



Economics of scientific text production, some incoherent thoughts

Prepared for the Textbook Summit

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Importance of textbooks

- “I don’t care who writes a nation’s laws – or crafts its advanced treaties – if I can write its economics textbooks” Paul Samuelson





Overview

- The un-importance of being un-important
 - Low budget share of textbooks
- Public goods and scholarly text production
- The market for economics texts
- Universities as clubs
- The disruptive effect of zero marginal costs
- Present and future of scientific text production





Un-importance of being unimportant

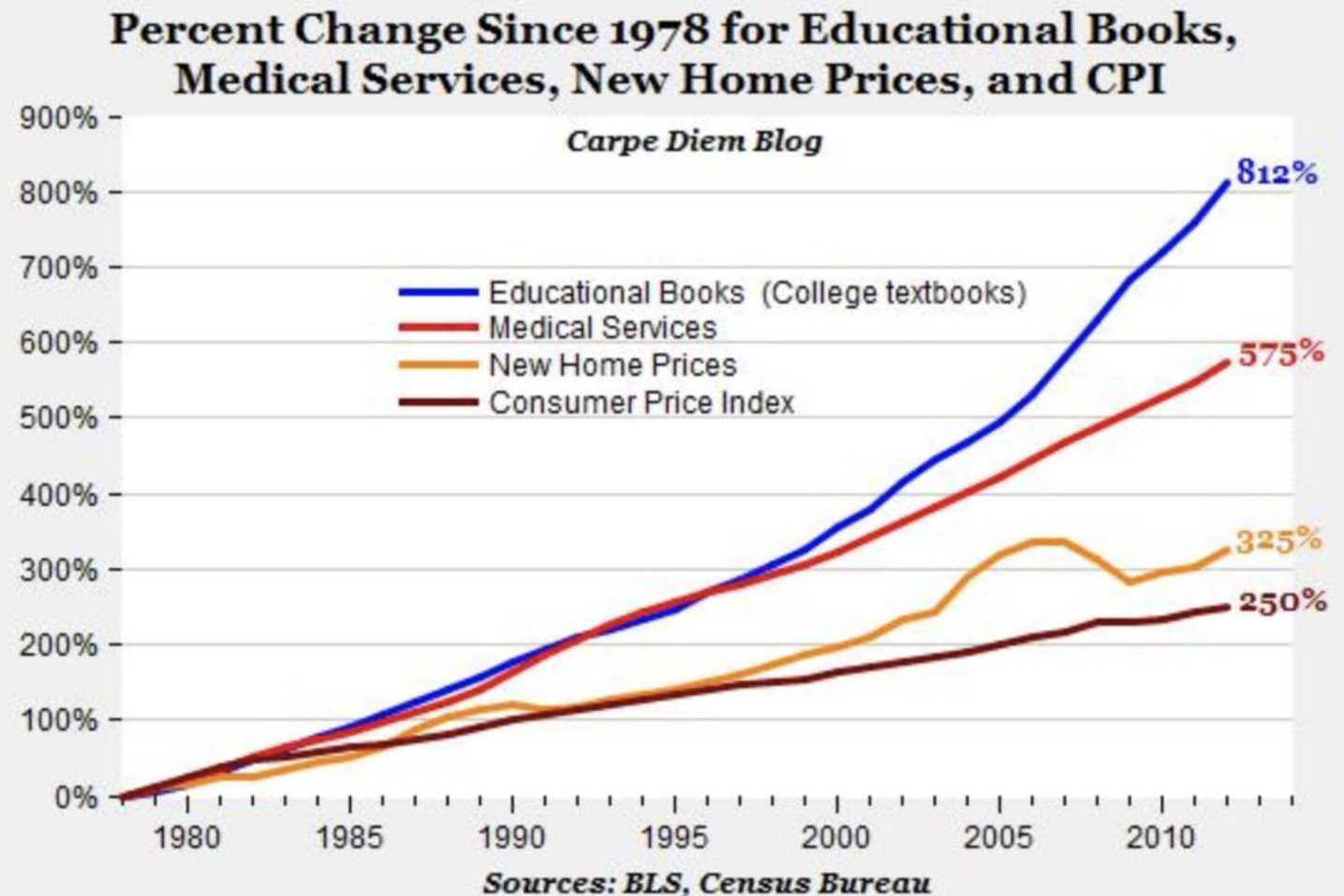
- According to an OECD survey material costs account only for 1,8% of total costs for tertiary education students in the OECD
 - Iceland is close to the average
 - Austria is highest (3,5%)
 - Estonia lowest (0,3%)
- Fees are much higher (av 8%) and variable [0,2%;32%]





So; are textbooks a concern?

- Not if you are at the W
– Textbooks
- Marshall of being
– Possible





PUBLIC GOODS, PRIVATE GOODS AND THE MARKET ECONOMY



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Knowledge as a club good/public good

- Value and usefulness of knowledge is not diminished as more is consumed
 - Non-rivalry good in consumption
- Very hard to restrict access to “pure” knowledge once it has been revealed (End of Romeo and Juliet! Or the whereabouts of MH370 if discovered)
 - Non-exclusion
- Goods with those characteristics are defined as Public goods or Club Goods





“Pure” knowledge vs distribution of knowledge

- Pure knowledge is a public good as understood by economists
- Distribution and communication of knowledge is not
 - Opens up the possibility to sell access to knowledge
 - Opens up myriads of paradoxes, contradictions and conflicts



Public good, private good matrix

Nature of use Eðli nýtingar	Samkeppnisnotkun Rivalry	Samnot Non-rivalry
	Exclusion Heftun	
Heftanleg notkun (Excludable)	Private good Einkagæði	Club good Klúbbgæði
Óheftanleg notkun (Non-excludable) Vanheft (bara í sérstöku samhengi)	Common pool (fish stock) Almenningur (fiskimið, afréttur)	Pure public good Almannagæði



Market failure for public goods

- Public economics (empirical and theoretical) show that a free market economy will:
 - Undersupply public goods (why pay for something that someone else might buy at no cost for me?)
 - Overuse commons (tragedy of the commons)
 - Club goods need some elaborate pricing schemes if a market is to be efficient
 - Private goods are usually efficiently supplied in a market economy





Nature of scientific texts

note excludability

Nature of use Eðli nýtingar	Samkeppnisnotkun Rivalry	Samnot Non-rivalry
	Exclusion Heftun	
Heftanleg notkun (Excludable)	Private good Books (before Xererox) Un published manuscript Efficient?	Club good Presentation in a lecture hall Semi-efficient?
Óheftanleg notkun (Non-excludable) Vanheft (bara í sérstöku samhengi)	Common pool Book in a reading room in a library Overuse?	Pure public good Open source textbooks Undersupply

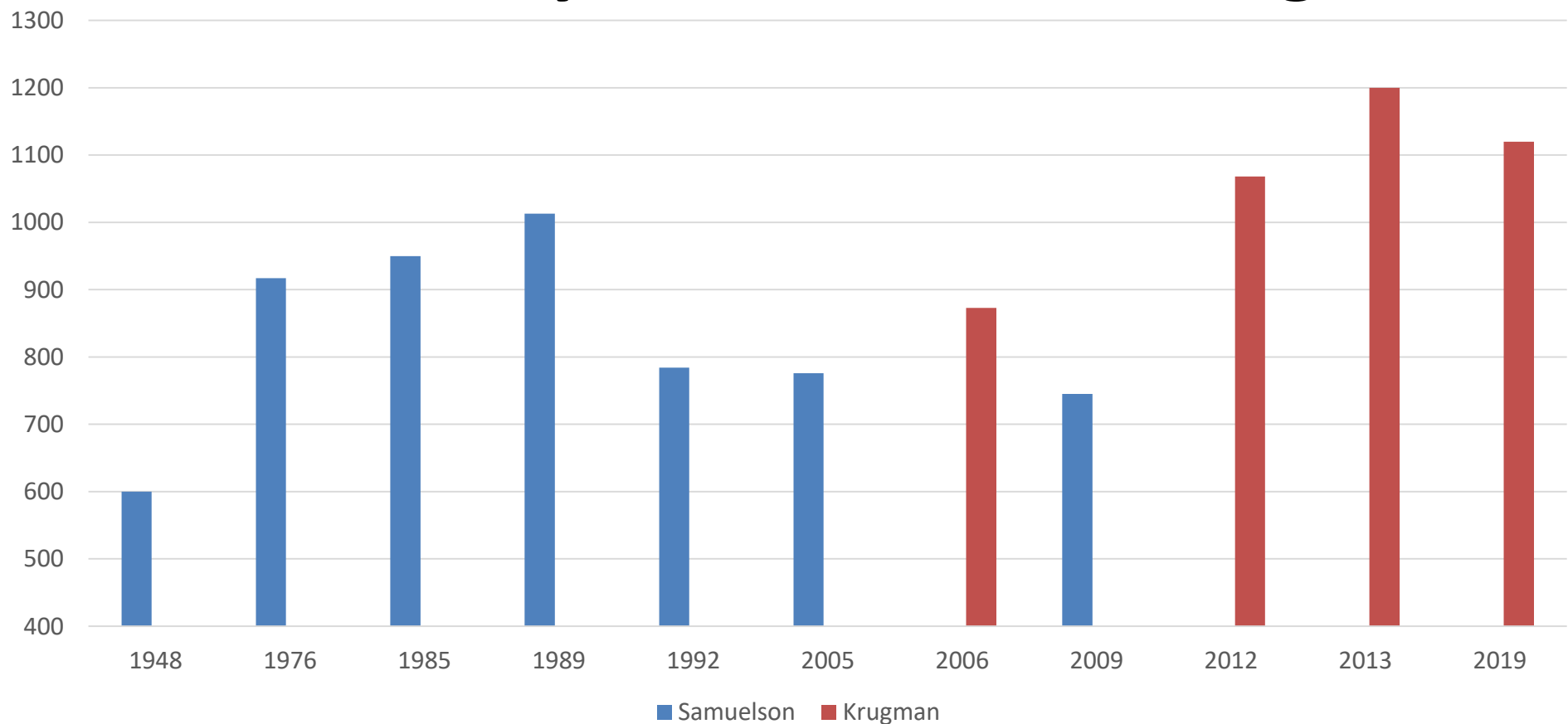


The old model of supplying information, books (private goods)

- Before the copy machine textbooks were strictly private goods
 - If a market was valuable enough a book would be produced
 - But market failure did exist
 - Small markets not served
 - Oligopolistic competition between very similar texts making it hard for new ideas to gain audience (Stiglitz: Almost all introductory texts in Economics are variations over Samuelson)

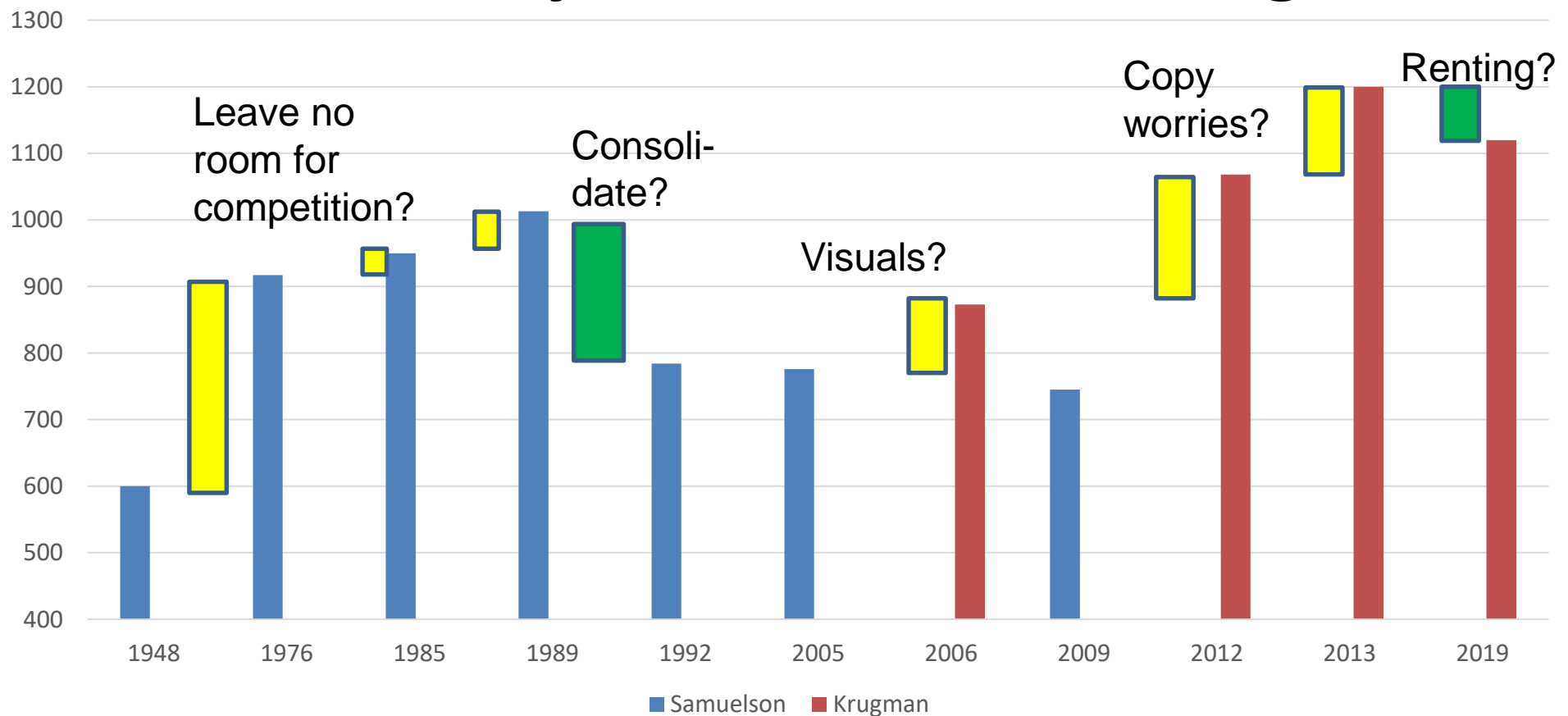
Oligopolistic competition

number of pages of various editions of Economics by Samuelson and Krugman



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number of pages of various editions of Economics by Samuelson and Krugman





The fluid pagenumber

Oligopolistic actions and reactions

- O-Action: Gain the Center by including everything in your text until you have 1013 pages (until 1989)
- O-Re-action: Competitors (Copy-cats?) offer simpler more accessible text, eat into the Center
- O-Action: Regain the Center by streamlining the text (cut almost down to 1ed size, 745/600)
- Photocopy action (Krugman): Increase size of book to make it more costly to copy?





RESTRICTING ENTRANCE SCHOOLS AS CLUB GOODS



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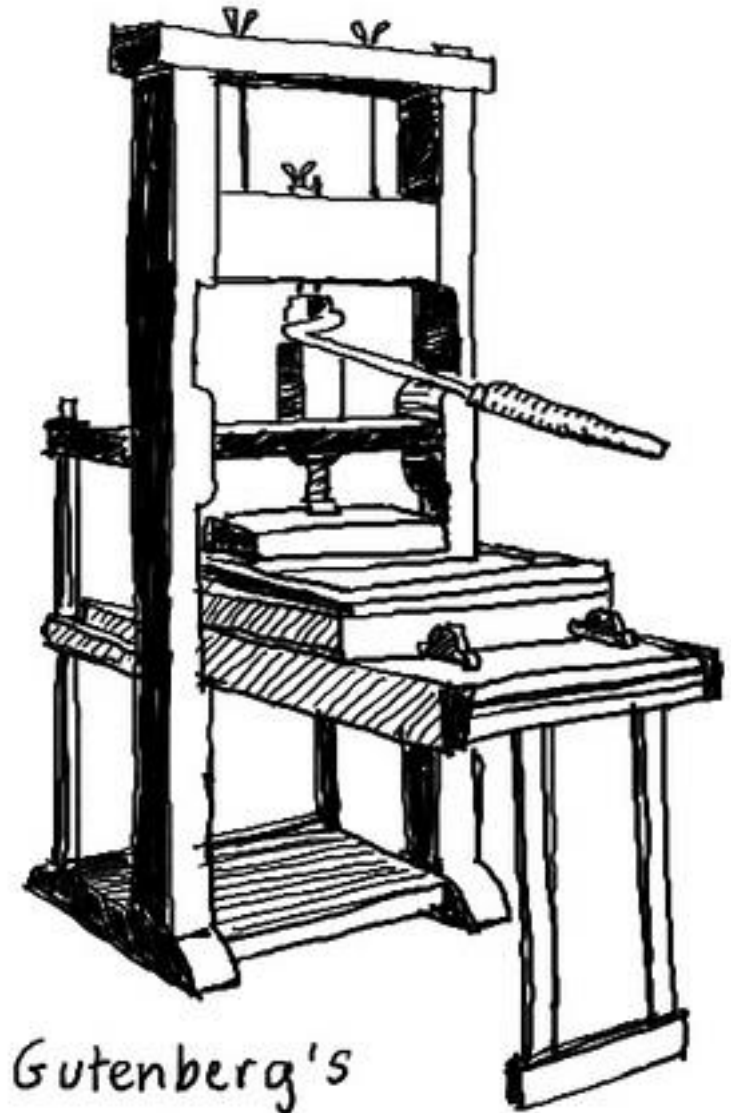


The old model of supplying information, oral presentation (club goods)

- Schools and universities are clubs that can charge for admission
- Those that are not admitted can not make use of the goods the club offers
- Do not solve the efficiency problem (clubs can be too few or of too low a quality)
 - Government can improve compared to pure market
- The Groucho Marx Paradox
 - “I sent the club a wire stating, PLEASE ACCEPT MY RESIGNATION. I DON'T WANT TO BELONG TO ANY CLUB THAT WILL ACCEPT ME AS A MEMBER.”
 - **Groucho Marx**



DISRUPTIVE TECHNICAL PROGRESS, ZERO MARGINAL COSTS ARE GAMECHANGERS



Gutenberg's
Press



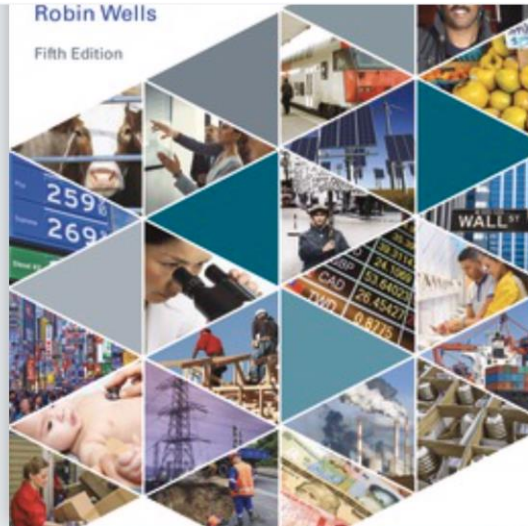
The old publication model challenged

- We had learned to cope with some of the deficiencies of the old model
 - Pricing schemes for textbooks accommodated for the second hand market (and even the existence of the copy machine)
 - Renting for a given period of time
- But then we see the entrance of scanners and virtually no cost of distributing additional copies of information





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Effect of the scanner and the photocopy-machine

- Content of books are on the move from being private good to being a public good
- Publishers are struggling with the adequate payment model
- Have not yet solved the problem
- The experience in the journal market may show where we may be heading



OPEN ACCESS

JOURNALS AS FORE-RUNNERS?





Journals

- From individual subscriptions to individual journals
- To library subscriptions for individual journals
- To library subscriptions for bundles of journals
 - Aggressive pricing models creating lots of profits
- Plan S, re-diverting funds for publishing making papers truly open for all (and possibly side-stepping the greedy publishing houses)



A new model is emerging in journals

- Plan S will dramatically change the journal market
 - May have a market without involvement of publishing houses
 - Journal of Machine Learning Research run at a cost of \$6,50 per article
 - Compare with \$500 to \$2.000 publishing fee in commercial open source journals
 - Publishers will have to adapt to the Open Source Model or leave the market





Similar development in the textbook market?

- Bundles:
 - Will Universities subscribe to bundles of e-based textbooks from major publishers?
 - Or will we see a Netflix of textbooks?
- And what about Open Source?





**HAVE WE SEEN THE FUTURE OR JUST
ITS SHADOW?**





Chaos as future?

- Comprehensive learning systems without content
 - Moodle, Canvas and all that
- Textbook based learning systems
 - Most big international textbook producers
 - Pearsons Revel, McGrawHill Connect,
- Textbook +
 - PPT, Question Banks (to use with Moodle etc)





Will the textbook market evolution mirror that of journals?

- Partially same forces at work
 - Possible to distribute text at zero marginal costs
 - But buyers and sellers in the two markets are very different
- Incentive structure to produce textbooks and journal articles differs
 - Promotion, grants, opportunities tied to writing, refereeing and editing journal articles
 - Samuelson's Reward (educating politicians) only befalls few "top cats" and distracts from producing journal articles!





A prediction?

- Field left for the big publishers?
 - Will big publishers offer up to 80 or 90% of content in introductory big item courses?
 - PPT, video clips, case studies, interactive material, quizzes, organize workshops across universities, grade final exams?
- What about topics that have fewer clients?
 - Teachers may shun those topics as it will take considerably more time to produce course content (almost no support material!)





Pessimism:

Are TAs (and professors) soon obsolete?

- A video produced by a team of 10 people will be better than any story hastily assembled by a time strapped professor the night before lecture
- Multiple Choice questions (or Fill In questions) will be more accurate, harder to misunderstand and more in line with new knowledge in learning science if produced by the textbook team than by a lone professor





A program of a sort?

- Production of content in small subjects and for small number of clients must be subsidized
 - Almost all the primary and secondary Icelandic textbook market
- Some form of consortiums of universities producing open source textbook for small subjects?
- Or maybe the old fashioned textbook will survive there?





Academic freedom challenged?

- Who is to control content of lectures (classrooms)?
 - Teachers, schools, textbook companies, ministries?
- Who should produce content?
- Who should pay for production of content?
- Who is responsible for “comprehensive” coverage?
- Not new questions, but ZMC is a serious challenge
 - A big datacompany might gain monopoly if steps are not taken carefully!

