 Assignments

W. Baumol, et al.

*Good Capitalism, Bad Capitalism*

Available at

http://www.yalepresswiki.org/
Assignments

Research and learn as much as you can about the following:

- Real GDP
- Human Development Index
- Gini Coefficient
- Corruption Index
- World Population Growth
- Human Poverty Index
- Quality of Life Index
- Reporters without Borders

Be prepared for a second Group Teach on these after the midterm: October 24
Comparing Economic Systems

How do we compare economic systems?

- We previously noted the many *qualitative ways* of comparing economic systems – organization, incentives, etc.
- What about the *quantitative*?
  - Potential quantitative measures might include:
    - Real GDP level and growth
    - Population level and growth
    - Income and wealth distribution
    - Major financial and industrial statistics
    - Indexes of freedom and corruption
- These measures should tell a story
  - The story is one of *economic performance*
Economic performance is multifaceted

- Judging how an economic system performs, we can look at broad topics or issues such as...
  1. Output/Income produced (usually real GDP)
  2. Economic Efficiency
  3. Macroeconomic Stability
  4. Economic Security
  5. Economic Equality
  6. Economic Freedom
  7. Long-term Viability
# Comparing Economic Systems

<table>
<thead>
<tr>
<th>Output</th>
<th>Efficiency</th>
<th>Security</th>
<th>Equality</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGDP Growth</td>
<td>Financial System</td>
<td>Laws</td>
<td>Poverty</td>
<td>Population</td>
</tr>
<tr>
<td>RGDP Levels</td>
<td>R&amp;D</td>
<td>Corruption</td>
<td>Income Distribution</td>
<td>Governance Policies</td>
</tr>
<tr>
<td>Convergence</td>
<td>Inflation</td>
<td>Violence</td>
<td>Education</td>
<td>Business Cycles</td>
</tr>
<tr>
<td>Standard of Living</td>
<td>Unemployment</td>
<td>Terrorism</td>
<td>Health Care</td>
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## Economic Performance

<table>
<thead>
<tr>
<th>Culture</th>
<th>Technology</th>
<th>Mechanism</th>
<th>Institutions</th>
<th>Politics</th>
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<tbody>
<tr>
<td>Communal</td>
<td>Leader</td>
<td>Markets</td>
<td>Private Own.</td>
<td>Democracy</td>
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<tr>
<td>Individual</td>
<td>Adopter</td>
<td>Planned</td>
<td>Common Law</td>
<td>Dictator</td>
</tr>
<tr>
<td>Corporate</td>
<td>Importer</td>
<td>Authoritarian</td>
<td>Regulatory</td>
<td>Monarchy</td>
</tr>
<tr>
<td>Aristocratic</td>
<td>Innovator</td>
<td>Tradition</td>
<td>Coercion</td>
<td>Fascist</td>
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## Scarcity

- Demography
- Population
- Resources
Comparing Economic Systems (Continued)

Output/Income produced
- Basic concept is...

**Say’s Identity**

Output produced = Income received

- Basic Measure is real GDP per capita
  - Often considered synonymous with real income
  - Nominal GDP has inflation built in so is distorted
  - Per capita allows for variations in population – normalizes the data to make "apples – apples" comparisons

- Other measures might include a Physical Quality of Life Index, Human Development Index (consists of life expectancy, infant mortality, literacy, educational enrollment, nutrition, etc.), etc.
  - But all are highly correlated with real GDP per capita
Comparing Economic Systems (Continued)

Output/Income produced

- A truly accurate measure would measure the net social value of all economic activities, rather than merely real GDP, and would adjust for the use of natural resources and other capital
- We can also look at...
  - Output composition
    - Civilian or military goods; consumption, investment, or government goods; food vs. housing vs. luxury goods.
  - Growth rates
    - The most common
    - But lesser-developed economies have the potential to grow at faster rates, since they start at a lower initial base and there is a catch-up effect
Comparing Economic Systems (Continued)

Output/Income produced

- Lesser developed economies catching up has to do with concept of *convergence*
  - The hypothesis that at least a fairly restricted set of countries, the members of the "convergence club", are undergoing a process that brings their levels of productivity and living standards increasingly close to one another
  - Remember, these are all different economic systems
Real GDP per Worker Growth Rates vs. Initial Level of GDP per Worker Growth Rates
Why does convergence matter?

- A driving economic policy for most (but certainly not all) nations is to reduce domestic income inequality
  - Policies used include...
    - Taxes
    - Welfare programs
- This same motive exists on a transnational basis
  - Convergence is tantamount to the diminishing of economic inequality among nations
  - There are no "world" taxes per se but there are "world" welfare programs (grants, subsidies, etc.)
But how is poverty reduction defined?

- **Absolute**
  - All nations are growing at the same rate (e.g., 3% per annum) so everyone in a nation is improving at the average rate of 3% per annum
  - Convergence in this case is not an issue: there is no way the gap can close

- **Relative**
  - Relative positions matter
  - Convergence is very important in this case
Convergence, as catch-up, entails absolute and relative poverty reduction.
An issue is continued convergence

- Once near-convergence is achieved, further convergence may be very difficult or near-impossible
  - One reason: no further transfer of technology may be possible
The leader countries may be traumatized by their loss of leadership and may fall into a state of malaise or psychological depression which could harm the nation economically.

- Social psychological depression could lead to economic depression.
Why does convergence matter? (Continued)

There are two concepts discussed under the label convergence:

**Homogenization**
The case in which most of the countries in a specified group constantly grow closer to one another in terms of per-capita incomes and other pertinent variables.

**Catch-up**
The case in which laggard countries narrow the distance separating them from the leading economy. This is typically considered the US.
Homogenization is...
- Reduction in the dispersion of some set of countries in terms of some measure of performance
  - For whatever variables are used to measure growth and standard-of-living, their variance narrows
  - Well discuss some measures of performance other than real GDP shortly
Why does convergence matter? (Continued)

- If a study shows that there has been a steady decline in, say, the coefficient of variation (as a measure of dispersion*) of the levels of labor productivity for some set of countries, then their labor productivity is becoming homogenized.
- On average, the percentage spread in the productivity levels has been narrowing.
  - This is the result of those countries starting out furthest behind experiencing faster growth rates than those that started out furthest ahead.

**Coefficient of Variation**

The coefficient of variation is a dimensionless number showing dispersion around a mean. Technically, it is the standard deviation divided by the mean. This is often reported as a percentage. It allows comparisons of populations with significantly different mean values.
Why does convergence matter? (Continued)

The claim is that a negative correlation exists between the initial level of RGDP or productivity and growth rates

- For the countries shown in the earlier graph...

Pearson’s Product-moment Correlation

Data: Initial RGDP and RGDP Growth

\[ t = -0.3225, \text{ df } = 109, \text{ p-value } = 0.7477 \]

Null hypothesis: true coefficient is equal to 0

Alternative hypothesis: true coefficient is not equal to 0

Sample estimates: correlation: -0.03087843

Conclusion: Not significant so no homogenization
Catchup is...

- A narrowing of the percentage gap between the leading country's performance in the variable in question and that of the other countries, primarily the leader.
Comparing Economic Systems (Continued)

This Shows Catch-up Concept
Comparing Economic Systems (Continued)

There are several popular myths about convergence

- Rapid productivity growth associated with converging countries will destroy jobs, even in the long run
- If one country's productivity growth lags other countries' growth (those converging), then . . .
  - Domestic workers will lose jobs to foreign workers
  - Domestic industries will suffer
  - There will be a chronic BOP deficit
Comparing Economic Systems (Continued)

There are several popular myths about convergence

- Unemployment effects unfounded
  - Data for the U.K., U.S., and Germany for 1874-1973 show that unemployment rates averaged 4% before WWII and slightly below that in the post-WWII period
  - Yet there was a 12-fold increase in U.S. output/work-hour, a 7-fold increase in the U.K., a 16-fold increase in Germany in the same period
  - Not bad!
There are several popular myths about convergence

- No long-run loss of competitiveness
  - Loss of competitiveness was a major issue for the U.S. in the 1970s and 1980s when it seemed that Japan would replace the U.S. as a major economic power
    - The "deindustrialization" of the U.S. was talked about and written about often, especially in the 1980s
    - The U.S. was viewed as having old, smoke-stack industries that could not compete globally
There are several popular myths about convergence

- This certainly did not happen in the U.S. as evidence by our economic position in the 1990s and 2000s
  - Some "power" or position was lost (autos, steel)
    - Our auto industry is in very bad shape e.g., Ford
  - But new ones were gained...
    - Computers
    - Communications
    - Biotechnology
- The U.S. economy shifted
There are several popular myths about convergence

- Leading nations, like the U.K., have not suffered at all historically because of growth
  - From 1870-1979, industry's share of employment in the U.K. stayed at 88% of Germany's and was ahead of Sweden, France, U.S., Belgium, Japan
  - Yet, the U.K.'s labor force share in industry declined from 1st place in 1870 to 4th in 1979
There are several popular myths about convergence

- Economic analysis also denies this possibility
  - There are competitive markets, even on a global basis!!
    - New industries and markets will be found by profit seeking economic agents
    - Competitiveness just shifts
Economic Efficiency

Efficiency

Efficiency is the ratio, relative to the maximum possible, of the total value of what we produce, divided by the total value of the resources we used, from now into the future.

- Efficiency is a more perfect measure than real GDP, but it is also much harder to measure and not easily available.
Economic Efficiency (Continued)

There are two types of efficiency

**Static Efficiency**

Can a reallocation of existing resources increase current output? Can we get the same current output using fewer resources? Do prices reflect scarcity values?

- **Technical efficiency**: Are we using the most productive technology?
- **Allocative efficiency**: Are resources distributed to the right producers, in the best mix?
- **Consumption efficiency**: Are we consuming the best mix of goods and services?

**Dynamic Efficiency**

Is the long-run value of output being maximized?
Macroeconomic Stability  prices, unemployment, recessions, and growth

Economic Security  can people find and keep good jobs, is insurance (public or private) widely available? Is there a social safety net?

Economic Equality (Equity)  distribution of wealth, income, and opportunity

Economic Freedom  - To own, buy, or sell what you want, to work and live where you want. Long-term viability  - Is the economic system adaptable? Does it maintain or destroy itself? Is it sustainable in its use of the natural environment?
Conflicts and Complements

Which of these measures are likely to be complementary?

- Output level is usually correlated with static efficiency, growth with dynamic efficiency, both with economic freedom
- Economic security is correlated with macroeconomic stability and/or equity
- Dynamic efficiency implies long-run viability

But there are problems
There are often conflicts between measures.

- For example, some static inefficiencies may be dynamically efficient, and vice-versa.
  - Allocate too many resources to medical device research with little return now, but in the long-run...

- Economic freedom may conflict with security.
- Efficiency may conflict with equity.
Many (most) statistics are usually not available, not objective, or not comparable

- Statistics are measured differently for each country, e.g., unemployment in U.S. vs. China.
- GNP, GDP, or NMP?

Key Measures

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<th>GNP: Gross National Product</th>
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<tr>
<td>GDP: Gross Domestic Product</td>
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<td>NMP: Net Material Product</td>
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- Should output include black or grey markets? What about nonmonetary goods?
- Inflation is often hidden or repressed.
- Do growth rates accurately adjust for capital accumulation or natural resource depletion?
The two most common measures are:

**Gross National Product**

GNP is the total value of final goods and services produced in a year by a country’s nationals (including profits from capital held abroad).

**Gross Domestic Product**

GDP is defined as the market value of all final goods and services produced within a country in a given period of time.

- The two are almost identical
2006 Top RGDP per Capita Countries (PPP)
Typical way to calculate an **Arithmetic Average**: add and divide

\[ \bar{X}_A = \frac{1}{\text{Number of Observations}} \sum \text{Observations} \]

- This is appropriate when the natural operation on the data is addition.
- Growth rates are based on a natural operation of multiplication.
- Another average is needed other than the arithmetic average.
A more appropriate average is the …

**Geometric Average**

\[
\bar{X}_G = \left( \frac{\text{Last Year Value}}{\text{First Year Value}} \right)^{\frac{1}{\text{Number Years} - 1}}
\]

- It can be shown that …

**Relationship Between Averages**

\[
\bar{X}_G \leq \bar{X}_A
\]
Various ways to say the same thing:

- Annual growth rate
- Average annual growth rate
- Compound Average Growth Rate (CAGR)
For us, the geometric average applies just to a single country’s growth. A batch of averages over many countries have to be analyzed with other tools.

- We have to look at *distributions* of averages
- Two useful and powerful tools are the . . .
  - **Dotchart**
    - Simple plot of values against a categorical variable (e.g. countries or regions)
  - **Boxplot**
    - Based on medians and quartiles
Example Dotchart
World Real GDP Distribution by Regions
World Population Distribution by Regions
World Population Distribution by Classifications
World Real GDP Time Trends by Regions
Real GDP per capita is often used as an indicator of standard of living in an economy.

- **Standard of living** refers to the quality and quantity of goods and services available to people and the way these goods and services are distributed within a population.
  - It is generally measured by items such as income inequality, poverty rate, real (i.e. inflation adjusted) income per person.
  - Other measures such as access to and quality of health care, educational standards and social rights are also often used.
  - Other examples are access to certain goods (such as number of refrigerators per 1000 people), or measures of health such as life expectancy.

- It is the ease by which people living in a country are able to satisfy their wants.
The idea of a "standard of living" may be contrasted with the quality of life, which takes into account not only the material standard of living, but also other more subjective factors that contribute to human life . . .

- Leisure, safety, cultural resources, social life, mental health, environmental quality issues etc.
- More complex means of measuring well-being must be employed to make such judgments, and these are very often political, thus controversial.
- Even among two nations or societies that have similar material standards of living, quality of life factors may in fact make one of these places more attractive to a given individual or group.
An issue in economic growth is that growth tends to improve the "standard of living" but may also reduce the "quality of life"

- Growth provides more material things and more opportunities, but . . .
- Growth also creates social and living problems
Growth is attacked on four fronts

1. Continued growth is impossible to sustain and dangerous to pursue

   - Growth is unsustainable because growing scarcity of food, basic raw materials, and means of disposing of waste products must eventually halt growth of aggregates and force a decline
   - If population growth continues, a Malthusian world may emerge in which adjustment will take place by war, famine, disease, and misery
     "Malthusian" refers to Rev. Thomas Malthus who (early 19th century) proposed that population growth will outstrip food supply growth
Growth is attacked on four fronts (Continued)

2. Growth entails costs that RGDP does not measure
   - Costs are either unmeasured or badly measured
   - External costs of production
     - Loss of valuable and scarce natural resources: timber land, wet lands, open spaces
     - If such costs are rising, then the net real growth is less than conventionally thought
     - No one knows how large these costs are because no one pays for them: no one knows the damage done by individuals or firms
Growth is attacked on four fronts (Continued)

3. Growth provides already affluent people limited marginal satisfaction so little incentive to pursue growth further
   - There is evidence that growth of average income is \textbf{NOT} accompanied by an increase in happiness
     - This is the basis for many Hollywood stories of how money doesn’t buy happiness
     - Gallup and National Opinion Research Center studies support this over time
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good
   - We need technology to grow
   - New technology requires highly trained individuals, not all of whom can meet the requirements for the new technology
     - People get displaced by new techniques, especially older people
     - They just get left behind
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - Organizations change to meet the demands of the new technology, subordinating the individual and the individuals needs
   - Example: cell phones and pagers: is it really necessary to be in touch with everyone every minute of the day no matter where you are (e.g., using cell phones in the rest room)
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - Some blame technology for the diminution of the quality of life
     - Quality has changed
     - The "stoop" issue
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - But there is more: Loss of time
     - In the last 20 - 30 years, the average employed American has seen his/her working hours increase by the equivalent of 1 month a year
     - This applies to everyone: men/women, young/old, rich/poor, educated/not
How our time is used

Annual Hours of Paid Employment
U.S. Labor Force Participants

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<tr>
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<tbody>
<tr>
<td>All Participants</td>
<td>1786</td>
<td>1949</td>
<td>163</td>
</tr>
<tr>
<td>Men</td>
<td>2054</td>
<td>2152</td>
<td>98</td>
</tr>
<tr>
<td>Women</td>
<td>1406</td>
<td>1711</td>
<td>305</td>
</tr>
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</table>

Based on "normal" work week: 40*4 = 160, 160*12 = 1920, 1786 - 1920 = -134 hours

J.B. Schor, *The Overworked American*
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)

- By the early 1990s, U.S. manufacturing employees alone worked 320 hours longer a year 2 months than their counterparts in Germany and France
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - Yet, productivity has expanded and growth has been strong in the U.S. since WWII, so strong, in fact, that . . .

Our Productivity

"We could now reproduce our 1948 standard of living (measured in terms of marketed goods and services) in less than half the time it took in 1948. We actually could have chosen the four-hour day. Or a working year of six months. Or imagine this: every worker in the United States could now be taking every other year off from work, with pay."

J.B. Schor, *The Overworked American*
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - Social critic Jeremy Rifkin believes that our perception of time has changed
   - Everything is speeding up and the culprit is the computer

The Computer

"The computer introduces . . . a time frame in which the nanosecond is the primary temporal measurement. The nanosecond is a billionth of a second, and though it is possible to conceive theoretically of a nanosecond . . . it is impossible to experience it. Never before has time been organized at a speed beyond the realm of consciousness."

Remember my comments about email and students expecting an instantaneous response?
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - Not everyone blames technology
     - Some contend that we are merely victims of our own aspirations
     - We have become more demanding in terms of activities, goals, and achievements
     - Competition drives us, perhaps, too much
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - Not everyone blames technology

The Computer

"We have become walking resumes. If you're not doing something, you're not creating and defining who you are."

J.B. Schor, *The Overworked American*

This leads to a high sense of frustration and mental illnesses
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)

- The compressed sense of time may be coupled with a view of: "Less Satisfaction from Possessions"
  - Gadgets such as the iPods, CDs, VCR, DVDs, cell phones, pagers, PDAs, laptops lead us to believe that we have to do things quickly in order to be able to use all these gadgets
  - We switch to those activities that could be done quickly
Growth is attacked on four fronts (Continued)

4. Technology, a major factor promoting growth and possibly the standard of living, does more harm than good (Continued)
   - Long courtships, leisurely walks on the beach, lingering over the dinner table are now passing away
   - Is technology and its focus on time and convenience the real issue?
The *UN Human Development Index* (HDI) is a comparative measure of poverty, literacy, education, life expectancy, childbirth, and other factors for countries worldwide.

- It is a standard means of measuring well-being, especially child welfare.
- It is used by many people to distinguish whether the country is a developed, developing, or underdeveloped country.
- The index was developed in 1990 by the Pakistani economist Mahbub ul Haq, and has been used since 1993 by the United Nations Development Programme in its annual Human Development Report.
The HDI measures the average achievements in a country in three basic dimensions of human development:

1. A long and healthy life, as measured by life expectancy at birth.
2. Knowledge, as measured by the adult literacy rate (with two-thirds weight) and the combined primary, secondary, and tertiary gross enrollment ratio (with one-third weight).
3. A decent standard of living, as measured by real GDP per capita at purchasing power parity (PPP) in USD.
The report for 2005 shows that, in general, the HDI for countries around the world is improving, with two major exceptions: Post-Soviet states, and Sub-Saharan Africa, both of which show steady decline.

- Worsening education, economies, and mortality rates have contributed to HDI declines amongst countries in the first group, while HIV/AIDS and concomitant mortality is the principal cause of decline in the second group.
An HDI below 0.5 is considered to represent low development and 30 of the 32 countries in that category are located in Africa, with the exceptions of Haiti and Yemen.

- The bottom ten countries are all in Africa.
- The highest-scoring Sub-Saharan country, South Africa, is ranked 120th (with an HDI of 0.658), which is well above most other countries in the region.
An HDI 0.8 or more is considered to represent high development.

- This includes countries of northern and western Europe, North America, Republic of China (Taiwan), Japan, South Korea, Singapore, Australia, New Zealand, the Southern Cone, Israel, Kuwait and the UAE.

- Other countries that exhibit high human development amidst countries with lower HDIs include (with their position) Costa Rica (47th), Cuba (52nd), Mexico (53rd) and Panama (56th).
The *Human Poverty Index* is an indication of the standard of living in a country, developed by the United Nations (UN)

- The UN considers this a better indicator than the Human Development Index, which in turn is considered a better indicator than real GDP
- This is a composite index measuring deprivations in the three basic dimensions captured in the Human Development Index: a long and healthy life, knowledge and a decent standard of living
Indicators used are:

  - Varies from 7.3% for Sweden to 12.6% for the USA.
  - This is the indicator that is best known for all countries (including the ones not on the list).
  - Worse values start only at position 35 of the HDI, indicating that many countries could climb on an extended list based on this, knocking down lower ranked countries on the above list.

  - Varies from 7.5% for Sweden to 22.6% for Ireland.
Indicators used are: (Continued)

  - Varies from 0.2% for Norway to 6.1% for Italy.
  - This indicator has by far the greatest variation, with a value as high as 9.3% at HDI position 39.

- Population below 50% of median income (%), 1990-2000.
  - Varies from 3.9% for Luxembourg to 17% for the USA.
Other Measures

There are many other measures we could look at

- Freedom of the Press
- Political corruption
Freedom of the Press

Reporters Without Borders (RWB) compiles and publishes an annual ranking of countries based upon the organization’s assessment of their press freedom records

- Small countries, such as Malta, and Andorra, are excluded from this report. The 2005 list was published in October 2005
- The report is based on a questionnaire sent to partner organizations of RWB (14 freedom of expression groups in five continents) and its 130 correspondents around the world, as well as to journalists, researchers, jurists and human rights activists.
Reporters Without Borders (Continued)

- The survey asks questions about direct attacks on journalists and the media as well as other indirect sources of pressure against the free press.

- RWB is careful to note that the index only deals with press freedom, and does not measure the quality of journalism. Due to the nature of the survey’s methodology based on individual perceptions, there are often wide contrasts in a country’s ranking from year to year.

- The ranking also states it takes into account pressure on journalists by non-governmental groups, for example the Basque militant group ETA in Spain or the Mafia in Russia, or pressure groups that can pose a real threat to press freedom.
In broad terms, political corruption is the misuse by government officials of their governmental powers for illegitimate, usually secret, private enrichment. Misuse of government power for other purposes, like repression of political opponents and general police brutality, is not considered political corruption.

- All forms of government are susceptible to political corruption.
  - Bribery, extortion, cronyism, nepotism, patronage, graft, and embezzlement.
  - While corruption may facilitate criminal enterprise, it is not restricted to these organized crime activities.
  - In some nations corruption is so common that it is expected when ordinary businesses or citizens interact with government officials.
Corruption undermines economic development by generating considerable distortions and inefficiency.

- **Private sector**
  - Corruption increases the cost of business through the price of illicit payments themselves, the management cost of negotiating with officials, and the risk of breached agreements or detection.
  - Although some claim corruption reduces costs by cutting red tape, the availability of bribes can also induce officials to contrive new rules and delays.
Corruption undermines economic development (Continued)

- **Public sector**
  - Corruption also generates economic distortions in the public sector by diverting public investment into capital projects where bribes and kickbacks are more plentiful.
  - Officials may increase the technical complexity of public sector projects to conceal or pave way for such dealings, thus further distorting investment.
  - Corruption also lowers compliance with construction, environmental, or other regulations, reduces the quality of government services and infrastructure, and increases budgetary pressures on government.