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### Transnational Farmland Investments (TFIs)

- Transnational Farmland Investments (TFIs)
  - Foreign Direct Investments (FDIs) in Farmland
  - Foreign investors bring in capital from outside, lease domestic land and employ domestic workers to engage in agricultural production.
  - Biofuel and Food projects
- Macroeconomic Implications
  - Advanced Technology + Capital Investment
  - Increased GDP ↔ Repatriation of Profits
  - Job Creation ↔ Dislocation of Local Farmers

**What is the effect of TFIs on the host country economy in terms of growth, income, and household welfare?**

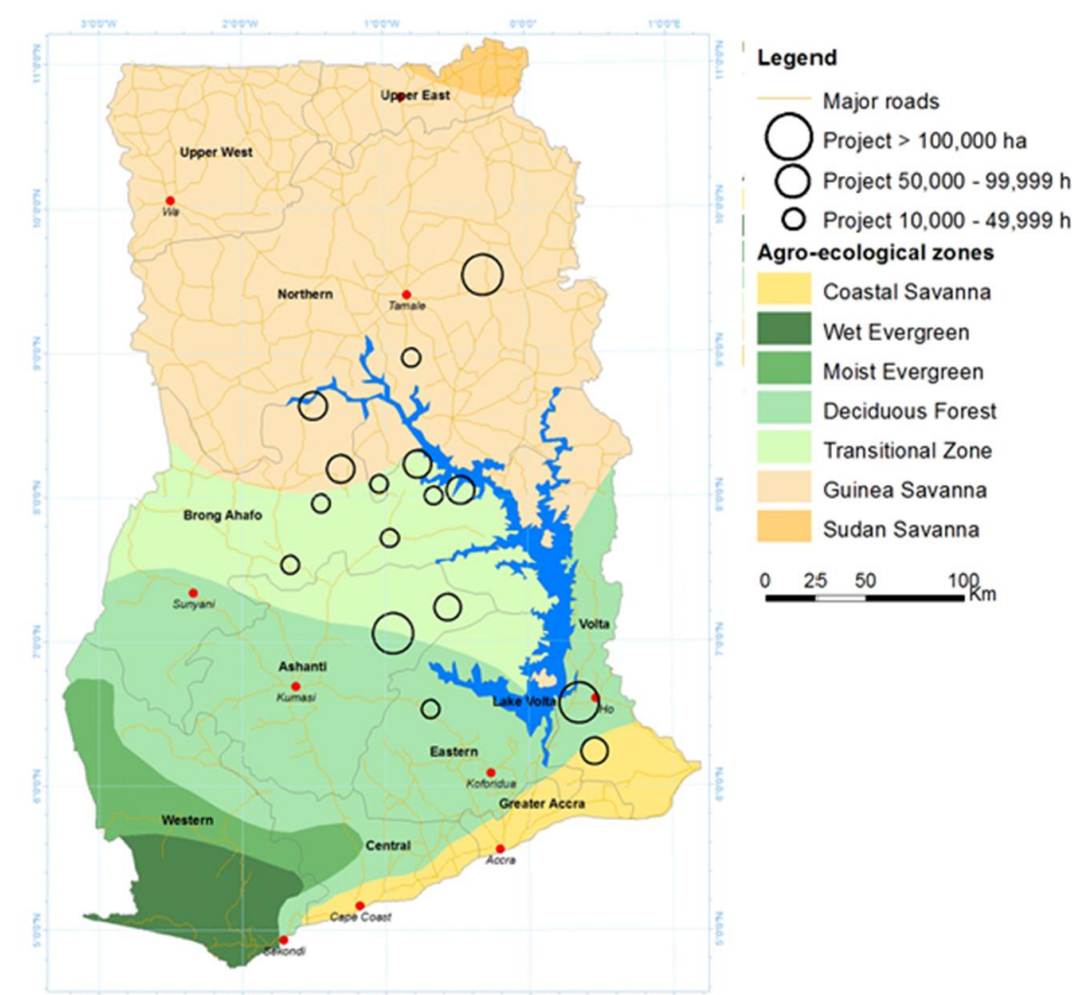
### Select Facts about TFIs

- Long-term and renewable leases, rather than purchase  
⇒ Land use compensation: fixed rent or profit sharing
- Lands under some form of use, rather than empty or abandoned lands  
⇒ Farmland transfer, rather than farmland expansion.
- Little evidence of knowledge transfer to local farmers (Asiedu 2006, Kleeman et al. 2013)<sup>3</sup>  
⇒ No spillover of knowledge is explicitly modeled.

### TFIs in Ghana

- 13% of total farmland (1,194,000 ha) transferred (August, 2014)<sup>1</sup>
  - The 4th largest recipient of TFIs in sub-Saharan Africa in terms of the share of transferred farmland
- Type of TFI activities<sup>1</sup>
  - biofuel (jatropha) projects for export market (8%)
  - food (grain) projects for domestic market (5%)
- Land use compensation: profit-sharing agreement<sup>2</sup>
  - The ratio of profit paid to the local community: 25%
  - Usually paid to local and traditional authorities/villages

### Distribution of Biofuel TFIs in Ghana<sup>2</sup>



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### Model

- Multi-sector Neoclassical (Endogenous-saving) Growth Model
- Six Production Sectors:
  - Non-agricultural sectors: Manufacturing, Service
  - Domestic agriculture: Domestic grain, Non-grain agriculture
  - TFI sectors : Foreign grain, Biofuel
- Features of TFI sectors
  - Foreign grain sector<sup>5</sup>
    - highly capital-intensive technology with mechanized operation
    - higher yield than domestic grain sector by 18%
    - outputs sold in the domestic market
    - perfect substitutes with grains produced by domestic farmers
  - Biofuel sector<sup>6</sup>
    - intensive use of labor per unit land as many manual workers are hired during the harvesting time
    - greater value added per unit land than non-grain agriculture
    - outputs exported entirely

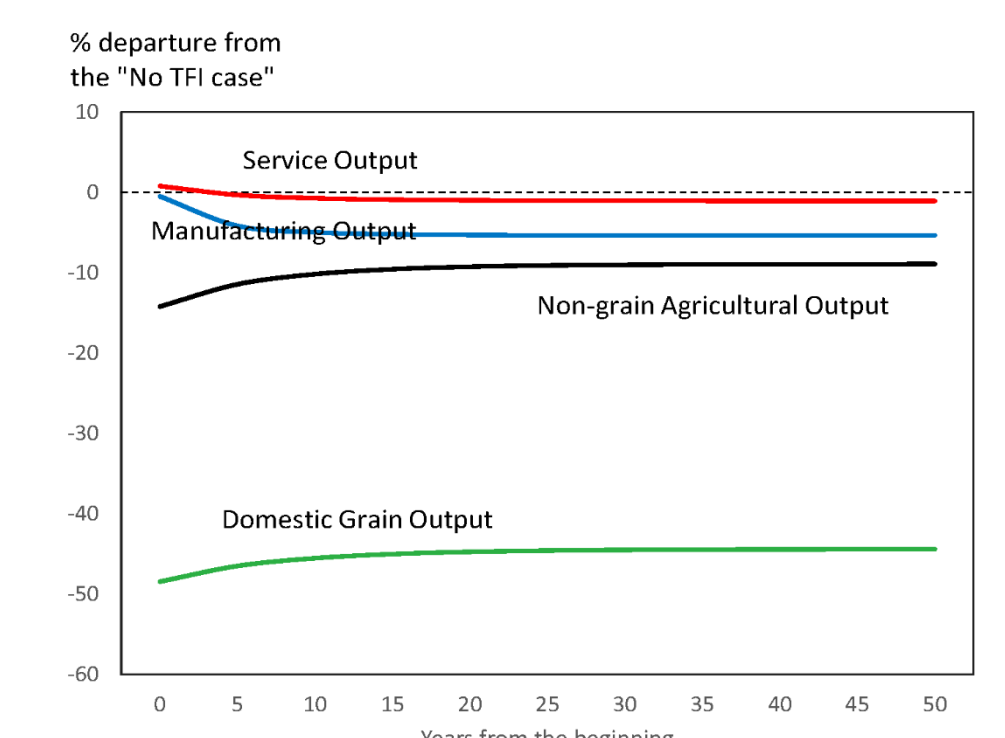
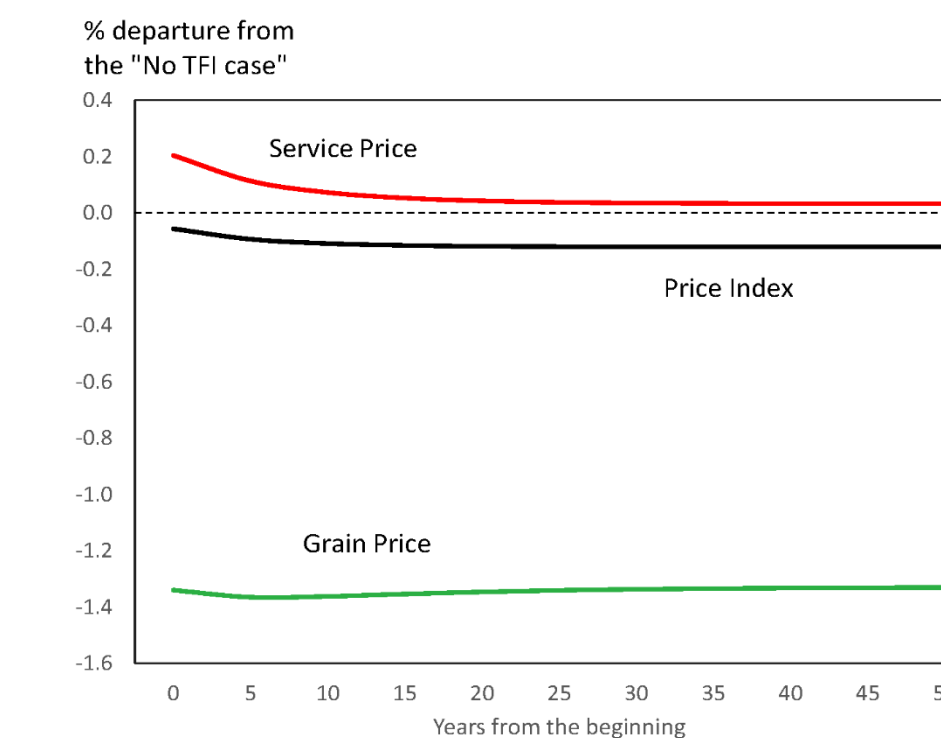
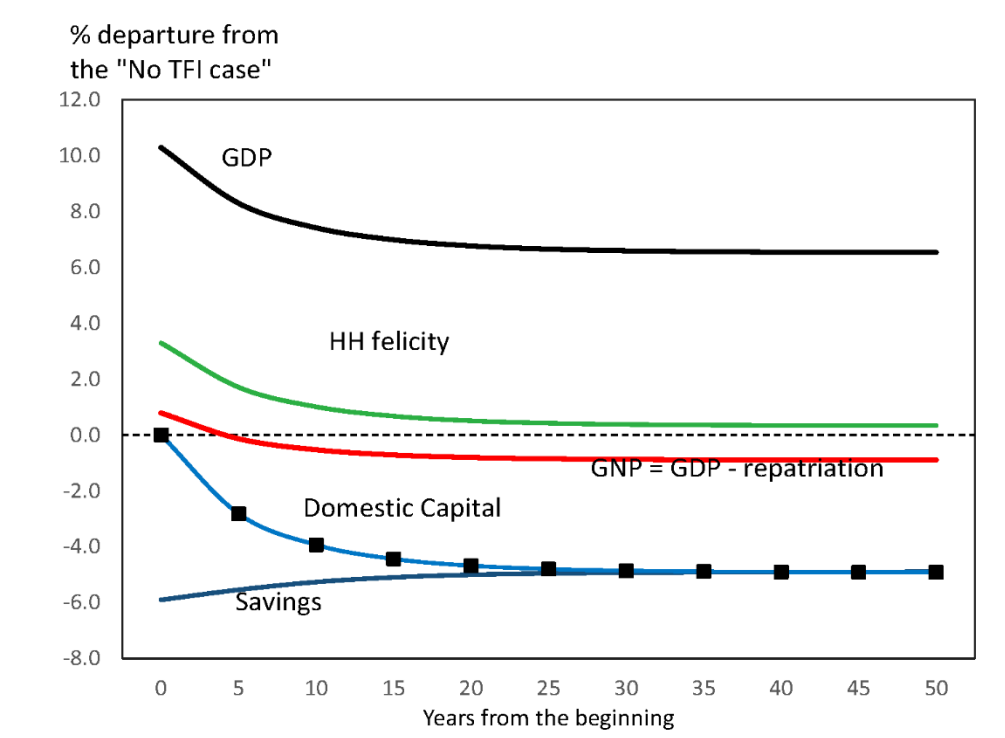
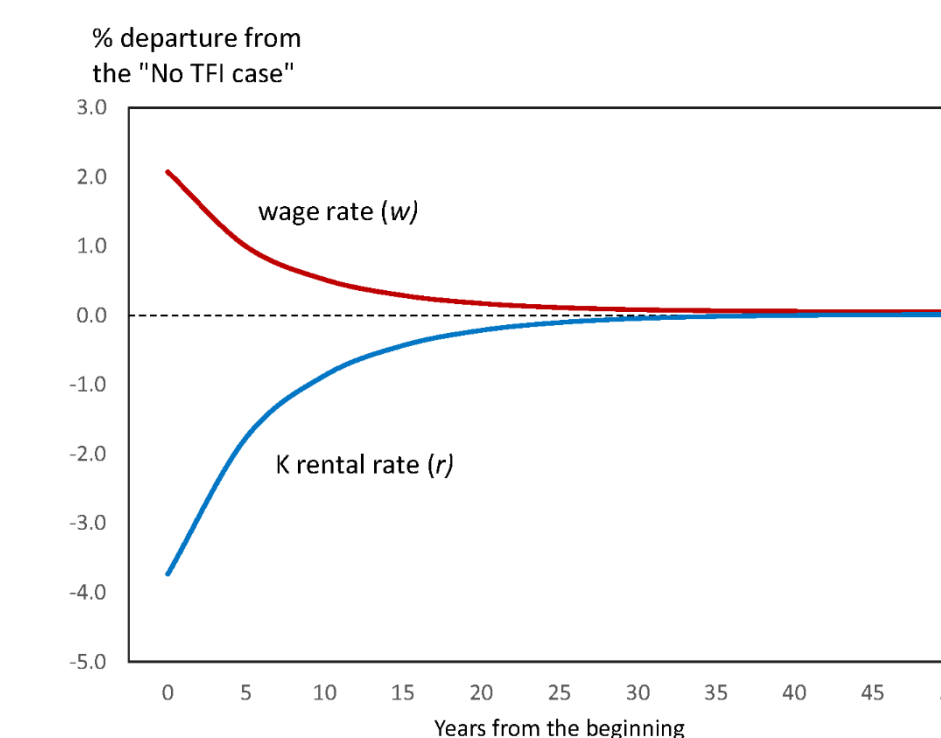
### The Differing Effects of Grain TFIs vs Biofuel TFIs

- Key Channel for the Long-term Effect
  - Labor intensity of TFI firms' technology determines whether the economy effectively becomes more labor-abundant or capital-abundant, changing marginal productivity of each factor. Subsequently, wage and return to capital change over time.
  - Changes in return to capital provide households with more or less incentives to save, determining the pace of capital deepening and economic growth.
- Effects of Grain-producing TFIs
  - Increase in productive capacity for grain  
⇒ Grain price falls, increasing grain consumption and HH welfare.
  - Technology: Low labor intensity  
⇒ Less labor employed on the transferred land  
⇒ Labor released into the labor market  
⇒ Labor abundant and capital scarce ⇒ wage ↓ & return to capital ↑
  - Faster K deepening  
⇒ Stronger growth and greater long-term income  
⇒ HH welfare improves.
- Effects of Biofuel-producing TFIs
  - Initial increase in productive capacity of the economy  
⇒ Initially greater GDP, GNP, HH welfare
  - Technology: Intensive use of Labor  
⇒ More labor employed on the transferred land  
⇒ Labor absorbed from the labor market  
⇒ Labor scarce and capital abundant ⇒ wage ↑ & return to capital ↓
  - Slower K deepening  
⇒ Weaker growth and lower long-term income  
⇒ HH welfare deteriorates in the long run.

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### Simulation Results

- The current state of TFIs in Ghana (share of total farmland as of August 2014)<sup>1</sup>
  - Grain-TFIs (5%) + Biofuel-TFIs (8%)
- The simulation investigates the effect of the current state of TFIs on the Ghanaian economy in terms of its percentage departure from a counterfactual baseline where no TFIs are present in Ghana.



- The effect of biofuel dominates via slower K accumulation.  
⇒ Lower grain price improves HH welfare.
- Wages are higher, but return to capital lower.  
⇒ Positive effect on labor income
- Less savings lead to slower K accumulation.  
⇒ Negative effect on growth and long-term income  
⇒ Negative effect on the capital-intensive manufacturing sector
- HH welfare improves despite lower long-term income.  
⇒ HH welfare up by + 0.3%, Long-term income down by - 0.9%
- Manufacturing and services are adversely affected.  
⇒ Structural transformation slows down.

### Policy Implication

- The predominance of biofuel-producing TFIs is expected to cause weak growth due to a relative shortage of savings and investment.
  - Incentives to savings and investment
    - Tax benefits for interest income and investment expenditure
    - Strengthening financial institutions
- Land use compensation in the form of infrastructure provision
  - Enhancing long-term growth potential of the economy examples: roads, irrigation facilities, etc...



**'Land Grab' or Deveopment Opportunity?  
The Effect of Transnational Farmland Investments on the  
Ghanaian Economy**

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