The Farm Sector Balance Sheet: A Partitioning of Operator, Landlord, and Contractor Contributions

Jim Ryan

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Denver, Colorado
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The Farm Sector Balance Sheet: 
A Partitioning of Operator, Landlord, 
and Contractor Contributions

Jim Ryan

NC-221 Annual Meeting
CoBank, Greenwood Village, CO
October 8, 2002

Participants in a Changing Farm Sector
A Variety of Resource Owners Contribute

Risk Bearers
➢ Bear Market, Production, and/or Financial Risk
  ➢ Farm operator households
  ➢ Other farm households
  ➢ Nonfamily farm corporations, estates
  ➢ Contractors

Stakeholders
➢ Do not bear Risk
  ➢ Hired labor
  ➢ Lenders
  ➢ Landlords
Income Returns to Participants

Risk Bearers => Residual Income Recipients:
  ➢ Net Farm Income, Net Cash Income
  ➢ Farm operator households
  ➢ Other farm households
  ➢ Nonfamily farm corporations, estates
  ➢ Contractors

Stakeholders => Fixed Income Recipients:
  ➢ Expenses in computing Net Farm/Cash Income
  ➢ Hired labor -> Wages
  ➢ Lenders -> Interest
  ➢ Landlords-> Rent

A “New” Approach to Net Farm Income

Value Added Approach Alters Presentation

Net Farm Income is still a component

  ➢ More consistent with NIPA and OECD
    ➢ Identifies ag contribution to economy

  ➢ Greater detail
  ➢ Identifies transactions with other sectors
  ➢ Identifies returns to stakeholders
  ➢ Identifies returns to risk-bearers

  ➢ Net farm income is residual
Farm Sector's Contribution to the National Economy

Output and Services Produced by Farms

Value of Commodity Production
- Crop
- Livestock & Products

Services & Other Income
- Customwork
- Forest Products
- Imputed Rent

Total Value of Production

Net Government Transfers
- Direct Government Payments
- Less Property Taxes and Licensing Fees

Purchased Inputs

Gross Value Added

Depreciation on Buildings & Machinery

Net Value Added

Allocation of the Value of Goods and Services

Distribution of Net Value Added to Resource Owners
- Farm Operator Households
- Other Households
- Non-family Corporations, Estates, etc.
- Contractors
- Hired Labor (Wages)
- Lenders (Interest)
- Landlords (Rent)

Distribution of Value Added to the National Economy, 2001

Contractors 13%
Rent 18%
Interest 13%
Non-family corporations & other 3%
Farm operator households 33%
Hired labor 20%

Concern with Sector Balance Sheet?

Relationship Between Usual Income Statement Measures and Balance Sheet?

Net Farm Income, Net Cash Income
- Measure returns to risk-bearers
  - Operators, contractors, corps, other households
  - Returns to landlords, lenders are expenses

Farm Sector Balance Sheet
- Includes assets/debt regardless of ownership
  - Assets owned by operators, landlords, others
  - Debt reported by lenders
    - Owed by operators, landlords, others

Partitioning Farm Sector Balance Sheet

Balance Sheet Splits Not Straightforward

- Sector Balance Sheet based on independent data
  - Landlord data from Ag Finance Surveys
    - Follow-on to selected Census
    - Farm Finance--1964, 1970, 1979
    - AELOS--1988 and 1999
      - ARMS => Operators estimate/Land value
  - Direct contractor data not available
    - Assets?
      - ARMS => Livestock under contract
    - Debt?
Farm Sector Balance Sheet

A Brief History

- Identifies assets, debt, equity
  - Constructed annually since 1945
  - Beginning in 1939
  - As of December 31 of each year
  - Prepared on annual basis—no quarterly

- Published Balance Sheet Series
  - For farm household from 1939-1992
  - Only for farm business since 1960
  - State level since 1960

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### Farm Sector Balance Sheet, 1997-2002F

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
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<td></td>
<td>$ billion</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Farm assets</td>
<td>1,059.0</td>
<td>1,085.3</td>
<td>1,149.8</td>
<td>1,189.3</td>
<td>1,230.4</td>
<td>1,299.5</td>
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<td>Real estate</td>
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<td>840.4</td>
<td>886.4</td>
<td>929.5</td>
<td>971.3</td>
<td>981.0</td>
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<td>Livestock and poultry 1/*</td>
<td>67.1</td>
<td>63.4</td>
<td>73.2</td>
<td>76.8</td>
<td>76.3</td>
<td>75.9</td>
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<td>Machinery and motor vehicles 2/*</td>
<td>10.4</td>
<td>91.7</td>
<td>92.3</td>
<td>92.0</td>
<td>92.5</td>
<td>93.6</td>
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<td>Crops stored 3/*</td>
<td>32.7</td>
<td>29.9</td>
<td>28.3</td>
<td>27.9</td>
<td>28.5</td>
<td>28.4</td>
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<tr>
<td>Purchased inputs</td>
<td>4.9</td>
<td>5.0</td>
<td>4.0</td>
<td>4.9</td>
<td>4.6</td>
<td>4.6</td>
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<tr>
<td>Financial assets</td>
<td>49.7</td>
<td>54.8</td>
<td>56.6</td>
<td>57.1</td>
<td>57.1</td>
<td>56.0</td>
</tr>
<tr>
<td>Total farm debt 4/*</td>
<td>162.4</td>
<td>172.9</td>
<td>176.4</td>
<td>194.0</td>
<td>192.8</td>
<td>195.0</td>
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<tr>
<td>Real estate</td>
<td>85.4</td>
<td>89.6</td>
<td>94.2</td>
<td>97.5</td>
<td>103.1</td>
<td>104.6</td>
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<tr>
<td>Nonreal estate</td>
<td>76.6</td>
<td>83.2</td>
<td>82.2</td>
<td>86.5</td>
<td>89.8</td>
<td>91.9</td>
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<tr>
<td>Farm equity</td>
<td>97.8</td>
<td>97.4</td>
<td>93.4</td>
<td>1,104.7</td>
<td>1,107.1</td>
<td>1,107.9</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
</tr>
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<tbody>
<tr>
<td>Debt-to-equity</td>
<td>18.6</td>
</tr>
<tr>
<td>Debt-to-asset</td>
<td>15.7</td>
</tr>
</tbody>
</table>

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Farm Sector Assets, December 31, 2002F

- Crops/Purchased Inputs: 2.7%
- Machinery: 7.6%
- Livestock: 6.1%
- Financial assets: 4.5%
- Real estate: 79.1%

Source: USDA/ERS

Operator and Landlord Shares of Farm Assets, 1999

- All assets
- Real estate
- Livestock/poultry
- Machinery
- Crops stored
- Purchased inputs
- Financial/other assets

Source: Agricultural Economics and Land Ownership Survey, 1999
Operator and Landlord Shares of Farm Debt, 1999

Source: Agricultural Economics and Land Ownership Survey, 1999

Partitioned Farm Balance Sheet, 1999

<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
<th>Operator</th>
<th>Landlord</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm assets</td>
<td>1,140,784</td>
<td>771,419</td>
<td>346,927</td>
<td>22,437</td>
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<tr>
<td>Real estate</td>
<td>886,405</td>
<td>551,528</td>
<td>334,877</td>
<td>0</td>
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<tr>
<td>Livestock and poultry</td>
<td>73,177</td>
<td>50,142</td>
<td>1,083</td>
<td>21,953</td>
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<tr>
<td>Machinery/motor vehicles</td>
<td>92,329</td>
<td>88,882</td>
<td>3,647</td>
<td>0</td>
</tr>
<tr>
<td>Crops stored</td>
<td>28,273</td>
<td>25,323</td>
<td>2,667</td>
<td>283</td>
</tr>
<tr>
<td>Purchased inputs</td>
<td>4,026</td>
<td>3,623</td>
<td>201</td>
<td>201</td>
</tr>
<tr>
<td>Financial assets</td>
<td>56,574</td>
<td>52,121</td>
<td>4,452</td>
<td>0</td>
</tr>
<tr>
<td>Total farm debt</td>
<td>176,476</td>
<td>145,153</td>
<td>30,336</td>
<td>987</td>
</tr>
<tr>
<td>Real estate</td>
<td>94,226</td>
<td>75,569</td>
<td>18,657</td>
<td>0</td>
</tr>
<tr>
<td>Nonreal estate</td>
<td>82,250</td>
<td>69,584</td>
<td>11,680</td>
<td>987</td>
</tr>
<tr>
<td>Farm equity</td>
<td>964,308</td>
<td>626,266</td>
<td>316,591</td>
<td>21,450</td>
</tr>
</tbody>
</table>

Selected ratios:
- Debt-to-equity: 18.3% 23.2% 8.6% 4.6%
- Debt-to-asset: 15.5% 18.8% 8.7% 4.4%
Distribution of Farm Business Assets, December 31, Various Years

Source: USDC/USDA, Census Surveys (Farm Finance and AELOS)

Distribution of Farm Business Debt, December 31, Various Years

Source: USDC/USDA, Census Surveys (Farm Finance and AELOS)
Summary

Adapting ERS Income Analyses to reflect impacts on agriculture’s participants:

- Improved data sources
  - AELOS
  - 2002 Census
  - Agricultural Resource Management Survey

- Enable Development of Estimates of Income and Other Measures of Financial Performance
  - Households
  - Businesses
  - Other Resource Providers

Future Extensions

Benchmark Balance Sheet to Census Surveys:
- Partition using Census data
  - AELOS—1988 and 1999

Mover System Between Census Surveys:
- Continuous data series, 1970-2002

Prepare Partitioned State Balance Sheets:
- Benchmark and Mover
- State data series, 1970-2002