Access to Land: Economics of Leasing

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President Harry Truman wanted one-handed economists because every one that he knew said: “On the one hand this, on the other hand that.”
Introduction

• Land values in VA are driven by non-Ag use
• Farmers will find it difficult to compete with
  – Developers
  – Recreational users
  – Rural lifestylers
• Established farmers & beginning farmers
Paying for Land w/Farming

- Rockingham County estimated profit per acre = $70 (Use Value Estimates)
- Given $70/yr, how much could you pay for land?
- Capitalize profits/ac based on 7.5%

\[
\text{Value} = \frac{\text{Net Return}}{\text{Capitalization Rate}}
\]

\[
$933 = \frac{$70}{0.075}
\]

- $933/ac is the price you can pay
- Fair market value is, well more than $933
Land and Farming

• Land ownership is not required to farm
• Land control is required to farm
• Longer years of control implies
  – Reduced risk
  – Access to cost-share
  – Credit acquisition
  – Capital investments
  – Outside investors to keep land in farming?
Leasing

• Objectives?
  – Own land as part of an investment portfolio
  – Operate a profitable farm business
  – Both?

• Land costs comparison
  – Purchase @ $5,200/ac - financed for 30 years @ 4% plus taxes ~ $300/ac annual cash flow
  – Lease similar land in VA range $15 to $100 (NASS)
  – Opportunity of that investment $5,200/$40 = 130 acres of additional cropland
Why own?

• Ownership – It’s my farm!
• Collateral – access to financing
• My farm – I can grow and do what I want – total control
• Builds value over time – equity
• Inversely related to stocks?
• Hedge against inflation

Why not own?

• Costs $$$$
• Diverts profits
• Cash flow
• Locked into current land base
• Acreage
• Problems
• Buildings
Why Lease?

- Lower start up costs (land and structures)
- Start up as part-time
- Can expand as needed
- Known fixed costs
- Greater working capital
- Flexible

Why not Lease?

- Not my farm
- Uncertainty of control
- Legal issues
- Age of infrastructure
- Limited equity
- Multiple landlords
- Multiple tracts – higher costs?
Economics of Leasing
Objectives

To illustrate

• Basic economic considerations of leasing
  – Understand costs – the key concept
  – “I quit” point
  – Long-term “wants”
  – Short-term “got to have”

• Negotiation range

• Valuation of assets & other inputs
What are Costs?
Costs

• Opportunity costs
  – Next best use of resources
  – Considering what you are doing now
    • What are you giving up or gaining?
    • Attend child's baseball game?
    • You can always go fishing!

• Variable costs

• Fixed costs
Variable costs
AKA, operating or out-of-pocket costs
e.g., fuel, oil, seed, fertilizer…

Change with production

$/Ac  

Beginning  

Established  

Total $  

------------------  

--------------

--------- Acres of production ---------
Fixed costs
AKA Sunk Costs
e.g., depreciation, interest, taxes, insurance…
Do not change with production

$/Ac  Beginning  Total $

----------------- Acres of production -------------------
“I Quit” Point

• For property owners to lease out land, they must cover all additional variable costs and risk
  – Otherwise they are better off doing nothing

• For farmers to lease land, they must cover all variable costs (and risk) of producing a crop and/or livestock product
  – Otherwise they are better off not leasing
Consider an Example Farm Lease

Landlord
• Owns land - 125 acres
• Owns hay shed, fence, & water system
• Good soil fertility & pH
• Wants a fair return

Tenant
• Owns machinery
• Owns 50 beef cows w/ rep heifers & bulls
• Will provide all labor and management
• Wants a fair return
Definition

What is Depreciation?

Depreciation – reduction in value and/or obsolescence of an asset over time (not tax depreciation)
Landlord Situation

Wants to cover FC & VC
- Buildings - repairs & depreciation
- Fence - repairs & depreciation
- Taxes & Ins
- Labor
- Return to ownership – land & improvements

Must cover additional VC
- Repairs
- Taxes
- Insurance
Tenant Situation

Wants to cover FC & VC
- Machinery - repairs & depreciation
- Livestock – taxes & depreciation
- All operating costs
- Labor
- Management
- Return to ownership

Must cover additional VC
- Repairs
- Taxes
- All other operating costs
- Labor?
## Landlord Situation

<table>
<thead>
<tr>
<th></th>
<th>Wants</th>
<th>Must</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 acres $300,000</td>
<td>$11,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Build., fence, &amp; water</td>
<td>$2,719</td>
<td>$2,719</td>
</tr>
<tr>
<td>Taxes &amp; Ins</td>
<td>$1,000</td>
<td>$0</td>
</tr>
<tr>
<td>Return to ownership</td>
<td>$18,125</td>
<td>$0</td>
</tr>
<tr>
<td>Total costs</td>
<td>$32,844</td>
<td>$3,719</td>
</tr>
<tr>
<td>Per ac rent</td>
<td>$263</td>
<td>$30</td>
</tr>
</tbody>
</table>
## Tenant Situation

<table>
<thead>
<tr>
<th>50 cows</th>
<th>Wants</th>
<th>Must</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery</td>
<td>$4,300</td>
<td>$1,200</td>
</tr>
<tr>
<td>Livestock</td>
<td>$3,500</td>
<td>$700</td>
</tr>
<tr>
<td>Operating costs</td>
<td>$11,500</td>
<td>$11,500</td>
</tr>
<tr>
<td>Labor</td>
<td>$5,000</td>
<td>$4,000</td>
</tr>
<tr>
<td>Management</td>
<td>$5,000</td>
<td>$0</td>
</tr>
<tr>
<td>Return to ownership</td>
<td>$6,300</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>$35,600</td>
<td>$17,400</td>
</tr>
<tr>
<td>Total income</td>
<td>$21,500</td>
<td>$21,500</td>
</tr>
<tr>
<td>Net income</td>
<td>-$14,100</td>
<td>$4,100</td>
</tr>
<tr>
<td>Per ac rent</td>
<td>n/a</td>
<td>$33</td>
</tr>
</tbody>
</table>
What Now?

The owner wants $263 per acre and the tenant is losing $14,100 per year

• Is there room to negotiate?
• Look at the must’s
• $30 vs. $33 per acre
• Trade services or costs
• Tenant over-estimated costs – under-estimated returns
• Use equipment, custom work, … spread fixed costs
Other Issues?

What’s the value of

• A great tenant and/or landlord
• The farm is next door, just down the road
• Soils - better or worse, could lead to higher or lower yields
• Length of lease
Valuation of Capital Assets

New costs/value (buildings, fences, silos…)

• Depreciation – spread value over life of asset
  – e.g. 100% ÷ 25 years = 4% per year
  – If already 15 years old, value is (25-15) ÷ 25 = 40% of new value, but will last 20 more years

• Interest on current value of assets

• Repairs - actual or 1.5%

• Taxes - actual or 1%

• Insurance - actual or 0.5%
## Valuation of Buildings

<table>
<thead>
<tr>
<th>Item</th>
<th>Rate</th>
<th>New</th>
<th>15 yrs Old</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Rate</td>
<td>$40,000</td>
<td>$16,000</td>
<td>40% of new</td>
<td></td>
</tr>
<tr>
<td>Depreciation (100/25 yrs)</td>
<td>4.0%</td>
<td>$1,600</td>
<td>$800</td>
<td>100%/20 yr</td>
</tr>
<tr>
<td>Interest</td>
<td>5.0%</td>
<td>$2,000</td>
<td>$800</td>
<td></td>
</tr>
<tr>
<td>Repairs</td>
<td>1.5%</td>
<td>$600</td>
<td>$240</td>
<td></td>
</tr>
<tr>
<td>Taxes</td>
<td>1.0%</td>
<td>$400</td>
<td>$160</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>0.5%</td>
<td>$200</td>
<td>$80</td>
<td></td>
</tr>
<tr>
<td>Total costs</td>
<td></td>
<td>$4,800</td>
<td>$2,080</td>
<td></td>
</tr>
</tbody>
</table>
Comments

Calculations will not overcome

• Costs-price squeeze – lack of profits
• Surplus of land for leasing
• Shortage of land for leasing
• High land values
• Poor landlord/tenant relations
• Lack of common sense
Resources

Farm Business Management Update, Virginia Tech Department of Agricultural and Applied Economics:
http://news.cals.vt.edu/fbm-update/

Office of Farmland Preservation, Farm Link Program, Virginia Department of Agriculture and Consumer Services:

Planning the Future of Your Farm: A Workbook Supporting Farm Transfer Decisions, Virginia Edition:
http://pubs.ext.vt.edu/446/446-610/446-610.html

Iowa State Extension, Sample Farm Leases:
https://www.extension.iastate.edu/agdm/wdleasing.html
Questions?

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