Development

18h lecture, M1 APE

Denis Cogneau
Sylvie Lambert
Oliver Vanden Eynde
Road map

What is development? (Cogneau)

Economic History of Development (Cogneau)

Poor Economics (Lambert)

Agriculture (Lambert)

Democracy (Vanden Eynde)

Infrastructure and service provision (Vanden Eynde)

Written exam (3 hours – Short questions from each session)
What is Development?

Lecture 1

Denis Cogneau
What is Development?

Development economics yesterday and today
Development as a post-WW2 problem
Development economics as a distinct sub-discipline
Special features & Mutual benefits (Hirschman)

Development as distinct from economic growth
Schumpeter: development as social innovation
Sen: development as freedom
‘Development’ is a post-war issue

Google ngram utility:
- 15 millions digitized books over 1800-2000 from 40 libraries;
- 500 billions words (360 in English)
- Moving averages of occurrence in %
Le développement c’est l’après-guerre
Do Development Economics exist? Krugman & Hirschman (1)


“Once upon a time there was a field called development economics, a branch of economics concerned with explaining why some countries are so much poorer than others, and with prescribing ways for poor countries to become rich. In the field's glory days in the 1950s the ideas of development economics were regarded as revolutionary and important, and commanded both great intellectual prestige and substantial real-world influence. Moreover, development economics attracted creative minds and was marked by a great deal of intellectual excitement. That field no longer exists. There are, of course, many excellent people who work on the economics of developing countries. Some of the problems they address are essentially generic to all countries, but there are also issues that are characteristic of poorer countries in particular, and in this sense there is a field that focuses on the economics of underdevelopment. But it is a diffuse field: those who work on the economics of, say, Third World agriculture have little if any overlap with those who work on LDC trade in manufactures, and these in turn hardly talk to those who focus on the macroeconomics of debt and hyperinflation. And very few economists would now presume to offer grand hypotheses about why poor countries are poor, or what they can do about it. In effect, a counterrevolution swept away development economics.”

Do Development Economics exist? Krugman & Hirschman (2)


Underdeveloped areas: special features or not?
(making orthodox econ. inapplicable)

North-South relations: mutual benefits possible or not?
(making policy changes efficient without changing the whole international order)
Vicious circle of poverty (macroeconomic poverty traps)
Rural underemployment + Late industrialization → Dualistic economies

A. Lewis: *Economic Development with Unlimited Supplies of Labour* (1954)
1st dualistic model where marginal productivity of labor in subsistence sector is 0 up to some point, and employment growth stems from capital accumulation in “modern” sector

A. Gerschenkron: *Economic backwardness in comparative perspective* (1962)
Catch-up of Germany, Russia, Japan → Technological leaps are possible but need of State intervention to mobilize savings for investment

P. Rosenstein-Rodan: *Problems of Industrialization of E and S-E Europe* (1943)
Indivisibilities in production, demand and savings create returns to scale → a big push is necessary to reach a critical level and balanced growth


Sectors with a lot of linkages with others (≠ agriculture or mines) should be pushed forward in unbalanced growth

Backward: “Last stage industries” = semi-manuf. imported inputs to domestic or export consumer goods → import substitution industrialization (ISI)
Forward: “Heavy industries” = “pôles de croissance” à la F. Perroux, “industries industrialisantes” à la De Bernis
The « special features » argument today

Ecology of the tropics


**Geography and ecology** may account for why Eurasia turned richer than Africa or America: domesticable plants and animals, East-West vs. North-South orientation and technology diffusion

Non-western cultures & family models

E. Spolaore & R. Wacziarg, “How Deep are the Roots of Economic Development?”, JEL 2013

**Genetic distance** between populations accounts for distance to the income frontier

A. Greif & G. Tabellini, "The Clan and the Corporation: Sustaining Cooperation in China and Europe“, 2015

Small initial ≠ between Europe (Christianism) and China (Confucianism) may account for the corporation / clan differentiation


**Families structures** are very different in Africa, and protection thru **informal insurance** has specific costs.

Institutions & state capacity


**State centralization** and **inclusive institutions** matter most, and are the product of **critical junctures of history**


3 pillars of cohesive institutions that determine development: **peace, easy taxation, rule of law**

Widespread poverty

A. Banerjee & E. Duflo, Poor Economics, 2011.

**The self-employed poor live in a world without stable wage contracts and social protection.** Their behavior is not only explained by the lack of resources, their **rationality** is also different. Behavioral poverty traps.
Development Economics yesterday: Mutual benefits?

Does the international capitalist order prevent industrialization of the 3rd World?

Marshall Plan raised hope of rapid catch-up: but W. Europe
Impact of US aid in Japan, Taiwan, South Korea
Export performance of E and S-E Asia in the 1960s, 1970s, 1980s

R. Prebisch: The Economic Development of Latin America and Its Principal Problems (1950)
H. Singer: “The Distribution of Gains between Investing and Borrowing Countries” (AER, 1950)
Declining relative price of primary products vs. manufactured goods \(\downarrow\) Terms of trade
(the opposite was believed until then and linked to unsustainable rapid population growth)
A. Gunter Frank: The Development of Underdevelopment (1966)
Reproduction of the colonial metropolis-satellite relationships: the closer to the ‘core’, the least chance to take off \(\rightarrow\) Deconnection strategies
The « mutual benefits » argument today

**International political economy:** Interpretation of East Asia success, and of “Washington consensus” (IMF/WB) on neo-liberal policies

A. Amsden, *The Rise of "The Rest": Challenges to the West From Late-Industrializing Economies*, Oxford University Press, 2001. Criticism of “one size fits all” policies and liberalization policies from the experience of East Asia

H.-J. Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective*, 2002. Western countries prevent developing countries to implement the interventionist (industrial, protectionist) policies that they used when they industrialized


**Debates around the efficiency of foreign aid**


**Role of trade and capital mobility**


In colonial times, the West didn't need the third world, which is good news for the third world. Today, the West doesn't need the third world, which is bad news for the third world
Development as distinct from growth

Development often equated with ‘sustained growth’ or high ‘GDP per capita’ level

Sustained growth already makes a difference: annual growth is highly volatile, in particular for primary commodity exporters

Today, search for ‘sustainable’ growth, given environmental concerns

Yet, not new that devt is not equated with growth

Growth or material wealth more seen as a means than a final goal, by Marshall or by Marx
Productivity growth and Income growth

Growth = ↑ productivity of labor thru capital accumulation, technology, organization
→ More purchasing power OR leisure, or children

Work intensity or leisure variations:
- Stone Age: Foragers well-fed & healthy with 3 hours work?
- ‘Industrious’ revolution = work more to consume more
  J. De Vries, "The Industrial Revolution and the Industrious Revolution“, JEH, 1994

Malthusian effects:
- Post-Neolithic: Population density increases (Malthusian)
Schumpeter’s Entwicklung

J. Schumpeter, « Development », JEL 2005 [c. 1933]

Not progress or material evolution, but innovation

Indetermination:
  Necessary conditions to innovation
    (entrepreneurs, not managers)
  Yet, no sufficient reason

Discontinuity:
  Railways do not stem from a gradual adaptation of the diligence

Recipes for growth and even sustained growth are not necessarily valid for social change or true development

Mantegna, Cristo morto, c. 1480 - Milano
Multidimensionality (1)

A. Sen. *Development as freedom, 1999*

Capabilities = Opportunity sets for “functionings”

(income, education, health, political voice)

Protection from poverty (cope with the non-deserving poor problem)

Capabilities are actually very hard to measure : void concept?

Material welfare + knowledge + health

→ Human Development index (GDP per capita, Literacy, Life expectancy)

Why equal weights? M. Ravallion, “Mashup indices of development”, 2010

Political voice mechanically raises distributional issues (redistribution of power)

Knowledge and health also, as they are bounded (more than income)
Multidimensionality (2)

Education ↔ Growth?

Micro evidence

Mincer equations confirm high private returns
From 6 to 15% for one additional school year on wages, a little less in non-agricultural informal activities (e.g. Magnac, 1991, Colombia), weak in agriculture but leading to diversification of activities (Joliffe, 1998, Ghana) and better risk management (Gurgand, 2003, Taiwan)
Parental income strongly matters for child schooling
A lot of experimental or quasi-experimental evidence

Macro evidence is very different

Rather the other way around (calibration exercise on orders of magnitude)

L. Pritchett. “Where has all education gone?” WBER 2001
No cross-sectional correlation between n. of years of education and GDP per worker (social return). Rent-seeking? Education allows fighting for rents
Labor demand composition? Less skill-intensive sectors grew more
Quality of attainments? As access increased, quality fell
Multidimensionality (3)

Health ↔ Growth?

Micro evidence

Health, child nutrition → Cognitive skills, education, income
Parental income & education → Child health

Macro evidence: mixed

Mixed evidence for health → growth

- No: Malthusian dilution effects can dominate:
  - Black Plague 14th century → ↑ real wages
  - 1919 influenza (Brainerd & Siegler)
  - UN eradication campaigns (Acemoglu & Johnson, JPE 2007)
- Yes: Malaria eradication (Bleakley AER 2010) + cross-section correlation

Mixed evidence for growth → health as well


Fall of mortality in China or India occurred before growth accelerated. Public health systems, hygiene, and medicine matter almost as much as nutrition.


Reduced burden of infectious diseases and inflammation might be as important as nutrition for height stature and longevity increases in 19th century Europe.
Income per head and life-expectancy: rich & poor countries

Life Expectancy is Longer in More Equal Rich Countries

“Lifetime income”: \( LY = \sum_{t=0,...,T} \frac{y}{(1+\delta)^t} \approx \frac{y(1-e^{-\delta T})}{\delta} \) with \( \delta \) discount factor (e.g. 2%)
Multidimensionality (4)

Democracy ↔ Growth?

Little evidence for growth → transition to democracy

D. Acemoglu et al. "Reevaluating the modernization hypothesis", JME 2009

Most of the correlation between growth and democracy is wiped out by country fixed effects.

Mixed evidence for democracy → growth


Economic crisis often precedes transition to democracy: difficulty for identification

Short-term transitions to democracy (in Africa in particular) are often not sustained, even over 2-3 years → Difficult to infer the impact of a long-term transition from the data
Multidimensionality (5)

Inequality ↔ Growth?

Growth → Inequality: The inverted-U Kuznets curve

- S. Kuznets. “Economic Growth and Income Inequality”, AER 1955
- Transition from low productivity agriculture to industry in a dual model
- Solow growth model with initial inequality in wealth → Kuznets curve

Not a universal empirical regularity anymore:
- T. Piketty, Capital in the 21st century, 2015

Inequality → Growth

Positive causation: N. Kaldor, “Capital accumulation and economic growth”, 1958
- Saving rates on profits higher than on wages

Negative causation:
- T. Persson and G. Tabellini, “Is Inequality Harmful for Growth?”, AER 1994
- Unequal countries have more distortionary redistribution
- Inequality prevents the poorest to invest in profitable projects

Not a universal empirical regularity anymore:
Growth decomposition

**Old-style Growth Accounting** (Denison, Solow, Malinvaud...)

\[ Y_t = A_t K_t^\alpha L_t^{1-\alpha} \rightarrow \Delta \ln Y_t = \Delta \ln A_t + \alpha \Delta \ln K_t + (1-\alpha) \Delta \ln L_t \]

\[ \Delta \ln A_t = “\text{Solow residual}” \text{ or “Total factor productivity” (TFP)} \]

More sophisticated aggregate production functions (translog), human capital added, etc.

**Decomposition of differences in level**


\[ Y = A K^\alpha (Lh)^{1-\alpha} \rightarrow y = A k^\alpha h^{1-\alpha} = A y_{KH} \quad y : \text{GDP per worker PPP} \]

\[ K_t = (1-\delta) K_{t-1} + I_t \text{ and } K_0 = I_0/(g_0+\delta) \]

\[ h = \exp[\phi(s)] \quad \text{i.e. Mincerian equation} \]

\[ A, \delta \text{ and } \phi \text{ calibrated (e.g. } \alpha = 0.3; \delta = 0.06; \phi \text{ piecewise linear with decreasing returns) \]

Less than 50% of variance is explained by the factor-only model.

Hence more than 50% is in A.

Robust to age composition of capital, sectoral composition of output, quality of education, health.

**What is A?**

? Heterogeneity of physical capital, complementarity phys./hum. capital, government sector

Or... technology, allocative efficiency... institutions
Conclusion (1)

Development turned into a worldwide concern after WW2

Next session: more on history from colonial times

Development economics of the origin assumed special features in poor countries, and possible although not obvious mutual benefits. Still valid today.

Since the 1950s, the heterogeneity of the 3rd world revealed itself

Alfred Sauvy: « Car enfin ce Tiers Monde ignoré, exploité, méprisé comme le tiers état, veut, lui aussi, être quelque chose » (1952). « Que l'on permette au créateur de l'expression tiers-monde, il y a déjà près de quarante ans, de la répudier, tant elle fait oublier la diversité croissante des cas. Englober dans le même terme les pays d'Afrique noire et « les quatre dragons » ne peut mener bien loin. » (1989)

Next session: more on heterogeneity of developing areas
Development economics is not growth economics

Frontier growth is not catch-up growth
Even productivity of labor gains can have varied consequences in terms of consumption, leisure or population
Development involves social change

Development can be seen as multidimensional
The knowledge, health or political voice components of development are to some extent dissociated from growth
Even growth involves other elements than factor accumulation
A Brief History of Development

Lecture 2

Denis Cogneau
FIGURE 2B. SHARE IN CUMULATED GLOBAL CO$_2$e EMISSIONS SINCE 1820

Source: authors' estimates based on CAIT (WRI, 2015), CDIAC (Boden et al., 2015), Maddison (Maddison, 2013). Key: In 2010, 12% of cumulated global CO$_2$e emissions, since the Industrial revolutions, were emitted in China. Note: data is smoothed via 5-year centred moving averages. Composition of each regions in this graph may slightly vary from the rest of the study, see Boden et al. (2015) for details.

Chancel, Lucas & Thomas Piketty, 2015
2D world after WW2

<table>
<thead>
<tr>
<th>Labor/Land (Intensive agriculture)</th>
<th>High Land/Labor (Industry)</th>
<th>Low Land/Labor (Industry)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Year 1950
Put Western Europe, America, Asia, Sub-Saharan Africa, Exceptions?
**2D world**

<table>
<thead>
<tr>
<th>Capital/Labor</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Europe</td>
<td>Asia (+Mediterranean)</td>
</tr>
<tr>
<td>Low</td>
<td>Americas (+Australia+NZ+Sth Africa)</td>
<td>Sub-Saharan Africa</td>
</tr>
</tbody>
</table>

- Why Intensive or Extensive Agriculture?
- Why Industrial Revolution in Europe (Rise of the West)?
- Why European Settlement Colonization?
A brief history of development

Pre-WW2 determinants

Historical heterogeneity of 3rd world
Precolonial Agriculture
Rise of the West and Colonization

Post-WW2 policies and trajectories
## Heterogeneity of the Third-World & History

| Region   | Population density (/ agr. land) | Colonization |  |
|----------|---------------------------------|--------------|
|          | Age 1<sup>st</sup> city<1500    | % Europ. colonies | Duration colon. | % Europ. pop. 1900 |
|          | (Bairoch) 1500 2001             |              |              |                      |
| East Asia| 1079 15.8 203.1 58% 140 0%      |              |              |                      |
| South Asia| 1724 6.7 103.3 74% 167 0%      |              |              |                      |
| MENA     | 2080 2.5 75.0 78% 75 3%        |              |              |                      |
| LAC      | 307 3.7 65.6 100% 307 24%      |              |              |                      |
| SSA      | 93  3.7 65.6 98% 94  2%        |              |              |                      |
Old & New World
L. Putterman & D. Weil, Post-1500 Population Flows and the Long Run Determinants of Economic Growth and Inequality, NBER 14448

Regional Ethnic Origins

- Indigenous or own region
- Europe
- SSA
- Other

Migrants not from neighboring countries:
- 0.00 to 0.20
- 0.20 to 0.40
- 0.40 to 0.60
- 0.60 to 0.80
- 0.80 to 1.01
Precolonial agriculture: Africa | Asia

Lipton M., Income from Work: The food-population-resource crisis in the ‘Short Africa’, Leontief Prize lecture 2012

Maddison:  
- 800 $ /cap. in 1950
- 1,400 $ | 6,000 $ in 2008

A pre-malthusian stage:
E.g. Ghana
1985-05: Cultivated land × 2, without ↓ yields
2005-12: ↑ input use + labor, land expansion stopped
(Cogneau, Tobin & Wren-Lewis, 2017)

→ Rapid change? Boserup or Malthus and when? Infrastructure (e.g. irrigation) requires the State

World Bank (2008)
Figure 3: Overall technology adoption in 1500 A.D.

Easterly, Comin and Gong, 2007
Table 2: Variables in the 1500 A.D. dataset

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Military</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standing Army</td>
<td>An organization of professional soldiers.</td>
<td>0,1</td>
</tr>
<tr>
<td>Cavalry</td>
<td>The use of soldiers mounted on horseback.</td>
<td>0,1</td>
</tr>
<tr>
<td>Firearms</td>
<td>Gunpowder-based weapons</td>
<td>0,1</td>
</tr>
<tr>
<td>Muskets</td>
<td>The successor to the harquebus (the common firearm of European armies) was larger and a muzzle-loading firearm.</td>
<td>0,1</td>
</tr>
<tr>
<td>Field Artillery</td>
<td>Large guns that required a team of soldiers to operate. It had a larger caliber and greater range than small arms weapons.</td>
<td>0,1</td>
</tr>
<tr>
<td>Warfare capable ships</td>
<td>Ships that were used in battle are considered &quot;warfare&quot; capable.</td>
<td>0,1</td>
</tr>
<tr>
<td>Heavy Naval Guns</td>
<td>Ships required significant advances in hull technology before they were capable of carrying heavy guns.</td>
<td>0,1</td>
</tr>
<tr>
<td>Ships (±180 guns), ±1500 ton deadweight</td>
<td>Large warships that only state navies had the capability of building.</td>
<td>0,1</td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunting &amp; Gathering</td>
<td>The primary form of subsistence.</td>
<td>0</td>
</tr>
<tr>
<td>Pastoralism</td>
<td>The primary form of subsistence.</td>
<td>1</td>
</tr>
<tr>
<td>Hand Cultivation</td>
<td>The primary form of subsistence.</td>
<td>2</td>
</tr>
<tr>
<td>Plough Cultivation</td>
<td>The primary form of subsistence.</td>
<td>3</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ships Capable of Crossing the Atlantic Ocean</td>
<td>Any ship that had successfully crossed the Atlantic Ocean.</td>
<td>0,1</td>
</tr>
<tr>
<td>Ships Capable of Crossing the Pacific Ocean</td>
<td>Any ship that had successfully crossed the Pacific Ocean.</td>
<td>0,1</td>
</tr>
<tr>
<td>Ships Capable of Reaching the Indian Ocean</td>
<td>Any ship that had reached the Indian Ocean from either Europe or the Far East.</td>
<td>0,1</td>
</tr>
<tr>
<td>Wheel</td>
<td>The use of the wheel for transportation purposes. The most common use was for carts.</td>
<td>0,1</td>
</tr>
<tr>
<td>Magnetic Compass</td>
<td>The use of the compass for navigation.</td>
<td>0,1</td>
</tr>
<tr>
<td>Horse powered vehicles</td>
<td>The use of horses for transportation.</td>
<td>0,1</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Movable Block Printing</td>
<td>The use of movable block printing.</td>
<td>0,1</td>
</tr>
<tr>
<td>Woodblock or block printing</td>
<td>The use of woodblock printing.</td>
<td>0,1</td>
</tr>
<tr>
<td>Books</td>
<td>The use of books.</td>
<td>0,1</td>
</tr>
<tr>
<td>Paper</td>
<td>The use of paper.</td>
<td>0,1</td>
</tr>
<tr>
<td><strong>Industry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>The presence of steel in a civilization.</td>
<td>0,1</td>
</tr>
<tr>
<td>Iron</td>
<td>The presence of iron in a civilization.</td>
<td>0,1</td>
</tr>
</tbody>
</table>
Table 6: Technology History and Current Development

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Log Income per capita in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>Overall Technology adoption level: in 1000BC</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>(1.96)</td>
</tr>
<tr>
<td>in year 0</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>(0.23)</td>
</tr>
<tr>
<td>in 1500AD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Major European Involvement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.83</td>
</tr>
<tr>
<td></td>
<td>(12.08)</td>
</tr>
<tr>
<td>Minor European Involvement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>(1.05)</td>
</tr>
<tr>
<td>Constant</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>(40.5)</td>
</tr>
<tr>
<td>N</td>
<td>105</td>
</tr>
<tr>
<td>R2</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Note: t-statistics in parenthesis computed using robust standard errors.
Major European Involvement is a dummy that is 1 for the "Neo-Europes": US, Canada, New Zealand and Australia.
Minor European Involvement is a dummy that is 1 for areas of partial European settlement in Latin America, the Caribbean and southern Africa.
Hoe and no plough, even if less useful for millet, sorghum, maize, roots or trees than for wheat, barley, rye

No wheel: no wheelbarrow, cart, no potter’s wheel, no water or wind mill

No plane, lime mortar, brick, cooked tile

Little irrigation techniques

→ Intensive can be less productive (per hour not per ha) than extensive, and sometimes riskier
Why so little technology?

1) Climate, soils, pathogens? 
Sth Africa, Australia, New-Zealand, Argentinan pampa make counterexamples

2) Oceans or Sahara & Sudan swamps barrier (Gourou) 
→ Bronze Age innovations in Eurasia (Goody) 
+ North-South Orientation (Diamond, 1997) 
+ Population density spurs technology (Boserup 1965)

3) Precolonial absolutists states? (Robinson) 
Land & output insecurity discouraged investment?
Africa manufacturing lagging behind

NBER WP 20188
Legacies of factor intensities

- Position in World Economy / Trade
  → Natural resource exports

- Distribution (scarce factors)
  → ‘Free labor’ expensive
  → Poverty = lack of labor inputs / Wealth based on control of labor and commerce (not assets) / communal usage rights (w.r.t. labor)

- Family structures / Demographic model
  → enlarged families / clans / inheritance rules (Goody)

- Volatile or moving kingdoms & empires
  → Fuzzy boundaries (Herbst)
  → Control of labor and commerce (Meillassoux, Polanyi)
Rise of the West (or of England)

- Family and kinship structures (Malthus)
- Reform and Protestant Ethic (Weber)
- Capital concentration (Braudel)
- Pragmatic culture (Landes)
- Industrial Enlightenment (Mokyr)
- Market + political liberalism (North)
- Medieval institutions more favorable to trust in anonymous transactions, corporations vs. clans (Greif)
Rise of the West (2): Europe vs. China


Little institutional, or technological, or socio-demographic, or economic, differences between England and Yang Tse China up to the 18th century.

Both Europe and China were condemned by land and energy scarcity to a “proto-industrial cul de sac” (with ↑ commercialization, ↑ division of labor).

Production of food, fiber (crops or sheep), fuel and building supplies all competed for increasingly scarce land → deforestation.

Great Divergence = Cheap coal (like Allen) + New World Resources.
IR in England (3): Robert Allen

The Economic Environment and the Industrial Revolution

- Cheap coal
- Commercial & imperial expansion
- High wages
- New technology
- Human capital
- Growing output & incomes

Rise of the West: Colonization (1)


1) Until 1960s, raw materials mainly came from the West (coal, oil, minerals), except tropical crops (sugar, spices, drinks)

2) Export crops specialization underdeveloped food production? Yet cereal imports only increased in 2nd half of 20th century, due to demographic growth and boom of agric. productivity in the West

3) Exports from West to Rest were limited (except UK cotton fabric)

4) Timing of colonial expansion does not fit with the one of industrial revolution; military power was the main trigger

Colonialism was not a zero-sum game. Even if the West did not gain, the Rest could have lost: disruption of precolonial institutions, political domination, initial deindustrialization (before 1830), etc.
Divergence and Deindustrialization (1)

Table 1. The Great Divergence: Income Per Capita Gaps 1775-1913

<table>
<thead>
<tr>
<th>Region</th>
<th>1775</th>
<th>1820</th>
<th>1870</th>
<th>1913</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Europe</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Southern Europe</td>
<td>75.2</td>
<td>62.4</td>
<td>52.7</td>
<td>47.3</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>70.0</td>
<td>58.1</td>
<td>48.8</td>
<td>42.0</td>
</tr>
<tr>
<td>Latin America</td>
<td>75.2</td>
<td>55.3</td>
<td>37.9</td>
<td>40.9</td>
</tr>
<tr>
<td>Asia</td>
<td>56.4</td>
<td>42.6</td>
<td>27.5</td>
<td>20.0</td>
</tr>
<tr>
<td>Africa</td>
<td>46.1</td>
<td>34.8</td>
<td>22.7</td>
<td>15.5</td>
</tr>
<tr>
<td>Poor Periphery Average</td>
<td>64.6</td>
<td>50.6</td>
<td>37.9</td>
<td>33.1</td>
</tr>
</tbody>
</table>

Notes and sources 1820-1913: The underlying data are GDP per capita in 1990 Geary-Khamis dollars, and from Maddison (1995): Table E-3.

A large part of the divergence was already set in 1870 (if Maddison data correct)
Williamson, Jeffrey, 2008, Globalization and the Great Divergence, NBER WP 13841
Settlement of Europeans (or Japanese)

Maritime distance + Ottoman Empire: Access to Asia & Sub-Saharan Africa

European germs → Mortality of indigenous populations

Mortality conditions for Europeans (malaria, etc.)

Indigenous population density in 1500

Indigenous resistance (e.g. Ethiopia)

→ European offshoots

→ Intermediate cases: Latin America, North Africa, South Africa

→ Other cases: Sub-Saharan Africa, Asia
Types of colonization

Settlement colonization vs. Extractive colonization

Settlers brought capital + State capacity + property rights protection

e.g., D. Acemoglu, S. Johnson, J. Robinson:

Indirect Rule vs. Direct Rule

Tax collection and land distribution delegated to chiefs or landlords


Identity of Colonizer: Legal origins & other features


Timing and duration of colonial occupation

e.g., Feyrer, James, and Bruce Sacerdote. "Colonialism and Modern Income: Islands as Natural Experiments," Restat 2009
Distinct growth profiles over 50 years

GDP per capita ($ 2010) – World Bank WDI

- Sub-Saharan Africa
- Asia (without Japan)
- Latin America
Infant mortality

Figure O.3 Under-Five Mortality Rate in Select World Regions, 1960–2012

Fertility

Figure 1.9 Total Fertility Rate in Select World Regions, 1960–2010

Population growth

**Figure 1.6** Actual and Projected Population Growth Rates in Select World Regions, 1950–2060

Source: UN Population Division 2012.
Note: Data after 2010 are projections based on medium-variant fertility. The period covers July 1 of the first year to June 30 of the second year.
Development Plans 1945-1979

Capital investments
  Financed by metropolis or Western donors
Commodity exports boom
  culminating in 1974-1979 oil booms
Industrial policies (ISI, transformation of NR)
Green revolution in India & S-East Asia

→

Dualistic growth and no reduction in inequality
Public wage and employment increases
« Urban bias », « White elephants »
Indebtment
Structural Adjustment 1980-1999 (1)

↓ commodity prices + ↑ interest rates + USD ↓ + OECD growth ↓
→ Debt crises (Mexico and others in LA and Africa)
→ BoP and Budget deficits (« 2 gaps »)

Elections of R. Reagan & M. Thatcher (1979-80)
« Washington consensus » between IMF and WB:

1) Macro-economic stabilization
   Expenditure cuts (subsidies, investment, layoffs, etc.)
   Currency devaluations
2) Market liberalization : « get the prices right »
   Deregulation of internal markets
   Tariff cuts (Uruguay round, WTO)
   Cost recovery (education, health)
   Privatizations
Structural Adjustment 1980-1999 (2)

Fall of Berlin Wall → Democratization wave, end of dictatures in LAC, end of Apartheid in Sth Africa, multipartism in SSA
Capital volatility: Mexican Peso 1994 (+Tequila effect), Asia 1997
Reforms: Mixed successes in few cases, blatant failures in others
Ex. of CFA franc devaluation (1994): macro stabilization through real wage bill ↓, but little growth impact. Lucky bounce back of commodity prices (cocoa, cotton, etc.)

→

High growth in China, India, Vietnam, etc. (but mixed models)
Lost decades in LAC and SSA: Poverty ↑ Corruption ↑ Failed States
Macroeconomic imbalances and debt burden reduced
Little domestic ownership of one-size fit all reforms
Aid fatigue
Povery Reduction & Governance Reforms 2000-15

Global public goods: epidemics, environment, knowledge
Boom of oil and commodity prices (until 2015)
Turn to the left in LAC –Conditional Cash transfer programs (Progresa 1994) – Fees cancellation in Africa
« Governance » : accountability, rule of law, corruption, property rights protection
September 9/11, Invasion of Irak 2003, Neoconservatives agenda.

→
Disappointment on governance improvements
Quality of public services into question
Tensions in globalization: inequality, capital flight, de-industrialization, climate, security
Today

UN Sustainable Development Goals
Climate change
? Sustainability of Chinese / Indian growth
De-industrialization of LAC, No industrialization of SSA

State fiscal and legal capacity – Domestic taxation
Productivity of agriculture – Technology adoption
Infrastructure: electrification, sanitation, roads
Quality of public services: education, health