So far we have focused on facts about long-run growth and models that aim to explain them. These BGP facts typically imply that some variable (interest rate, capital share, etc.) has been constant in the last century or so. However, Simon Kuznets has documented another set of variables change systematically as countries grow. Most famously, he observed that the share of different sectors initially grow, then stabilize and then fall over time (this cycle can take a century or even longer!)
Structural Transformation

In the early 1800’s:
- 90% of US population worked in agriculture. Now the share is about 2%
- Less than 10% worked in services. Now the share is almost 70%
- Manufacturing was non-existent. The share rose to about 40% in 1950’s. Now it is down to 20-25%.

Note: The loss of manufacturing jobs that you hear on the news all the time is in fact part of a broader trend that is an integral part of the development process.

Agriculture, Manufacturing and Services

Econ 4960: Economic Growth
What Explains the Structural Transformation?

We do not have a complete answer, but we have a good idea about two key pieces that should be part of the overall explanation:

1. Demand Side: Non-homothetic preferences (Engel’s law):
   a) Households like to spend a smaller fraction of their budget on food as they become richer.
   b) More generally, the share of necessities fall and the share of luxuries rise as individuals get richer.
   c) As a result, the share of agriculture falls, replaced by manufacturing (the luxury items at the time).
   d) Then the share of manufacturing falls while services (that contain more luxuries) rises.

2. Production Side: Differential TFP Growth Across Sectors
   a) A second reason is that productivity growth has been very fast in agriculture, which has made it unnecessary to employ as many workers as before.
   b) Similarly, manufacturing today is so productive that you need to hire far fewer people to produce the same amount.

For example, education, health expenditures, travel, etc are all luxuries that are part of services. These expenditures have grown tremendously.
Conclusion

* There are other changes—transitions—that take place very slowly but are also very important.

* For example, the opening up of China and India, and the fall of Soviet Union has generated an important transition with hard to predict consequences: High oil prices, food shortages, and so on are largely attributable to the quick rise of these economies.

* Food shortage:
  - Rise of middle class in China and India demand more red meat. Producing meat requires lots of grain for feed.
  - Global warming, creating drought.
  - Biofuels subsidies causing farmers to switch from other uses of land to corn or sugar cane, etc.

Food for Thought