

An efficient student loan system: case study of HUNGARY



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Content

Introduction

I. Basic characteristics of the Hungarian model

II. Institutional solution

III. Redistribution effects

Challenges in the future

The beginning..

- Design period: 1998-2001
World Bank project
with international advisory board:
Maureen Woodhall, Nicholas Barr...
- Implementation: 2001 september

Basic concept

- **FIRST STEP:**
Introduction of student loan system.
- **SECOND STEP:**
Introduction of tuition fee.

We have not accomplished the 2nd step yet 😊

NEXT YEAR may be?

Some statistics

- 150 thousands of borrowers until now \ 420 thousands of students. (36%)
- 98.5% of the scheduled repayment cash-flow comes in.
- Administration cost of the system per year slightly exceeds 1% of the aggregate debt.

Limited indebtedness

- Living cost per year: 2400 euro
- Tuition fee per year: 600 euro
- **Student loan allowance: 1200 euro**

Financial sustainability:

Maximum allowance can be increased with the income of graduates.

I. Basic characteristics of the Hungarian model



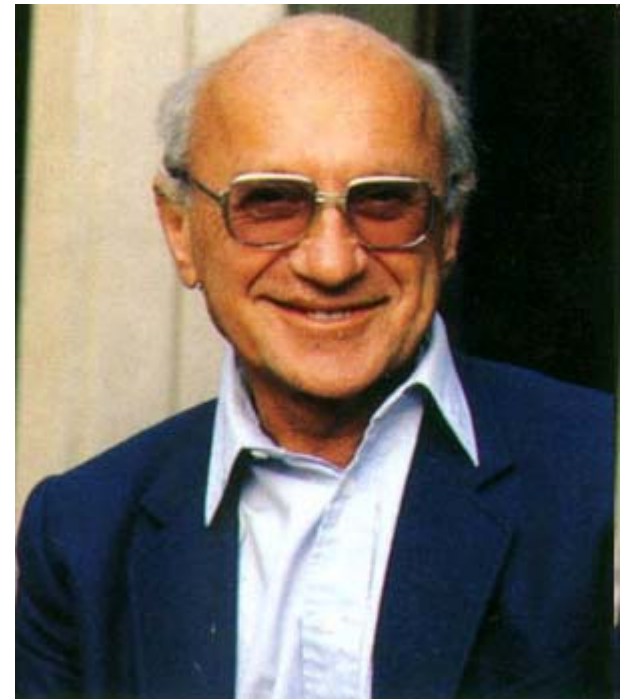
DIÁK HITEL

1. Income contingent repayment
2. Universal access, same conditions
3. Self-sustaining (zero-profit) operation

Income contingent, self-sustaining loan-scheme

The origin of the idea: **Milton Friedman**
Capitalism and Freedom 1957

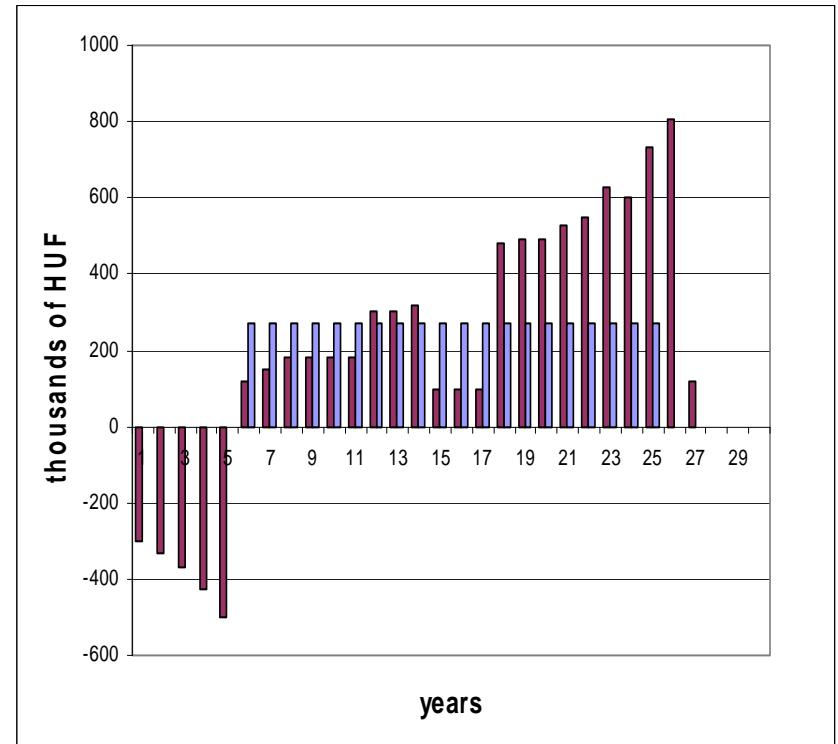
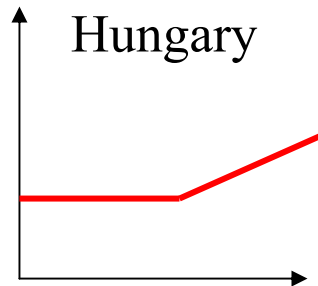
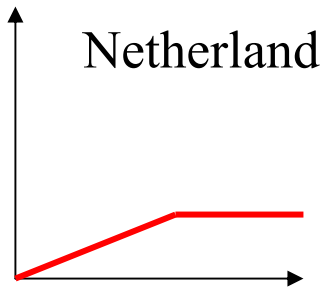
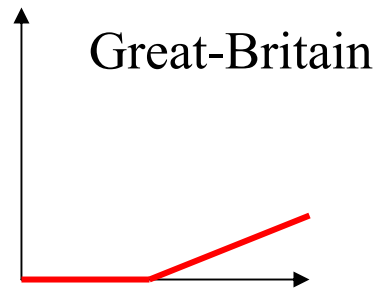
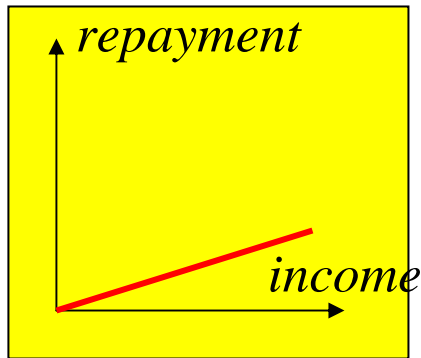
*„...very risky investments
usually have to be financed
from equity-like capital.”*



Income-contingency

Repayment is proportional to income.

Cash-flow is stochastic.



Modification 1.

- **Minimum repayment obligation (even in case of unemployment or inactivity).**
- **Except for women with baby.**
- **Threshold = actual minimal wage**

Advantages:

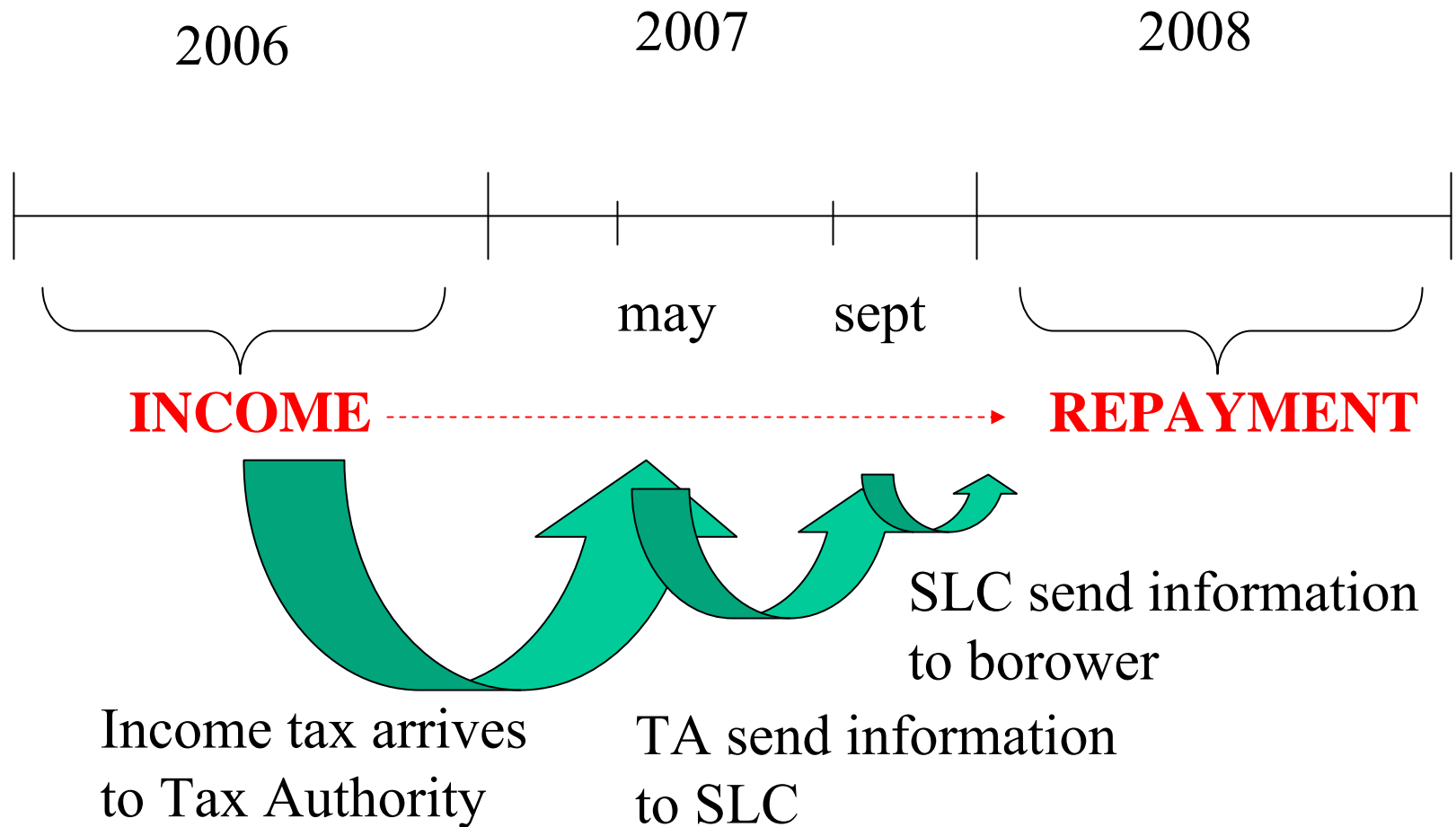
- **Administration is simple.**
- **Lender can keep contact.**
- **Borrowers become more disciplined.**
- **Default risk is reduced.**
- **More favorable loan conditions.**

Modification 2.

- Repayment is contingent on the income of 2 years before

because Tax Authority is not developed enough to keep individual balances up-to-date: legal verification procedure takes 1-2 years.

Time-lag of the repayment



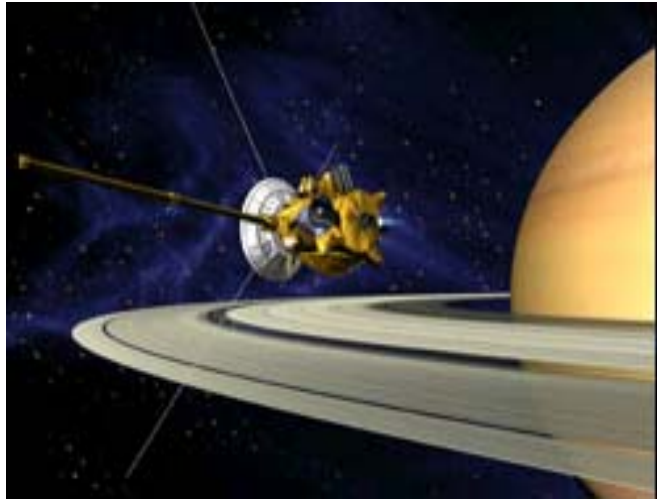
Self-sustaining operation

The risk community of the borrowers repays the debt with its costs on aggregate level.

The lender institution has no profits or losses in the long run. (**zero-profit operation**)

Research question

How to keep such a system in equilibrium
in a changing environment?



Stochastic control problem.

Self-sustaining operation in the Hungarian system

The interest rate of the student loan:

$$b \gg r = f + p + c$$

b – bankloan rate	20%
r – interest rate of student loans	10%
f – financing cost (\approx Treasury yield)	7%
p – risk premium	2%
c – cost of operation	1%

Is it possible to repay the debt?

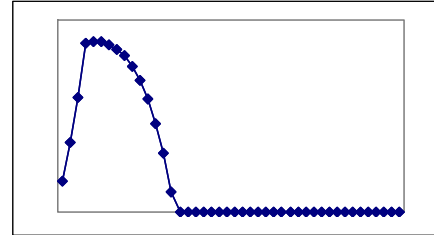
- the total debt at graduation: 1,5 M HUF,
- the income of the freshly graduate: 1,5 M HUF per year
- repayment rate: 6%
- interest rate of the loan: 10%

$$0,06 \times 1,5 \lll 0,1 \times 1,5$$

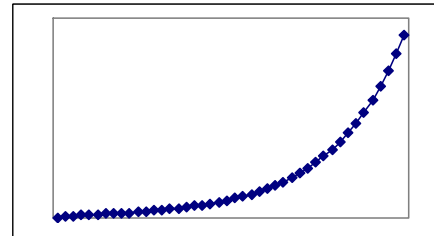
repayment interest

Debt paths

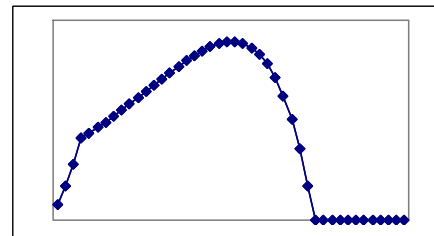
1. monoton decreasing



2. monoton increasing



3. „humped”



Sources of risk

1. Risk of disappear

Borrowers become disabled, die, emigrate, escape... before full repayment.

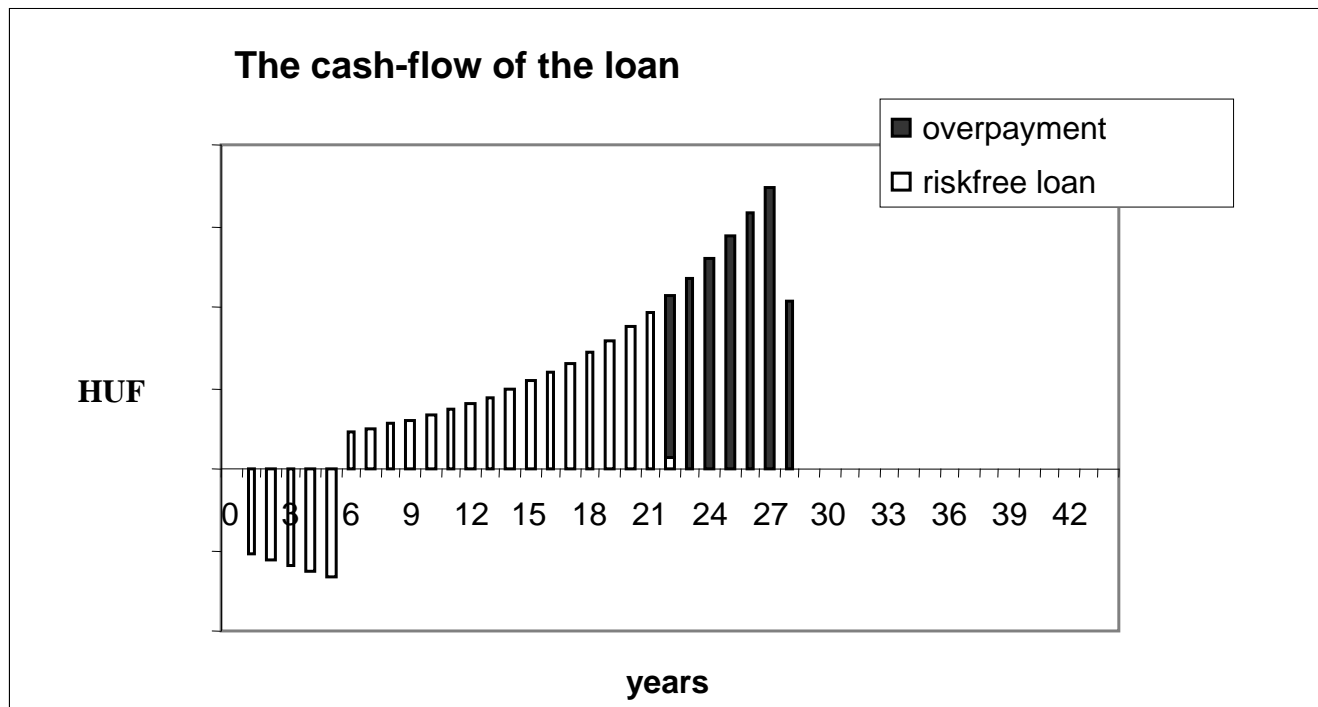
2. Risk of low income

Borrowers with low income are not able to repay until retirement.

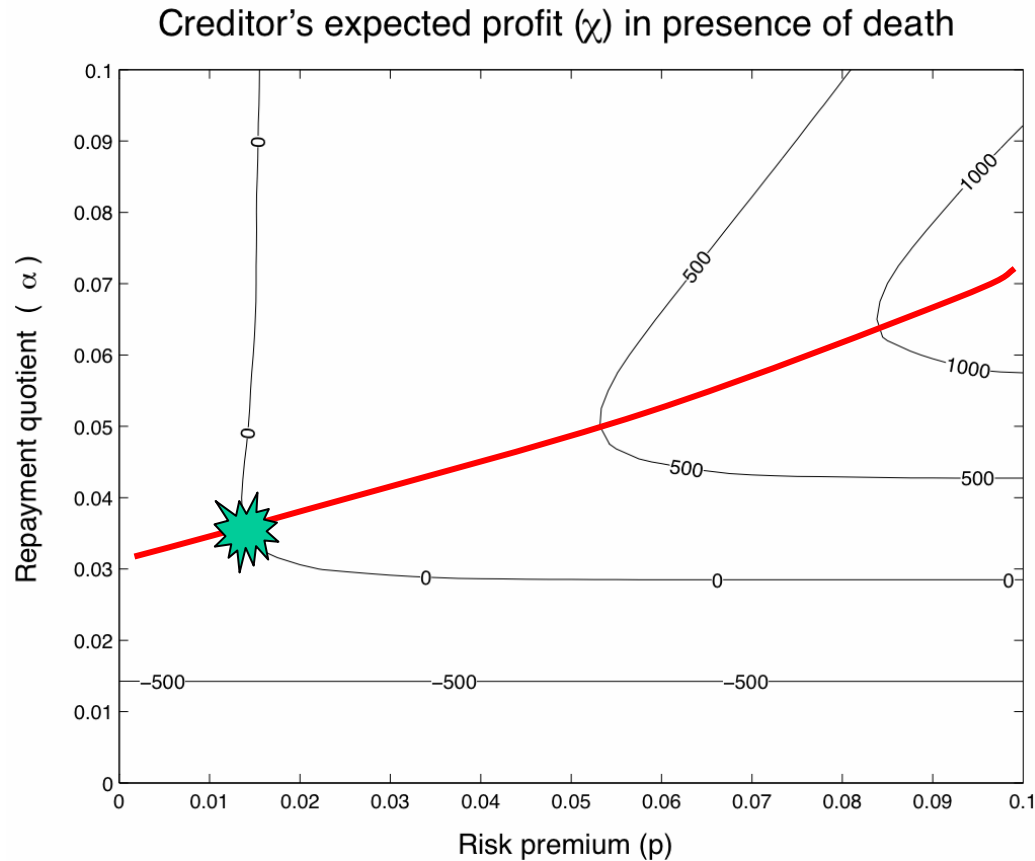
Key-parameters

Risk premium (p) = 2%

Repayment rate (α) = 6%



Optimisation in a risk neutral world



STAY IN THE CORNER!

Separation of control parameters

- Repayment rate (α) \sim risk of low income
- Risk premium (p) \sim risk of disappear

II. Institutional solutions

Players:

- Students
- Student Loan Company
- State
- Retail banks
- Capital market
- Tax authority
- Employers
- Universities etc....

How to organize?

Basic requirements

- Private funding \ not part of the state budget
- Public control
- The lowest possible financing cost
- Efficient collecting mechanism

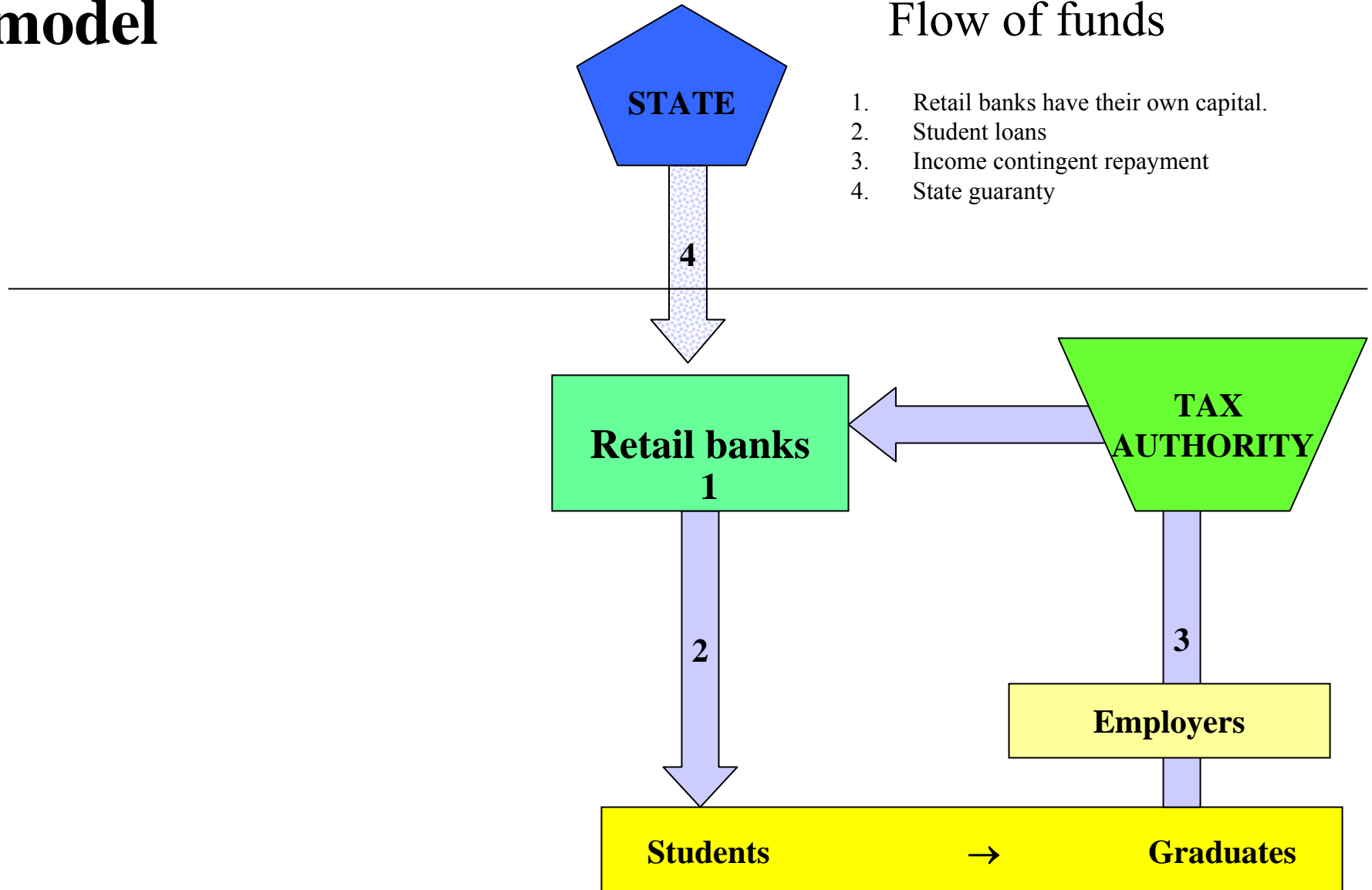
Two competing models

- „Retail bank” model
- „Specialized institution” model

The „Retail Bank” model

Flow of funds

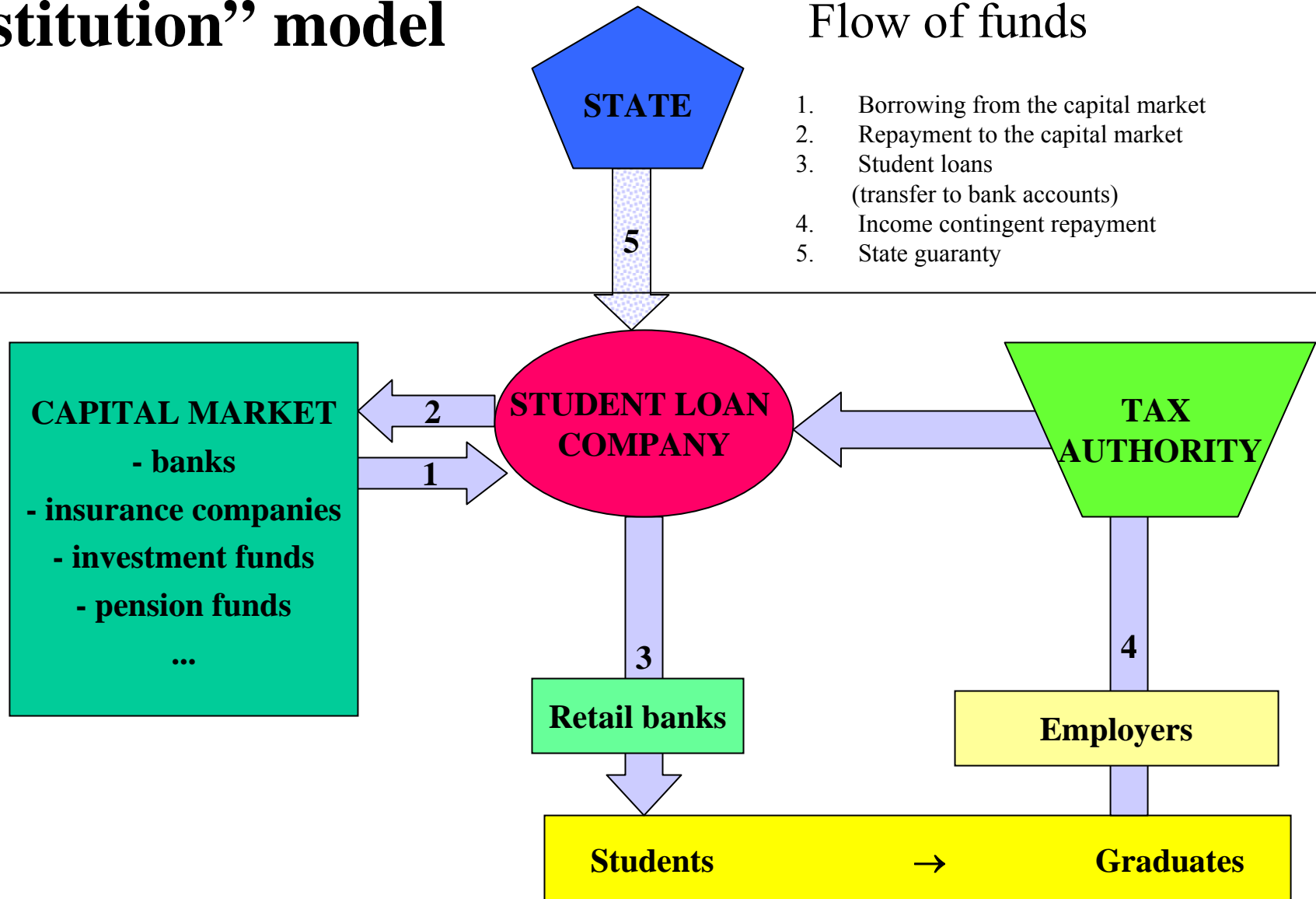
1. Retail banks have their own capital.
2. Student loans
3. Income contingent repayment
4. State guaranty



The „Specialized Institution” model

Flow of funds

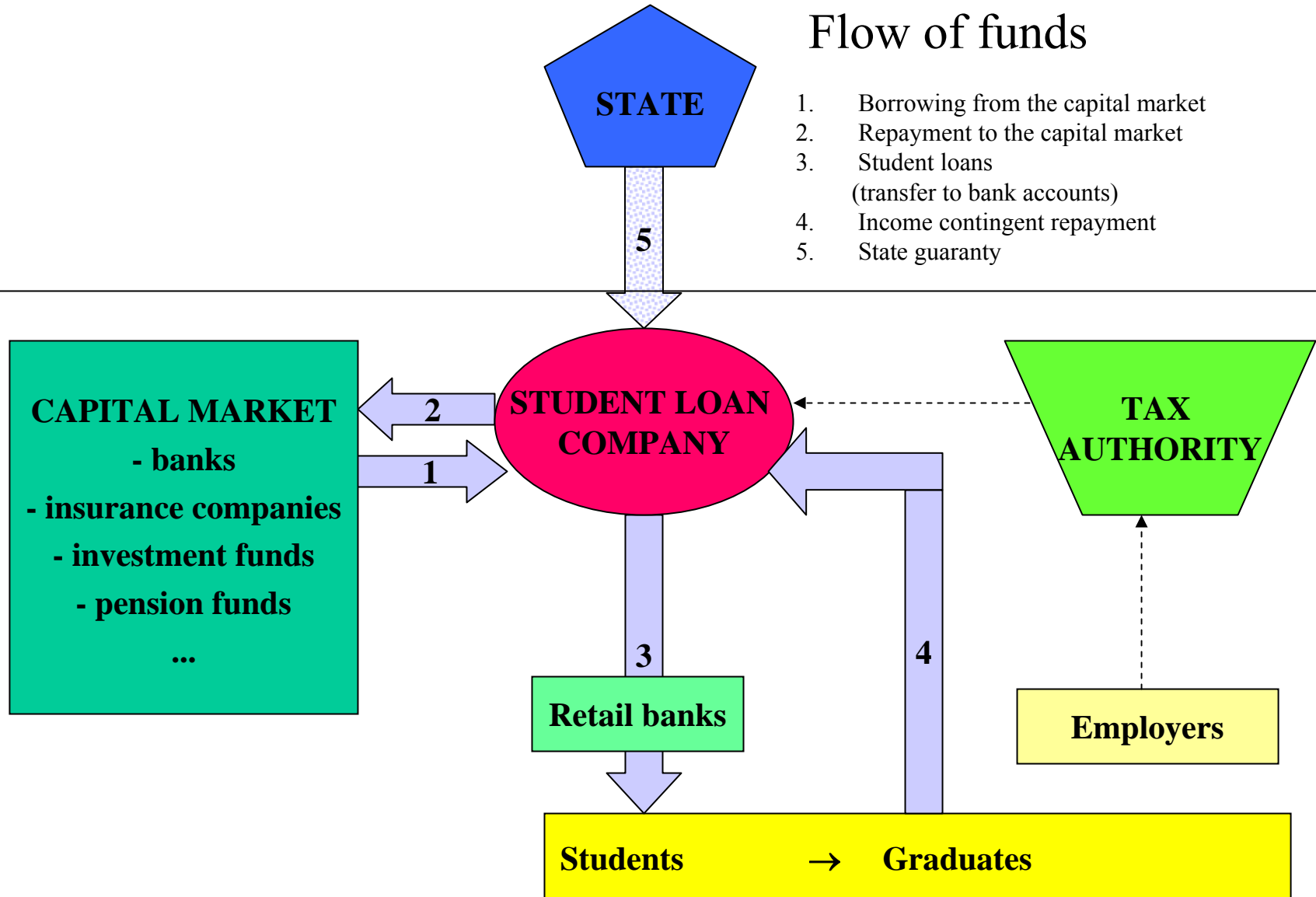
1. Borrowing from the capital market
2. Repayment to the capital market
3. Student loans
(transfer to bank accounts)
4. Income contingent repayment
5. State guaranty



The actual model

Flow of funds

1. Borrowing from the capital market
2. Repayment to the capital market
3. Student loans
(transfer to bank accounts)
4. Income contingent repayment
5. State guaranty



Roles of Tax Authority

- Supplying information about incomes.
- In case of non-repayment TA will recover the claim in a lump sum.

The balance sheet of the Student Loan Company

Assets	Liabilities
Student Loans	Issued Bonds
INCOME CONTINGENT	FIXED REPAYMENT
variable interest rate	fixed interest rate

III. Redistribution effects

In the Hungarian model there is significant income risk.

Those who

- take up a lot of money,
- are old at graduation,
- earn minimal wage or less

will not be able to repay until retirement.

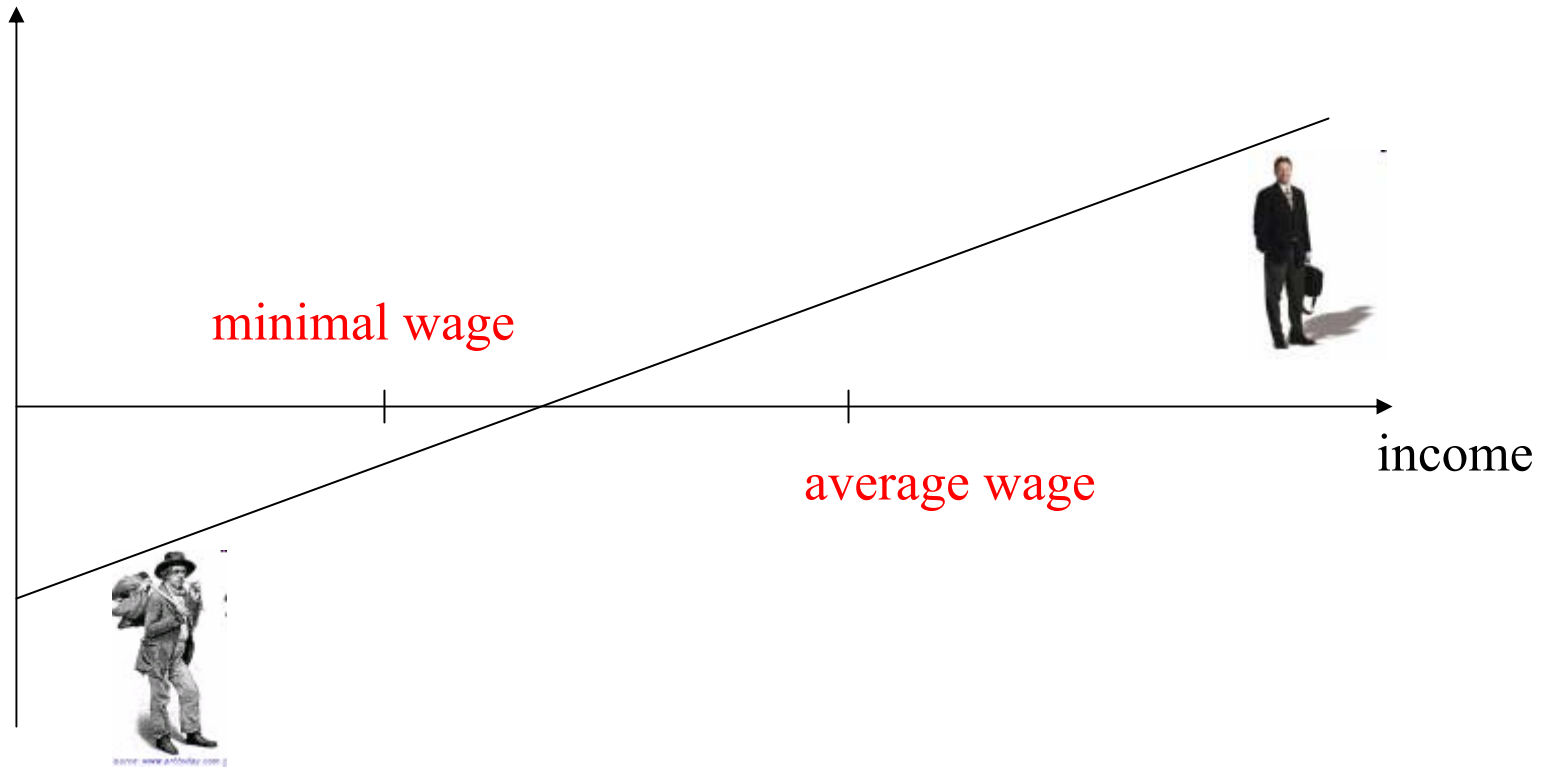
Without income risk, the risk premium would be under 1%.

„Solidarity”

Younger borrowers with higher income finance the losses of the older ones on minimal wage.

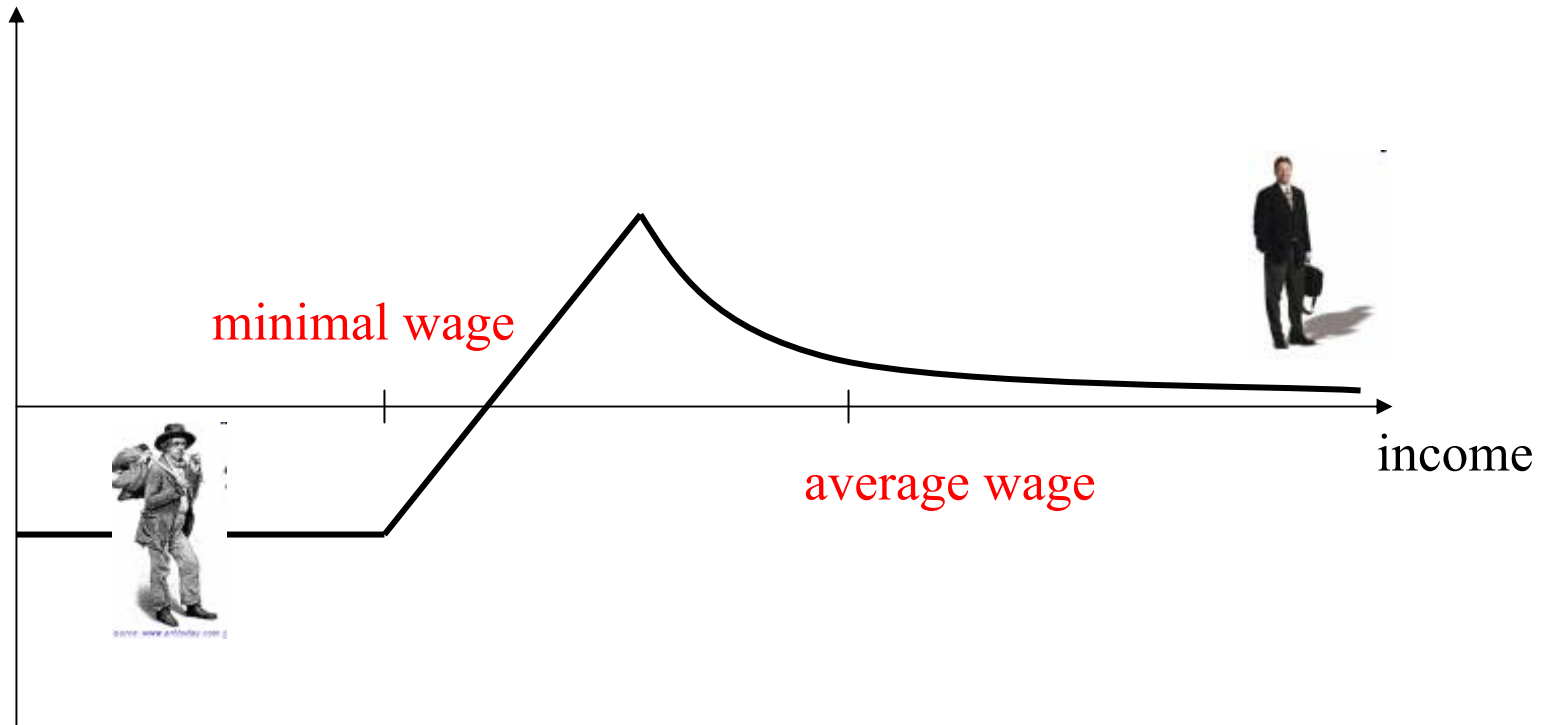
Supposed redistribution

profit of the lender



Real redistribution

profit of the lender



**The danger of adverse selection is minimal.
BUT IT IS NOT FAIR.**

Toward an „actuary fair” system

$$\text{PV (loan)} = \text{PV}(\text{expected repayments})$$

for each borrower

NO BUILT-IN REDISTRIBUTION

My suggestion: Introduction of tailor-made repayment rates (depending on age and indebtedness).

Challenges in the future

- Tuition fee.
- Increasing international mobility of students, professors, employees.
- Long run financial equilibrium.
- Financing life-long learning.
- ...

Thank You very much!