Do I have to take the final?

- The final is obligatory.
- If you miss it, you will get a zero, and your grade is affected compensurately.
- (If you are hospitalized, dealing with the emergency illness of a family member, etc., we will find a way of accommodating you.)
- As explained on the syllabus, if you missed the problem set, first midterm, or second midterm (but not two of these elements), we will scale up the remaining components so that they comprise 100 per cent of your grade.
African underdevelopment is not new

- Slow growth has been a chronic African problem.
- Its consequences include extreme poverty, civil conflict, and a variety of other social ills.
- The continent’s poor growth seems to outlast any single policy (and political) environment, posing a challenge for analysts.
iClicker question: between 1820 and 1992 GDP per capita in the world as a whole rose by a factor of 8.* In Africa it rose by a factor of:

- A. 1
- B. 3
- C. 5

Meaning it was 8 times as high in 1992 as in 1820.
African underdevelopment is not new

- The only period when Africa did as well as the world as a whole was during the two world wars and interwar depression (when the main difference was that other regions were doing poorly).
Data on trade shows the same discouraging picture

Figure 16: Africa’s Share of World Trade

Source: IMF and World Bank database
iClicker question: is foreign aid a solution to this problem?

- A. Yes. (An infusion of foreign aid to build roads, provide insecticide-coated bed nets, provide pumps for clean water etc. can ignite and sustain a sharp acceleration in African growth.)

- B. No. (Foreign aid would do nothing, because slow African growth reflects weak institutions, which are inherited from the past and deeply embedded.)
Changing fortunes

- 1950-72 (the trans-independence era): Africa grew by 2.1% per annum, compared to 2.9 per cent for the world as a whole (disappointing but not disastrous).

- 1980s & 1990s: Subsaharan Africa’s growth performance deteriorated significantly. The region continued to lag both other developing countries and the world as a whole.
More recently, however, there has been significant improvement

- 1995-99, growth accelerated to 2.0% per capita.
- Number of countries with growth rates of real GDP in excess of 5% rose from 4 to 15.
- 2004-6, growth in Subsaharan Africa accelerated again to more than 5 per cent. In 2007 there was a further pick-up to 6 per cent (helped by both economic reforms and high commodity/oil prices).
- The IMF is projecting 7 per cent for 2008 (although we will see; this will depend also on global economic conditions, as I will explain in a moment).
It is further reassuring that this faster growth is registering across a large number of Sub-Saharan countries.
There has been a favorable impact on poverty [though the correlation is loose – other things matter importantly as well]
This table for the growth of per capita incomes makes it look like the break point was around 1995.

<table>
<thead>
<tr>
<th>Period</th>
<th>Growth rate</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard</td>
<td>deviation</td>
</tr>
<tr>
<td>1975-2005</td>
<td>0.70</td>
<td>6.27</td>
<td></td>
</tr>
<tr>
<td>1975-1984</td>
<td>0.13</td>
<td>6.92</td>
<td></td>
</tr>
<tr>
<td>1985-1994</td>
<td>-0.23</td>
<td>5.87</td>
<td></td>
</tr>
<tr>
<td>1995-2005</td>
<td>1.88</td>
<td>5.99</td>
<td></td>
</tr>
<tr>
<td>1975-1994</td>
<td>-0.07</td>
<td>6.33</td>
<td></td>
</tr>
<tr>
<td>(1995-2005) minus (1975-94)</td>
<td>1.95</td>
<td>-0.34</td>
<td></td>
</tr>
</tbody>
</table>

Source: Arbache and Page (2007a)
The unanswered question is whether this improved performance will last.

Is it simply a consequence of high commodity prices, or does it reflect real improvement in policies?

Commodity prices (determining Africa’s terms of trade) have declined before. Now, with slowing global growth, could it happen again?
Of course, it matters which commodity you rely on...

**Figure 2.17. Sub-Saharan Africa: Real GDP Growth, 2007 (Percent)**

Source: IMF, African Department database.

**Figure 2.4. Sub-Saharan Africa: Commodity Prices (Index 2003=100)**

Sources: IMF, Commodity Prices; and UN Comtrade.

1 Composite of cocoa, coffee, sugar, tea, and wood, weighted by SSA exports.
Debt relief also helped

- HIPC (Highly Indebted Poor Country) Initiative administered through the IMF has led to debt forgiveness, conditioned on a plan for improved policies.
  - This has reduced fiscal pressures and provided more incentive to follow growth- and investment-friendly policies.

- Nigeria also received special debt relief from official (governmental) lenders through the Paris Club.
Thus, many factors could have contributed to improved performance

- Improved terms of trade.
- Debt relief.
- Improved policies.

- The question is what has mattered most.
Conventional view is that improved policies are key

- Poor economic performance in the long term has been due to poor policies:
  - Unstable monetary and fiscal policies
  - Overvalued real exchange rates
  - Low rates of public investment
  - Low levels of human capital formation

- So what matters now is improved policies.
  - For an example of this conventional wisdom, see E.A. Calamitsis et al., “Adjustment and Growth in Sub-Saharan Africa,” www.imf.org.
Appeal of this Conventional View

- At least superficially, this conventional view can explain why growth deteriorated after 1973 (policies deteriorated noticeably).
- It can explain why growth accelerated after 1995 to +1.2% per annum, and why growth has accelerated further in the last 3 years (policies improved noticeably):
  - 36 African countries improved macroeconomic stability (reducing their inflation rates) and growth accelerated in 30 of them.
  - A numerical majority of African countries succeeded in reducing budget deficits, increasing private saving, increasing public investment).
  - A number of African countries privatized more than 50 per cent of their state enterprises (Central African Republic, Ivory Coast, Gambia, Guinea, Kenya, Mali, Tanzania, Togo, Uganda and Zambia).

Figure 2.3. Sub-Saharan Africa: Inflation, 2000-06
(Percent)

Source: IMF, African Department database.
1 Excluding Zimbabwe.
But *why* has policy improved in the last ten years?

- Might smaller budget deficits, lower inflation etc. simply be a consequence of improved economic performance rather than a fundamental cause?

- If the advantages of better macroeconomic policies are so compelling, then why weren’t such policies adopted earlier?
  
  - On the absence of answers to such questions, we can’t say anything about whether we should expect the improvement to be temporary or permanent.
  
  - In particular, if growth slows (due, say, to weaker commodity prices), will inflationary pressures resurface?
This conventional answer to the question of “why weak policies” is “weak institutions”

- Governments have been unstable.
- Civil strife has been widespread.
- Checks and balances, voice and accountability have been lacking.
- Governments have not invested in infrastructure, education, and health care.
- Property rights are insecure; unreliable formal contract enforcement leads to use of informal means: corruption adds to the cost of doing business.
Note: This graph plots estimates of Control of Corruption in 2002 for all 74 countries potentially eligible for the first round of the MCA. Countries are ranked according to their corruption rating on the horizontal axis, and corruption scores are shown on the vertical axis. The vertical lines for each country report the 90% confidence intervals for corruption, and the midpoint of each interval indicates the corruption score. The red squares (yellow triangles) (green circles) report the probability that each country has a corruption score above the median. The colours correspond to three groups of countries for which this probability is less than 25%, between 25% and 75%, and above 75%. As emphasized in the text, the ranking of countries along the horizontal axis is subject to significant margins of
But are weak institutions endogenous?

- This is the argument of Jeffrey Sachs and his coauthors in various studies.
  - They regress the quality of governance or control of corruption on per capita GDP and show that Africa is right on the regression line.
  - This suggests that Africa could have poor governance because something else is causing the low incomes, which in turn results in poor governance.
  - But what is that “something else?”
In the readings you will encounter two views

- Acemoglu, Johnson and Robinson argue that the answer is the institutional inheritance.
  - Europeans interested only in extracting natural resources created institutions good for this but bad for economic development (no checks and balances, arbitrary governance).
  - Slave trade weakened civil society, cooperation, state stability.

- Sachs argues that it is the geographical (climatic and disease) burden.
  - Low agricultural productivity.
  - Land lockedness and limited trade possibilities.
  - Susceptibility to malaria, hookworm, AIDS.

- Are these two views really incompatible, or are they in fact two variants of the same theme?
Acemoglu, Johnson and Robinson (AJR) argue as follows

- Europeans founded extractive colonies or developmental colonies, depending on how hospitable local climate was for settlement.
  - Where malaria and other diseases killed off European explorers, they did not settle.
  - Where indigenous population density was high, they also did not settle.

- Where they settled, settlers demanded checks and balances, limits on arbitrary governance, etc. Where they didn’t, power was concentrated in the hands of a few. Institutions were designed to extract surplus, not to promote development.
  - Compare Africa and Australia….
AJR have a clever way of implementing their analysis. What do they do?
AJR have a clever way of implementing their analysis. What do they do?

- They gather data on settler mortality in the 15th-18th centuries.
- They look at only that portion of current institutions correlated with settler mortality in the 15th-18th centuries.
- They can then argue that they are picking up the truly exogenous component of institutions.
  - Note that this is an argument for how history matters.
  - The clever part is that there is no reason why settler mortality 300 years ago should affect income and development now, except through the posited effect on institutions.

Figure 2: Institutional quality (GDP) and log of settler’s mortality (lnmort)
Source: Hall and Jones (1999) and Acemoglu, Johnson and Robinson (2001)
What are the problems with this story?
What are the problems with this story?

- It assumes very strong path dependence (determinacy).
- In practice, we know that institutions display some plasticity. (In Africa, most measures suggest that they have improved since 1995).
What are the problems with this story?

- How representative are priests and soldiers?
- Do we care about barracks mortality rates or campaign mortality rates? Do the sources reliably distinguish them?
- Can we map 15th through 18th century regional mortality into modern African nation states?
- AJR have to work hard to explain some notable outliers (Botswana has grown successfully, by more than 7 per cent per annum for more than three decades) despite having been colonized by British settlers who experienced high mortality rates.
  - Thus, it must have been special:
    - Too remote for British to have an impact?
    - Diamonds?
    - Civic culture?
The Legacy of the Slave Trade

- This was the ultimate extractive institution.
  - The slave trade continued for 500 years, but European colonial rule for less than 100. Which would one expect to have had the larger impact?

- Between 1400 and 1900, some 50-80 million Africans were enslaved. Only a fraction of these survived transportation to other continents. But the impact of African population was profound. (This in a period when Africa’s population averaged 50-80 million.)
  - Caution: Note that we are comparing a cumulative number – everyone ever enslaved – with a population average at a point in time.
There are multiple reasons to expect negative effects

- Those enslaved and transported were disproportionately prime age workers.
- Commercial development was discouraged, since it exposed a region and tribe to slave traders (who often consorted with legitimate traders).
- The slave trade surely had profoundly disruptive social effects. (Ethnic conflict was fanned, as one tribe engaged in domestic warfare, raiding and kidnapping, or cooperates in the enslavement of another.)

![FIGURE III](image)

Relationship between log slave exports normalized by land area, ln(exports/area), and log real per capita GDP in 2000, ln y
The argument would be that countries that were poorly developed then, for whatever reason, remain poorly developed today. Because the relatively powerful had nothing else to sell, they selected into the slave trade. But the slave trade played no causal role.
Solution: look at distance from major ports of export of slaves

- For the technically inclined, this distance is “an instrument.”
- Intuitively, what they do is to consider only that portion of the slave trade that can be explained by this distance.
- Distance from the market for slaves is correlated with the extent of the slave trade empirically.
- And there is no reason why distance from the main ports of export for slaves hundreds of years ago should affect African development now.
- It turns out that the evidence is robust to this treatment.

FIGURE V
Example showing the distance instruments for Burkina Faso
So where would you expect the effects to show up today?

**FIGURE VI**
Relationship between slave exports and current ethnic fractionalization

**FIGURE VII**
Relationship between slave exports and 19th century state development
Bottom line:

- Here is another channel through which history matters.
The Sachs alternative

- Adverse geography – rather than the legacies of imperialism and the slave trade – are the cause of African underdevelopment.

- Specifically, adverse geography is the source of:
  - Low productivity agriculture
  - High disease burdens
  - High transport costs, difficulty of exporting

- Consider now the evidence on these three consequences in turn.
Implications for Agriculture

- Climate does not support growing high-yield temperate crops (wheat, barley, paddy rice).
- Land lacks fertility except in interior highlands.
- Limited opportunities for irrigation due to lack of alluvial plains.
- Rainfall is heavily concentrated in certain seasons (leaching nutrients), subject to evaporation due to tropical climate, and unreliable.
- Evenness of growing day across seasons limits photosynthesis. (Lack of 12+ hour days during growing season reduces rate of photosynthesis.)
But Are Low Yields the Result of Climate or Institutions?

- Photosynthesis, rainfall, soil type etc. is one determinant of yields, to be sure.
- But because of the absence of insurance markets and financial markets on which to store savings, farmers are forced to scatter plots, intermix crops, and engage in other practices which limit yields.
- Farmers who want to borrow to improve irrigation, drainage, etc. generally must do so informally, because of the absence of financial markets and institutions, at interest rates approaching 40 per cent. No surprise, then, that too few improvements take place.
- Does this mean that the effects on agriculture are mutable? Can they be solved by improved governance and market development?
Implications for Disease Burdens

- Constancy of temperature (no subzero temperatures) supports disease vectors and microbes.
- Africa mosquitoes – unlike those in the U.S. South – are primarily human biters.
- 90% of the world’s malaria deaths occur in Sub-Saharan Africa, the majority of them among children.
- In addition, incidence of AIDS is 7 per 100 population, where in no other region does it exceed 1 per 100.
But is this an exogenous, immutable factor?

- Some would argue that with stronger governance and better institutions, African governments could deliver better public health services.
  - In this view, high incidence of health problems is endogenous – a consequence of other things (weak institutions), not a climatically- and geographically-determined cause.

- Or maybe an injection of foreign aid or just simple provision of insecticide-coated bednets will be enough to solve the problem.
Implications for Trade

- Transport costs are high: hence difficulty of exporting
- A disproportionate share of African countries are landlocked.
- Navigable rivers are few.
- Sahara cuts many countries off from richer Mediterranean markets.
- Temperate climate and more abundant rainfall in highlands causes population to concentrate away from coast (further discouraging trade).
But aren’t these problems again partly endogenous and subject to change?

- Roads can be built to the coasts.
- Location of population is endogenous (viz. air conditioning and American South)
We see here that many of the obstacles to exporting are self inflicted.
So what should we conclude about geography and institutions?

- Are AJR really telling us about the importance of institutions or about the importance of geography?
- After all, there is a sense in which geography (which determines settler mortality) is the ultimate determinant of economic outcomes, and institutions only intermediate between them.
- AJR argue that the channel operating through institutions is fundamental because they control separately in their empirical work for distance from the equator, length of the growing season, land lockedness, etc. And it is institutions that matter.
- However, Sachs, in a later paper ("Institutions Don’t Rule") shows that malaria risk (proxied, for example, by the share of a country’s population in temperate ecozones) is also important for growth, even when one includes the AJR variable.
- This suggests the relevance of both direct (via the disease environment) and indirect (via institutional evolution) affects of geography. Seems like a plausible synthesis.
What do these two views imply about possibilities for overcoming the obstacles to growth and development?

- The Sachs view would be that modern technology offers ways of overcoming the tyranny of geography.
  - Roads can be built to the coast.
  - Simple investments in inoculation and $7 bed nets can reduce disease burdens.
  - Population centers can move.
  - Credit markets can be build to encourage improvements by farmers; new crops and seed types can be introduced.
  - With these innovations, higher incomes can follow, and other problems (corruption, weak rule of law) will solve themselves.

- The Acemoglu-Johnson-Robinson view is that the effects of geography are not so easily mutable, since they become embedded in institutions that are hard to change.
  - But as we saw before, their predictions about what determines institutions may explain less than they claim.
  - And we have seen significant improvements in institutional quality in various African countries in the last ten years.
What might the global policy community do?

- A variety of initiatives might help: more comprehensive debt relief, fewer restrictions on textiles and agricultural exports, incentives to target pharmaceutical and “green revolution” research on problems of poor and tropical countries, more accommodating enforcement of pharmaceutical companies’ intellectual property rights.

- In addition, Sachs & Bloom argue for a massive increase in foreign aid to finance improvements in public health and other basic services. They argue that:
  - Africa is stuck in a low level equilibrium trap where poverty prevents improvements in governance, investment etc., and the failures of governance, investment etc. frustrate efforts to life people out of poverty.
  - A massive infusion of investment can shock the continent out of this low level equilibrium trap.

- What is the obvious objection to this proposal?
Foreign aid and growth

- Where institutions are weak, aid may be dissipated or diverted by corrupt governments
  - A long list of empirical studies found no firm link between aid and growth.
  - Influential study by Burnside & Dollar for World Bank (*American Economic Review* 2000) showed that aid worked only where corruption was low.
  - This led to Millenium Challenge Accounts.
  - But few countries have qualified for disbursal.

- How do Sachs et al respond?
Responses to this critique

- Subsequent studies have cast considerable doubt on the Dollar-Burnside result that aid only works where corruption is low.
  - A recent study for the World Bank headed up by two eminent economists, Angus Deaton and Kenneth Rogoff, concluded not just that their methodology was flawed but that the results were misused for political purposes.

- In reality, African countries are not that poorly governed; this problem is greatly exaggerated.

- And to the extent that poor governance is a problem, it is endogenous. It will decline with faster growth and higher living standards.
So what should we conclude about foreign aid?

- Some (Bill Easterly*) would say it has been tried and failed. (The “principal-agent problems” are simply too severe.)
- Others (Jeff Sachs**) would say that we have never really tried a Marshall Plan (“big push”) for Africa.

iClicker question: with which of these views do you agree, given our readings and discussion?

- A. An infusion of foreign aid to build roads, provide insecticide-coated bed nets, provide pumps for clean water etc. can ignite and sustain a sharp acceleration in African growth.

- B. Foreign aid would do nothing, because slow African growth reflects weak institutions, which are inherited from the past and deeply embedded.