

# Public Economics

## Lec 2: Equity, efficiency and welfare economics

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**LUND UNIVERSITY**

School of Economics and Management

# Some information

- **Office hours**

- Tuesdays, 14:30 - 16:30

- **Lectures attendance**

- Recommended, not mandatory

- **Seminar day**

- 12/12, 8:00—16:00
- Presentation + discussion, 1 group member each

- **Today: John Wallis**, University of Maryland

- *Leviathan Denied: Governments, Rules, and Social Dynamics*  
Alfa1: 3004, 14:15

# Today's reading list

- **Rosen & Gayer** ch. 3

**Tool to evaluate public policies:** desirable outcome

- Normative analysis

**1 Define the target**

- Individual utility as criterion
- Efficiency, equity, a combination of the two?

**2 Evaluate impact of intervention**

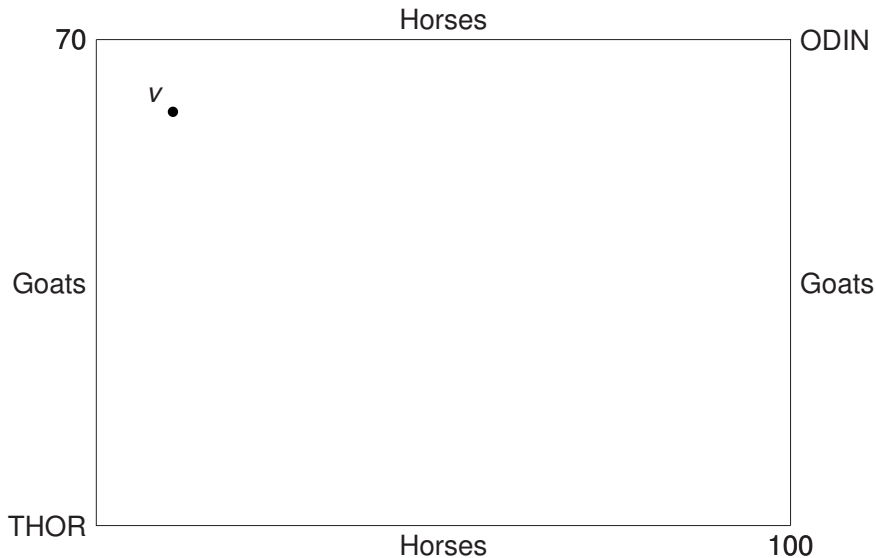
**3 Weight it according to preferences**

# First criterion: efficiency

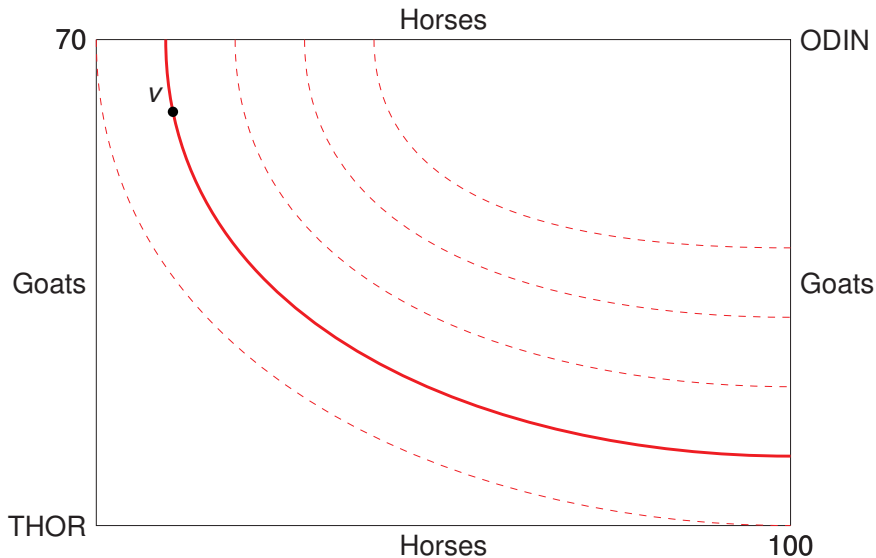
## Benchmark

- Efficient **consumption**
- Efficient **production**

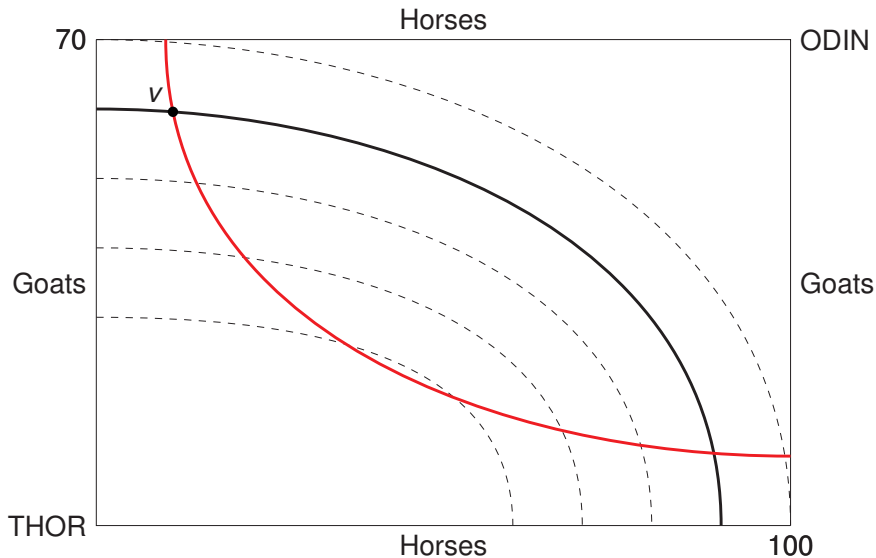
# Efficient consumption: **Edgeworth box**



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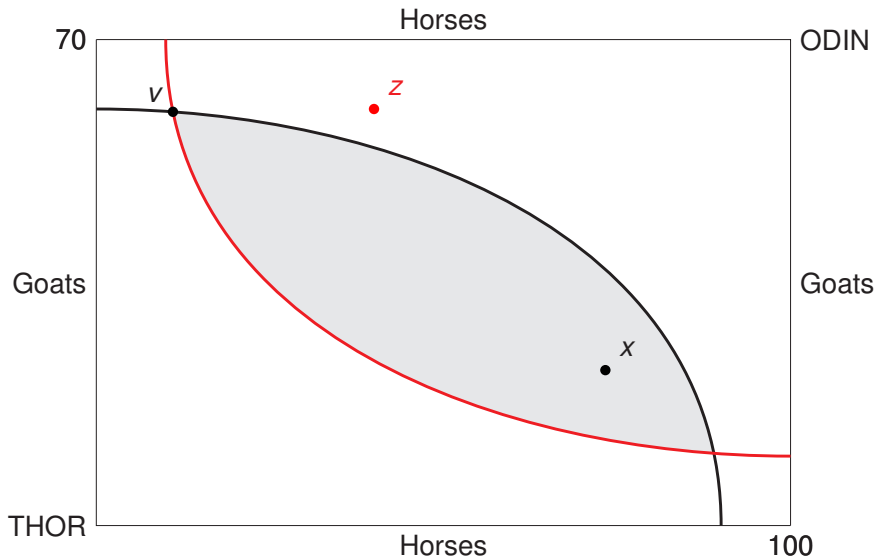


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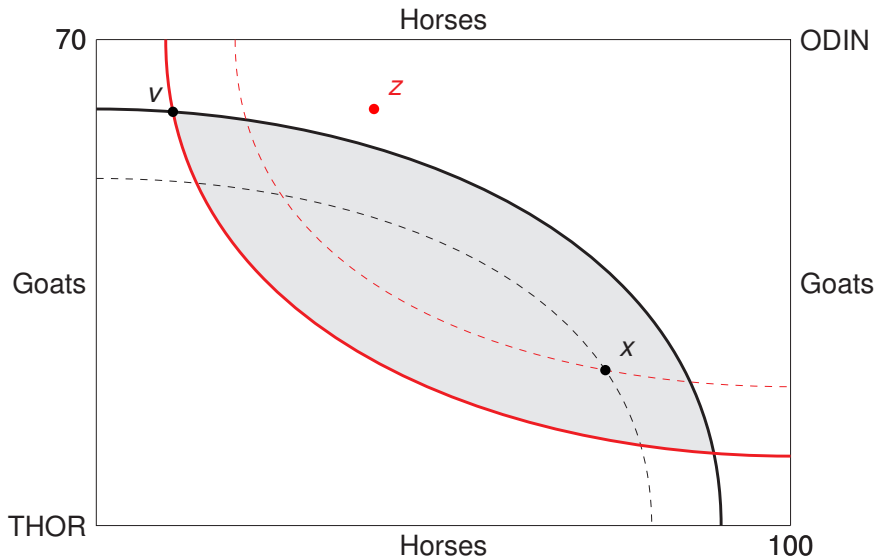




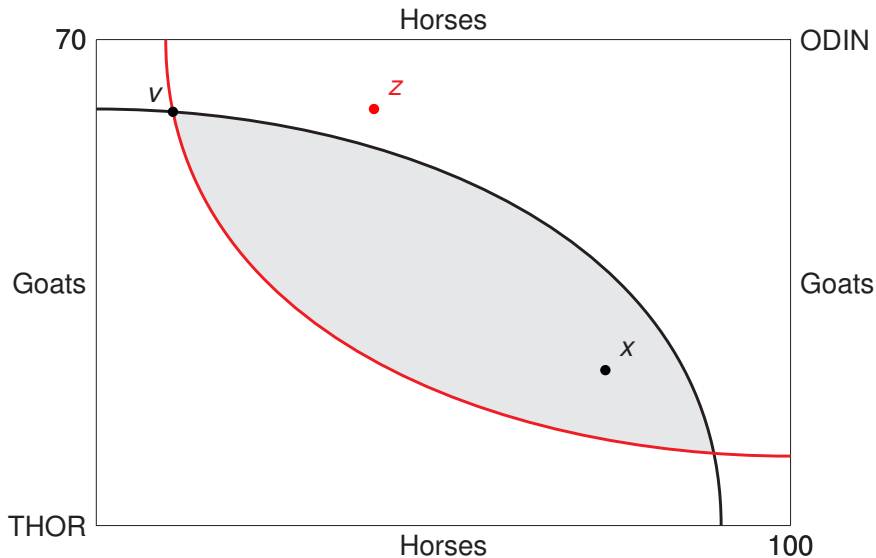
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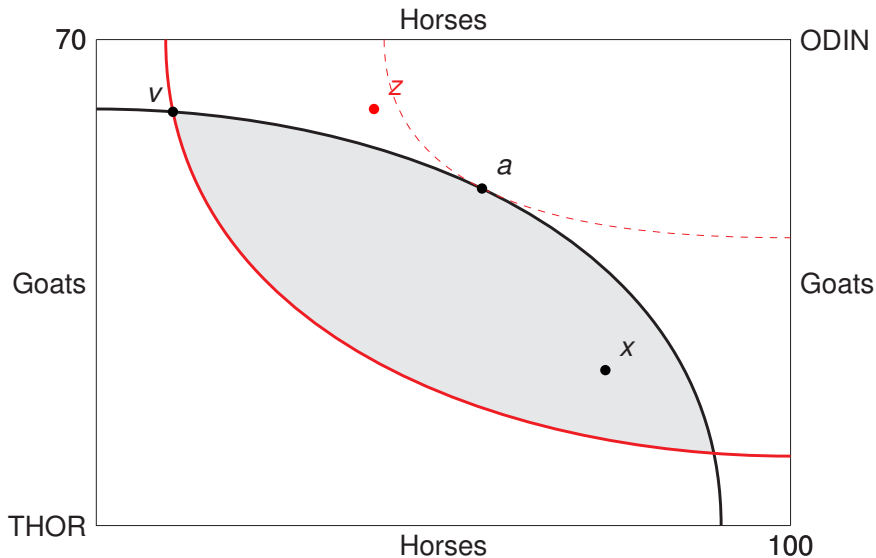
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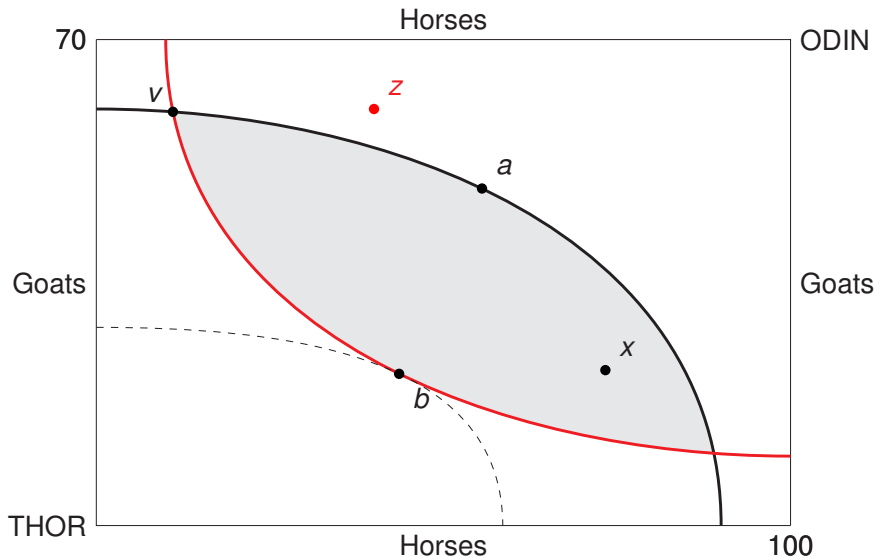
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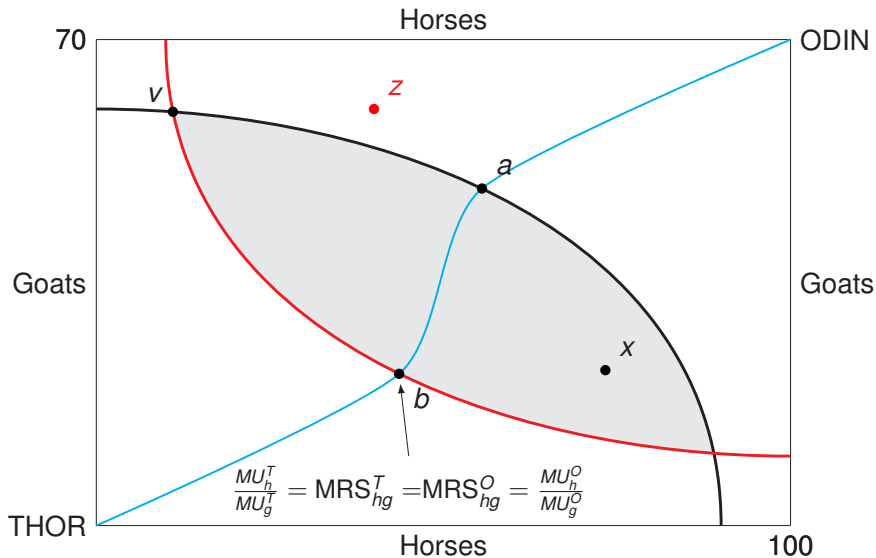
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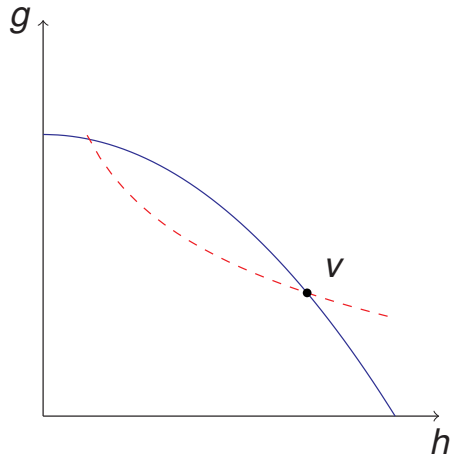
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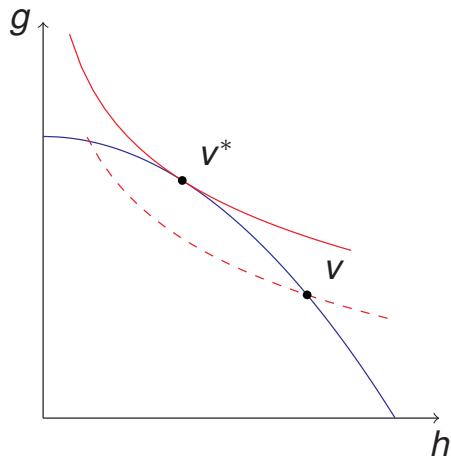
# Efficient production



## Production economy

- **Production possibilities curve**
- **$v$ : Initial allocation**
- $MRT_{hg} = MC_h/MC_g$

# Efficient production



## Production economy

- **Production possibilities curve**
- **$v$ : Initial allocation**
- $MRT_{hg} = MC_h/MC_g$
- **$v^*$ : Efficient allocation with transformation**
- $MRT_{hg} = MRS_{hg}$



# Efficient allocation

## Pareto efficiency

- Efficient consumption
  - Marginal Rate of Substitution of (MRS): ratio between marginal utilities (MU)
  - **Contract curve:**  $MRS^T = MRS^O$
  
- Efficient production
  - Marginal Rate of Substitution (MRT): ratio between marginal costs (MC)
  - **Efficient allocation**  $MRS_{hg}^T = MRS_{hg}^O = MRT_{hg}$



Vilfredo Pareto  
(1848 - 1923)

# First fundamental theorem of welfare economics

## Goal: efficiency. Assume

- 1 **Perfect competition** (both consumers and producers)
  - No market power
- 2 **A market exists for every commodity**
  - No market failures

⇒ The economy achieves a Pareto efficient allocation of resources

# First fundamental theorem of welfare economics

## Intuition

- (1) implies that people are price-takers
- Consumer theory: if consumers are price takers, the optimal consumption at  $MRS_{hg} = P_h/P_g$
- Production side: if firms are price takers, profits are maximized at  $MC_h/MC_g = P_h/P_g$
- True for both Odin and Thor and production side
- Reach  $MRS_{hg}^T = MRS_{hg}^O = MRS_{hg}$ , which is necessary and sufficient condition for Pareto efficiency

**Awesome!**

Role for the government?

## Yet again...

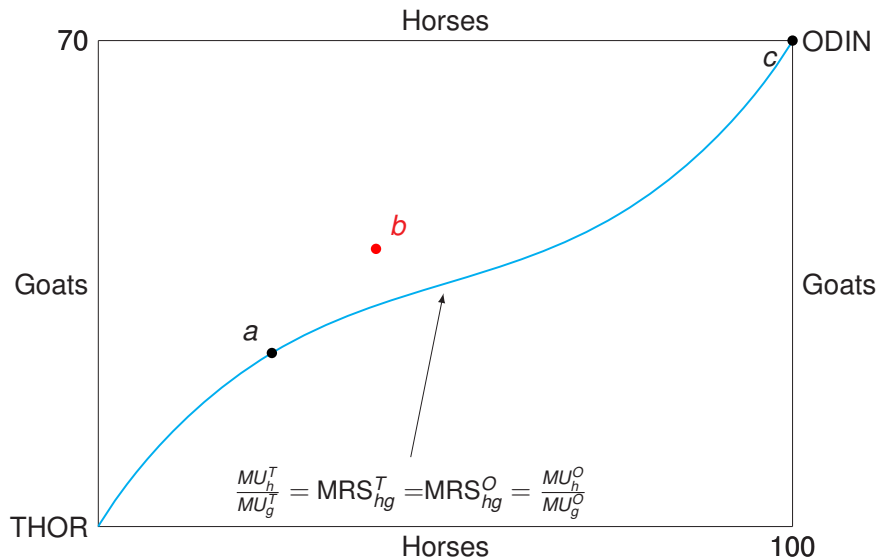
*“But I don’t want comfort. I want God, I want poetry, I want real danger, I want freedom, I want goodness. I want sin.”*

*“In fact,” said Mustapha Mond, “you’re claiming the right to be unhappy.”*

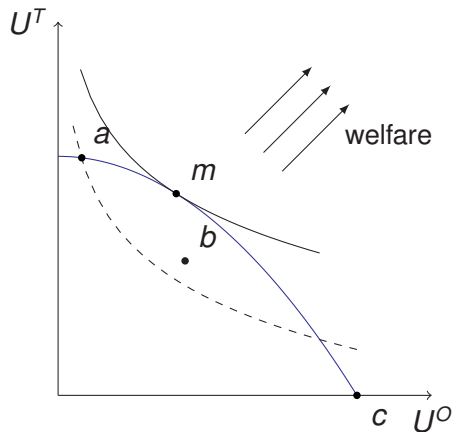
*“All right then,” said the Savage defiantly, “I’m claiming the right to be unhappy.”*

***A Brave New World***, A. Huxley

## Second criterion: Equity and fairness



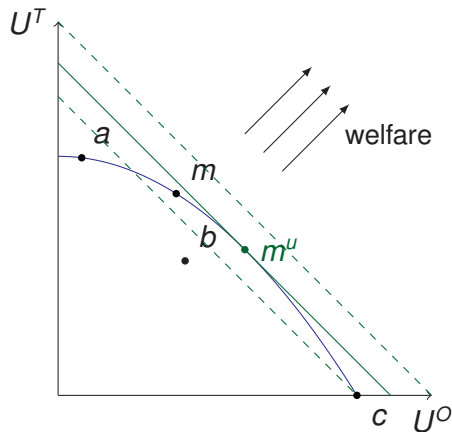
# Social welfare functions



## Max. social welfare

- **Utility possibilities curve** as constraint

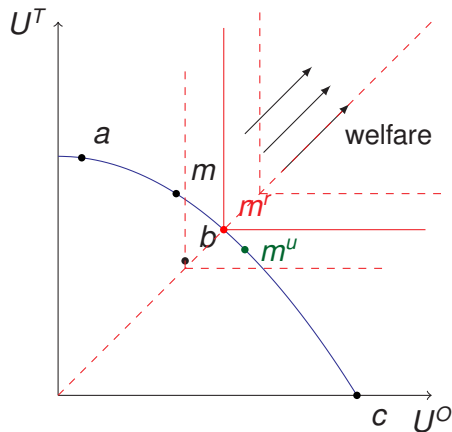
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- **Utilitarian:**  $F = \sum U_j$

# Social welfare functions



## Max. social welfare

- **Utility possibilities curve** as constraint
- **Utilitarian:**  $F = \sum U_j$
- **Rawlsian:**  $F = \text{Min}(U_j)$



## 2<sup>nd</sup> fundamental theorem of welfare economics

### Goal: achieve desired utility distribution

- **Affect/interfere with prices?**

- Very costly, inefficient

- If conditions holds (perfect competition + existence of markets)

⇒ Any desired distribution in equilibrium achievable by changing initial allocation of resources and then letting people trade freely

## Make sure conditions hold: correct market failures

### 1 Market power

- Monopolies
- Oligopolies
- (Monopsony...)

### 2 Non-existing markets

- Public goods
- Externalities
- Asymmetric information

## Paternalism?

# However...

**Public intervention is often expensive** - in efficiency terms

Taxes are generally distortionary

- **Redistribution of initial allocation is inefficient**
  - Carrying water with a leaking bucket
  - Trade-off between equality & efficiency
- **Public intervention for correction of market failures**
  - Trade-off between inefficiency and efficiency
  - Can be that public intervention increases both efficiency and equality

# Optimal public policy

- **MBPF:** Marginal Benefit of Public Financing
- **MCPF:** Marginal Cost of Public Financing
- **Optimal condition:**  $MCPF=MBPF$

# Surprise slide

## Hypothetical game

- Groups, each of you has 100 ducats
- Decide how many to keep for yourself and how many to put in a common investment fund with people in your group
- **Do not talk or peak at what other people are doing**
- All ducats invested in the fund will grow by 50%, then split equally among all members
- The person earning more money gets chocolate
- Identify yourself with last 4 digits of your mobile number

**Group 99, 8144**

Myself  
40

Pool  
60