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**

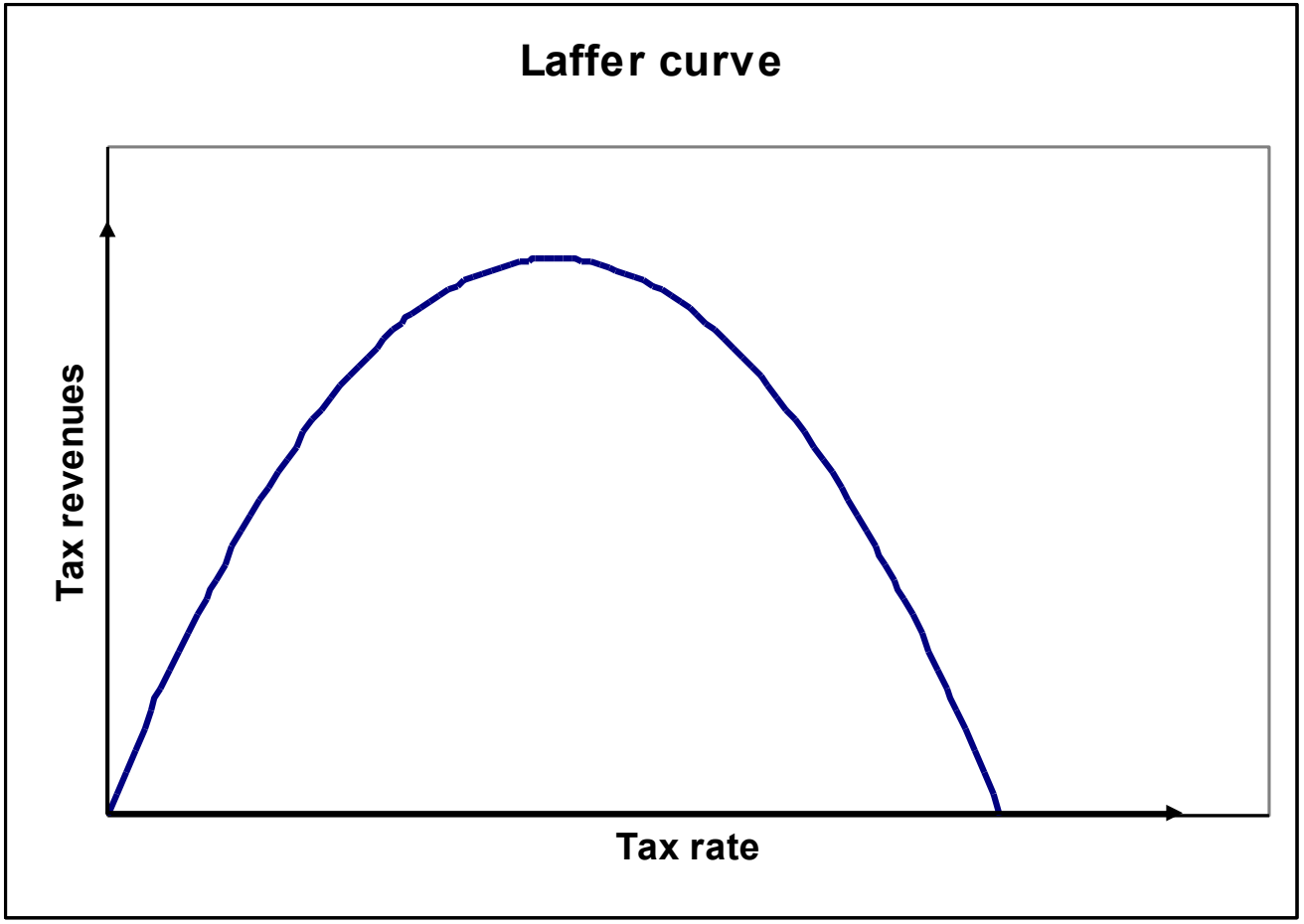
Classifying market economic systems according to the extent of government intervention

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

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

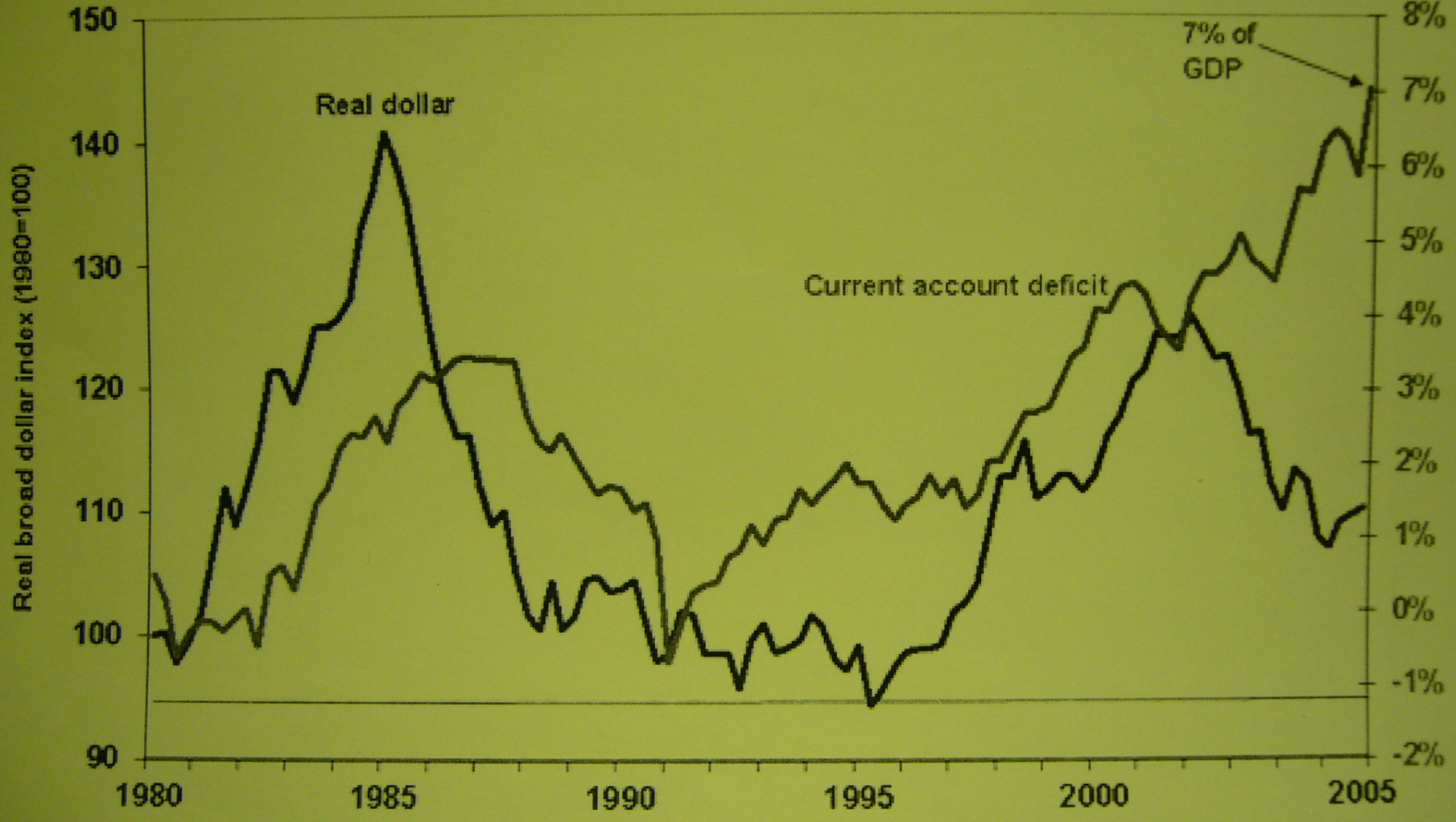
  LM curve and AS curve are not vertical
- Twin deficits: budget deficit is accompanied by trade balance deficit

  $Y=C+I+G+NX$, $Y=C+S+TA$

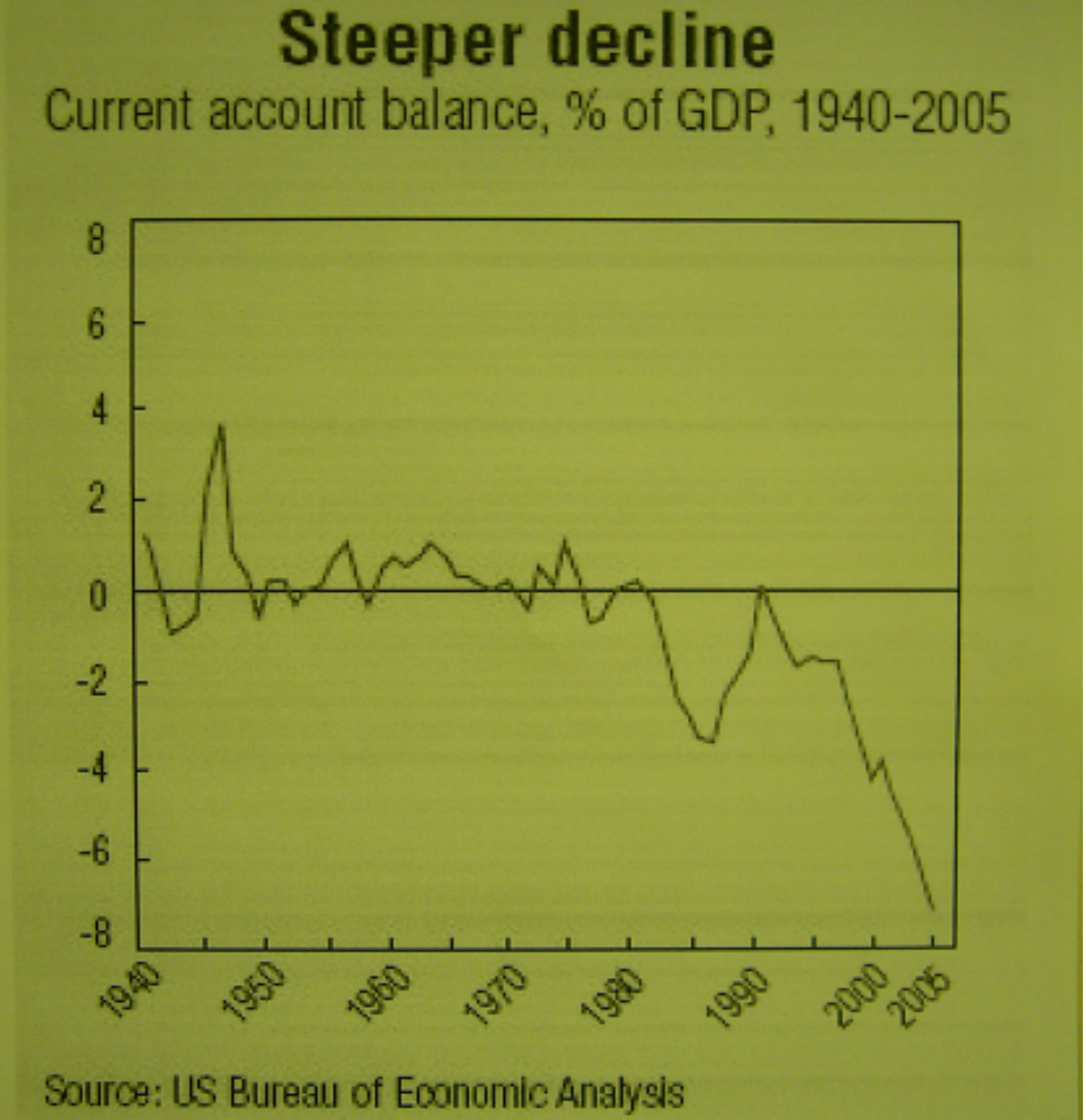
  $\Rightarrow NX=(S-I)+(TA-G)$

  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 or 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

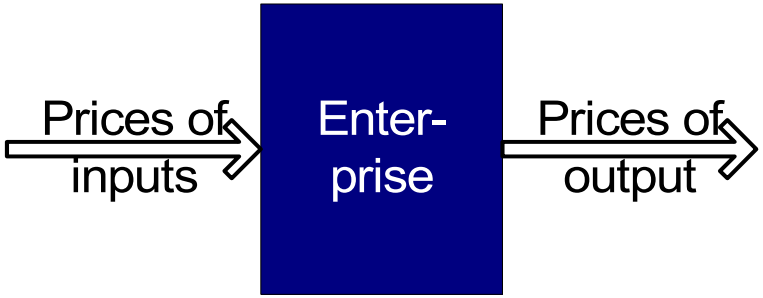
Forms of government intervention	Instruments of government policy	Countries
Directive planning	Setting production quotas and rationing supply for producers	Soviet Russia under War Communism (1918-20); China under cultural revolution (1966-70)
Indicative planning	Setting all the prices and wages from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

Rationales for central planning

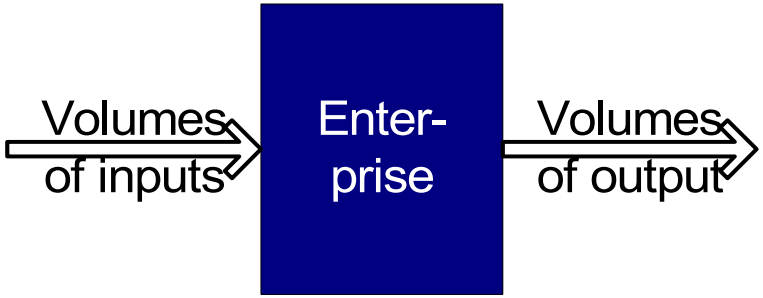
- The term “indicative planning” has two meanings
  - a sort of industrial policy (firms are encouraged, but not forced, to fulfill the plan via tax stimulus, credits, etc.)
  - a variety of central planning (prices, but not production quotas) are set by the state
- Why planning? The market is not perfect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

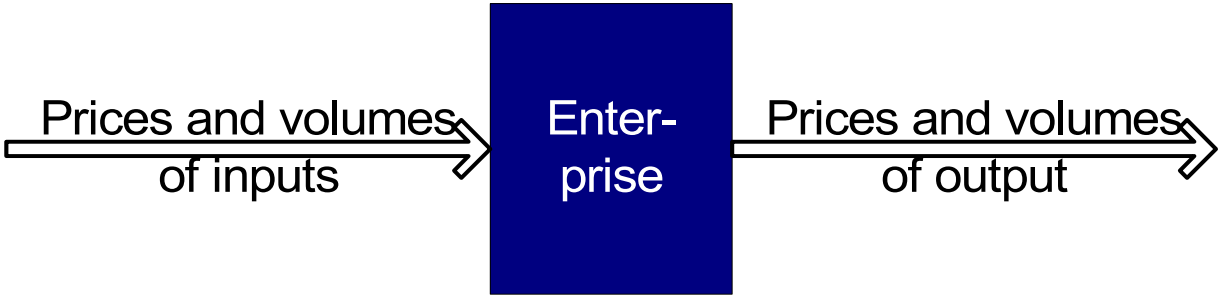
Indicative Planning



Directive Planning



Combined Planning



Directive versus indicative planning in the USSR

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

Rationing of Consumer Goods			
1918-21, War Communism	1928-35, Industrialization	1941-47, Great Patriotic War and post-war recovery	1970s - onwards, rationing of some food supply in some areas due to reluctance to increase prices

Restrictions on Changing Jobs		
1918-21, War Communism	1932 - end of 1950s, restrictions for peasants not having passports	1938-1956 Restrictions for workers of state enterprises

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:

$$F = aY + bY + \ldots + wY \Rightarrow max,$$

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

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

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)

Cooperative (B. Ward. The Firm in Illyria: Market syndicalism", AER, 1958)

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

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

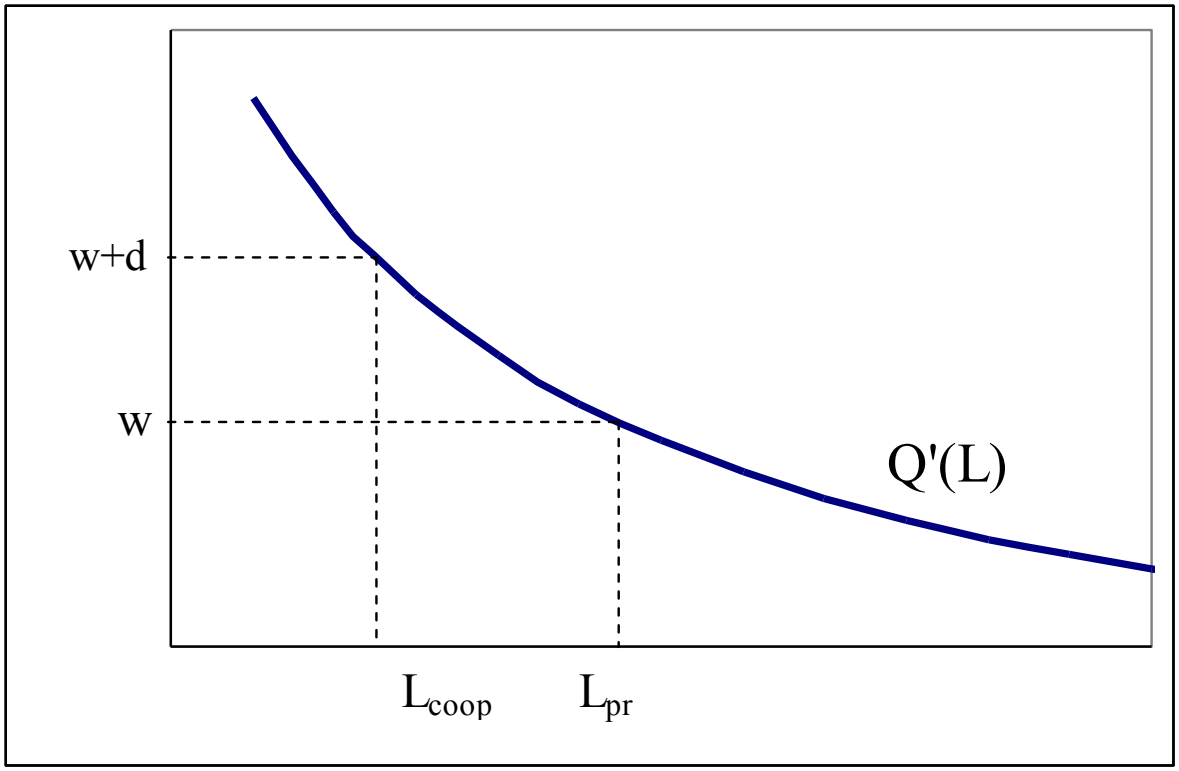
where Q(L) – output
R – capital rent
L – number of employees

- **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:

$$Q(L)=AK^{\alpha}L^{\beta},\ 0<\alpha$$

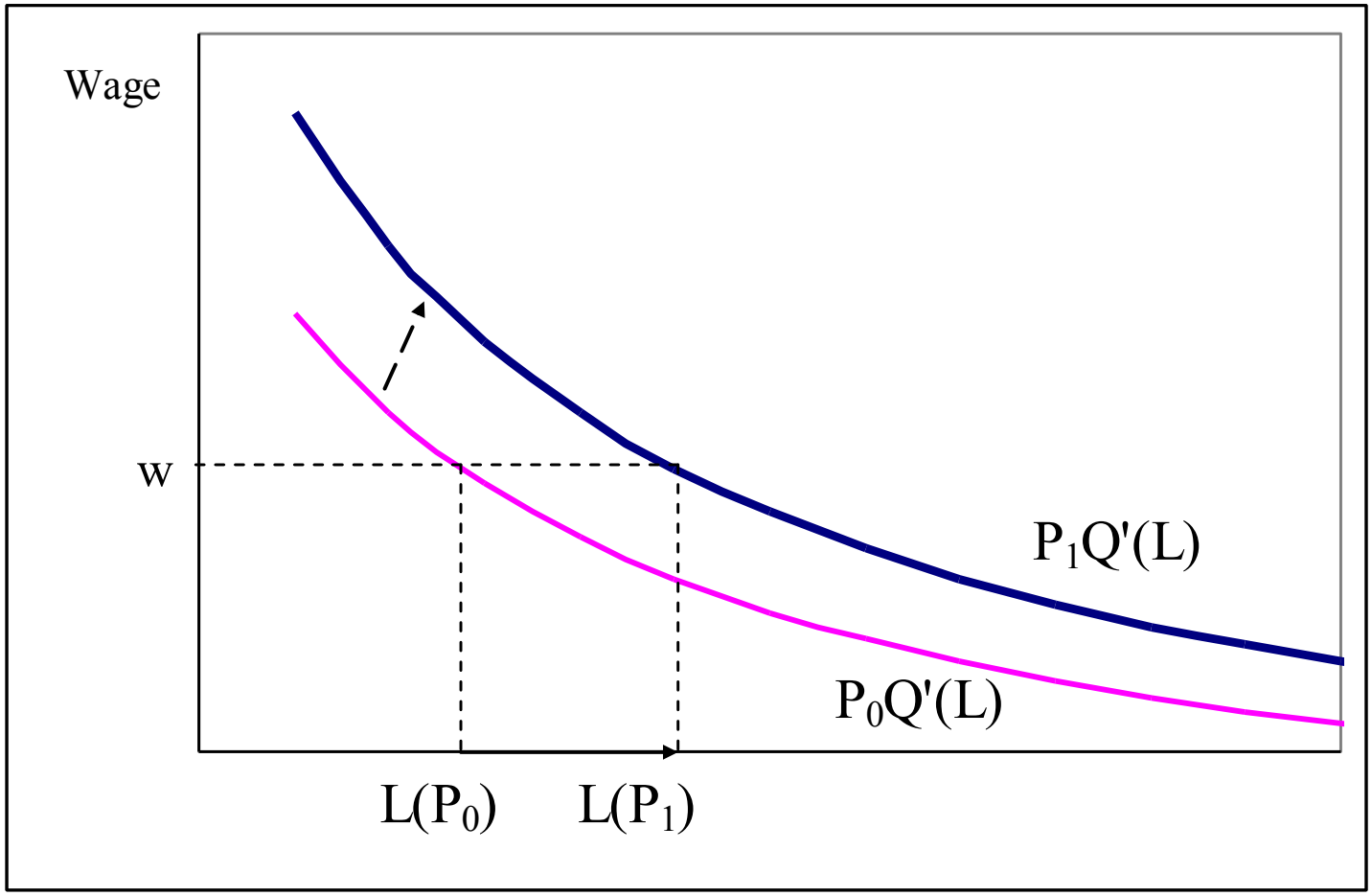
The cooperative solves the problem:

$$\frac{PAK^{\alpha}L^{\beta}-R}{L}\rightarrow \max_{L}$$

The solution is:

$$L^{\beta}=\frac{R}{(1-\beta)PAK^{\alpha}}$$

Private firm increases employment when price of output goes up



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)

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