Role of Agriculture in Inclusive Growth
Diagnostic Tools for Country Economists

Mizuho Kida
PRMED
World Bank
Nairobi, 28-29 September 2011
Objectives

• How DFSG-funded country studies approached Agriculture- Inclusive Growth issues

• A broader set of tools that would be useful to be added to country economists’ analytical toolkit
Agriculture in DFSG country studies

• **Country coverage:**

  – A number of country studies, either exclusively or as part of a broader investigation, looked at agriculture as possible vehicle for promoting inclusive growth

  – E.g. (in Africa): Rwanda, Kenya, Uganda;

  – E.g. (in Asia): China, Indonesia, Philippines
Agriculture in DFSG country studies

• **Motivations:**
  
  – What were the main motivations for looking at agriculture in inclusive growth analysis?

  a. **To promote faster growth**
     – low growth, low productivity, lack of structural transformation

  b. **To promote poverty reduction**
     – most poor live in rural areas, depends on agriculture, differences in poverty impact of agricultural growth

  c. **To promote employment**
     – largest employer of a country’s labor force, understand what constrain people to participate in other sectors
Agriculture in DFSG country studies

• **Methodology:**
  - Decision three—Agriculture being looked at as part of the quasi-exhaustive investigation process
  - Agricultural statistics—Yield per hектar, output per crop area
  - Farmers’ ICA—main obstacles faced, main difficulties in selling products
  - Decomposition—Growth decomposition, employment by skills
  - Poverty elasticity of growth
  - Benchmarking—Growth of agriculture, share in GDP/exports/employment, etc. compared across selected countries
  - Spatial mapping—Distribution of crops grown, yields, density of cultivating population, etc.
  - Value-chain analysis (in the context of commercializing agriculture)
  - Regression analysis—primary for decomposition purposes
Agriculture in DFSG country studies

• Observations:

a. Most of the studies that look at agriculture are exclusively focused on the agriculture sector
   – Macro perspective, e.g., cross-sector growth links, is not explored or discussed (could be done somewhere else in the CEM?)

b. Good use of available technology
   – mainly descriptive

c. Two stage diagnostic?
   – First stage (“what has happened”) diagnostic is big part of the study
   – Second stage (“why” or “how” did it happen) analysis is limited
Lessons from a Broader Literature on Agriculture for Inclusive Growth
Objectives

• Take a closer look at each link between agriculture and inclusive growth
  – Role of agriculture in driving economic growth
  – Role of agriculture in reducing poverty
  – Role of agriculture in providing productive employment

• Discuss tools that can help country economists

• Encourage use of a broader set of existing tools
  – that can increase the focus of the analysis, sharpen the questions that need further investigating, and make progress on the second stage of diagnostics—on the “why” questions
Why Agriculture?

• Principal ways in which agriculture is considered to promote inclusive growth:
  1. Drive growth – stimulate structural transformation, lead aggregate growth
  2. Reduce poverty – more effectively than growth in other sectors
  3. Create employment – for millions of unskilled labor
Why Agriculture?

• Some striking statistics (WDR 2008)
  – Agriculture generate on average 29 percent of the GDP in poor developing countries
  – Employs 65 percent of the labor force
  – More than half of the developing worlds’ population (3 out of 5.5 billion) live in rural areas
  – As much as 75 percent of the poor live in rural areas, mostly dependent on agriculture either directly or indirectly

• Question: Do they imply that agriculture should be the central pillar of inclusive growth?
Why Agriculture?

• A case for Agriculture should be made, not assumed
  – The large size of the agricultural sector does not imply it must be the leading sector of economic growth (Dercon 2008)
  – Because agriculture is often the least productive sector, directing public investment to promote agriculture at the expense of other, more productive sectors, cannot be unambiguously good for growth (Gollin 2010)
  – “By showing where the poor live and the sectors in which they are employed... we cannot automatically assume that rural economic growth is the key to poverty reduction (Ravallion and Datt 1996)
1. Understanding the Role of Agriculture in Growth

- Two reasons why agriculture is considered central to growth
  - It has a big share of GDP, and/or
  - It stimulates “structural transformation”—the process whereby resources move from low productivity sectors to higher productivity sectors

- Two possibilities for structural transformation
  - It can be driven by productivity improvements within the agricultural sector
  - It can be driven by productivity improvement outside the agriculture sector

- There is no agreement which underlying process drives the structural transformation in general

- Calls for country-specific diagnostics
Profiling the growth process

- Bosworth and Collins (2008)

<table>
<thead>
<tr>
<th></th>
<th>Value added (% GDP)</th>
<th>Employment (% Labor force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>28</td>
<td>17</td>
</tr>
<tr>
<td>Industry</td>
<td>48</td>
<td>51</td>
</tr>
<tr>
<td>Services</td>
<td>24</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>44</td>
<td>33</td>
</tr>
<tr>
<td>Industry</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>Services</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Profiling the growth process

• Decomposes changes in aggregate GDP into main components:
  – changes in growth within sectors and
  – inter-sectoral resource shifts (“structural transformation”)

\[
\Delta \ln Y_t = s_1 \Delta \ln y_1 + s_2 \Delta \ln y_2 + s_3 \Delta \ln y_3 + \text{Residual}_t
\]

<table>
<thead>
<tr>
<th>Change in total GDP</th>
<th>Within sector effect</th>
<th>Resource shift effect</th>
</tr>
</thead>
</table>

• where 1, 2, 3 corresponds to economic sectors
  – Agriculture, Industry, services
## Sectoral Decomposition of Growth

- Bosworth and Collins (2008)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Reallocation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>China</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978–93</td>
<td>6.4</td>
<td>1.2</td>
<td>2.4</td>
<td>1.1</td>
<td>1.7</td>
</tr>
<tr>
<td>1993–04</td>
<td>8.5</td>
<td>0.7</td>
<td>5.0</td>
<td>1.7</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>India</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978–93</td>
<td>2.4</td>
<td>0.6</td>
<td>0.5</td>
<td>0.7</td>
<td>0.6</td>
</tr>
<tr>
<td>1993–04</td>
<td>4.6</td>
<td>0.5</td>
<td>0.9</td>
<td>2.1</td>
<td>1.2</td>
</tr>
</tbody>
</table>
Profiling the growth process

Bosworth and Collins (2008) find:

• In both China and India, agriculture played a positive role but not a leading role in driving overall growth
  – In China, it was industry which contributed most to growth
  – In India, the main growth driver was services

• In both countries, the reallocation effect was an important source of growth
  – Gollin (2010) find similar evidence in a broader set of developing countries using the same technique
Profiling the growth process

• The accounting framework which calculates the resource reallocation effect essentially as a residual
  – Much like Solow residual in the growth accounting, it has well known problem of interpretation

• The decomposition exercise like this is good for understanding “what” happened but not “why” it happened
  – Is the growth in other sectors that pulls underutilized resources out of agriculture? or
  – Is it productivity gains in agriculture that releases resources and make available to other sectors?
Understanding the process behind resource reallocation effects

  - The average income of rural household grew faster than the average US household
  - Inequality declined within the rural sector (farm income at the bottom quintile grew faster than at the median)

<table>
<thead>
<tr>
<th>Year of Census</th>
<th>Median Real Income (1990 dollar)</th>
<th>20th Percentile Real Income (1990 dollar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>12,580</td>
<td>4,510</td>
</tr>
<tr>
<td>1970</td>
<td>22,390</td>
<td>9,200</td>
</tr>
<tr>
<td>1980</td>
<td>28,180</td>
<td>12,650</td>
</tr>
<tr>
<td>1990</td>
<td>29,510</td>
<td>13,930</td>
</tr>
</tbody>
</table>

Source: Gardner (2000)
Understanding the process behind resource reallocation effects

- Gardner investigates three alternative hypothesis

1. “Selective migration” (poor farmers left agriculture faster than richer farmers)

2. “Labor market integration” (growth in non-farm sector benefited low income farmers through greater off farm jobs and opportunities to leave farming altogether)

3. “Agricultural specific developments” (e.g., changes in farm size, human capital, agricultural productivity at the state level)
Understanding the process behind resource reallocation effects

• Sets up a simple error-correction type model

\[ G20_{t+1,t} = b_0 + b_1(y_n - y_f) + b_2(y_{n_{t+1}} - y_n) + b_3Y20_t + b_4z_{t+1,t} + u \]

  - Initial disequilibrium in labor market

  - Growth of non-farm sector within a country

  - Labor outflow

• Later use 2SLS to estimate \( Z_{t+1,t} \) to test

  – “Selective migration” – via initial level controls
    (% farm population, % non-white farm population, % adult farm male less than 6 years of schooling)

  – “Agriculture specific developments” – via time-varying controls  (farm size, median schooling of farm adult, agricultural TFP at state level)
Understanding the process behind resource reallocation effects

\[ G20_{t+1,t} = b_0 + b_1(y_n - y_f) + b_2(y_n_{t+1} - y_n_t) + b_3Y20_t + b_4z_{t+1,t} + u \]

- Growth in non-farm income is the most important factor
- Correction of initial disequilibrium also in favor of low-income farm households
- No evidence of “selective migration”
- Agricultural specific developments played no significant role

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Coefficient (t-statistics)</th>
<th>Dependent Variable: Growth of Real Farm-Household Income at the 20th Percentile (Mean Value = 0.038)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.28 (29.7)</td>
<td>(1)--OLS (2)--OLS (3)--2SLS</td>
</tr>
<tr>
<td>1960 income at the 20th percentile (b3)</td>
<td>-0.034 (-25.6)</td>
<td>-0.026 (-11.9)</td>
</tr>
<tr>
<td>Growth rate of nonfarm median income (b2)</td>
<td>0.345 (2.7)</td>
<td>0.434 (3.2)</td>
</tr>
<tr>
<td>1960 ratio of nonfarm-farm income (b1)</td>
<td>0.021 (4.2)</td>
<td>0.012 (2.1)</td>
</tr>
<tr>
<td>Percent change in farm household numbers b</td>
<td>-0.061 (-0.7)</td>
<td>0.059 (0.2)</td>
</tr>
<tr>
<td>1960 percentage of county population rural-farm</td>
<td>-0.028 (-2.8)</td>
<td></td>
</tr>
<tr>
<td>1960 median schooling of farm males of age 25 and older</td>
<td>0.00072 (0.6)</td>
<td></td>
</tr>
<tr>
<td>Multifactor productivity growth, state level</td>
<td>0.162 (0.4)</td>
<td></td>
</tr>
<tr>
<td>1959 value of sales per farm</td>
<td>0.00009 (1.2)</td>
<td></td>
</tr>
<tr>
<td>Exclusion-bias indicator</td>
<td>-0.0065 (-1.6)</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>0.677</td>
<td>0.694</td>
</tr>
</tbody>
</table>
Understanding the process behind resource reallocation effects

• Gardner (2000) finds:
  a. Growth in non-farm income is the most important factor
  b. Correction of initial disequilibrium also in favor of low-income farm households
  c. No evidence of “selective migration”
  d. Surprisingly, agricultural specific developments play no significant role
     – e.g., agricultural TFP growth at the state level
2. Understanding the Role of Agriculture in Poverty Reduction

• Many cross-country studies found that agriculture is more effective in reducing poverty than other sectors
  – WDR (2008)
  – Ligon and Sadoulet (2007)
  – Christiansen and Demery (2007)

• Many other cross-country studies failed to find the “special power” of agriculture compared to other sectors
  – Loayza and Raddatz (2006)
  – Bravo-Ortega and Lederman (2005)

• The empirical evidence from country level studies points to important variation across countries
  – Ravallion and Datt (1996) on India
  – Ravallion and Chen (2004) on China
  – Ferrieira, Leite, and Ravallion (2009) on Brazil

• Calls for country-specific diagnostics
Sectoral Decomposition of Poverty

- Decomposes changes in aggregate poverty into main components:
  - changes in poverty within sectors and
  - inter-sectoral population shifts

\[
P_t - P_0 = \sum_k \left( s_0^k \right) \left( P_t^K - P_0^K \right) + \sum_k \left( s_1^k - s_0^k \right) \left( P_0^K \right) + \sum_k \left( s_1^k - s_0^k \right) \left( P_t^K - P_0^K \right)
\]

- Typical sectors for decomposition:
  - Urban/rural, Regions, or Economic sectors
### Sectoral decomposition of poverty changes

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>India</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth rate of GDP per capita</td>
<td>–2.60</td>
<td>–0.99</td>
<td>n.a.</td>
</tr>
<tr>
<td></td>
<td>(–2.16)</td>
<td>(–3.38)</td>
<td></td>
</tr>
<tr>
<td>Primary (share-weighted)</td>
<td>n.a. –8.07</td>
<td>n.a. –1.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–3.97)</td>
<td>(–2.96)</td>
<td></td>
</tr>
<tr>
<td>Secondary (share-weighted)</td>
<td>n.a. –1.75</td>
<td>n.a. 3.41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–1.21)</td>
<td>(1.84)</td>
<td></td>
</tr>
<tr>
<td>Tertiary (share-weighted)</td>
<td>n.a. –3.08</td>
<td>n.a. –3.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–1.24)</td>
<td>(–2.74)</td>
<td></td>
</tr>
<tr>
<td>Secondary + tertiary</td>
<td>n.a. n.a.</td>
<td>n.a. n.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–2.20)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| R^2                     | 0.21        | 0.43        | 0.42  |
|                        |             |             | 0.75  |


Note: t-statistics in parentheses
One reason why sectoral patterns of growth may matters is because they affect incomes of rural and urban households differently...

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth rate of mean rural income (share-weighted)</td>
<td>–2.56</td>
<td>–1.46</td>
</tr>
<tr>
<td></td>
<td>(–8.43)</td>
<td>(12.64)</td>
</tr>
<tr>
<td>Growth rate of mean urban income (share-weighted)</td>
<td>0.09</td>
<td>–0.55</td>
</tr>
<tr>
<td></td>
<td>(0.2)</td>
<td>(–1.37)</td>
</tr>
<tr>
<td>Population shift effect</td>
<td>0.74</td>
<td>–4.46</td>
</tr>
<tr>
<td></td>
<td>(0.16)</td>
<td>(–1.31)</td>
</tr>
<tr>
<td>R2</td>
<td>0.82</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Note: t-statistics in parentheses
Role of initial conditions and policies

• Reason why agriculture growth have weaker impact on poverty in India
  – land distributions, human capital, and policies (Chaudhuri and Ravallion, 2006)

• Ferrieira, Leite, and Ravallion (2009) on Brazil
  – extend the poverty decomposition analysis to explore the influences of initial conditions and policies in accounting for differential poverty impact of sectoral growth within a single country framework
Role of initial conditions and policies

- Ferrieira, Leite, and Ravallion (2009) on Brazil
  - Uses a panel analyses at state level data for the period 1985–2004
  - Estimates an extended poverty decomposition model

\[
\Delta \ln P_t = \alpha + \beta_i^B \sum_{i=1}^{3} s_{i,t-1} \Delta \ln y_{i,t} \cdot I_t + \beta_i^A \sum_{i=1}^{3} (s_{i,t-1} \Delta \ln y_{i,t})(1 - I_t) + \theta_1 \Delta \ln SOC_{i,t-1} + \theta_2 \Delta \ln INV_{i,t-1} + \theta_3 \Delta \ln SSA_{t-1} + \theta_4 \Delta \ln CPI_{t-1} + \theta_5 I_t + \varepsilon_{i,t}
\]

State-level policies

Federal-level policies
Role of initial conditions and policies

- Ferrieira, Leite, and Ravallion (2009) on Brazil

<table>
<thead>
<tr>
<th>Regressions</th>
<th>Headcount index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff</td>
</tr>
<tr>
<td>Real agricultural sector output</td>
<td></td>
</tr>
<tr>
<td>Before 1994</td>
<td>0.061</td>
</tr>
<tr>
<td>After 1994</td>
<td>−0.007</td>
</tr>
<tr>
<td>Real industrial sector output</td>
<td>k</td>
</tr>
<tr>
<td>Real tertiary sector output</td>
<td>−0.603</td>
</tr>
<tr>
<td>State specific time trend</td>
<td>Yes</td>
</tr>
<tr>
<td>Dummy if before 1994 (I)</td>
<td>0.023</td>
</tr>
<tr>
<td>Social expenditure (SOC)</td>
<td>0.014</td>
</tr>
<tr>
<td>Investment (INV)</td>
<td>−0.003</td>
</tr>
<tr>
<td>Inflation rate (CPI)</td>
<td>0.017</td>
</tr>
<tr>
<td>Social security (SSA)</td>
<td>−0.058</td>
</tr>
<tr>
<td>1970 Census variables at state level</td>
<td></td>
</tr>
<tr>
<td>k</td>
<td>−4.100</td>
</tr>
<tr>
<td>k’×average years of schooling of adult population</td>
<td>−0.176</td>
</tr>
<tr>
<td>k’×infant mortality rate per 100,000 people</td>
<td>0.766</td>
</tr>
<tr>
<td>k’×share of labor force employed in industry</td>
<td>−0.299</td>
</tr>
<tr>
<td>associated with union</td>
<td></td>
</tr>
<tr>
<td>ρ</td>
<td>(−0.3499)</td>
</tr>
<tr>
<td>Number of observations</td>
<td>364</td>
</tr>
<tr>
<td>Number of groups</td>
<td>26</td>
</tr>
<tr>
<td>Time periods</td>
<td>14</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>350.41</td>
</tr>
</tbody>
</table>
Role of initial conditions and policies

Ferrieira, Leite, and Ravallion (2009) find:

a. A strong impact of the sectoral pattern of growth
   – Growth in the service sector was substantially more poverty-reducing than growth in either agriculture or industry

b. Initial conditions at the state level also mattered
   – Growth was more poverty reducing in states where, in 1970, infant mortality was lower (a measure of access to public services) and workers were more unionized (a measure of political voice)

c. Policy changes at the federal level had greater impact on poverty
   – The expansion of social security spending by the Federal Government

d. State level public spending was largely inconsequential
   – At least from the perspective of poverty reduction over the studied period
3. Understanding the Role of Agriculture in Creating Employment

- Rural sector is heterogeneous
- Contrary to the popular perception, “rural” does not mean “agriculture”
- Many rural households derive income from many occupations, agriculture is only one of them (and may not be a dominant source of income)
- To design policies that can help rural people escape poverty and participate more fully in a country's’ growth process, it is important to understand which occupations are important for rural people and why they choose to pursue them (opportunities vs constraints)
- Calls for country-specific diagnostics
Profiling pattern of rural employment

• Distribution of rural households by main occupation
Profiling pattern of rural employment

• Distribution of per capita household income by occupation
Profiling pattern of rural employment

- Quintile distribution of average income share of rural occupations

---

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- On-farm Total
- Ag Wage Labor
- Non-Agricultural Total
- Transfers & Other
Understanding constraints

- Demand side constraints:

<table>
<thead>
<tr>
<th>Own characteristics</th>
<th>Physical capital</th>
<th>Human capital</th>
<th>Social and Public capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Land</td>
<td>Education</td>
<td>“Network”</td>
</tr>
<tr>
<td>Sex</td>
<td>Livestock</td>
<td>Training</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>HH Size &amp; composition</td>
<td>Finance</td>
<td>Health</td>
<td>Policies</td>
</tr>
</tbody>
</table>

- Probit analysis = A common approach to begin investigating the relationship between occupational choice and endowments/ constraints
  - e.g., Elberes and Lanjouw (2001) on the occupational choice of rural households in Ecuador
Understanding constraints

• Supply side constraints:
  – What determines the supply of non-farm employment in rural areas?

• There are many ways to approach this question
  – One of which is from a perspective of economic geography

• Focuses on physical attributes of the location of job creation
  – E.g., Araujo, de Janvry, and Sadoulet (2002) on the role of geography in non-farm employment growth in Mexico
Understanding constraints

• E.g., A spatial model of non-farm employment creation across municipalities over time:

\[
\left( \frac{L_{is}^1 - L_{is}^0}{P_{is}^0} \right) = \alpha_s + (\beta_s - 1) \frac{L_{is}^0}{P_{is}^0} + \gamma_s g_i + \delta_s h_i^1 + u_{is}
\]

- Change in non-farm job per population
- Initial non-farm job per population
- Municipality’s geographic charc.
- Municipality’s economic charac.

• Distance from urban centers is allowed to impact on job creation via “spillover”, e.g.:

\[
\mathbf{u} = p \mathbf{Wu} + \mathbf{\varepsilon}
\]

\[
w_{i,j} = 1 / D(i, j) \times \sigma_{i,j} \quad \text{for } i \neq j
\]
Understanding constraints

• Estimating the impact of distance on rural employment growth
Understanding constraints

• Proximity to large urban centers and intermediate cities has strong influence on expansion of non-farm rural jobs
  – The influence of proximity to the centers declines until a distance of 150 kilometers, beyond which it disappears
  – In isolated municipalities, there tends to be stronger growth in services employment than in manufacturing
• Connectedness to infrastructure network also has robust influence in rural Mexico
  – Employment in services grew more in municipalities on the coast and on the US border
• Municipalities with a large initial employment in manufacturing experienced faster growth of employment
  – suggesting concentration; this was not found for employment in services
Conclusions

• The three key roles agriculture can play in promoting inclusive growth
  – stimulating economic growth, reducing poverty, and creating employment

• Ways in which agriculture can contribute to or pose a challenge to achieving more inclusive growth through any of these links vary
  – depends on country context, and within country over time

• Descriptive tools are useful for “what” question, but additional tools are needed to address “why” questions
  – Some of the “why” question tools we’ve discussed: binary or categorical regressions, convergence (ECM) models, spatial regressions