Income (BFIT)</td>
<td>535</td>
<td>97</td>
</tr>
<tr>
<td>depletion allowance, 15% of net revenue</td>
<td>146</td>
<td>146</td>
</tr>
<tr>
<td>Allowable limit, 50% of taxable income</td>
<td>267</td>
<td>48</td>
</tr>
<tr>
<td>Depletion allowance</td>
<td>146</td>
<td>48</td>
</tr>
<tr>
<td>Taxable Income (BFIT)</td>
<td><strong>389</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>