• After the leader, United Kingdom and close followers, many countries find themselves facing the need to catch-up:

  1. Political pressure.
  2. Defensive modernization.
  3. Economic Gains.

• Successes: Germany, Japan, U.S.

• Failures: China, India.

• Two questions:
  1. How can we think about catching-up?
  2. What can be done for catching-up?
Alexander Gerschenkron, *Economic Backwardness in Historical Perspective*:

1. Backwardness creates a tension that takes political form and motivates institutional innovation.
2. The more backward the country, the more state intervention (or large banks in Germany) to channel capital and entrepreneurs to nascent industries. Also, the more coercive and comprehensive were the measures required to reduce consumption and allow national saving.
3. The more backward the economy, the more likely an emphasis upon domestic production of producers’ goods rather than consumers’ goods, the use of capital intensive technologies, the emergence of larger-scale production units, and dependence upon borrowed, advanced technology.
4. The more backward the country, the less likely the agricultural sector to provide a growing market to industry, and the more dependent was industry upon growing productivity and inter-industrial sales. Such unbalanced growth was frequently made feasible by the state.
Catching-up III

• How do we take stock on Gerschenkron’s thesis?

• We will see again when we study Asian countries after the WWII.

• Evidence:
  1. Some vigorous programs of state-led modernization have worked.
  2. But, for each program that worked, we have many other that did not.
  3. Hence, it is difficult to find out what works and what does not.

• Elements that seem to help:
  1. Strong nationalistic feeling in government and population.
  2. Strong civil service that prioritizes modernization.

• But even for successes, militaristic-authoritarian tendencies are common.
Role of tariffs I: Infant industry

• Original proponents: Alexander Hamilton, Friedrich List.

• Possible justifications:

  1. Learning-by-doing.

     1.1 Leonard Rapping, Kenneth Arrow.

     1.2 Liberty Ships during WWII.

  2. Economies of scale.
MANHOURS PER SHIP FOR VESSELS BUILT IN NEW YARDS
Selected Types By Rounds Of the Ways

- Transports, C4-S-A1 (right-hand scale)
- Aircraft Carriers, S4-S2-BB3 (left-hand scale)
- Tankers, T2 (left-hand scale)
- Liberty Ships, EC2 (left-hand scale)
Role of tariffs II

• Counterarguments:

1. Difficult to extend to many countries.

2. Difficult to pick “national champions.”
   
   2.1 Experience of MITI: Fifth Generation Computer Systems project, Honda.
   
   2.2 Experience of “Atari Democrats.”

3. Difficult to separate from interest groups.

• Current implications: green technologies.
On January 18, 1871, Deutsches Kaiserreich is proclaimed in the Hall of Mirrors of the Palace of Versailles.

Crucial development:

1. Largest population in Europe.
2. Central position in the continent.
3. Limited democracy/partially authoritarian regime.
4. Most importantly, a quickly growing economy.
German economy

- Role of heavy industry: steel, chemical.
- Role of banks: universal banking.
- Role of universities.
- Role of R&D.
- Alliance of iron and rye.
Japan opens: Perry’s expedition

- Remember that, from early 16th century, Japan was closed to the rest of the world.

- In 1852, Commodore Perry travels from Norfolk, Virginia for Tokyo Bay, in command of a squadron of four black-hulled steam frigates.

- Goal: search of a Japanese trade treaty.

- President Millard Fillmore has authorized the use of force if needed.

- Treaty of Kanagawa signed in 1854.

- In 1855, Russia and Japan establish diplomatic relations.

- In 1864, British, French, Dutch, and American warships bombard Shimonoseki and open more Japanese ports for foreigners.
Meiji restoration

• In 1868, Tokugawa Yoshinobu resigns, the Tokugawa dynasty ends, and the emperor (or "mikado") Meiji is restored.

• Capital in Edo/Tokyo, emperor supposedly with divine attributes.

• Small, tight group of elite notable controls the country.

• Idea: western learning with Japanese spirit.

• Accelerated program of modernization:
  1. By 1873: prefects, bureaucratic jobs, newspapers, an education ministry, military conscription, railways, and the Gregorian calendar.
  2. By 1879: representative local government.

• Samurais are expropriated: feudal rents transformed into bonds from the central government but eaten away by inflation.
Assertive foreign policy

- 1894-1895: War with China. Control over Korea and Taiwan.

- 1899: abolished extra-territoriality—the immunity of Europeans from Japanese justice and law.


- 1914: Japan’s declaration of war against Germany in WWI. Control over Germany Pacific colonies.

- Feels cheated in 1918.

- Most important lesson: non-European peoples can modernize pretty quickly.
• U.S. comes out of the civil war as a country with a much more unified elite (no Southern president until Wilson in 1912).

• It seems to have all the gifts of nature:

  1. Abundant land.
  2. Multiple mineral resources.
  3. No enemies north or south.
  4. An educated population.
  5. A large internal market.

• Fast economic growth: first economic power by 1900.

• At the same time:

  1. South reduced to a backwater region.
  2. Failure of the promise of Reconstruction.
  3. Populism in the Midwest.
The Gilded Age

- Big corporations to take advantage of economies of scale.
- Robber Barons: Duke, Vanderbilt, Stanford, Rockefeller (just those with Universities named after them).
- 1911 the Supreme Court agreed that Standard Oil Company had violated the Sherman Act and broke the monopoly into three dozen separate companies:
  1. Standard Oil of New Jersey (later known as Exxon and now ExxonMobil).
  2. Standard Oil of Indiana (Amoco).
  3. Standard Oil Company of New York (Mobil, again, later merged with Exxon to form ExxonMobil).
A case study: Aluminum

- Aluminum is the most abundant metallic element in the Earth’s crust.

- However, it is mainly found in bauxite, an ore where it is mixed with iron and other minerals.

- Discovered and first produced in 1827 by Friedrich Wöhler at an extreme cost. Napoleon III’s forkware.

- 1886: American chemist Charles Martin Hall and the Frenchman Paul Héroult separately invent the Hall–Héroult process for smelting aluminum: it dissolves aluminum oxide (alumina) in molten cryolite, and electrolyzing the molten salt bath.

- Suddenly, large production of aluminum becomes feasible at reasonable prices.

- Pittsburgh Reduction Company, which later became Alcoa: biggest Aluminum producer in the world for many decades.
Jonathan Spence, *God’s Chinese Son: The Taiping Heavenly Kingdom of Hong Xiuquan*

- Taiping Rebellion of 1850-1864 ravages central China.
- Hong Xiuquan, a failed scholar:
  1. After failing one exam, the has some visions of him being the younger brother of Jesus Christ.
  2. Proclaims the “Heavenly Kingdom of Great Peace.”
  3. Land equally divided after all the landlords were killed down (roughly 50% increase in median peasant standards of living).
- Three reasons the rebellion survives for so long:
  1. The imperial court feared victorious generals (as potential usurpers) at least as much as it feared rebels.
  2. Enough landless and other desperate peasants to join the rebellion.
  3. Hong Xiuquan supplemented his brand of theocratic landlord-free authoritarian communism with anti-Manchu nationalism: “Ever since the Manchus poisoned China... the poison of corruption has defiled the emperor’s throne...”
The Self-Strengthening Movement

- Li Hongzhang: traditional scholar, serves the Qing during the Taiping rebellion.

- Becomes senior official in foreign and military affairs.

- Initiatives:
  1. In 1877, Kaiping coal mine.
  2. In 1878 cotton mills in Shanghai.
  3. Tianjin arsenal.
  4. Telegraph between Tianjin and Peking.
  5. A seven-mile railroad to ship from Kaiping to the river.
• Resistance:

1. Dynasty itself.

2. Bureaucrats.

3. Landowners.

• Reformers are defeated.
The end of Imperial China

- War of 1894-1895 with Japan over the control of Korea.
- Boxer Uprising (or the Righteous Harmony Society Movement) in 1898-1901.
- Foreign powers: Eight-Nation Alliance.
- Finally, 1911 Revolution.
- Starts times of political instability that will last until 1949.
- Industrialization is nearly impossible.

Two important elements:

Left Behind II: India

- Great rebellion of 1857:
  1. Last Mughal rules, Bahadur Shah II, deposed (direct descendent of Ghengis Khan, Timur, and Babur).
  2. An Act for the Better Government of India in 1858 abolishes the BEIC and the assets are transferred to the Crown ⇒ British Raj.
  3. Ruled by Indian Office ⇒ Extremely small number of civil servants (but some of them quite famous).
  4. Divided between British India and the Princely States (568 at independence).

- Little or no economic growth until SWW (more before 1914, no growth from 1918 to 1929) and several severe famines.

- Why?

- Effects of colonialism.
THE FIRST INDIAN NATIONAL CONGRESS, 1885.
I then work backwards step by step towards the earlier benchmark years for each of the countries in the region. I proceed in three stages. In the first stage of the reconstruction procedure, I work backwards to 1913 using the available evidence on rates of change in per capita GDP as well as other estimates on per capita GDP levels for those countries of the region for which estimates or income series are available, most importantly Turkey and Egypt. The first stage enables me to carry the GDP per capita estimates expressed in 1990 international dollars back to 1913 at least for parts of the region. For Turkey, national income accounts now go back to 1923. We have linked these series to the Ottoman period making use of a de-
**TABLE 1**
ECONOMIC GROWTH IN THE MIDDLE EAST SINCE 1820

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP Per Capita (1990 PPP dollars)</th>
<th>Annual Change in GDP Per Capita (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>680</td>
<td>880</td>
</tr>
<tr>
<td>Syria</td>
<td>680</td>
<td>880</td>
</tr>
<tr>
<td>Lebanon</td>
<td>680</td>
<td>950</td>
</tr>
<tr>
<td>Jordan</td>
<td>550</td>
<td>700</td>
</tr>
<tr>
<td>Palestine-Israel</td>
<td>650</td>
<td>850</td>
</tr>
<tr>
<td>Israel</td>
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<td>750</td>
</tr>
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<td>Saudi Arabia</td>
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<td>520</td>
</tr>
<tr>
<td>Gulf</td>
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<td>700</td>
</tr>
<tr>
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<td>550</td>
<td>600</td>
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<td>Western Europe</td>
<td>1,245</td>
<td>2,086</td>
</tr>
<tr>
<td>U.S. and W. Europe</td>
<td>1,246</td>
<td>2,159</td>
</tr>
</tbody>
</table>
Modernizing regimes

• Karl Marx missed the main force of the 20th century: it was not class struggle, it was nationalism.

• Japan first, but specially Atatürk in Turkey are the first examples of modernizing nationalist regimes.

• Even today, this is an extremely powerful force.

• Failure of nationalist movement: the Arab world. Nasser, Baath party.

• We will revisit this issue when we talk about the experience after WWII.