Technology

- 1. Explain **technological** change in context of institutions.
- 2. Explain **institutional** change in context of technological change.

Technological Change

<table>
<thead>
<tr>
<th>Relative price changes returns to R &amp; D</th>
<th>Firms maximize profit by redirecting R&amp;D investment.</th>
<th>Induced technological change (endogenous). Efficient.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scale</td>
<td>Ditto</td>
<td>Large firms dominate.</td>
</tr>
</tbody>
</table>

Technological Change II

<table>
<thead>
<tr>
<th>Return to R&amp;D uncertain. C-D Gap</th>
<th>SOP’s</th>
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<tbody>
<tr>
<td></td>
<td>1. Research as % of sales is X.</td>
</tr>
<tr>
<td></td>
<td>2. Research as % is Y.</td>
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</tbody>
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<thead>
<tr>
<th>Technological change.</th>
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<tr>
<td>Research process characterized by cumulative causation.</td>
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<tr>
<th>Informal rules. Intellectual fads. What will win Nobel Prize?</th>
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<td>Technological change is exogenous &amp; follows a trajectory.</td>
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Institutional Change

(Hayami & Ruttan)

**Situation**

Technology & population change relative prices.

**Structure**

Market equilibrates marginal returns to labor in city and agriculture.

**Performance**

Informal institution changes from Hunusan to Gamma. Landless harvesters lose. Efficiency enhancing; not a question of power. Do-gooders make things worse.
Situation: Technology and population change create IUG rent. Land, seeds & irrigation are complements.

Structure: Rules for changing rules:
1. Landlord solidarity. Control over landlord violence.

Performance: 1. Informal institution changes from Hunusan to Gamma. Landless harvesters lose, a question of power.
2. No change. Law specifies fixed rent & prohibits sub-tenancy.

Policy outcome is:
HEC among landlords—small group.
HEC among tenants—large group.

Rules for changing rules:
1. Landlord solidarity. Control over landlord violence.

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1. Informal institution changes from Hunusan to Gamma. Landless harvesters lose, a question of power.
2. No change. Law specifies fixed rent & prohibits sub-tenancy.

Change analysis with institutional economics. A particular performance is neither inevitable nor natural. Choice of rules for making rules implies a moral judgement.

Impact Analysis. Institutional theory suggests additional structures that can obtain a desired performance.