

*Lecture 1 : The role of agriculture in development strategies*

Outline:

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1. The importance of agriculture in LDCs
2. Development strategies
3. Rural-urban interlinkages: the Lewis model, and its implications
4. Rural-urban interlinkages: Eswaran and Kotwal
5. Generalising: the role of agriculture

## 1. The importance of agriculture in LDCs

- important source of GDP
- even more important as sector of employment
- share of GDP and share labour force in agriculture declining in wealth
- poverty much higher in rural areas than in urban areas (incl. income, health, education, water, ...)

so ‘development’ processes may well be characterised by trying to reduce relative importance of rural and agricultural sector in GDP and employment, and moving workers and families into non-agricultural (industrial) sectors and urban areas...

Question is how will this come about? Via focusing on agriculture and rural development? Or by industrialisation? Both? Does it matter how for growth and poverty reduction?

## 2. Development Strategies: the big theories

- standard growth theories (Solow, endogenous growth models): no attention to sectoral composition
  - focus on savings, population growth, technological progress and process stimulating technology (initial conditions in endogenous growth models) (see excellent discussion in Ray chps. 3-5)
  
- what is the process of growth and transformation? does it matter in which sector we start? (also Ray chps 5 – or any introductory book on development – Todaro or Gillis or Lynn)
  - Big push models (Rosenstein-Rodan)
  - Balanced growth (Nurske)
  - Unbalanced Growth and Linkages (Hirschman)

- **Big Push:**

- in order to economic transformation via industrialisation, we need a big push – a massive investment
- why? industrial development is characterised by:
  - complementarities and externalities: mutual dependence on suppliers and customers, with benefits from mobility of workers across firms
  - indivisibilities: high fixed costs and long gestation periods
  - market imperfections: just focusing on the slow correction of market failures will not achieve much
  - large infrastructure development with positive externalities
  - massive savings requirements

questionable theoretical (eg trade, economies of scale) and empirical basis – but powerful idea

recent revival of model linked to ‘growth and poverty trap’ in endogenous growth models (‘creating initial conditions’)

- **Balanced growth**
  - pursuit on many fronts “pattern of mutually supporting investments over a range of industries”
  
- **Unbalanced growth**
  - don't focus on all at the same time
  - provide a boost to leading sectors which will create the linkages to bring others into existence
  - ‘backward linkage’: proportion of inputs purchased from other industries
  - ‘forward linkage’: proportion of outputs sold to other industries  
how?
    - by setting up industries, create shortage of key input, to create incentives for other firms to set up to produce them (backward linkage)
    - or create excess capacity, creating incentives for others to set up production requiring this output as an input (forward linkage)

Big push, balanced growth – nothing specific on agriculture  
Unbalanced growth – largely concerned with ‘industry’

Still: interpretation regarding industry and agriculture possible (Mellor)

Can ‘agriculture’ be a leading sector?

- producing incentives to produce inputs for agriculture
- producing incentives to process outputs from agriculture

### 3. Rural-Urban Interlinkages: The Lewis Model

- models of rural-urban linkages:
  - ‘big’ agricultural sector, ‘small’ non agricultural sector
  - producing ‘food’ and ‘non-food’, with food necessary for workers in industrial sector
  - how does overall growth come about, boosting outputs and incomes (reducing poverty)
  - to result in ‘industrialisation’ and small agricultural sector
  - *note: most of them poor treatment of opportunities for international trade*

Lewis model:

- industry is ‘modern’, agriculture is ‘traditional’ (or even ‘backward’)
- wage gap between agriculture and urban sector, and existence of ‘surplus labour’, i.e. reducing total labour input in agriculture results in NO reduction in output (or,  $MPL=0$ )
- stylised story ‘rural areas share output among each other – each get average product’ while in urban areas they are paid ‘ $MPL=wage$ ’, higher than pay in rural sector (as in Ray)
- (stylised features could be retained if there simply is a wage gap, with urban sector not necessarily paying  $MPL$ , but more than rural sector – see e.g. version in Basu, *Analytical Development Economics*)
- ‘growth’ is possible in industrial sector, where (profit maximising) firms invest profits back into the economy in the next period (e.g. as in a simple Harrod Domar, or indeed Solow world)

figure 7.1 in Basu: the Lewis model

figure 10.3 Lewis-Ranis-Fei model

- three stages:
  - labour surplus – moving out of agriculture, keeping MPL in agriculture constant, allowing process of growth via savings and investment, with constant wages in both sectors
  - ‘disguised unemployment’ where output declines, at first slightly, but still pay in rural sector above MPL, but with less food to go around, (prices up) urban wages has to go up to allow them/induce them to substitute to non-food (‘first turning point’)
  - commercialisation, where MPL in agriculture is higher than pay in agriculture, so workers will not leave unless paid more in industry – both wages will now rise together... from then a Solow or Harrod-Domar world...

process of economic development

= the simultaneous transfer of (surplus) labour from agriculture to industry and of surplus food-grain production, sustaining the labour force in industry

=development is driven by the accumulation of capital but is limited by the ability of the economy to produce a surplus of food

=since higher rural wages limit surplus output (so requiring higher urban wages), they limit profits and investment, so industrial development is limited by food prices

=how is poverty alleviated? First, by getting more and more in urban areas (migration), in response to job offers. They will earn more than in rural areas (which they spend fully on non-food...). Rural poverty remains until enough people have left to boost MPL to levels equal to urban levels.

Policy issues:

*industrial policies*

- if profits invested by ‘capitalists’ are small, you could help them (i.e. increase capital investment and inward flows)
- industrial productivity increases are excellent supplementary policies to fasten the process

*agricultural policies*

- the usually preferred option: agricultural taxation (keep food prices low)
  - and disastrous agricultural policies throughout the world followed... e.g. recall high rural poverty
- the possible alternative (1): agricultural productivity increases
- the possible alternative (2): keep food prices (at first) high

other issue: the issue of *migration flows* – will only those with a job go and the others ‘wait’ in the rural areas?

*(not discussed – but see Ray, on Harris-Todaro model: job creation in urban sector results in increases in urban unemployment or informal sector)*

## 5. Rural-urban interlinkages: Eswaran and Kotwal

- Assumptions about functioning of rural sector – backward, sharing, happy to stick to low wages for long ‘surplus to be extracted’
  - Post-Lewis: rediscovery of the ‘rational’ peasant
- Also, willingness of urban workers to eat ‘their shirts’, i.e. after moving not wanting to buy more food, but spend extra on other items
  - Poor will spend high share of additional income on food (Engel’s Law: share spend on food will decline with income)

## Eswaran and Kotwal model

Still: 2 sectors (textiles and agriculture), 2 goods (food and shirts)

- Neoclassical labour market, i.e. each is paid value of MPL, equal wages across sectors ( $w=P.MPL$ )
  - Only moving to other sector if it is worth doing so
  - Development is real wage increases, i.e.  $P.MPL$  must go up
- Preferences are hierarchical: first, you must be sated in food before you will buy nonfood (shirts) (i.e. poor have income elasticity of 1 for food and zero for nonfood, rich have the reverse)
- Let's assume: workers in both sectors are non-sated in food

Impact of industrial ('neutral') productivity growth (TFP)

- Incentives to attract workers to industry - but this would reduce food output, and since workers would only want to buy food anyway, increased nominal wage offer would not compensate for higher prices
- So no-one will take offer if workers are non-sated— leaving value of MPL unchanged
- So the only impact of TFP increase is more shirt for same amount of labour, and cheaper shirts for the 'rich'
- I.e. DEMAND is the constraint for growth and poverty reduction effect of industrial progress

### Impact of agricultural ('neutral') productivity growth

- Total output in agriculture increases and MPL goes up.
- Increasing wages in both sector
- At some point, some workers become sated and then there is a demand for textiles, so that there are workers that can move to the urban sector.
- So there is an increase in wages, since increased demand for food implies that wages are indeed higher
- There is poverty reduction and growth

### In an open economy, industrial progress can work as well

- Since demand exists for industrial goods, they are not constrained by local demand
- Since food can be imported, there is no constraint via the need to keep enough workers in the rural sector

## 6. Generalising: the role of agriculture

- Lewis: source of agricultural surplus, constraining industrial progress
  - Taxation?
  - Industrial or agricultural productivity growth have benefits
- Eswaran and Kotwal: demand constraint, linked to poverty
  - Much scope for agricultural development policies as engine
  - But opening the economy opens other opportunities (and problems – see their book and article)
- EK provides ‘model’ consistent with some of the ideas of unbalanced growth: effectively form of ‘linkages’: more output in agricultural sector opens opportunities for industry to develop, while there is only limited linkage from industry to agriculture
- Note that different models have effectively different views on whether rural poverty requires attention in rural areas or is better addressed elsewhere