

11.167 Economic Development & Technical Capabilities

Lecture 7

1) Three Elements to Technological Capabilities

Technological Capabilities refer to the ways that developing countries can improve to keep up with the rest of the world. There are three major capabilities, and they are production, project execution, and innovation.

- Capability 1: Production
 - Countries that did production well – Japan, and East/SouthEast Asian countries.
 - A good example of a company is Hyundai motors – their technological successes come all from efficiency in their production process, with very little actual innovation. Hyundai implemented a lot of modern inventory control, quality control, and thorough training to ensure the quality of its product.
 - One reason production is a successful way for underdeveloped countries to gain industry is because it requires very little innovation to become a producer, as we see from the Hyundai example.
 - As an aside, how does a country make themselves attractive for outsourcing from developed countries? The solution is “export processing zones.” These zones have duty free imports, and are usually focused to have 100% of its product exported out of the country. The main benefit for creating these “export processing zones” is strictly employment. It was started in Japan during the Korean war, when the United States wanted more companies in Japan to strengthen its resistance to communism, as well as to get a closer footing near North Korea. The companies that participate in the export processing zones are almost always foreign multi-national companies.
- Capability 2: Project execution
 - Project execution refers to the manner or process that new companies or countries go about developing a new industry or product.
 - Included things like pre-investment feasibility studies, project management/engineering, basic engineering, procurement, constructing the plant, acquiring the machinery, and starting the operation smoothly.
 - Learning by doing is the only real way to acquire project execution skills. Let's look back at the example of Hyundai again. In 1964 Hyundai began investing in the cement industry back when they only did construction mainly as an exercise for managers to learn project execution - by 1968 Hyundai was able to expand much more because they became experienced in project execution skills that they learned from building the cement plant.
- Capability 3: Innovation
 - Didn't play as large a part in developing countries, because of the lack of infrastructure.
 - Some countries had moderate success in innovation, and their efforts are being rewarded now (note the May 3rd article from the New York Times about the United States losing its dominance in the sciences)
 - Example of South Korea – in 1966, South Korea started the Ministry of Science and Technology. At this time, Korea had roughly the same per capita as

Guatemala, but now has far surpassed them. South Korea saw their investment in innovation as something essential towards their long term goals of being a fierce competitor in the global market, even though it didn't produce short term results.

2) How the mid-late 1900's changed the United States foreign policy from “Security Economics” to “Superpower Economics.”

In the next lecture we'll discuss what exactly the “Security Economics” and “Superpower Economics” refers to. However, now we can observe that the events during this time period drastically affected the United States view on the rest of the world.

Timeline:

- 1950's - Stalin passes away. His successors decide that the developing world could be a strong place for support, and as a result the United States starts to pay more attention to the developing world as well.
- 1950-70 - The United States practices a policy of nonreciprocity, great for the developing world. This means that the United States opened up its markets to the developing countries, but didn't force them to open their markets. This allowed many companies in the developing countries to develop and grow, and got them exposure to the strong United States domestic market. This was **great** for developing countries.
- 1970's - Horrible time for the United States. Three things contributed to the decline of United States power and refocused their foreign policy.
 - Vietnam war
 - OPEC
 - US humiliation by Japan in nearly **every** industry x/c chemistry

3) World Trade Organization

Partly a byproduct of this, the United States helped to develop the World Trade Organization (WTO). The WTO was designed to make sure developing countries didn't have promotional measures for their industries. The WTO emphasized: No tariffs, no subsidies, no local content, everything free market. However, this created a level playing field in terms of opportunities, but not in terms of capabilities. The establishment of the WTO makes it difficult for the developing world, who rely on protection for their small industries. However, there are two loopholes in the WTO that some countries are exploiting. They are:

- A country can promote “regional” development. An example of this is in Southern China (poor compared to Northern China), where there is some protection of the developing industries there.
- Science and Technology endeavors can be protected.