Profitability of coffee farming in selected Latin American countries

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Nairobi, Kenya

Background
MOTIVATION OF THE STUDY

• Low world market prices
  – increased pressure on higher-cost origins
• High variation in production costs
  – between regions and across individual growers
• Identify the drivers of farm profitability
• Scarce literature on production costs
  – methodological shortcomings
• No unified methodology to calculate production costs
THE FARMER SURVEY

- Examine in-depth farmer-level data
  - Calculate distribution of costs and profitability
- Random sample of 1,907 coffee farmers in 3 major coffee regions
  - Colombia’s Coffee Belt (745)
  - Los Santos and the Western Valley in Costa Rica (503)
  - three regions in Honduras (659).
- Detailed farmer-specific cost and production data collected in 2017

Selected geographic areas
HOW DO WE CONCEPTUALIZE COSTS?

• Farmer’s view: Cash Outlays
  – Paid labour
  – Inputs

• Economists view: Full Economic Costs
  – Unpaid/family labour
  – “Fixed costs”
    • Installation costs (spread out)
    • Depreciation of machinery/equipment
    • Finance costs (interest payments)
Results

CASH VS FULL ECONOMIC COSTS
2015/16 (US$/lb)

- Cash costs \(\rightarrow\) generally what farmers consider when they evaluate profitability
AVERAGE COSTS FOR INPUTS
2015/16 (US$)

<table>
<thead>
<tr>
<th></th>
<th>Colombia</th>
<th>Honduras</th>
<th>Costa Rica</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average labour costs (per day)</td>
<td>14.33</td>
<td>6.48</td>
<td>17.85</td>
</tr>
</tbody>
</table>

Input costs

<table>
<thead>
<tr>
<th></th>
<th>Colombia</th>
<th>Honduras</th>
<th>Costa Rica</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbicides (glyphosate 1 litre)</td>
<td>4.62</td>
<td>6.51</td>
<td>6.31</td>
</tr>
<tr>
<td>Fertilizer (urea 45 kg)</td>
<td>18.18</td>
<td>21.28</td>
<td>16.45</td>
</tr>
</tbody>
</table>

Installation costs

<table>
<thead>
<tr>
<th></th>
<th>Colombia</th>
<th>Honduras</th>
<th>Costa Rica</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost per plant</td>
<td>0.09</td>
<td>0.18</td>
<td>0.38</td>
</tr>
</tbody>
</table>

➢ Striking differences in input prices across countries

DISTRIBUTION OF PRODUCTION COSTS
2015/16 (US$/lb)

➢ Farm-gate prices needed to ensure that 75% of farmers breakeven

<table>
<thead>
<tr>
<th>Country</th>
<th>Farm-gate Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>US$1.19/lb*</td>
</tr>
<tr>
<td>Honduras</td>
<td>US$0.88/lb*</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>US$1.25/lb*</td>
</tr>
</tbody>
</table>

*ICO reported farm-gate prices
SHARE OF SAMPLE FARMERS THAT WERE LOSS MAKING 2015/16

Colombia  Honduras  Costa Rica

*Expressed in terms of gross margin 2015/16: price/lb – costs/lb

Conclusions & outlook
CONCLUSION AND NEXT STEPS

• Significant difference in production costs across countries
  – Honduras much lower than the other two
• Labour represents the highest share of costs
  – Colombia (75%), Costa Rica (57%), Honduras (56%)
  – Wages vary significantly across countries
• Colombian producers face both short- and long-term challenges to profitability

Next steps:
• Econometric analysis to identify the factors driving efficiency of production and profitability

Thank you
Appendix

Average farm-gate prices 2015/16
(US$/lb)

Costa Rica: 1.44
Honduras: 1.60
Colombia: 1.12

*Farmer-specific prices converted to green coffee beans.
Cost structure of full economic costs 2015/16 (US$/lb)

Full economic costs by country in 2015/16 (US$/ha)
Average production costs by country in 2015/16 (US$/ha)

<table>
<thead>
<tr>
<th>Country</th>
<th>Paid labour</th>
<th>Labour pruning and weeding</th>
<th>Labour fertilizing</th>
<th>Labour spraying</th>
<th>Labour harvest</th>
<th>Permanent Labour (managers)</th>
<th>Unpaid labour</th>
<th>Labour pruning and weeding</th>
<th>Labour fertilizing</th>
<th>Labour spraying</th>
<th>Labour harvest</th>
<th>Total production costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia (n=720)</td>
<td>1,907.92</td>
<td>249.13</td>
<td>75.39</td>
<td>48.99</td>
<td>1,538.41</td>
<td></td>
<td>586.11</td>
<td>519.18</td>
<td>27.24</td>
<td>12.11</td>
<td>407.19</td>
<td>3,317.80</td>
</tr>
<tr>
<td>Honduras (n=644)</td>
<td>583.86</td>
<td>135.47</td>
<td>39.29</td>
<td>55.17</td>
<td>581.86</td>
<td></td>
<td>295.61</td>
<td>412.79</td>
<td>17.92</td>
<td>9.11</td>
<td>213.82</td>
<td>1,557.26</td>
</tr>
<tr>
<td>Costa Rica (n=493)</td>
<td>2,173.91</td>
<td>130.87</td>
<td>26.93</td>
<td>52.17</td>
<td>1,408.99</td>
<td></td>
<td>150.19</td>
<td>658.36</td>
<td>19.42</td>
<td>19.42</td>
<td>-</td>
<td>4,045.01</td>
</tr>
</tbody>
</table>

Paid labour includes: paid wage for pruning, weeding, fertilizing, spraying, and harvesting.

Unpaid labour includes: unpaid wage for pruning, weeding, fertilizing, spraying, and harvesting.

Inputs:
- Herbicides: 2.16, 3.65, 29.42
- Fertilizer: 494.57, 381.19, 506.02
- Pesticides: 22.46, 27.94, 122.92
- Finance cost: 53.36, 41.59, 39.05

Fixed costs include:
- Installation costs: 48.80, 47.76, 142.14
- Depreciation of machinery: 112.93, 84.87, 523.85
- Opportunity cost of land: 97.50, 91.00, 357.50

Total production costs include all costs above.