Allocation under Fixed Book-Prices

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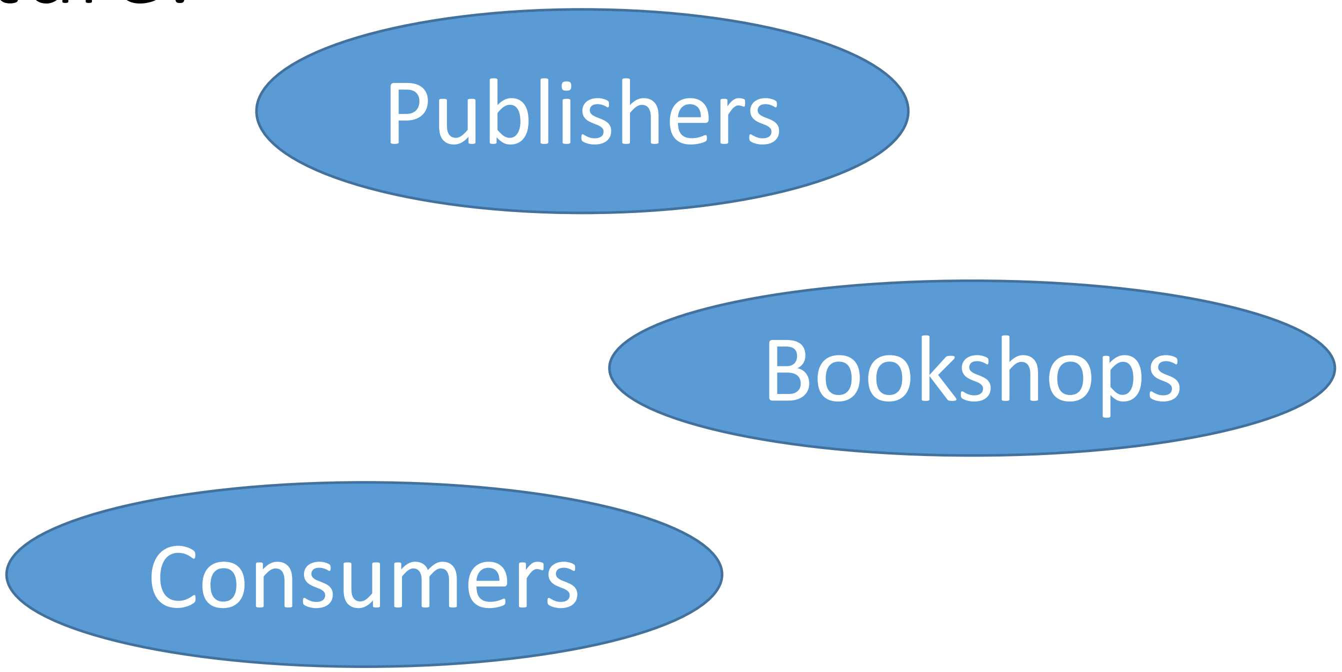
Monthy Phyton’s Flyong Circus: And now to something (completely) different.

Theory paper on fixed book prices.

European Union Policy: Fixed-price arrangements promotes title variety.

This paper: Do they, and if so is it a good idea?

Structure:



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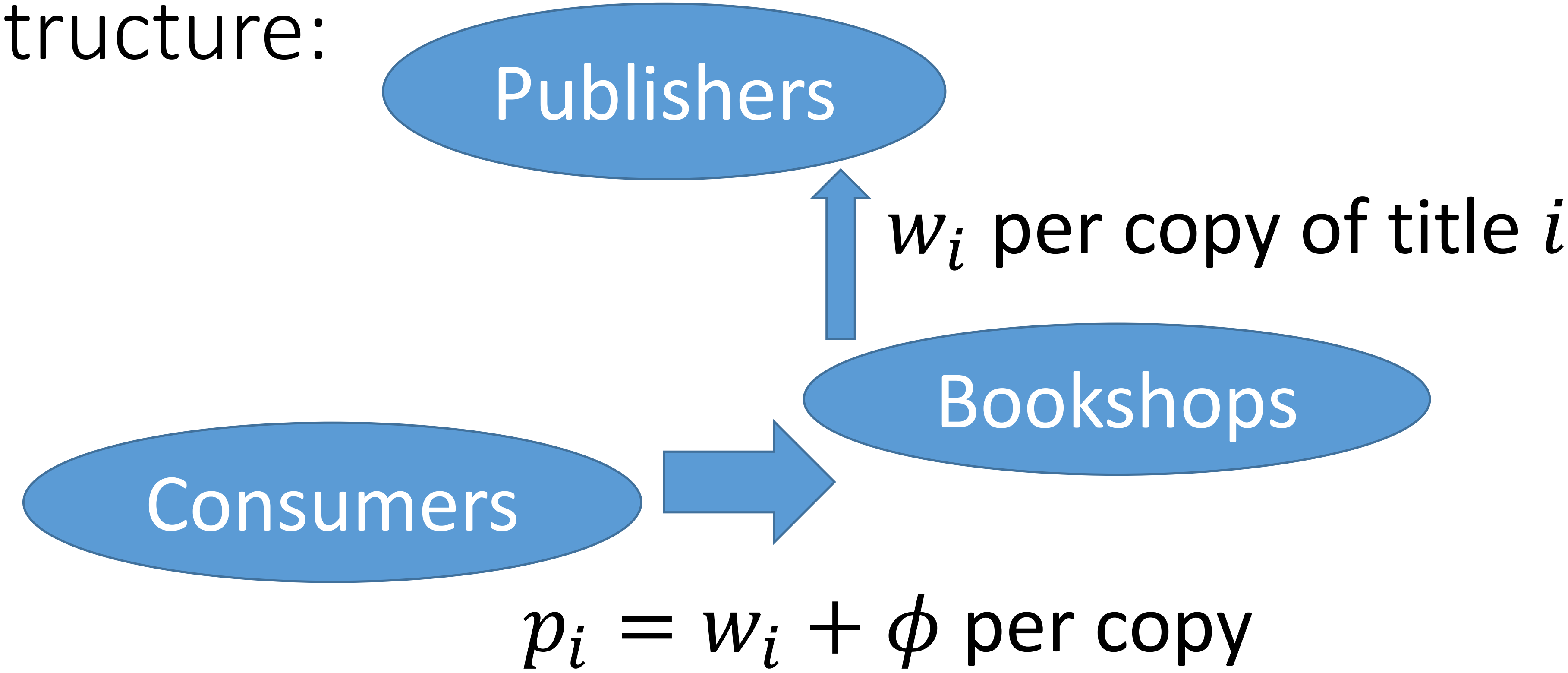

Publishers
w_i per copy of title i
Bookshops
Consumers
$p_i = w_i + \phi$ per copy

Publishers:
We think of fixed book-price system as:

Publishers determines w_i and ϕ.

Eliminating competition is comes down to $\phi > 0$.

We do not ask how ϕ is determined—just ask if it as good idea that $\phi > 0$.

Then, is $\phi > \mathbf{0}$ a good idea?

To make this question precise we need to say something about the value of books (and other things such as production costs).

Model:
1. Many titles, single title is exclusive, variety has value

2. Fixed cost, marketing, proof reading etc.

Monopolistic competition is a way to capture this.

Value of books:
Let q_i be copies of title i and n number of titles.

For fixed $\sum_1^n q_i$, representative consumer puts more value on large n and low q_i.
Example:
(1,1,1,1) better than (1,2,1,0)

Utility function:

$$u(q) = \alpha^{-1} m^{\alpha}, m = n^{\upsilon} \sum_{i=1}^{n} q_i{}^{\theta_i}, q = q_1, q_2, \ldots . q_n$$

$$0 < \alpha < 1, 0 < \theta_i < 1,\ 0 \leq \upsilon < 1$$

What is n^{υ}? Some value of the existence of a broad range of titles; maybe, after all, bookse are special.

Publisher costs:

Important: fixed cost

$$c(q_i) = cq_i + F$$

Bookshop costs: w_i

You can add more costs like $z + w_i$

Three market failures:

Wrong number of q_i and n.

Wrong i's; that is wrong title selection.

Our focus is on q_i and n; that is, right titles are in the market, for more see Spence, 1976).

So, our question is:

Does $\phi > 0$ in comparison to $\phi = 0$ give better values of q_i and n?

Title selection problem: use Spence (1976) but likely very, very messy.

Anyway: with our utility function the market selects the right title variety.

Some answers, part 1:

It follows from prop. 2 in the paper that:

Without fixed ($\phi = 0$) there are too few titles in the market, and too many copies per title.

Some answers, part 1--continued:

Too few titles and too many copies per title.

Should we sacrifice number of copies for variety?

Some answers, part 2: Not in this model (so far).

Introducing fixed prices (increasing ϕ to make it positive):

Proposition 3. An increase in the sales margin reduces welfare.

Some answers, part 3: Or maybe we should.

Reading oppertunity costs (van der Ploeg):

Price of a book is (DK): 35-40 euro.

Rebecca’s unskilled wage (DK): 16/10 euro.

External examiner’s wage (DK): 65/32 euro.

Some answers, part 3:

Let δ be social opportunity cost and δ_t private opportunity costs. Eg. taxes.

Proposition 4. δ_t<< δ , an increase of the sales margin from being zero increase welfare.

Summing up:

Bad news for fixed book-price systems;

Prop. 3 says that ϕ>0 is bad.

Prop.4 just says that people spend too much time reading.

Although, given we accept externalities, ϕ>0 might bring about a better balance between number of titles and copies per title.

Where to go:

A modified model like that of Benassy (1996) allows us to be more precise on the value of n.

Quadratic utility might change prop. 3.

Title selection problem: asymmetry in θ_i and ϕ_i. As said, use Spence (1976) but likely messy.

Technical stuff:
Monopolistic competition model.

One publisher=one title with our cost function.

Under symmetry, eq. defined by $MR = MC$ and $\pi = 0$.

Define $m = n^{1+\upsilon} q^{\theta}$. Under monopolisitic competition we have $\partial m/\partial q_i = 0$.

Technical stuff:
What is the problem with monopoly?

The social marginal value of q_i is:

$$\text{SMV} = m^{\alpha-1} n^{\upsilon} \theta_i {q_i}^{\theta_i - 1},$$

Marginal revenue is:

$$\text{MR} = \theta_i \left(m^{\alpha-1} n^{\upsilon} \theta_i {q_i}^{\theta_i - 1} \right).$$

Technical stuff:
Social welfare:

$$W = \alpha^{-1} m^{\alpha} - n(cq + F),$$

Profit is:
$$\pi(q_i) = (p_i - \phi)q_i - \ cq_i - F.$$

$$p_i = m^{\alpha-1} n^{\upsilon} \theta_i {q_i}^{\theta_i - 1}.$$

Technical stuff:
Profit maximizing monopoly behavior:

$\left(p_i - (c + \phi)\right)/p_i = 1 - \theta$, or
$\bar{q}_i = {}^{\theta}/_{(1-\theta)} \cdot {}^{F}/_{(c+\phi)}$,

And m from $\pi_i = 0$,

$p_i = m^{\alpha-1} n^{v} \theta_i {q_i}^{\theta_i - 1} = c + F/q_i$,