

UNIT 3. The Spread of Industrialization. (*)

(2478) Economic History.

(*) UNIT 3 is a thematic extension of UNIT 2.3 The Industrial Revolution and its Patterns of Development.

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3. The Spread of Industrialization.

3.1. Introduction.

3.2. The Spread of the Industrial Revolution: the Ascent of the Rich.

3.3. The Standard Model and Late Industrialization.

3.4. Conclusions.



Textbook:

- ALLEN, Robert. 2011. *Global Economic History: A Very Short Introduction*, (Very Short Introductions), Oxford University Press, 40-47, 78-83, 114-130.

Other references:

- The Economist. 1999. Catch the waves. (18.2.1999).

[<http://www.economist.com/node/186628>]

- The Economist. 2015. Time to Fix Patents. (8.8.2015).

[<http://www.economist.com/news/leaders/21660522-ideas-fuel-economy-todays-patent-systems-are-rotten-way-rewarding-them-time-fix>]

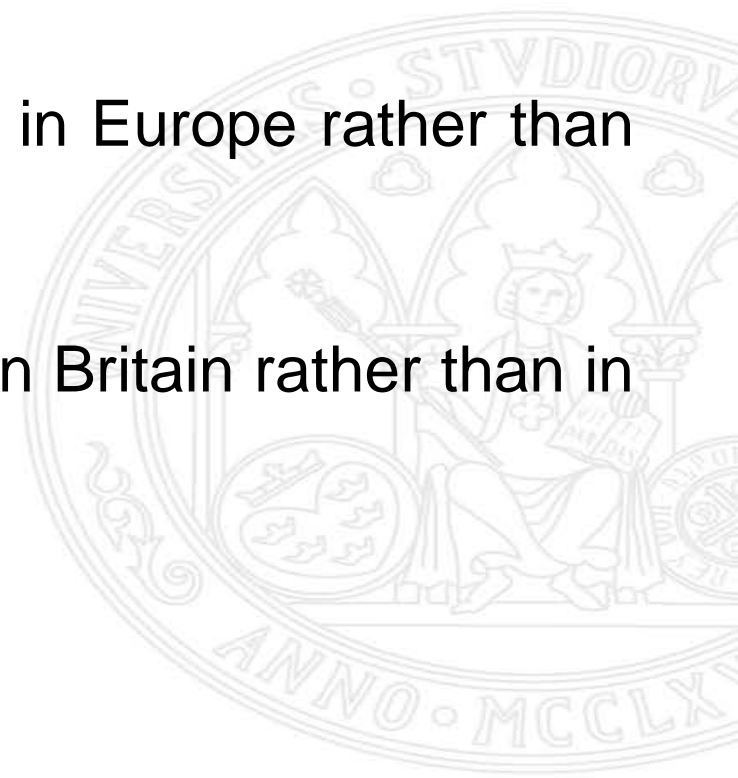
ROBINSON, James. 2014. “Why Nations Fail?” TEDx Talks.

[<https://www.youtube.com/watch?v=jsZDIBU36n0>]

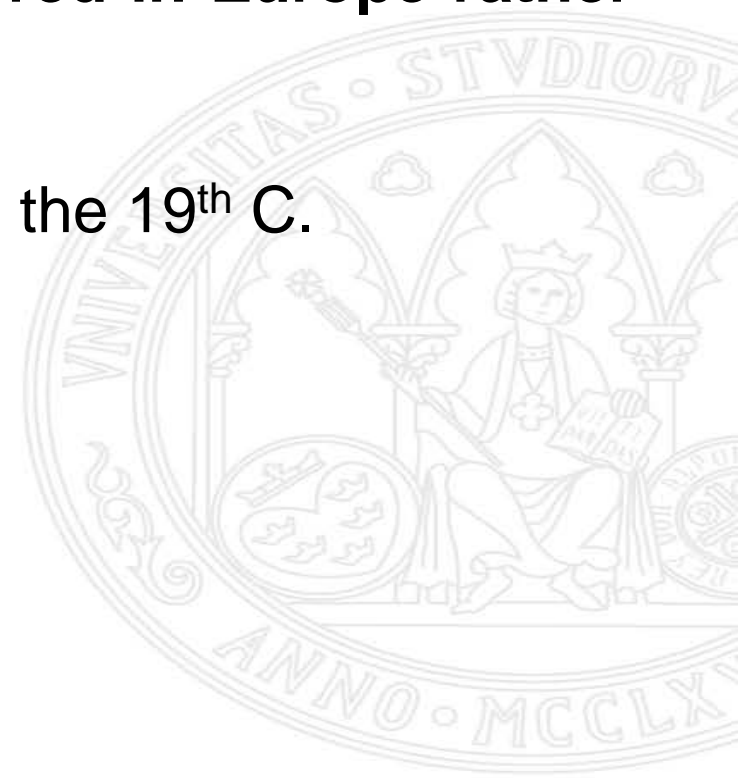
- **3.1 Introduction.**
- Between 1815-1870, the IR spread from Britain to the continent with remarkable success.
 - Also to the US.
- ‘Western countries will succeed in the IR process’. Is this relevant?
 - There are two mains standpoints in this debate.



- **3.1 Introduction.**
- There are two main standpoints in this debate.
- 1) The relevant issue is to explain why the IR occurred in Europe rather than in Asia.
- 2) The relevant issue is to explain why the IR occurred in Britain rather than in any other European country.

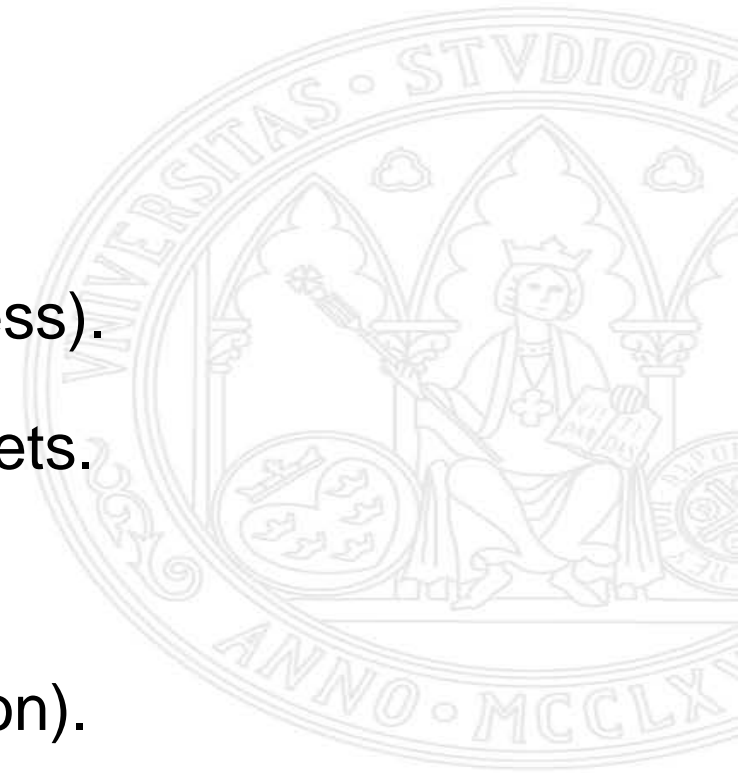


- **3.1 Introduction.**
- **1) The relevant issue is to explain why the IR occurred in Europe rather than in Asia.**
- Drastic institutional changes in Europe happened before the 19th C.
 - [English Scientific Revolution] Enlightenment .
 - [English (Modern) Parliament].
 - French Revolution (1789).
 - Napoleonic invasions (Codes: written law).



- **3.1 Introduction.**

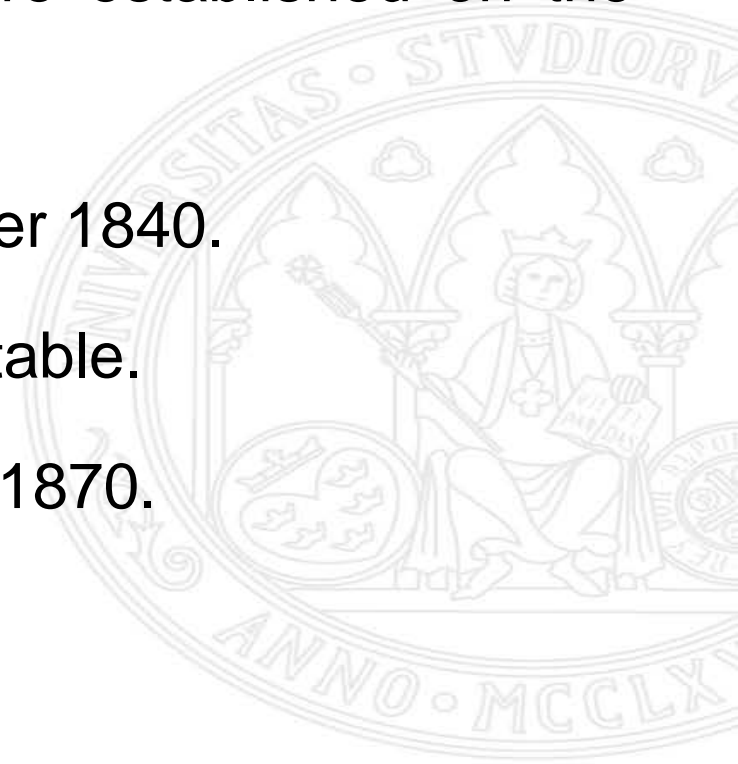
- Facts.
- Abolition of the serfdom (only in Western countries).
- Equality before the law.
- Expropriation of monastic properties (Mortmain process).
- Abolition of internal tariff => creation of national markets.
- Modern tax system.
- Universal education (extension of secondary education).
- Scientific culture.



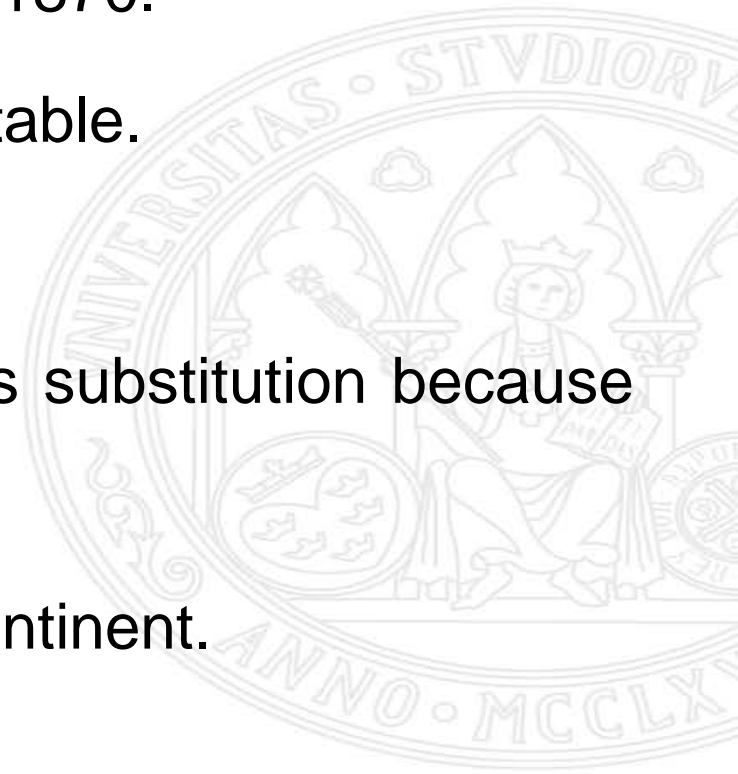
- **3.1 Introduction.**
- **2) The relevant issue is to explain why the IR occurred in Britain rather than in any other European country [Allen's position].**
 - High wages + low energy prices gave Britain the incentive to adopt new industrial technology.
 - Also, some relevant changes took place in the UK before they took place on the continent.
 - (Modern) Parliament.
 - The Scientific Revolution focused on natural laws.

- **3.1 Introduction.**
- **Key Point:** While Britain did not have a policy to “industrialize”, most (successful) followers had a strategy to emulate it’s success.
 - Four policies:
 - Creation of unified national market by eliminating internal tariffs and building transportation infrastructure.
 - External tariff to protect industries from British competition.
 - Chartering of Banks to stabilize the currency and finance industrial investment.
 - Establishing mass education to create a more-skilled labor force.

- **3.2. The Ascent of the Rich.**
- Between 1815-1870 all major industries of the IR were established on the continent on a profitable basis.
- The cotton industry was established on the continent after 1840.
 - Subsequent technical progress made machines profitable.
- The iron industry was established on the continent after 1870.



- **3.2. The Ascent of the Rich.**
- The iron industry was established on the continent after 1870.
 - Subsequent technical progress made machines profitable.
 - Example: Coke replaced charcoal.
 - Some countries were slower to implement this substitution because they had extensive forestry resources.
- Railways: leading innovations were also found on the continent.



- **3.2. The Ascent of the Rich.**
- In 1870 Western Europe had overcome its technological deficiencies.
- Production levels on the continent were still far behind those in Britain.

1880: World's
manufacturers

- Britain: 23%
- France, Germany & Belgium: 18%
- US: 15%

1913: World's
manufacturers

- Britain: 14%
- France, Germany & Belgium: 23%
- US: 33%

- **3.2.1. The Second Industrial Revolution.**

- Late 19th C: new industries appeared:
 - Automobiles.
 - Petroleum.
 - Electricity.
 - Chemicals.
- Common features:
 - Innovations & industries related to developments in the natural sciences.
 - Rich countries were involved in creating these industries.
 - Countries with strong university programmes created a strong connection between science & industry.
 - Germany is the best example before 1930.
 - The US led university research after WWII.
 - The gap between rich countries and the rest of the world increased in term of R+D.



- **Did you know...?**
- J.A. Schumpeter defined the trilogy of innovation: Invention-Innovation-Difussion.
- Schumpeter emphasized that a healthy economy was in constant “disruptive” (technological) innovation.
- The Economist. 1999. Catch the waves. (18.2.1999).

[<http://www.economist.com/node/186628>].



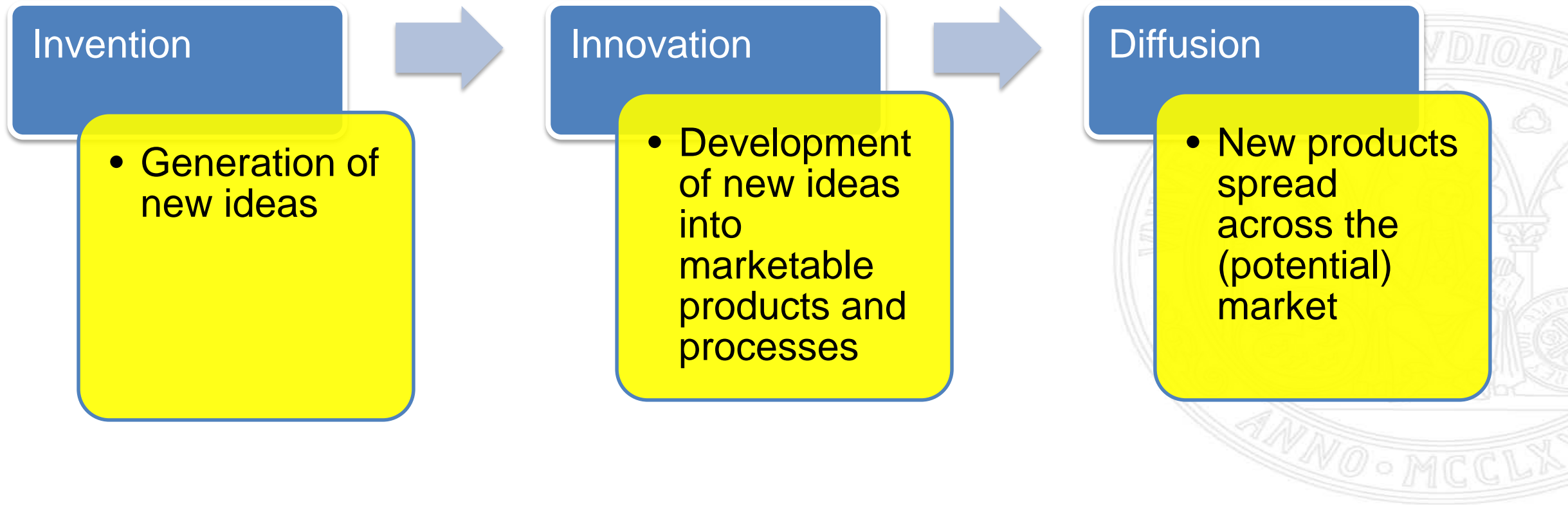
Joseph Alois Schumpeter (1883-1950).

- **Did you know that...**
- Lineal model of technological change

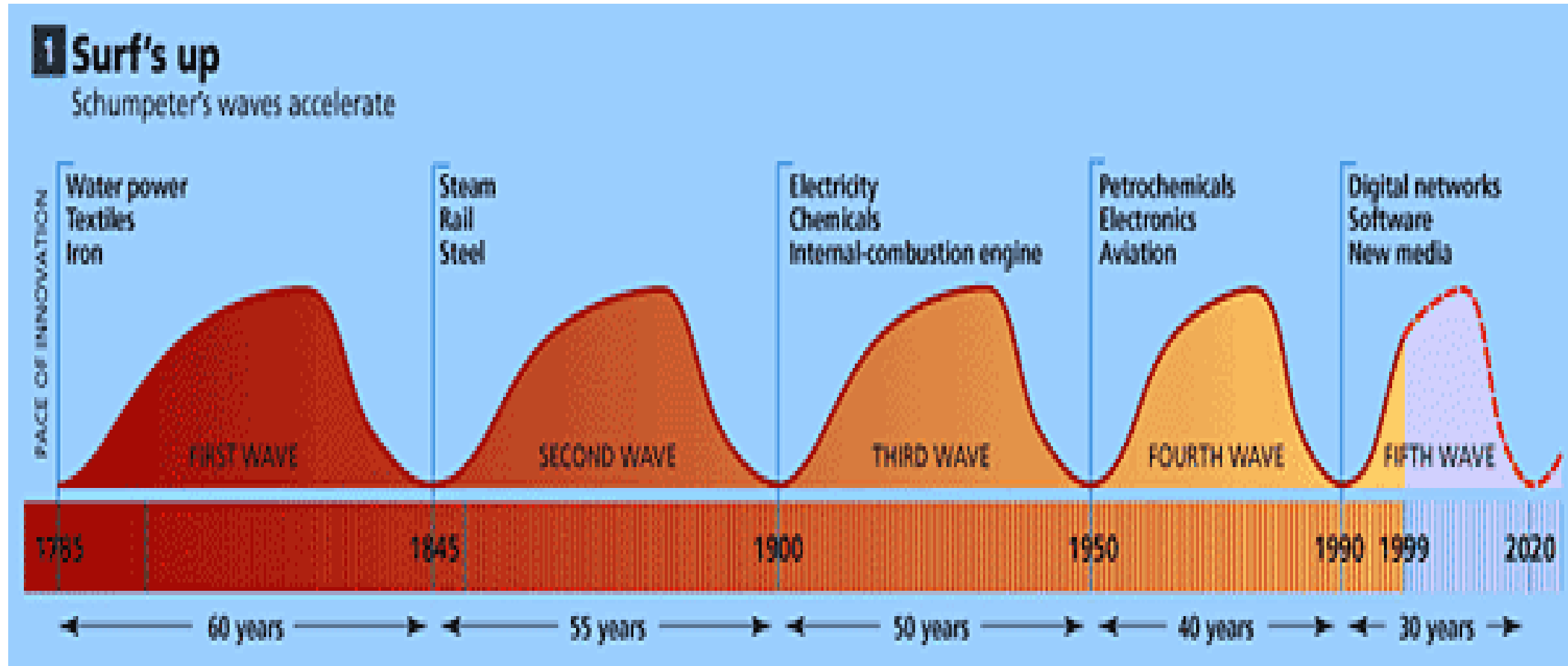


UNIT 3.2. The Second Industrial Revolution: the Ascent of the Rich.

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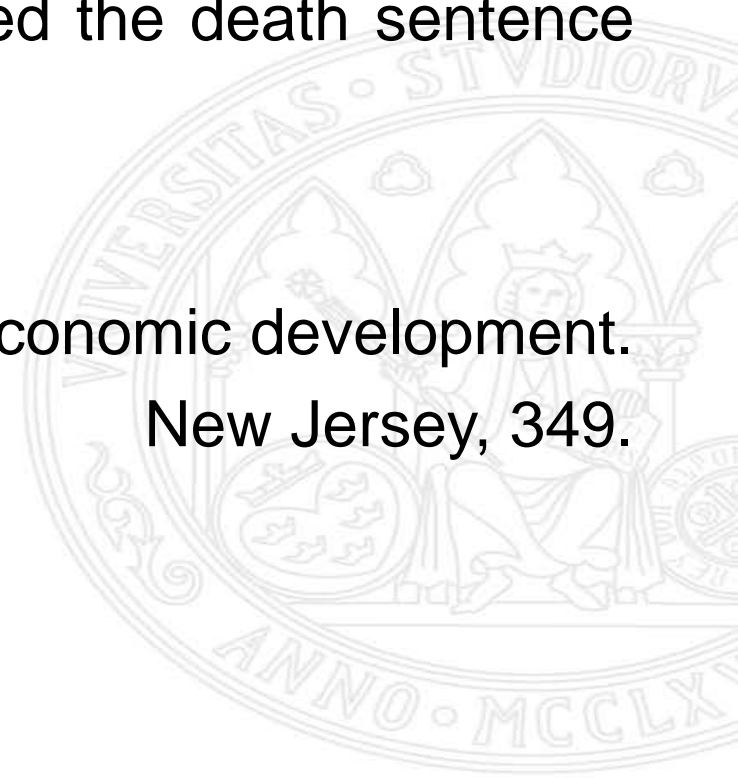
UNIT 3.2. The Second Industrial Revolution: the Ascent of the Rich.



Source. The Economist. 1999. Catch the waves. (18.2.1999)
[<http://www.economist.com/node/186628>]

- “The railroadization of the Middle West, as it was initiated by the Illinois Central (...) not only meant very good business (...) but it spelled the death sentence for the (old) agricultura of the West”.

J.A. Schumpeter. 1934. The theory of economic development.
New Jersey, 349.



Task 1.

Patents had a relevant role promoting innovation (please review the practice class on the patent systems of leading countries from a historical perspective).



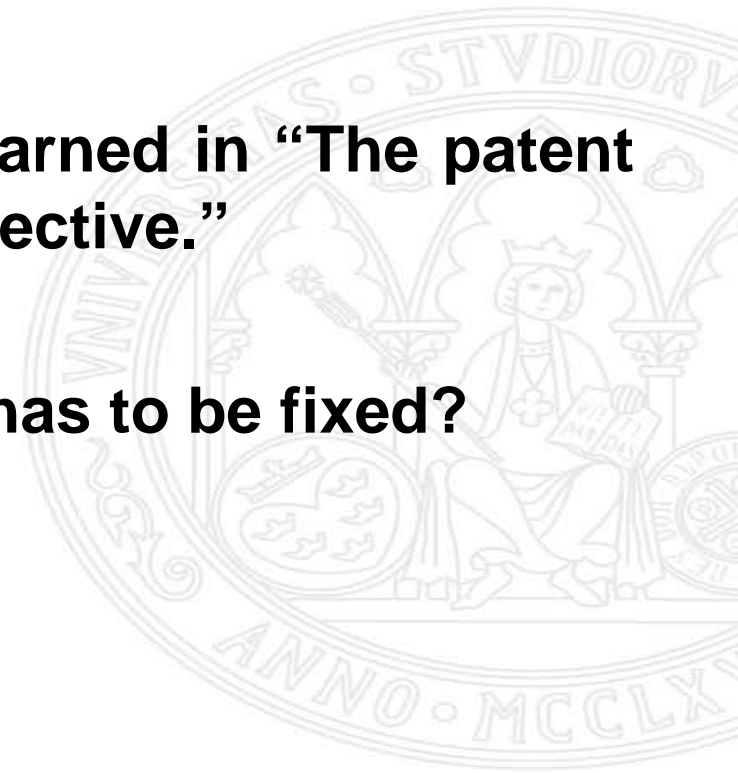
In the following article from The Economist you will find a different perspective on the need to fix, or remove, patent systems. According to the author, patents are an impediment to economic development.



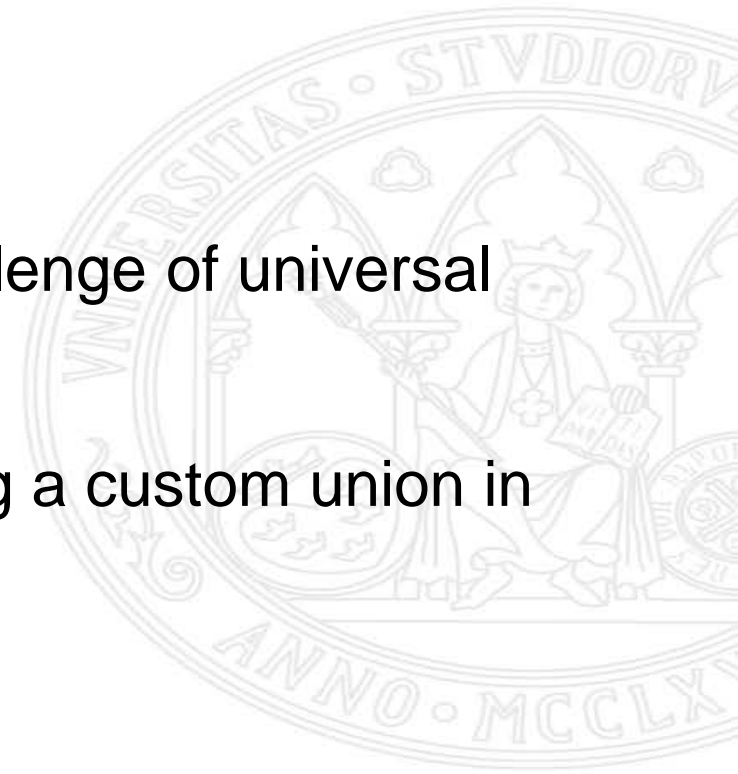
- **Task 1**
- **TOOL: The Minute Paper.**
- This is an assessment technique that provides rapid feedback on what you, a student, perceived as the main idea in a particular topic.
- You must first organize your thinking to rank the major points and then decide upon a significant question.



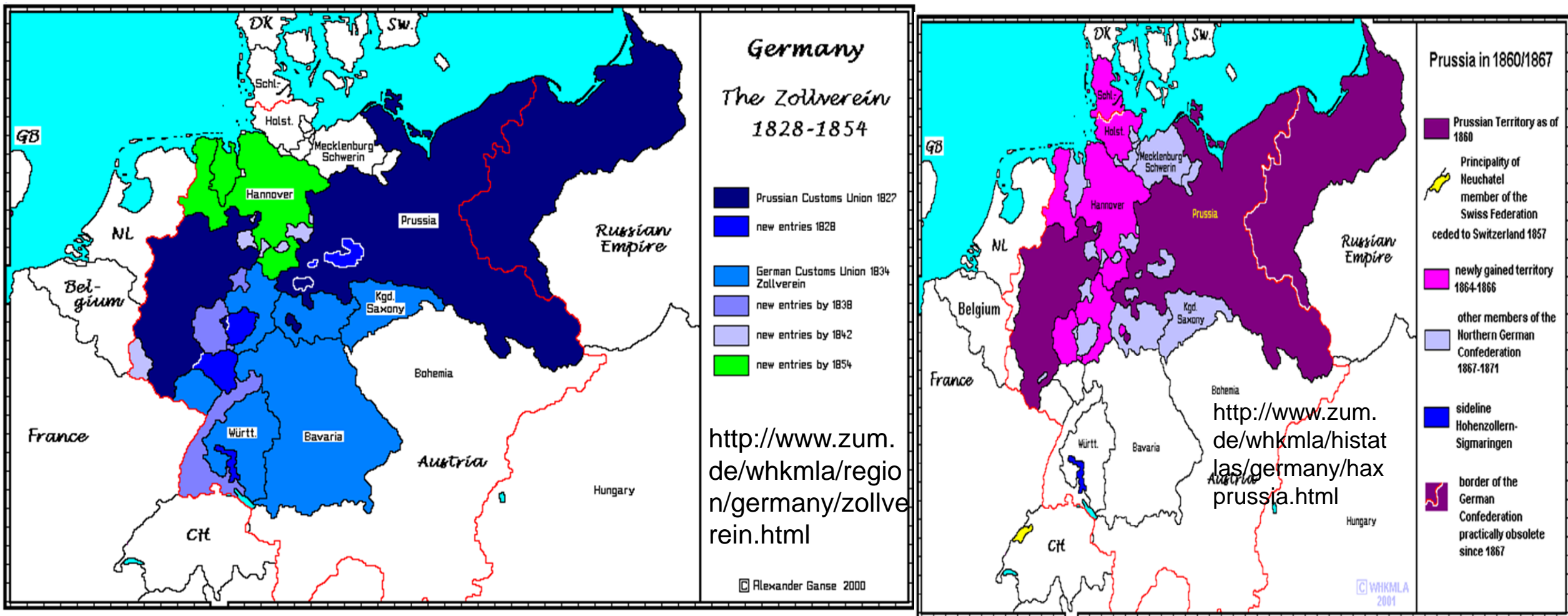
- **Task 2.**
- **Please, answer the two questions below.**
- **1. What are the most significant points you have learned in “The patent systems of leading countries from a historical perspective.”**
- **2. Why do some experts say that the patent system has to be fixed?**



- **3.2.2. The Ascent of the Rich: Germany.**
- Divided into almost 40 political units at the beginning of 19th C.
- Prussia, was the largest state.
 - Instituted universal primary education in the 18th C.
 - By the mid-19th C it had already achieved the challenge of universal primary education.
 - Took the lead in creating a national market by forming a custom union in 1818 to unify its territory.
 - Other German states followed.
 - *Zollverein.*



• 3.2. The Ascent of the Rich: Germany.



- **3.2.2 The Ascent of the Rich: Germany.**
- The economic union formed the basis of the German Empire (1871).
- The integration of markets was reinforced by the railway system.
 - 63000 km in 1913.



- **3.2.2 The Ascent of the Rich: Germany.**
 - **In Germany:** all the giant German banks were founded by 1872.
 - Banks financed German industrialization (1880-1914).
 - Branches amassed the capital of many depositors.
 - Bank representatives served as directors of the industrial firms (which were clients of the bank).
 - Target: long lasting relationships with clients (including firms).
 - Long term loans secured by mortgages on industrial properties.

- **3.2.2 The Ascent of the Rich: Germany.**

- **NOTE:** Investment banks played a relevant role in European industrialization.

- In France: *Le Credit Mobilier*:

- Société Générale du Crédit Mobilier (1852).
- French Government sanctioned the statutes of a new bank.
- Founders: Pereire brothers.
- Capital came from: large industrialists, & general public.
- Target: expansion of the railway network and industrial investment.



UNIT 3.2. The Second Industrial Revolution: the Ascent of the Rich.

A3. Germany, 1907

	Share capital	Total assets	Workforce	Chairman ^a
<i>I. Industry</i>				
<i>Heavy industry</i>				
Friedrich Krupp AG	9,000	21,726	64,354	E. Haux
Gelsenkirchener Bergwerks	6,500	13,607	31,252	E. Kirdorf
'Phoenix'	5,000	9,836	31,000	H. Kamp
Harpener Bergbau	4,000	8,039	26,000	R. Müser
Hibernia	3,000	5,997	19,212	H. Lindner
Oberschlesische Eisenbahnbedarfs	2,400	3,986	11,500	O. Niedt
Deutscher Kaiser	2,338	7,712	18,931	A. Thyssen
'Union'	2,100	4,002	11,605	Mathies
Hohenlohe Werke	2,100	5,079	12,367	F. Lob
Vereinigte Königs- und Laurahütte	1,800	3,483	23,224	E. Hilger
Rheinische Stahlwerke	1,750	2,689	10,000	E. Goecke
Rombacher Hüttenwerk	1,650	5,084	7,000	R. Hinsberg
Eschweiler Bergwerksverein	1,600	2,953	9,268	H. Schornstein
Kattowitzer	1,500	2,700	10,968	G. Williger
Oberschlesische Eisen-Industrie	1,400	2,639	9,500	V. Zuckerkandl
Bochumer Verein	1,260	2,407	10,867	F. Baare

UNIT 3.2. The Second Industrial Revolution: the Ascent of the Rich.

Deutsch-Luxemburg	1,200	4,000	10,000	C. Knupe
Gutehoffnungshütte	1,200	4,266	21,657	P. Reusch
<i>Textiles</i>				
Nordwolle	1,125	3,245	8,000	C. Lahusen
Kammgarnspinnerei Stöhr	500	1,673	3,000	E. Stöhr
<i>Food, drink, tobacco</i>				
Gebrüder Stollwerck	800	1,303	2,500	L. Stollwerck
Schultheiss Brauerei	700	775		R. Funke
<i>Chemicals</i>				
Bayer	1,800	3,247	7,811	C. Duisberg
BASF		4,100	8,877	H. von Brunck
Hoechst	1,800	3,898	6,000	G. von Brüning
<i>Electrical engineering</i>				
Allgemeine Elektrizitäts-Gesellschaft (AEG)	5,000	11,500	30,667	E. Rathenau
Siemens Schuckertwerke	4,500	7,418		A. Berliner
Siemens & Halske	3,150	6,279	42,866 ^b	A. Berliner
Felten & Guillaume-Lahmeyer	2,750	5,602	11,760	B. Salomon
<i>Mechanical engineering</i>				
Stettiner Maschinenbau 'Vulcan'	500	2,890	6,450	R. Zimmermann



UNIT 3.2. The Second Industrial Revolution: the Ascent of the Rich.

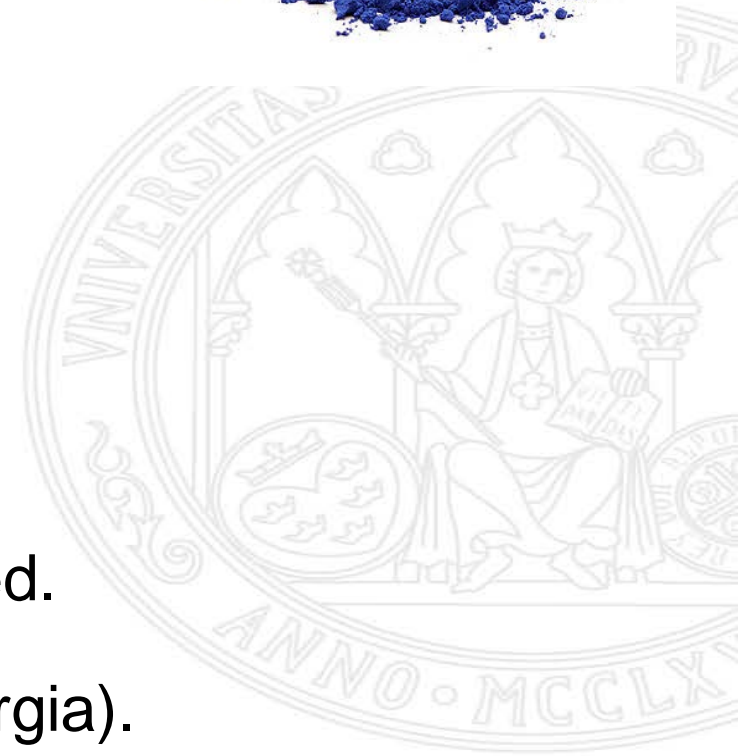
II. Finance

Banking

Deutsche Bank	10,000	93,600	8,475 ^c	A. Gwinner
Dresdner Bank	9,000	50,600		E. Gutmann
Disconto-Gesellschaft	8,500	42,500		A. Schöller
Darmstädter Bank	7,700	30,650		M. von Klitzing
<i>Insurance</i>				
Concordia	300	7,167		P. Hensel
Victoria zu Berlin	150	32,258		O. Gerstenberg

3.2.3. The Ascent of the Rich: US.

- The US declared independence from Britain in 1776.
 - 1790-1860:
 - The economy took off.
 - Population increased by a factor of eight.
 - Income per capita doubled.
- New product: cotton (left behind tobacco, rice and indigo).
 - Demand for the fiber soared in Britain as the IR unfolded.
 - Cotton crop was high profit after some innovation (Georgia).
 - Eli Whitney: cotton gin in 1793.



3.2.3. The Ascent of the Rich: US.

- Cotton was responsible for the industrialization of the Northeast.
 - Southern plantations and Western farms demanded manufactured products.
- Cotton was grown on plantations using slave labor.
- [African human trade] was prohibited by Congress in 1808, but slavery continued until the Civil War (1861-1865).
 - Connection between suffragist movement and abolition of the slavery.
 - Spain prohibited slavery in 1837 (peninsula), 1873 (Puerto Rico), 1880 (Cuba).

Did you know...?

The following article from The Economist analyses key points in the industrialization of the US and, at the same time, offers the readers a reflexion on the methods of historians and economists.

- The Economist. 2016. “Lessons from a fight between economists and historians” (9.12.2016) [<http://www.economist.com/blogs/freeexchange/2016/12/pain-past>]

3.2.3. The Ascent of the Rich: US.

- US industrialization also depended on four supportive policies (the standard model).
- Hamilton in *Report on Manufactures* (1792) established 3 of the 4 policies:
 1. Improvements in transportation to expand markets.
 2. A national bank to stabilize the currency and ensure a supply of credit.
 - The First Bank of the United States (1791-1811).
 - <https://www.federalreserveeducation.org/about-the-fed/history>.
 3. A tariff to protect the industry (*).
- 4th policy: Mass education.

3.2.3. The Ascent of the Rich: US.

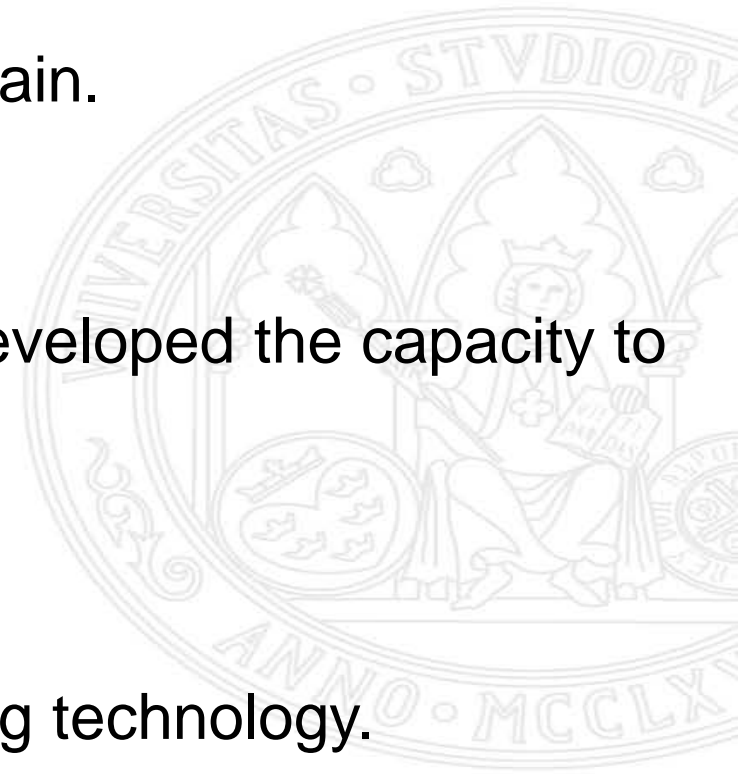
Additional remark on “A tariff to protect the industry” (*).

- Protectionism became a characteristic of American policy.
 - To protect the vast internal market.
- While the US applied protectionism policies, the UK had followed free trade .
 - [since repealing Corn Laws (1846) and the Navigation Act (1849)].

NOTE: as opposed to Spanish industries which protected the internal market because they could not compete abroad

3.2.3. The Ascent of the Rich: US.

- After independence, the US real wage grew continuously.
 - 1830s real wages in the US were double those in Britain.
 - Immigration did not keep wages down.
- The rise in GDP and wages indicates that the US had developed the capacity to generate rising productivity through its own efforts.
 - Free land in the West generated high real wages.
 - High wages induced businesses to invent labor-saving technology.



UNIT 3.2. The Second Industrial Revolution: the Ascent of the Rich.

3.2.3. The Ascent of the Rich: US.

**Evolución de la población, en millones de habitantes
1820-1913**

	Gran Bretaña		Francia		Alemania		Italia		Estados Unidos		Japón	
1820	21.23	100	30.69	100	24.90	100	18.99	100	9.61	100	30.98	100
1830	23.93	113	32.70	107	28.06	113						
1840	26.76	126	34.29	112					17.12	178		
1850	27.43	129	35.71	116	33.73	135			23.27	242		
1860	28.84	136	36.64	119	36.05	145			31.51	328		
1870	31.39	148	38.44	125	39.24	158	26.27	138	39.91	415	34.46	111
1880	34.62	163	37.46	122	45.09	181	28.70	151	50.27	523		
1890	37.48	177	38.38	125	49.25	198	30.86	163	63.06	656	40.08	129
1900	41.15	194	38.94	127	56.05	225	32.86	173	76.10	791	44.08	142
1910	44.92	212	39.53	129	64.56	259	35.51	187	92.42	961	49.54	160
1913	45.65	215	39.77	130	66.98	269	36.17	190	97.23	1011	51.67	167

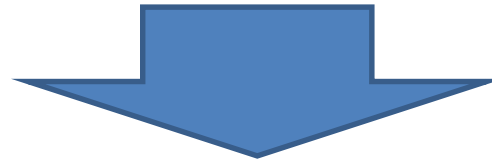
Fuente: Elaboración propia a partir de A. MADDISON. *Historia del desarrollo capitalista*. op. cit., pp. 144, 146-152 y 159-165

3.2.3. The Ascent of the Rich: US.

Free land in the West generated high real wages



High wages induced businesses to invent labor-saving technology (R&D)



Labor-saving technology meant more capital invested per worker



More capital invested per worker raised wages even further

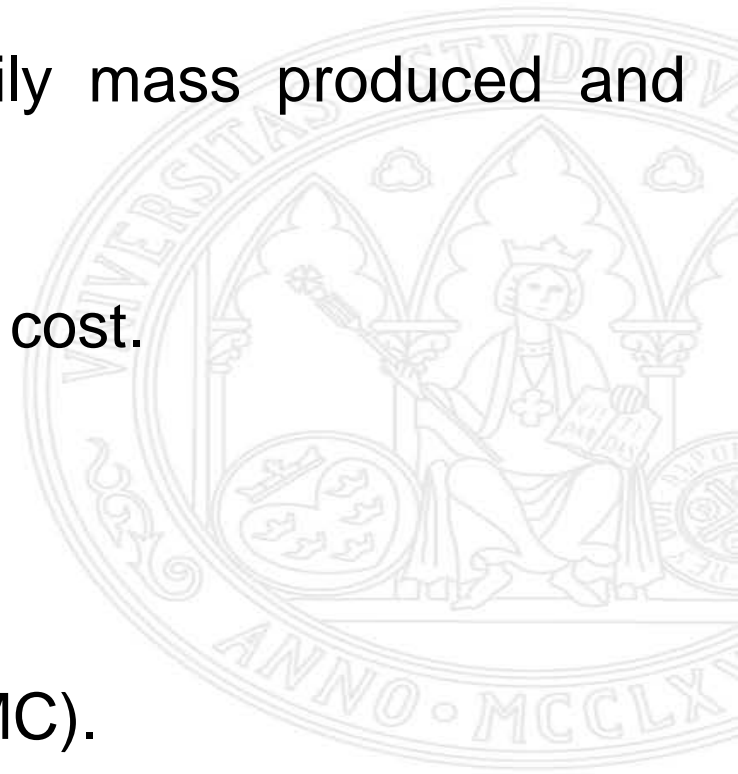
3.2.3. The Ascent of the Rich: US.

- The high cost of labor had led American firms to experiment with machines since the 1770s.
- British technology was redesigned to adapt it to American conditions.
 - The US took up the power loom more rapidly than Britain.
 - 1792 the first automatic flour mill was built in the US.
 - 1816 experiments with a system for manufacturing interchangeable parts.


3.2.3. The Ascent of the Rich: US.

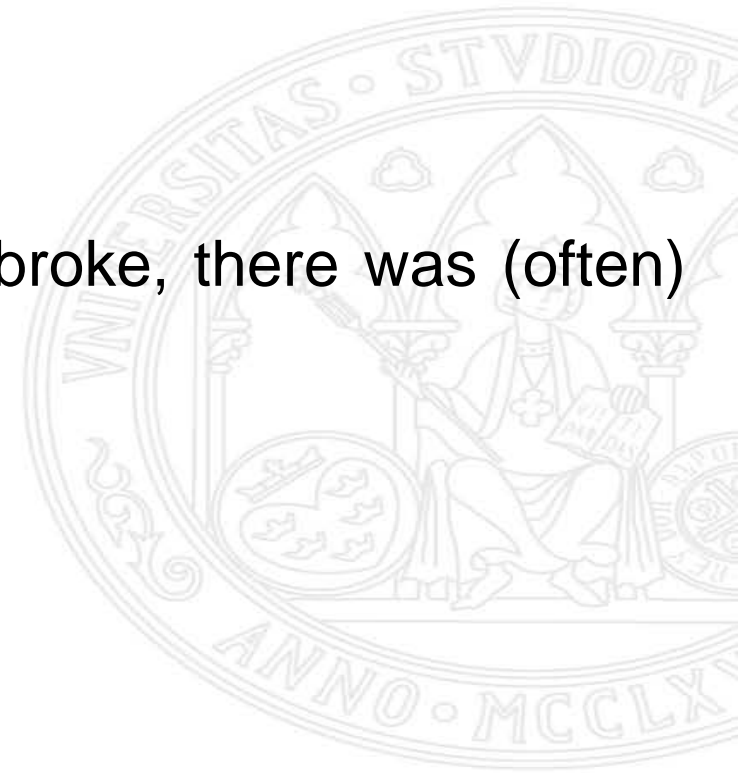
A system for manufacturing interchangeable parts

- This means creating identical parts that can be easily mass produced and replaced.
- It allowed production in massive scale at a relatively low cost.
- Examples:
 - Eli Whitney: guns.
 - Colt's [Patent] Firearms Manufacturing Company (CMC).
 - Singer Corporation: sewing machines.



3.2.3. The Ascent of the Rich: US.

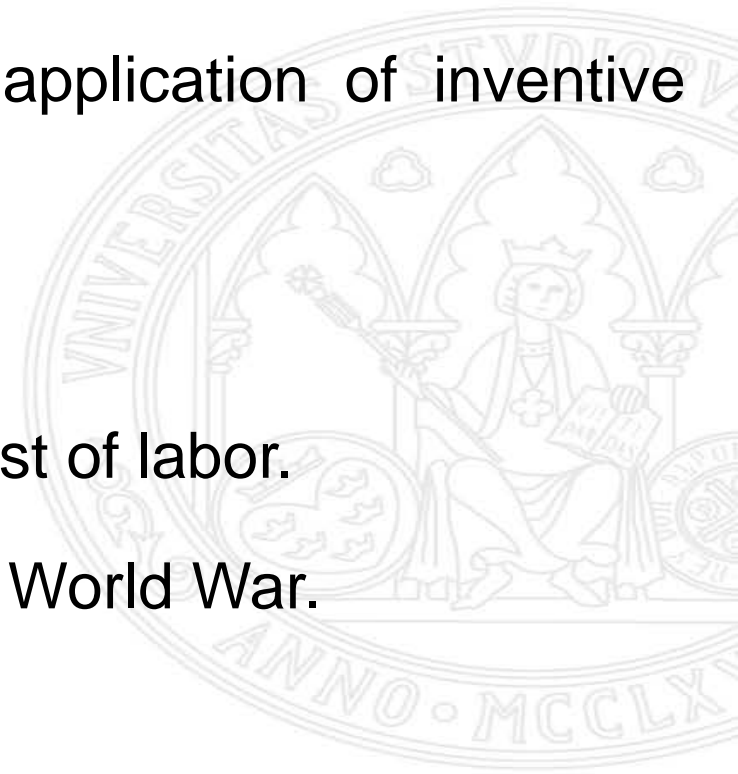
- Example: firearms. 
- Before the interchangeable parts system:
 - Rifles were produced as a single piece. If one part broke, there was (often) no replacement.
- After the interchangeable parts system:
 - Replacing parts was easy and affordable.



3.2.3. The Ascent of the Rich: US.

Corollary-US industrialization.

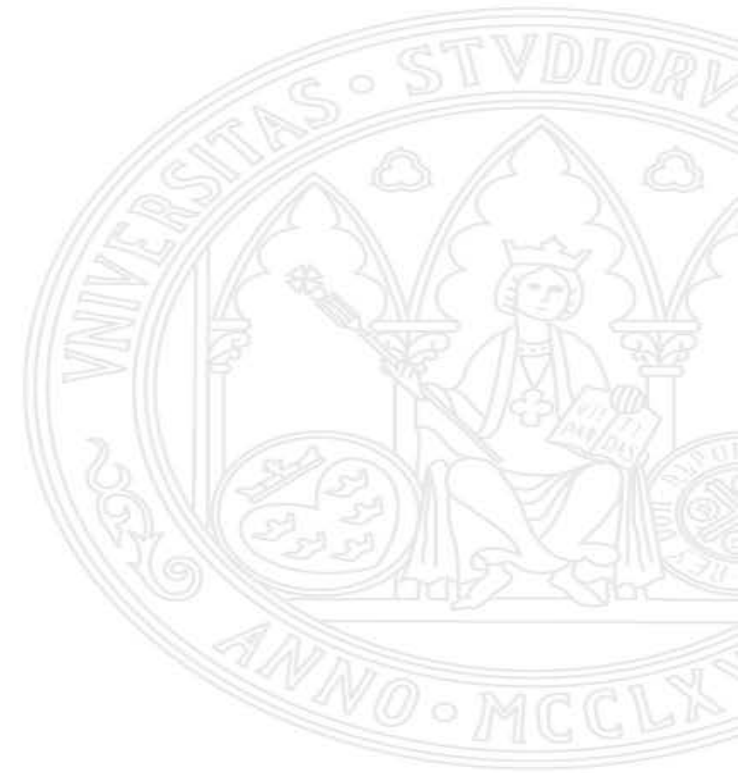
- The success of the US economy depended on the application of inventive engineering across the full spectrum of industries.
 - large pool of potential investors.
- The incentive to mechanize was provided by the high cost of labor.
- The US was the world leader in productivity by the First World War.



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Russia.

- Crimean War 1853-56:
 - Russia was defeated by France and England.
 - Urgent modernization.
 - Reforms:
 - Serfdom abolished by Tsar Alexander II.
 - Four rules (more or less).



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Russia.

1. The national market was created through a **vast program of railway construction** [...*Le Credit Mobilier*].
2. Tariffs were used to build up industry.
3. Private Banks were too weak: Russia relied on foreign capital.
 - R&D: direct invest became the principal means of bringing advanced technology to the country.
 - Importation of inventions without any adaptation to Russian specifications => failure.

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Russia.

4. Education was expanded from the 1860 onwards [...like in Spain].
- In 1913: 50% of the population was literate.
 - Schooling was attractive to the average person: higher wages.
 - Results of the standard model.
 - Heavy Industry was boosted from 2% (1885) to 8% (1913) [in GDP].
 - Agriculture remained the biggest sector [in the GDP]: 59% (1885) to 51% (1913):
 - From 1885 to 1913: the main crops doubled as a result of extensive farming techniques (more labor, more land....).

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Russia.

- Results of the standard model.
- An indicator of the limited impact of the standard model:
- Labor demand **in industry did not grow enough** to fully employ the population:
 - Wages remained at subsistence level.
 - The workforce was concentrated in the agricultural industry.

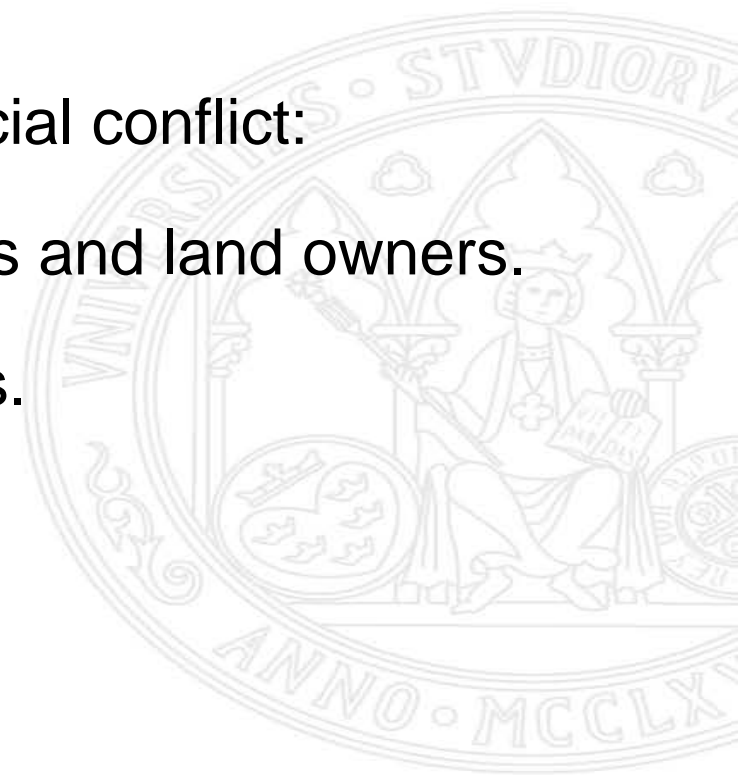
UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Russia.

Final remarks:

Limited industrialization was one of the reasons behind social conflict:

1. Industrialization increased the profits of industry owners and land owners.
2. Workers continued with bare-bones subsistence wages.



UNIT 3.3. The Standard Model and Late Industrialization.

Did you know...?

The Trans-Siberian railway was built by Tsar Alexander III between 1891 and 1916.

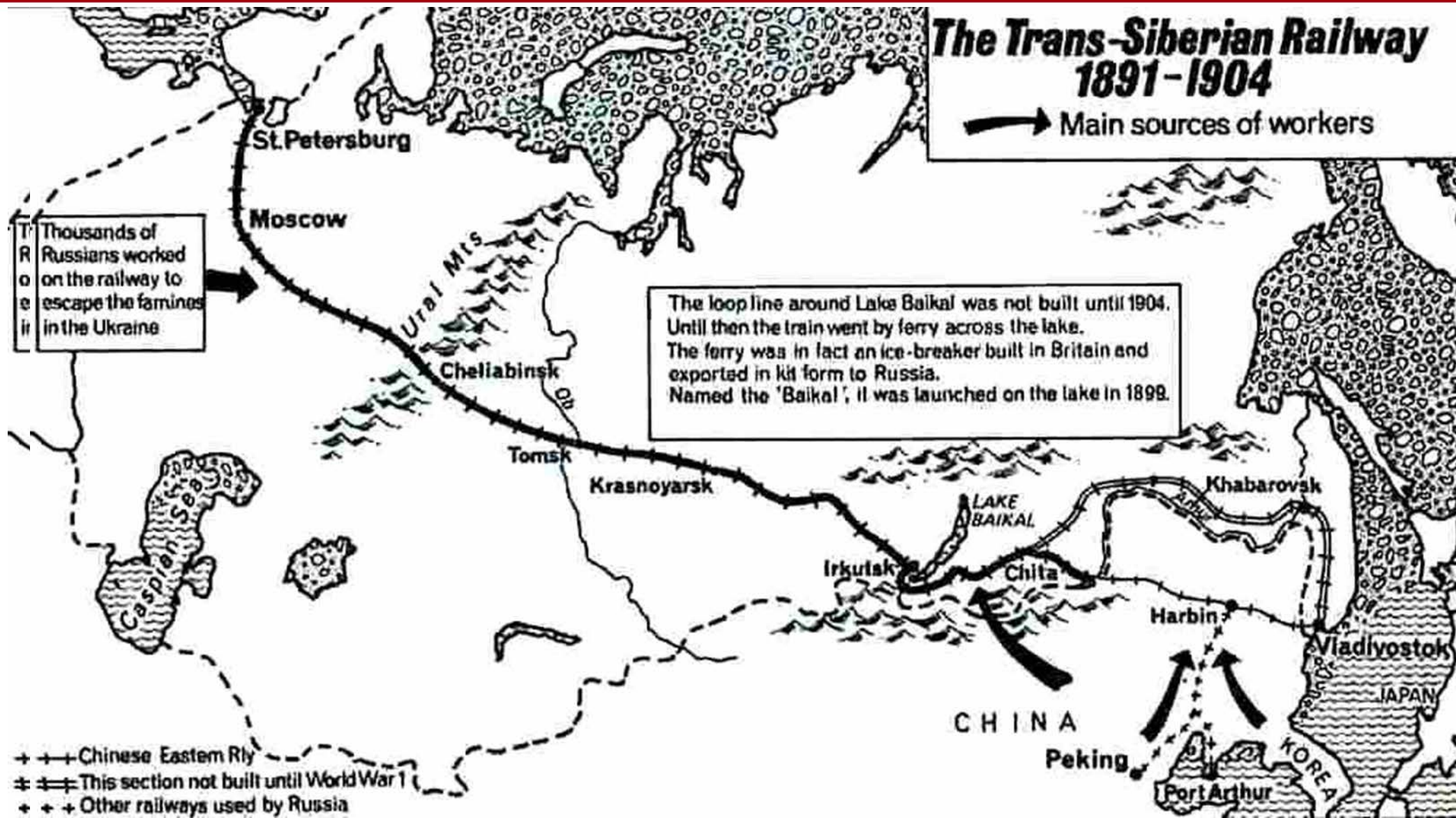
The railway was a milestone in Russia's trade with Europe and China.



Railway bridge over the Ob River, 1899. Source:

<https://1870to1918.wordpress.com/2014/04/10/building-the-trans-siberian-railway/>

UNIT 3.3. The Standard Model and Late Industrialization.



UNIT 3.3. The Standard Model and Late Industrialization.



The green line is the Baikal-Amur Mainline, a modern addition. Source:
<https://1870to1918.wordpress.com/2014/04/10/building-the-trans-siberian-railway/>

UNIT 3.3. The Standard Model and Late Industrialization.

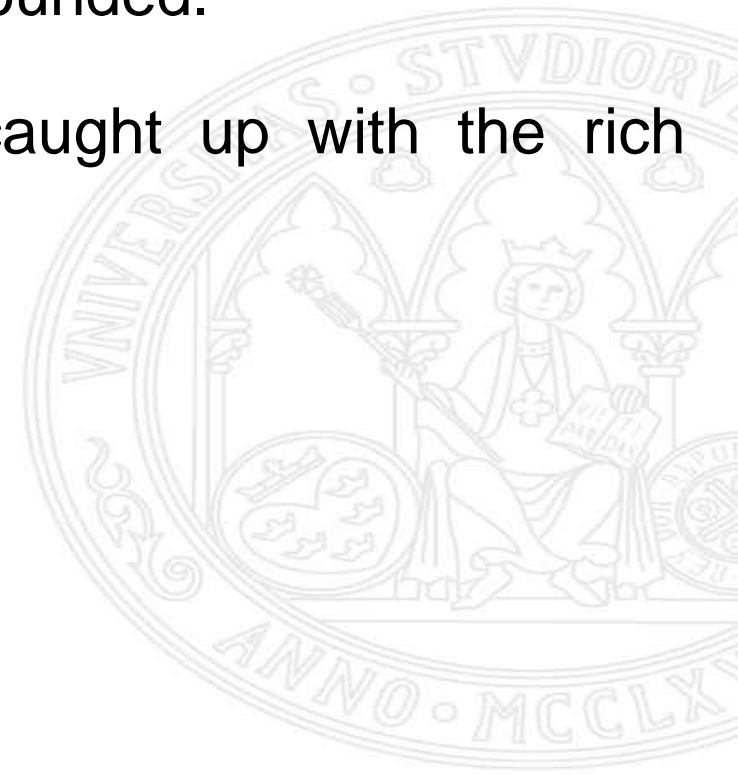
3.3.1 The Standard Model and the Late Industrialization: Japan.

- The first Asian country to catch up with the West:
- In the study of Japan it is important to highlight several points about Japanese History:
 1. Tokugawa period 1603-1868: the country was governed by shoguns.
Shogun == warlord (commander).
 2. Meiji period 1868-1905: power was returned to the Emperor Meiji.
Economic modernization began.

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

3. Imperial period 1905-1940: heavy industries were founded.
4. Era of High Speed Growth 1950-1990: Japan caught up with the rich countries of the West.



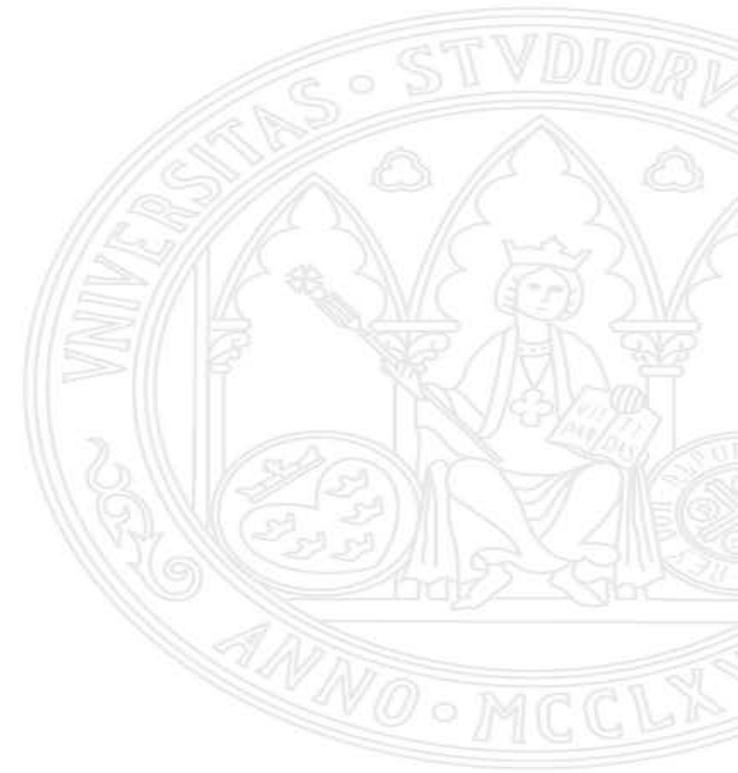
UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

El producto interior bruto
1820-1913

	Francia	Alemania	Italia	EE.UU.	Japón
1820	110	78	57	34	57
1830	107	76			
1840	103			58	
1850	99	66		75	
1860	90	62		94	
1870	74	62	39	109	25
1880	68	65	37	149	
1890	61	69	34	159	27
1900	60	79	31	189	28
1910	56	91	40	248	31
1913	59	95	41	257	31

Fuente: Elaboración propia a partir de A. MADDISON. *Historia del desarrollo capitalista*, op. cit., pp. 144 y 146-152



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

P.I.B. por habitante
1820-1913

	Francia	Alemania	Italia	EE.UU.	Japón
1820	76	67	64	75	39
1830	78	65			
1840	80			90	
1850	76	53		88	
1860	71	50		86	
1870	60	50	46	86	23
1880	63	50	45	103	
1890	59	53	41	95	25
1900	63	58	39	102	26
1910	63	64	50	121	28
1913	68	65	52	121	28

Fuente: Elaboración propia a partir de A. MADDISON. *Historia del desarrollo capitalista*, op. cit., pp. 144, 146-152 y 159-165



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

Tokugawa period [[European Feudalism period]].

- Society was divided into castes: samurai, peasants, artisans and merchants.
- Domains could be confiscated:
 - Insecurity of property at the highest social level.
- Punishments were imposed for international trade and foreign contacts:
 - Maritime commerce with China, Korea.
 - Exceptionally with Holland (Nagasaki).

3.3.1 The Standard Model and the Late Industrialization: Japan.

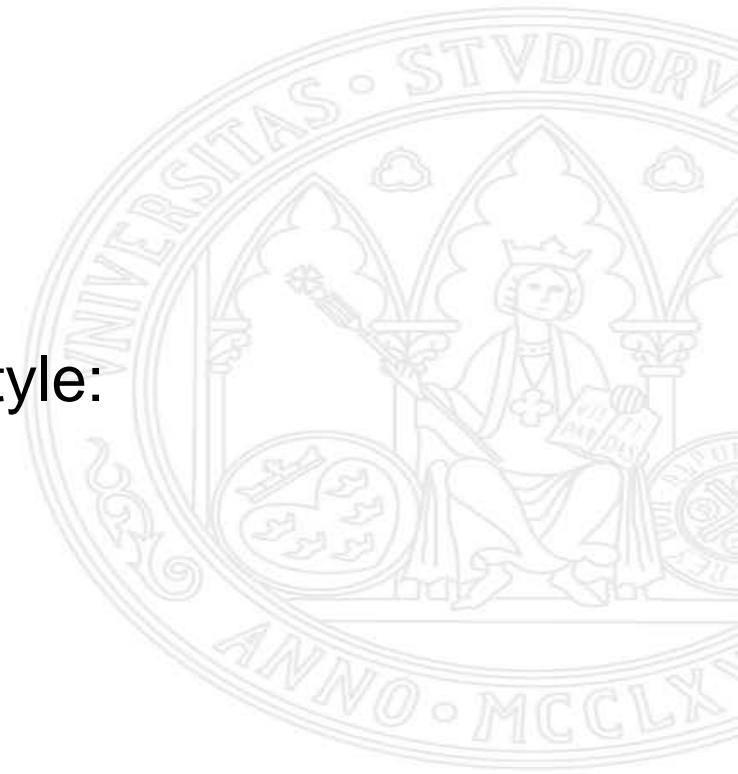
- R+D: technology advanced.
 - The Japanese invented technology that increased the use of labor in order to raise the productivity of resources (land, capital and materials).
 - NOTE: British improvements increased the productivity of labor, using less labor (human resources) and more capital.
 - REASON: low wages, high population.
 - Productivity in agriculture and manufacturing processes also improved.

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

Tokugawa period.

- Population and rice crops both grew in the 17th century:
 - Wages stayed at subsistence level.
- Urbanization: Many people enjoyed a more affluent lifestyle:
 - Largest cities in the world: Tokyo, Kyoto, Osaka.



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

Tokugawa period.

- School attendance was very high for an agrarian society.
- “In 1868, 43% boys and 10% of girls attended to school... More than half of adult men were literate” (Allen, 2013, 18).
 - Due to the commercialization of the Japanese economy, and it lay behind later growth.
 - Impressive level of engineering and administrative competence.
 - Weak military power (compared to Western Countries).

UNIT 3.3. The Standard Model and Late Industrialization.

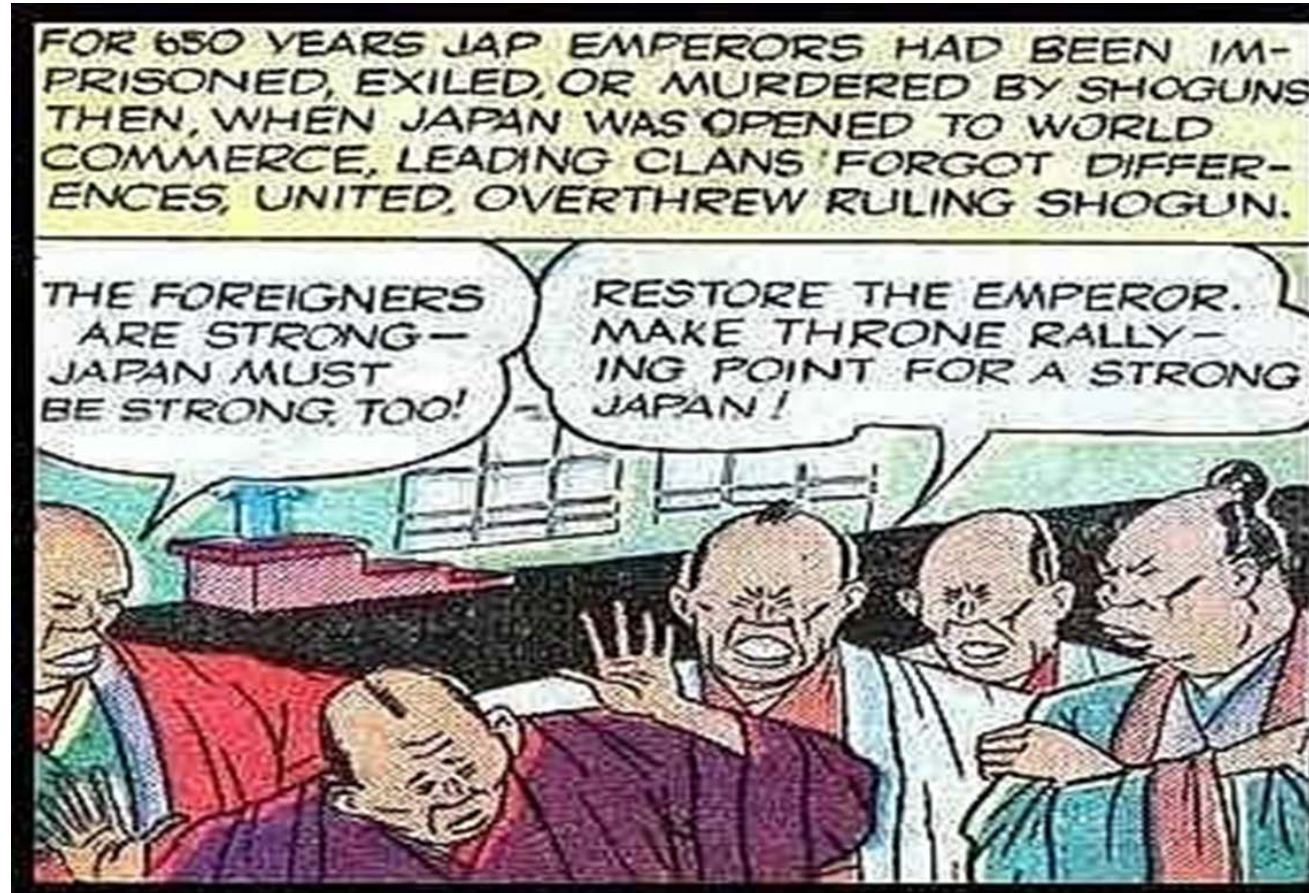
3.3.1 The Standard Model and Late Industrialization: Japan.

- Tokugawa Japan was growing.
 - There was R&D.
 - Education flourished.
- Why did Japan start a civil war to change the political regime?



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

- **EXTERNAL FACTOR:** American warships arrived in Japan => demand for a trade treaty with the West: no resistance.
- Part of the Japanese aristocracy realized that Shogun power was not enough: they supported an alternative power: the Emperor (Meiji Restoration).
 - » “Civil War”

UNIT 3.3. The Standard Model and Late Industrialization.

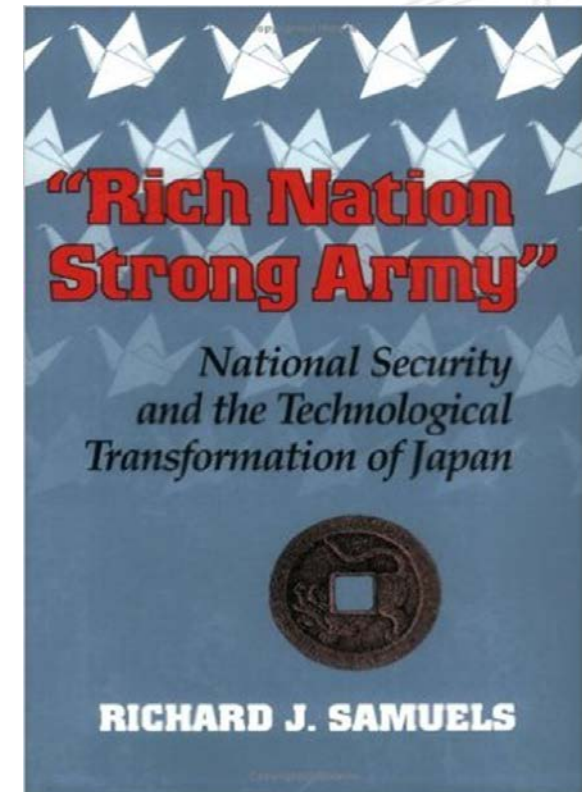
3.3.1 The Standard Model and the Late Industrialization: Japan.

- US Commodore Perry arrived in Japan with four warships in 1853 and demanded that Japan end restrictions on foreign trade.
 - Years before (1839) the British had attacked China to force the country to allow the importation of opium.
- **TARGET:** hegemony in the Pacific Ocean:
 - Commercial treaties with Asia.
 - Imperialist & colonialist proposals (political and economic reasons).

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

- Fighting between supporters of the Shogun and supporters of the Emperor would end in civil war.
 - Meiji Restoration.
 - 1867 the Meiji Emperor ascended to the throne.
 - Motu: “Rich country, strong army”.



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.



<http://historyimages.blogspot.com.es/2009/09/rise-of-imperial-japan-comics-leading.html>

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

Meiji Restoration.

- Modern property rights were created.
 1. Feudal domains were surrendered to the Emperor.
 2. Feudal payments were replaced by a land tax payable to national government.
 3. Peasants were confirmed as the owners of their land.
- Four orders of society were abolished [[European process: abolition of serfdom]].
- Samurai were paid off with government bonds.
 1. Universal conscription was introduced.
 2. A western-style army was created.

UNIT 3.3. The Standard Model and Late Industrialization.

Did you know that...?

- As an example of the radical spirit of Meiji reforms the State abolished traditional Japanese time and replaced it with the 24-hour clock system. They argued that modern transportation (railway) required modern time.

Fixed time system



- ☐ Each day is divided in 24 hours
- ☐ Each hour is an equal portion

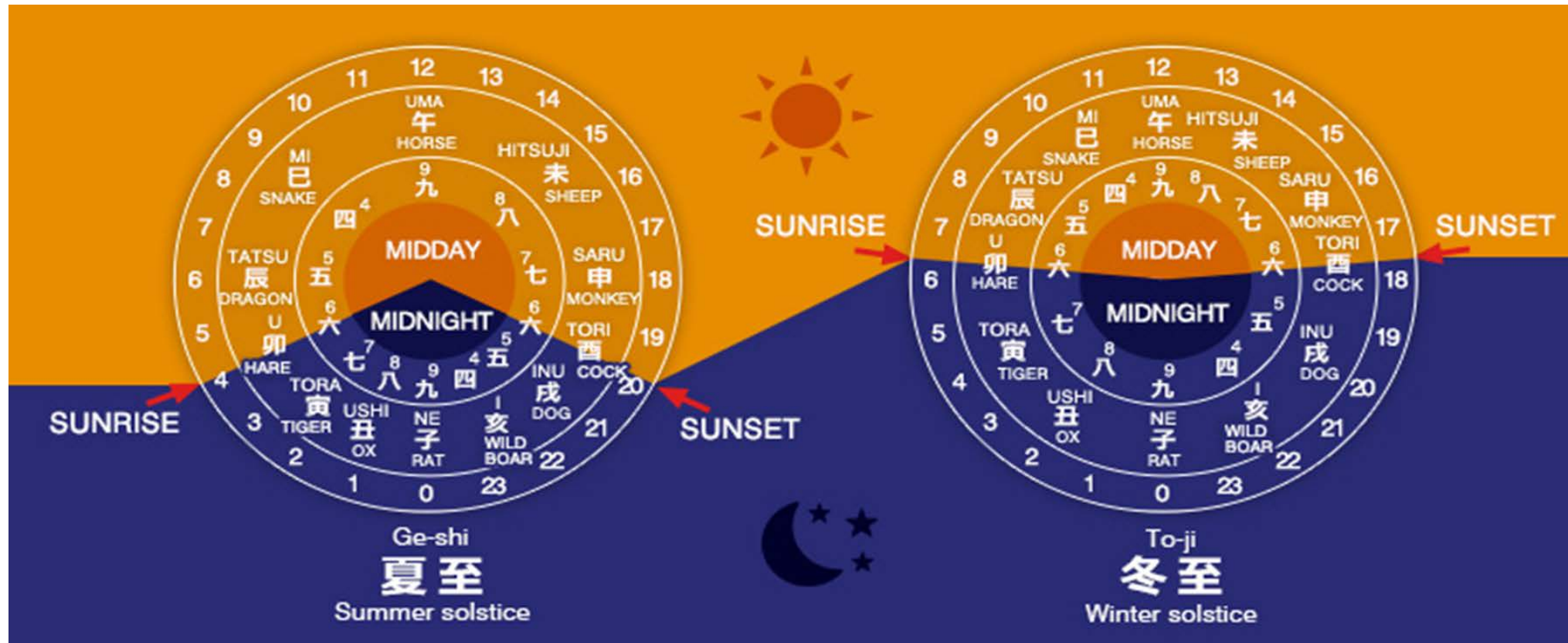
Seasonal time system



- ☐ Each day is divided into day and night
- ☐ Day and night are portioned into six parts
- ☐ The length of each part depended on the Summer and Winter solstices

UNIT 3.3. The Standard Model and Late Industrialization.

Did you know that....?



<http://museum.seiko.co.jp/en/knowledge/wadokei/index.html>

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

- Meiji Regime “four policies” (Unit 1 & Unit 2).
 1. Creation of unified national market by eliminating internal tariffs and building transportation infrastructure.
 - Creation of a national market by abolishing the tariffs between domains and building a railway network.
 2. Establishing mass education to create a more-skilled labor force.
 - Universal primary education from 1872.

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

- Meiji Regime “four policies” (Unit 1 & Unit 2).
- 2. Establishing mass education to create a more-skilled labor force.
 - In 1900, 90% children were enrolled in (compulsory) schooling.
 - Secondary and university studies were limited.
 - Study abroad became popular (for the elites).
 - Mass education was one of the main reasons for Japan’s success at adopting modern technology.
- 3. Chartering of Banks to stabilize the currency and finance industrial investment.

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

3. Chartering of Banks to stabilize the currency and finance industrial investment.
 - Tokugawa Japan had nothing like modern banks.
 - Meiji chartered banks were created overseas: a failure
 - In the Early Meiji Period the state filled the gap by acting as the **venture capitalist** (=acting as a private banker, granting industries and commercial houses with loans).
4. An external tariff to protect their industries from competition.
 - Maximum tariff rate was capped at 5% by a treaty with Western powers.

UNIT 3.3. The Standard Model and Late Industrialization.

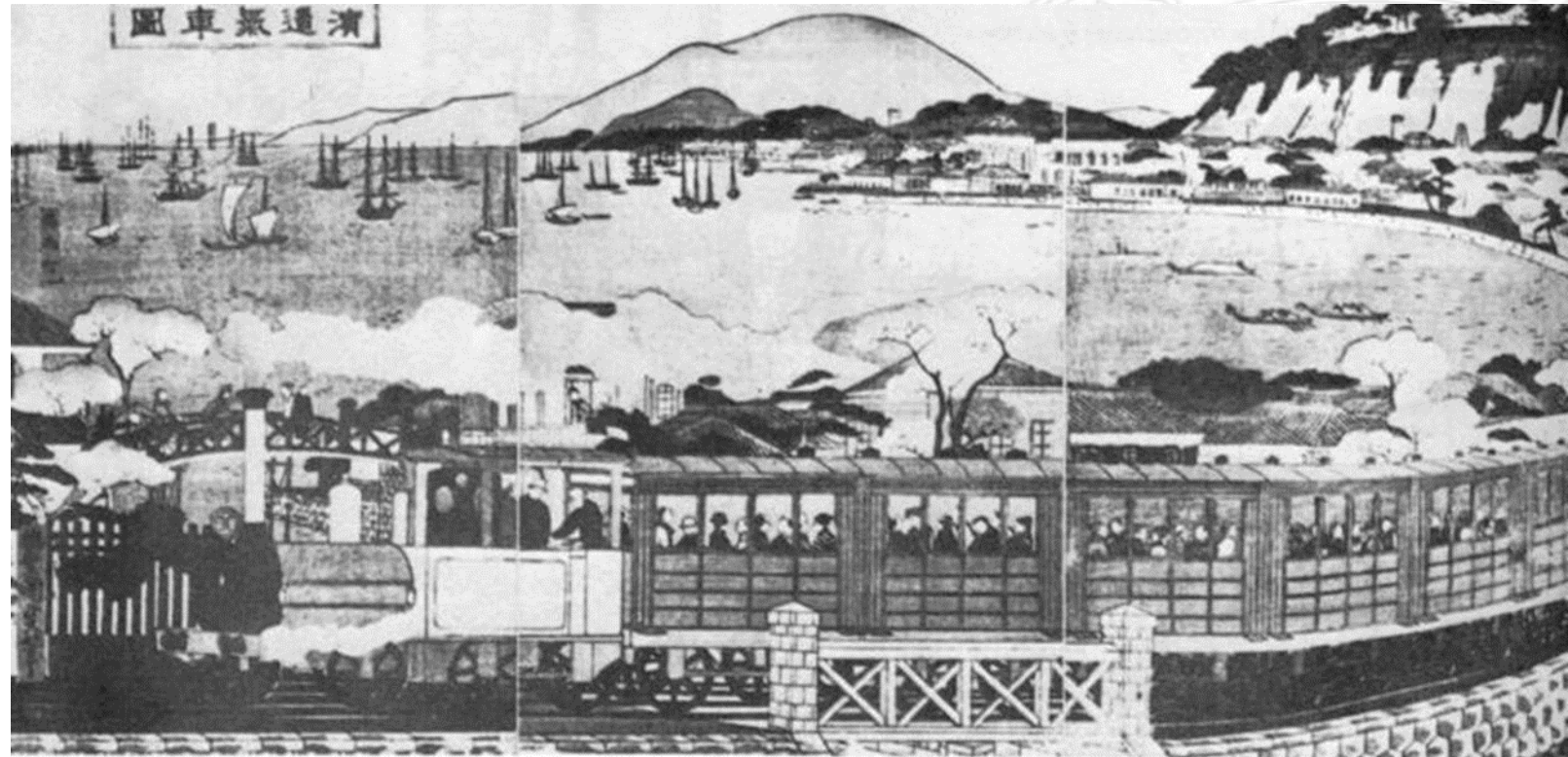
3.3.1 The Standard Model and the Late Industrialization: Japan.

- R&D and Industry during the Meiji Restoration.
 - R&D:
 - Railway, telegraph.
 - Redesigned Western technology to make it cost effective in their low wage economy:
 - Machines were made from wood rather than metal.
 - Power came from human force rather than steam engines (low wages, high population).
 - Japanese engineers and technicians.

UNIT 3.3. The Standard Model and Late Industrialization.

- **Did you know that...?**
- Even the railway was redesigned in a Japanese style:
- Wood instead of metal.
- Lighter machines.

Railroad Tokyo-Yokohama (1872)



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

- R&D and Industry during the Meiji Restoration.
 - Leading industries were traditional:
 - Exports paid for imported machinery and raw materials:
 - Tea.
 - Silk.
 - Cotton.



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.The Imperial period.

- Industrial growth accelerated between 1905-1940.
 - Share of manufacturing leapt from 20% (GDP, 1910) to 35% (GDP, 1938).
- Sectors that dominated Japanese growth in this period.
 - Metallurgical industry.
 - Engineering.
 - Chemical industries.
- All sectors were promoted by the Government: sectors were potentially useful for Japanese imperialist purposes.

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.The Imperial period (1905-1940).

- Japan (re)gained (total) control of its tariffs in 1911 (1894).
 - Raised to protect industry.
- The First World War caused Japanese businesses to go bust :
 - Promoted key industries: automobiles, trucks and aircraft.
 - Large firms, along with banks financed key industries: holding companies: ZAIBATSU.

UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.

The Imperial period (1905-1940).

- ZAIBATSU.
 - **Zaibatsu** (literally *financial cliques*) were the diversified family enterprises that rose to prominence in the Meiji Era.
 - **Zaibatsu**: coordinated production and channeled investment to industry.
 - Dealt with the shortage of capital by increasing the rates of saving and investment.



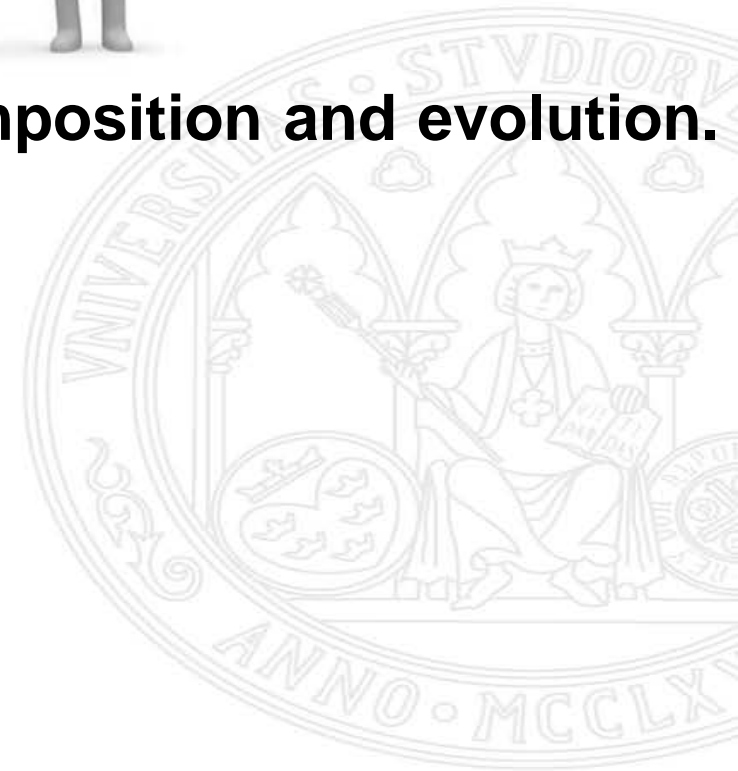
Task 3.

Please find an example of ZAIBATSU. Explain its composition and evolution.

Do not forget to reference your source(s).

- **Example:**


Mitsubishi (Three Diamonds).



UNIT 3.3. The Standard Model and Late Industrialization.



Source: Mitsubishi. “Origin.” [<https://www.mitsubishi.com/e/history/>]
(01.11.2016).

- In 1874 the Meiji government wanted transportation for a military expedition to Taiwan and foreign shipping firms refused to provide the ships.
- Yatarō Iwasaki (founder of Mitsubishi) offered his shipping company to the government. 
- Mitsubitshi gained favor and protection from the Meiji government.



Source: Mitsubishi. “Origin.” [<https://www.mitsubishi.com/e/history/>]
(01.11.2016).

- “Mitsubishi Mail Steamship Company” became the first Japanese company to open an overseas route (Japan-China).
- The company diversified its investments:
 1. Purchased several mines (coal, copper).
 2. Bought the Nagasaki Shipbuilding Yard from the government.



UNIT 3.3. The Standard Model and Late Industrialization.

Source: Mitsubishi. “Origin.”

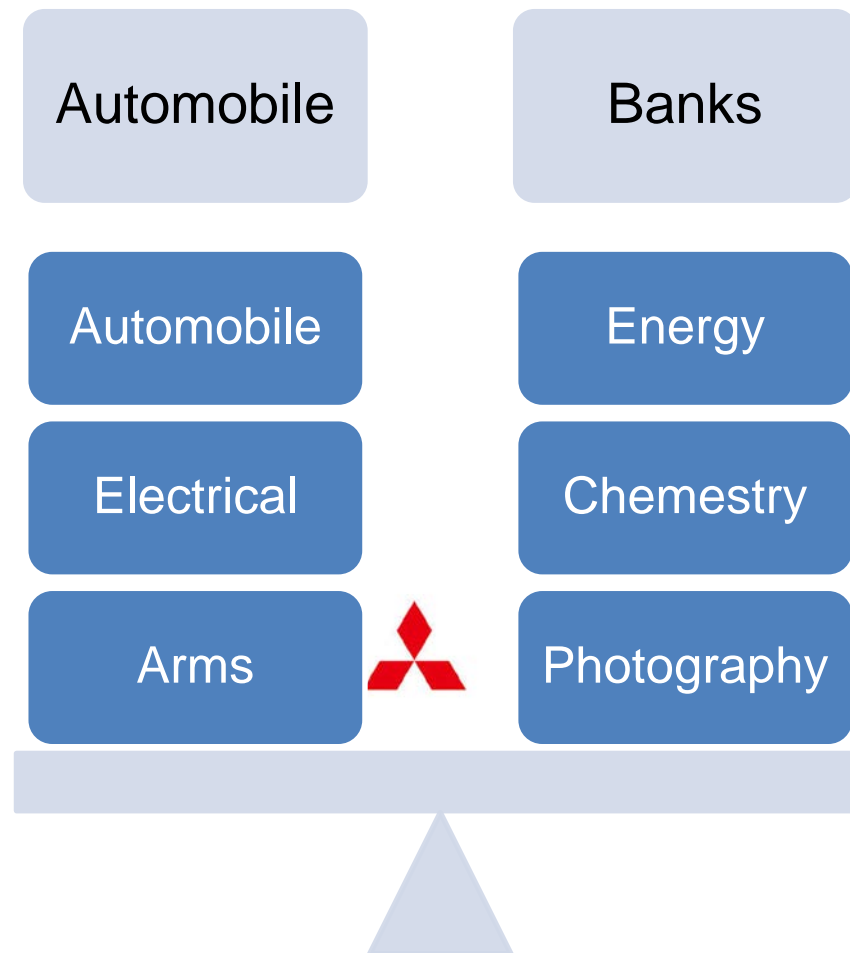
[<https://www.mitsubishi.com/e/history/>] (01.11.2016).

- In 1885 Mitsubishi was incorporated and the organization was rebuilt around mining and shipbuilding businesses.
- The next step was to expand in insurance and warehousing.
- During the Imperial period, Mitsubishi achieved leadership in such sectors as automobiles, machinery, electrical equipment and the chemical industry.



Mitsubishi Model A (1917)

UNIT 3.3. The Standard Model and Late Industrialization.



UNIT 3.3. The Standard Model and Late Industrialization.

<http://www.mitsubishichemical.com/>



UNIT 3.3. The Standard Model and Late Industrialization.

3.3.1 The Standard Model and the Late Industrialization: Japan.The Imperial period (1905-1940).

- 1920 banking system had matured to the point that it could finance industrial development.

Final remark:

- Symbiosis between the modern and the traditional sectors.
- The large-scale firms paid high wages, but wages remained very low in agriculture and small-scale industry because labor demand was weak (Allen, 2011, 126).

3.3.1 The Standard Model and the Late Industrialization: Spain.

- Prados (1988, 169) Table 4.10. Industrialization per capita in various European countries, 1800-1910 (in \$US, at parity purchasing power).

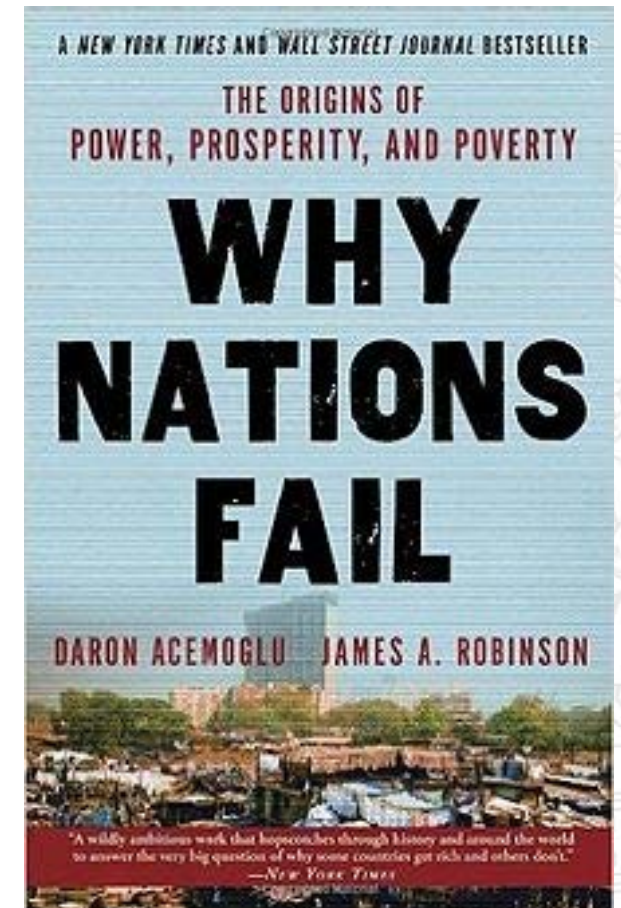
Country	1800	1830	1860	1890	1910
Great Britain	89	139	257	391	458
France	59	92	164	250	356
Germany	--	--	102	134	391
Sweden	--	--	46	97	198
Italy	--	--	35	63	145
Hungary	--	--	--	--	157
Spain	34	29	50	93	122

UNIT 3.3. The Standard Model and Late Industrialization.

Why do nations fail?

In *Why Nations fail* Daron Acemoglu and James Robinson try to examine which factors are responsible for the political and economical success or failure of states. The book was published in 2012 and was hugely successful.

- ACEMOGLU, Daron and James ROBINSON. 2012. *Why nations fail The origins of Power, Prosperity and Poverty*, Crown Publishing Group-Deckle Edge, New York



UNIT 3.3. The Standard Model and Late Industrialization.

Why nations fail

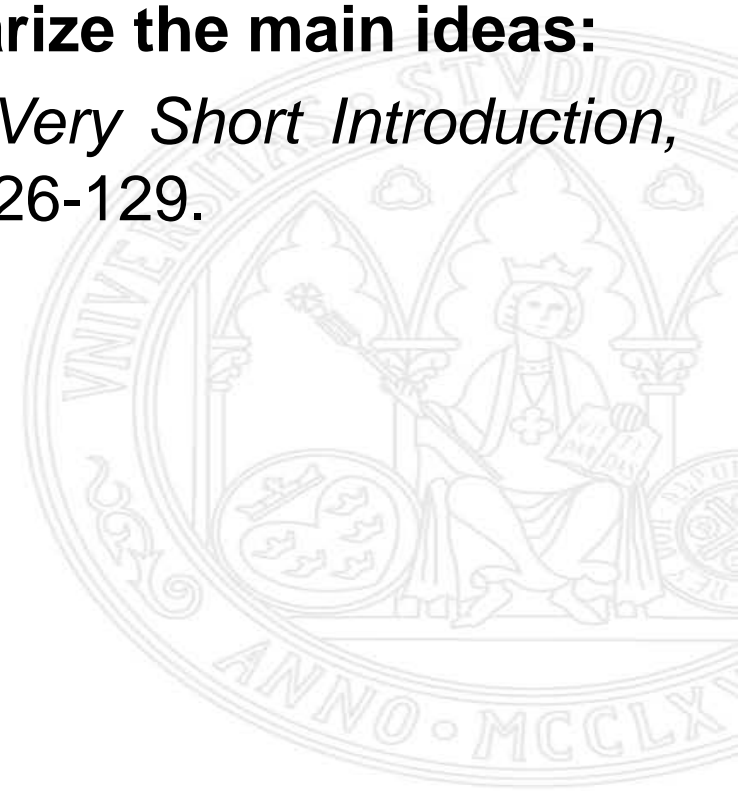
In the next video, from TEDx Talks, Dr. Robinson summarizes some of the main ideas of the book.

<https://www.youtube.com/watch?v=jsZDIBU36n0>

TED^x (Technology, Entertainment, Desing) is a diverse group of conferences run by Sapling Foundation (non-profit organization). The goal of TED is to help spread great ideas.

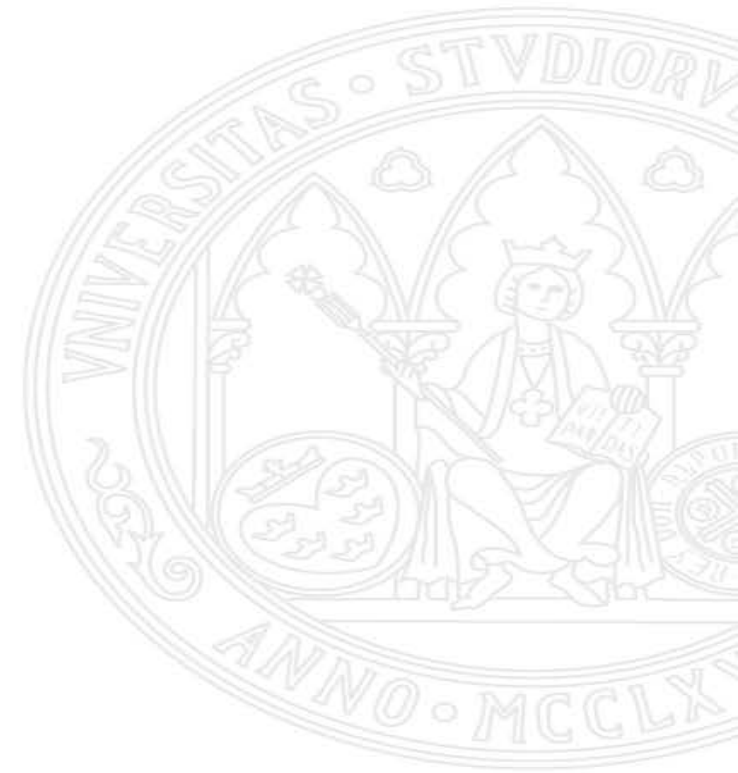
UNIT 3.3. The Standard Model and Late Industrialization.

- **Task 4.**
- **Please, read the section “Latin America” and summarize the main ideas:**
 - ALLEN, Robert. 2011. *Global Economic History: A Very Short Introduction*, (*Very Short Introductions*), Oxford University Press, 126-129.



UNIT 3.4. Conclusions.

- **3.4. Conclusions.**
- Which are the key concepts of Unit 3?
- What do you highlight, as the most relevant ideas?





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