17.181/17.182
SUSTAINABLE DEVELOPMENT
Week 7 Outline
Technology, Firms & Markets

1. SOME REMINDER

2. COMPLEXITIES of GLOBALIZATION

3. GLOBAL INVESTMENTS
   - Firms and Markets
   - States, Firms, and Markets
1. SOME REMINDERS

2. COMPLEXITIES of GLOBALIZATION

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Figure 1.1 Waves of innovation of the first and the next industrial revolution

Hargroves, Karlson "Charlie", and Michael H. Smith, eds. The Natural Advantage of Nations: Business Opportunities, Innovations and Governance in the 21st Century. Routledge, 2004. © Routledge. All rights reserved. This content is excluded from our Creative Commons license. For more information, see https://ocw.mit.edu/help/faq-fair-use/.
Figure 8.2 Number of events, 1970–2001

Source: Swiss Re Australia

Hargroves, Karlson "Charlie", and Michael H. Smith, eds. The Natural Advantage of Nations: Business Opportunities, Innovations and Governance in the 21st Century. Routledge, 2004. © Routledge. All rights reserved. This content is excluded from our Creative Commons license. For more information, see https://ocw.mit.edu/help/faq-fair-use/.
## Re-VIEW Matrix of Possible Climate Change/Security Interactions over Time - Strong Interactions

<table>
<thead>
<tr>
<th>Direct impact</th>
<th>Indirect Consequences</th>
<th>Slow-onset</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Water</strong></td>
<td><strong>Food</strong></td>
<td><strong>Health</strong></td>
</tr>
<tr>
<td>Short term (2007-2020)</td>
<td>Local conflict over water</td>
<td>Failure to meet MDGs</td>
</tr>
<tr>
<td>Medium term (2021-2050)</td>
<td>Increased local &amp; some international conflict over water</td>
<td>Significant displacement due to famine</td>
</tr>
<tr>
<td>Long term (2051-2100)</td>
<td>Major international conflict over water</td>
<td>Major displacement &amp; political upheaval</td>
</tr>
</tbody>
</table>
Fig. 1. U.S. GDP per capita, corrected for inflation in 2005 dollars. The smooth green curve is an exponential fit to the data. Shaded date ranges show official periods of recession. On average, an individual’s income in the United States has increased by about 2% per year for more than 130 years.

Press, William H. "What's So Special About Science (And How Much Should We Spend on It?)" Science 343, no. 6160 (2013): 817-22. © American Association for the Advancement of Science. All rights reserved. This content is excluded from our Creative Commons license. For more information, see https://ocw.mit.edu/help/faq-fair-use/.
Countries Exporting Oil to China: 1996

"Hungry For Oil." National Geographic 213, no. 5 (2008): 172-3. © National Geographic Partners. All rights reserved. This content is excluded from our Creative Commons license. For more information, see https://ocw.mit.edu/help/faq-fair-use/.
Countries Exporting Oil to China: 2006

"Hungry For Oil." National Geographic 213, no. 5 (2008): 172-3. © National Geographic Partners. All rights reserved. This content is excluded from our Creative Commons license. For more information, see https://ocw.mit.edu/help/faq-fair-use/.
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Complexities of Globalization:
Real & Virtual

• **Cases in the complexities of globalization**
  – Flow types
  – Impacts on sending and receiving
  – Relevance to profiles
  – From state-based interactions to pervasive modalities

• **Different flows engender different forms of demands for regulation**
  – Adaptive versus transformative

• **Brief introduction to four modalities of globalization**
  – Trade, Migration, Environment, Cyberspace
  – Each manifesting different aspects of globalization and of governance challenges
  – Each rooted in activities of individuals within the state
<table>
<thead>
<tr>
<th>Pressures from Globalization Domains</th>
<th>Globalization Type</th>
<th>Interaction Mode</th>
<th>Flow Type</th>
<th>Target or Management</th>
<th>Internationally Managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade</td>
<td>Traditional</td>
<td>Bilateral</td>
<td>Tangible goods and services</td>
<td>Object</td>
<td>High</td>
</tr>
<tr>
<td>Migration</td>
<td>Traditional</td>
<td>Bilateral</td>
<td>Tangible/People</td>
<td>People</td>
<td>Variable</td>
</tr>
<tr>
<td>Environment</td>
<td>Emergent</td>
<td>Global</td>
<td>Intangible</td>
<td>Effleunts</td>
<td>Low moving toward some form of accord</td>
</tr>
<tr>
<td>Cyberspace</td>
<td>Emergent</td>
<td>Global</td>
<td>Intangible</td>
<td>People and Networks</td>
<td>Low with little trends toward formalization</td>
</tr>
</tbody>
</table>
Level of Monitoring

<table>
<thead>
<tr>
<th>Heavily Monitored</th>
<th>Relatively Unmonitored</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>Trade</td>
</tr>
<tr>
<td>Emergent</td>
<td>Environment</td>
</tr>
<tr>
<td></td>
<td>Migration</td>
</tr>
<tr>
<td></td>
<td>Cyberspace</td>
</tr>
</tbody>
</table>
### Flow Type and Response to Flow

<table>
<thead>
<tr>
<th>Tangible</th>
<th>Encouraged</th>
<th>Discouraged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade</td>
<td></td>
<td>Migration</td>
</tr>
<tr>
<td>Intangible</td>
<td>Cyberspace</td>
<td>Environment</td>
</tr>
<tr>
<td>Object-oriented</td>
<td>Trade</td>
<td>Environment</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>People-oriented</td>
<td>Migration</td>
<td>Cyberspace</td>
</tr>
</tbody>
</table>

**Interaction Type**

**Bilateral / Dyadic**

**Multilateral**
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Figure 2.3  The production chain

Dicken, Peter. *Global Shift: Reshaping the Global Economic Map in the 21st Century*. SAGE Publications, Ltd. 2003. © SAGE Publications, Ltd. All rights reserved. This content is excluded from our Creative Commons license. For more information, see [https://ocw.mit.edu/help/faq-fair-use/](https://ocw.mit.edu/help/faq-fair-use/).
Press, William H. "What's So Special About Science (And How Much Should We Spend on It?)" Science 343, no. 6160 (2013): 817-22. © American Association for the Advancement of Science. All rights reserved. This content is excluded from our Creative Commons license. For more information, see https://ocw.mit.edu/help/faq-fair-use/.
Figure 12.1 Stages in environmental policy and management development

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Five Factors Affecting Competition in an Industry

- Threats of New Entrants
- Bargaining Power of Suppliers
- Threats of Substitute Products or Services
- Bargaining Power of Buyers
- Rivalry Among Existing Competitors