Comparative economic systems

• Market systems
  – Libertarians
  – Monetarists
  – Keynesians
  – Industrial policy school
  – Advocates of income policy (price and incomes control)

• Non-market systems
  – Indicative planning
  – Directive planning

• Property, capitalism and socialism
  – Economic systems based on private property
  – Economic systems based on collective property
  – Economic systems based on state property
### Classifying market economic systems according to the extent of government intervention

<table>
<thead>
<tr>
<th>Forms of government intervention</th>
<th>Instruments of government policy</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laisser-faire (libertarians)</td>
<td>Providing public goods, eliminating externalities</td>
<td>XIX century capitalism</td>
</tr>
<tr>
<td>Monetarist approach</td>
<td>Maintaining constant rates of growth of money supply</td>
<td>USA</td>
</tr>
<tr>
<td>Keynesian approach</td>
<td>Macroeconomic stabilization (fiscal and monetary) policy</td>
<td>USA, Western Europe, Japan, NIC</td>
</tr>
<tr>
<td>Industrial policy</td>
<td>Selective support of industries, regions, and areas of economic activity through taxation, subsidies, credit, trade barriers</td>
<td>Western Europe, Japan, NIC</td>
</tr>
<tr>
<td>Income policy</td>
<td>Imposing control on the rates of growth of prices and wages</td>
<td>A typical wartime measure in most Western countries; a temporary peacetime measure in some Western countries</td>
</tr>
</tbody>
</table>
Libertarians (recently - supplysiders)

- The state should provide public goods and regulate externalities. What are public goods? Prisons, post-office, central bank?
- Frederick Hayek (“Road to slavery”), Ludwig von Mises (debates with O. Lange)
- Privatization of the central bank
- Market economy <=> democracy
- private property <=> civil liberties
- Gold standard or common world currency (R. Mundell)
- Laffer curve (optimal tax rate that maximizes budgetary revenues)
Laffer curve – the relationship between the revenues and tax rate
Why government intervention?

• In classical case, all markets are perfect, self-adjusting
  • Elasticity of wages on demand-supply of labor is infinitely high => supply curve is vertical in AS-AD model
  • Elasticity of interest rates on money demand-money supply is infinitely high => LM curve is vertical in IS-LM model

• Keynesian approach: markets cannot clear because of rigid prices and wages
  LM curve and AS curve are not vertical

• Twin deficits: budget deficit is accompanied by trade balance deficit
  \[ Y = C + I + G + NX, \quad Y = C + S + TA \]
  \[ \Rightarrow NX = (S - I) + (TA - G) \]
  if \( S = I \), then \( NX = TA - G \)
Overvaluation of the dollar since 1995 contributes to the trade deficit

Source: Federal Reserve Board of Governors, Bureau of Economic Analysis, and Economic Policy Institute
The US never had such a large current account deficit.
Why government intervention?

- Prerequisite for industrial policy: not only the market mechanisms can guarantee macroeconomic equilibrium with full employment, but they also fail to allocate properly resources by industries, regions and areas of economic activity.

- Prerequisite for income policy: distributions of income (wages - profits) is too serious a task to be delegated to the market forces.
# Classifying non-market economic systems

<table>
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<tr>
<th>Forms of government intervention</th>
<th>Instruments of government policy</th>
<th>Countries</th>
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</thead>
<tbody>
<tr>
<td>Directive planning</td>
<td>Setting production quotas and rationing supply for producers</td>
<td>Soviet Russia under War Communism (1918-20); China under cultural revolution (1966-70)</td>
</tr>
<tr>
<td>Indicative planning</td>
<td>Setting all the prices and wages from above</td>
<td>Hungary (1968-90), China (1979-onwards), USSR (1920s)</td>
</tr>
<tr>
<td>Combined central planning</td>
<td>Indicative planning and directive planning</td>
<td>USSR (1930s-1980s) and countries with Soviet-type economic system</td>
</tr>
</tbody>
</table>
Rationales for central planning

• The term “indicative planning” has two meanings
  • a sort of industrial policy (firms are encouraged, but not forced, to fulfill the plan via tax stimulus, credits, etc.)
  • a variety of central planning (prices, but not production quotas) are set by the state

• Why planning? The market is not perfect in:
  • Maintaining equilibrium at full employment (recessions)
  • Long-term projects
  • Income distribution (windfall profits)
  • Allowing the society to control its own development
Types of planning

Indicative Planning

Enterprise

Prices of inputs → Prices of output

Directive Planning

Enterprise

Volumes of inputs → Volumes of output

Combined Planning

Enterprise

Prices and volumes of inputs → Prices and volumes of output
Directive versus indicative planning in the USSR

FIGURE 3.2. Rationing of consumer goods and legal restriction on labor mobility in the USSR, periods

<table>
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<tr>
<th>Rationing of Consumer Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1918-21, War Communism</td>
</tr>
<tr>
<td>1941-47, Great Patriotic War and post-war recovery</td>
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<tr>
<th>Restrictions on Changing Jobs</th>
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<tbody>
<tr>
<td>1918-21, War Communism</td>
</tr>
<tr>
<td>1938-1956 Restrictions for workers of state enterprises</td>
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</table>
Elements of indicative planning and market mechanisms in the USSR in the 1980s

• Not all types of goods are subject to production quotas (25 million types of products, only about 1 million aggregated items planned)

• Collective farm market (2-3% of total retail trade turnover, 5% of food sales)

• Consumer goods market (supply and prices were planned, but demand was mostly not planned, i.e. no pervasive rationing)

• Labor market (demand and prices - wage rates - were planned, but supply was mostly not planned)

• After 1965 reform enterprises got the right to use part of the profit for paying bonuses, for investment into production and residential and social construction
Theory of optimal planning

• Given information:
  • Limitations on resources
  • Expenditure (inputs) of each and every type of resource needed for production of each product
  • Production targets for some final product
  • Structure of final consumption

• Goal: to select the production levels for all resources and final products such that
  • Production of resources is equal to their intermediate consumption + final consumption
  • The final consumption (with the given structure) is maximized
Planning problem

The simplified basic equation of the input-output model describes the distribution of output of each particular product:

\[ x_i = \sum_{j=1}^{n} a_{ij} x_j + Y_i + E_i - I_i + s_i, \]

where \( x_i, y_i, E_i, I_i, s_i \) - volumes of production, final consumption, export, import and change in stocks of \( i \)-product respectively, while \( a_{ij} \) - input-output coefficients, i.e. inputs of \( i \)-product per unit of \( j \)-product output.

The utility function is:

\[ F = aY + bY + ... + wY \rightarrow \max, \]

where \( a, b, ... w \) - parameters, fixing the structure of final consumption.
Indicative planning: theoretical foundations

- O. Lange - “trial and error method”
- L. Kantorovich - “objectively determined valuations”, or “shadow prices”, from the dual problem of optimal planning
  - Particular set of prices calculated for each product in the main problem
  - If profit-maximizing producer is guided by these valuations as prices, he will inevitably arrive at the previously computed optimal plan from the main problem
  - Therefore, society can influence producers economically (via setting prices) – not administratively – so that they provide the maximum benefit for the entire society
What is the difference between directive and indicative optimal plan?

• In theory – results are the same
• In practice – the results are inevitably different
  • Imagine new technology, that did not exist during the preparation of the plan, emerges during the planning period:
    – Under directive planning this new technology is not going to be used (no resources)
    – Under indicative planning, enterprises will have a chance to use this technology at the expense of taking resources away from other enterprises (so the balanced plan will be ruined)

• Indicative planning is more flexible
  • It is impossible to envisage the emergence of all new technologies
  • Unforeseen options, such as new technologies, cannot materialize under directive planning
Indicative planning vs. market

• If “shadow prices” are adjusted taken into account supply/demand deviations (Lange’s trial and error” method), then indicative planning works as imitation of the market

• Shadow prices (“objectively determined valuations”) reflect the priorities of socioeconomic development set by the planners - in the conditions of limited resources and information

• Market prices reflect preferences of all economic agents
Limitations of central planning

- Enormous scope of the problem: too much information to be collected, too complex problem to be solved
  - The entire product nomenclature was 25 million items
  - All products should be allocated in time and in space
- Hayek’s criticism: The market as a procedure of discovery - all unforeseen production options cannot be taken into account before the planning period
- Huge bureaucracy is needed for setting the levels of output and/or prices; low stimulus for managers; adjustment is too slow
## Classifying economic systems according to types of property

<table>
<thead>
<tr>
<th>Market or Non-Market</th>
<th>Type of Property</th>
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<tbody>
<tr>
<td></td>
<td>Private</td>
</tr>
<tr>
<td>Market economies</td>
<td>Developed capitalist countries (OECD)</td>
</tr>
<tr>
<td></td>
<td>Collective (Cooperative)</td>
</tr>
<tr>
<td></td>
<td>Market socialism of Ward's type (Yugoslavia); coops and participatory firms in Western countries</td>
</tr>
<tr>
<td></td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>Market socialism of Nove's type (Poland from 1990; Hungary, Czechoslovakia, East Germany from 1991); state owned, companies in developed and developing market economies</td>
</tr>
<tr>
<td>Non-market economies</td>
<td>War-time capitalist economies and Hitler Germany; some developing countries</td>
</tr>
<tr>
<td></td>
<td>Cooperatives under central planning, for instance, collective farms in the USSR</td>
</tr>
<tr>
<td></td>
<td>USSR from the end of the 1920s and other countries with Soviet-type economic system</td>
</tr>
</tbody>
</table>
Market socialism

• Market socialism = market economy + collective or state property

• Elements of market socialism in the world:
  • Cooperatives in market economies or in CPE
  • Employee participation in management, ownership and profit
  • “Complete” market socialism (Yugoslavia 1965-72)

- Each worker has a vote, collective property
- Maximizes revenues per worker:

\[ z = \frac{Q(L) - R}{L} \rightarrow \max \]

where \( Q(L) \) – output
\( R \) – capital rent
\( L \) – number of employees

- Perverse reaction of coops to the market signals. Coops
  - Hire less workers than private firm
  - Reduce employment when price of output goes up
Cooperatives hire less workers than private firms

Differentiating net revenues per worker with respect to $L$, we obtain:

$$Q'(L) = z = w + d$$
Private firm and the increase in prices of output

Private firm solves the problem:

\[ PAK^\alpha L^\beta - wL \rightarrow \max_L \]

The first order condition is:

\[ PQ'(L) = \beta PAK^\alpha L^{\beta-1} = w \]

Private firm increases employment and output, when prices increase
Cooperatives reduce employment when price of output goes up

Assume Cobb-Douglas production function:

\[ Q(L) = AK^\alpha L^\beta, \quad 0 < \alpha, \beta < 1 \]

The cooperative solves the problem:

\[ \frac{PAK^\alpha L^\beta - R}{L} \rightarrow \max_L \]

The solution is:

\[ L^\beta = \frac{R}{(1 - \beta)PAK^\alpha} \]
Private firm increases employment when price of output goes up

\[ L(P_0) \quad L(P_1) \]

\[ P_0Q'(L) \quad P_1Q'(L) \]

Wage
Cooperatives compared to the private firms

• **Advantages of cooperatives:**
  - Higher labor productivity
  - Less sick leaves
  - Less strikes
  - Lower employee turnover
  - Lower managerial expenses
  - Higher work satisfaction

• **Disadvantages of cooperatives:**
  - Capital scarcity (as the owner of capital is not remunerated fully; cooperative may not attract capital via selling shares)
  - Use of less capital-intensive technologies
  - Higher debts to assets ratio
Employee participation

• Employee participation in management boards
• Profit sharing
• Participation in equity
  – ESOP: Employee stock ownership plans
  – Workplace democracy

“Pure” market socialism

• Yugoslavia, 1965-72
  • All decisions were made by work collectives, while enterprises were state-owned
• New Economic Policy, 1920s, Russia
• China, 1990s
  • TVE - township and village enterprises
Justification of workers participation

• Human capital today is roughly equal to the physical capital
• De-bureaucratization of management in large companies (to prevent managers from collusion)

In fact, non-profit-maximizing firms and organizations constitute a substantial share in most economies: public sector, non-profit organizations, cooperatives.