

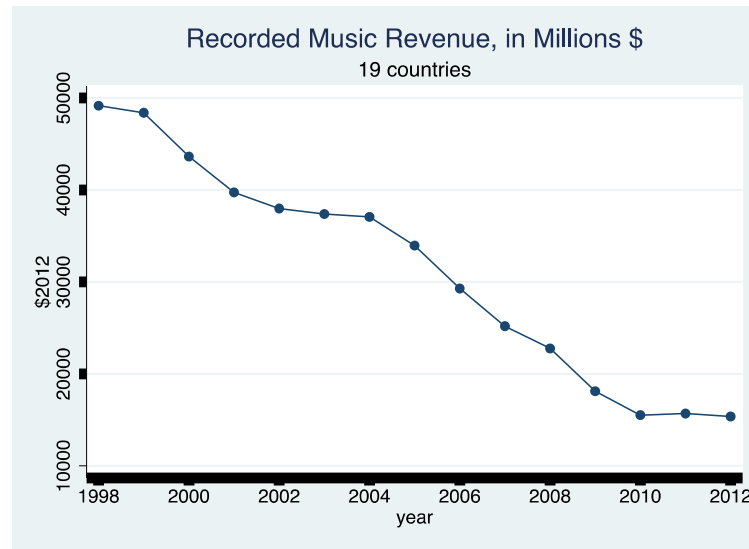
# Digitization and Creative Products: Crisis or Renaissance?

Joel Waldfogel

University of Minnesota and NBER

# Background: Napster...

- ...and the collapse of revenue
  - Calamitous consequences in recorded music



- Real threats in movies, books
  - (but no precipitous decline)

# Initial research response

- Mostly a kerfuffle about whether file sharing cannibalizes sales
- Surprisingly hard question to answer
  - » Oberholzer-Gee and Strumpf (2006), Rob and Waldfogel (2006), Blackburn (2004), Zentner (2006), and more
- Now, most believe that file sharing reduces sales

# Why care about revenue?

- Recouping investments
  - music is investment-intensive (IFPI)
  - MPAA:  $\approx$  \$100 million per movie
- ***Concern: weakened revenue could undermine the flow of new products***

# Digitization is a two-edged sword

- Napster/piracy are bad news for revenue
- But costs may have fallen
  - Production
    - Studio + professionals vs Garageband
  - Distribution
    - CDs & stores vs CD Baby + iTunes, etc
  - Promotion
    - Radio bottleneck vs new environment:
    - YouTube/Pandora/Pitchfork/Spotify

# Purpose of copyright

- ...to provide rewards/incentives to allow creators to cover costs so that they can bring new works to market

“To promote the Progress of Science and useful Arts, by securing limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”

- Is copyright fulfilling its function better/worse since digitization?

# Is copyright working?

- If appropriability and costs have both fallen, then
  - “what has happened to revenue?” is not the right question
- Instead, we should ask:
- ***On balance, are the existing legal and technological protections sufficient to finance continued creation of new products?***

# The right question is hard, but...

- With some empirical spadework, we can address:
  - Has flow of new products grown or shrunk?
  - Are the new products valuable to consumers and producers?
- *Contribute to an evidence-based discussion on adequacy of IP protection in new economy*

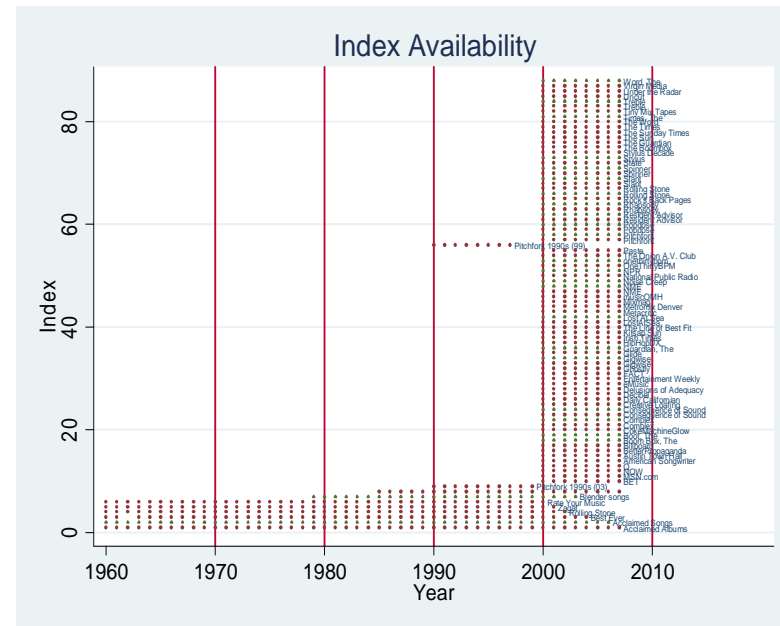
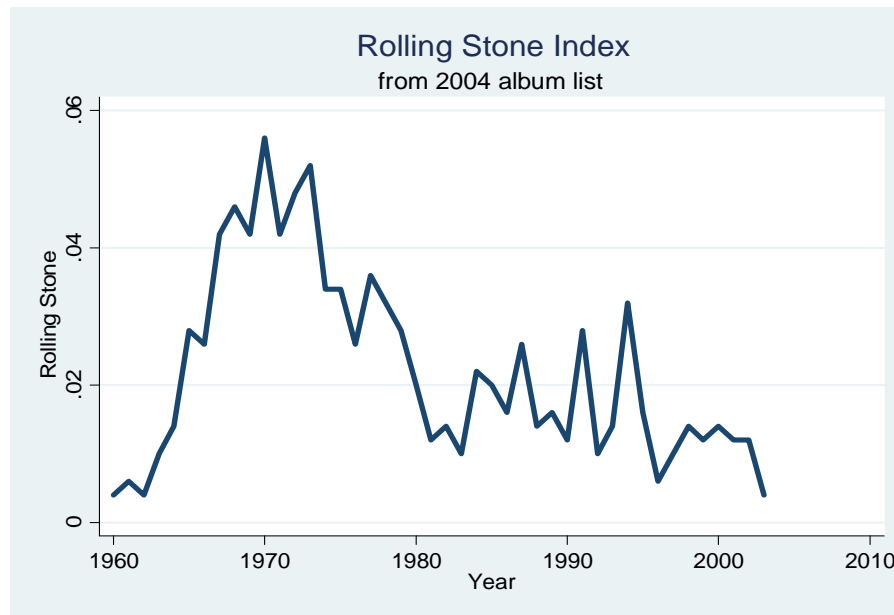




# Approach #1: critics' lists

- How many works from each vintage surpass a constant threshold?
- Use critics' retrospective best-of lists
  - E.g. Number of albums on a best-of-the-decade list from each year
  - Retrospective: to be on list, album's quality must exceed a constant threshold

# Rolling Stone's 500 Best Albums (2004)



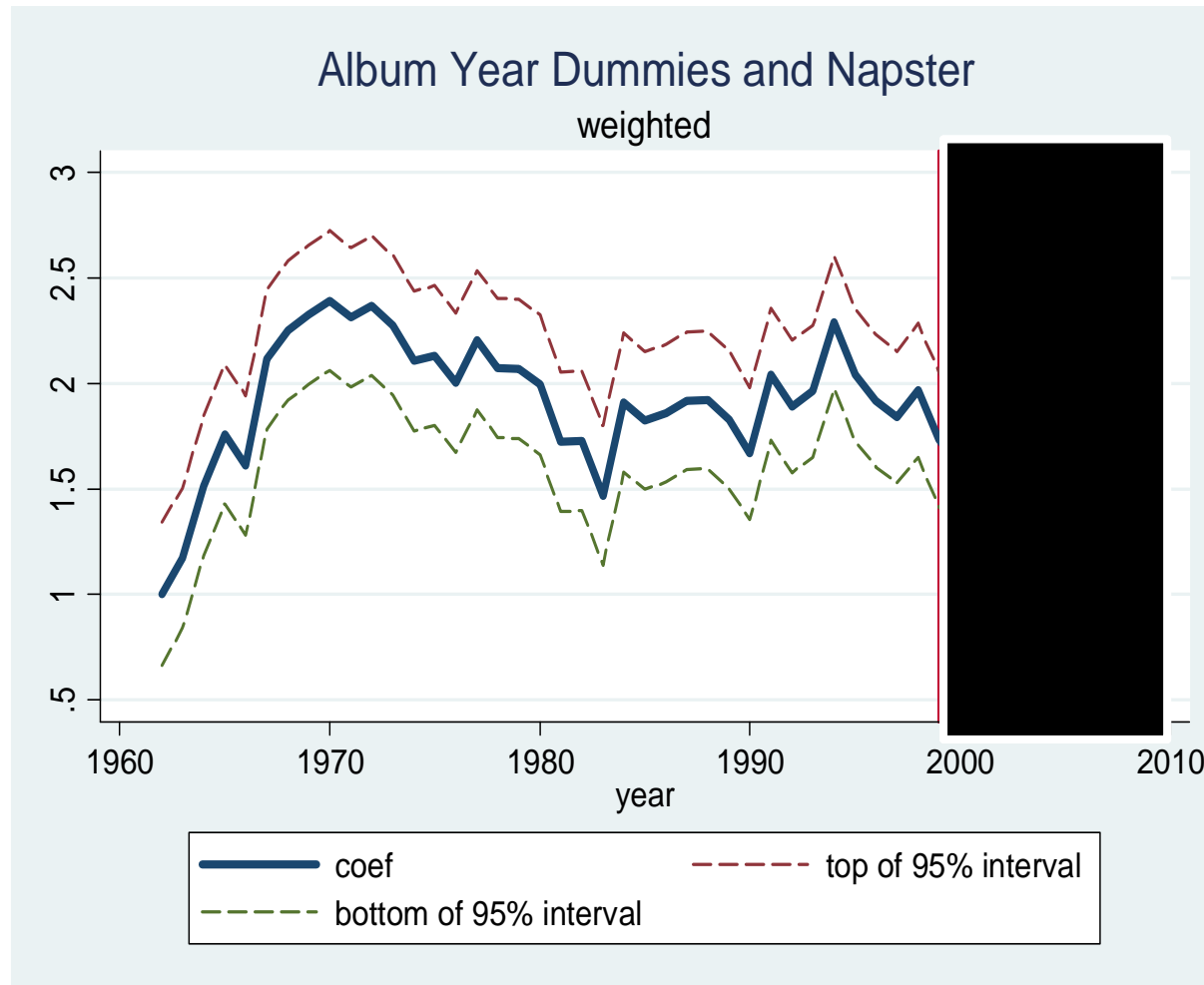
- Regression:

$$\ln(y_{it}) = \mu_i + \theta_t + \epsilon_{it}$$

- Plot  $\theta$ 's

“Splice”  
together to  
create overall  
index, covering  
pre- and post-  
Napster era.

# And voilà: index of vintage quality



Index is falling prior to Napster

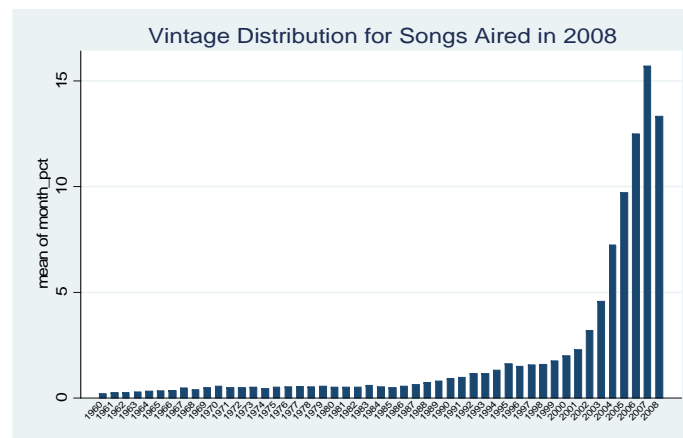
Post-Napster constancy is, if anything, a relative increase

## Approach #2

- Measure of vintage “quality” based on service flow/consumer decision
  - Sales and airplay data
- Idea: *if one vintage’s music is “better” than another’s, its greater appeal should generate higher sales or greater airplay through time, after accounting for depreciation*

# Intuition of approach

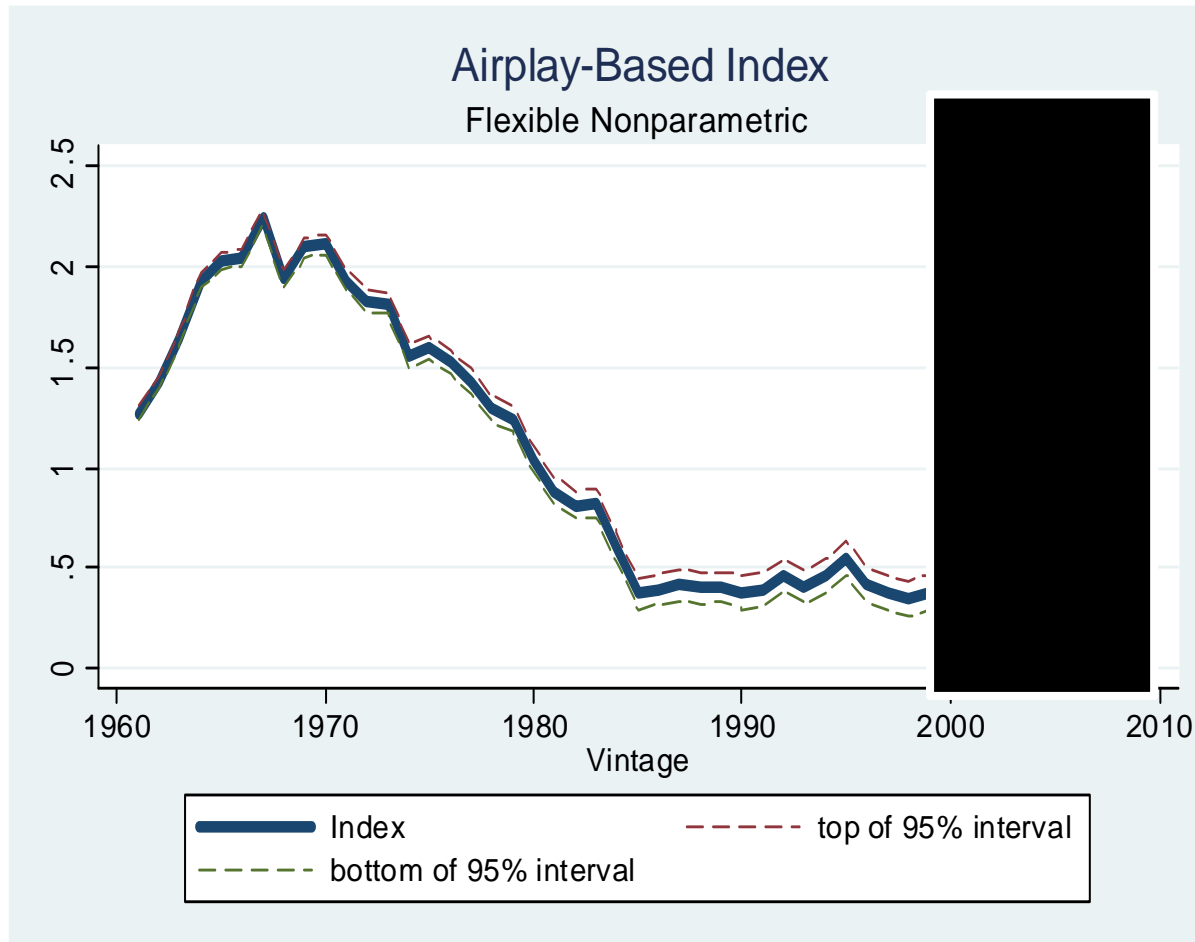
- Popular music depreciates
  - older music is sold, aired less



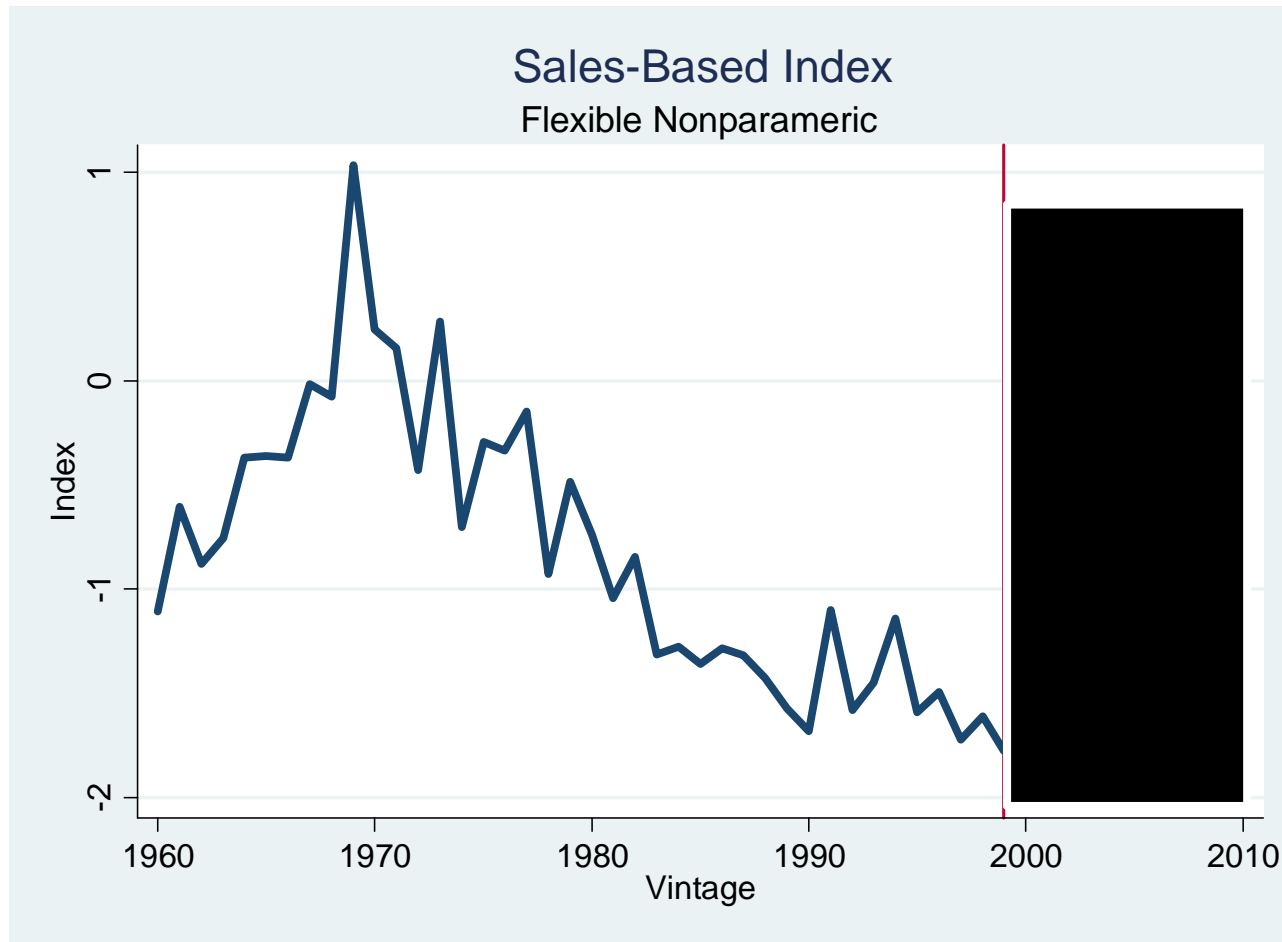
Release vintage

- *After accounting for usual effect of age, which vintages are used more or less than others?*

# Resulting airplay index



# Sales-based index



# Bottom line on music appeal

- No evidence that vintage quality has declined
- Instead, compelling evidence that it has increased
- Big contrast to what's happening to revenue
- Puzzle: *Why is “quality” up despite revenue collapse?*



# Resolving the puzzle

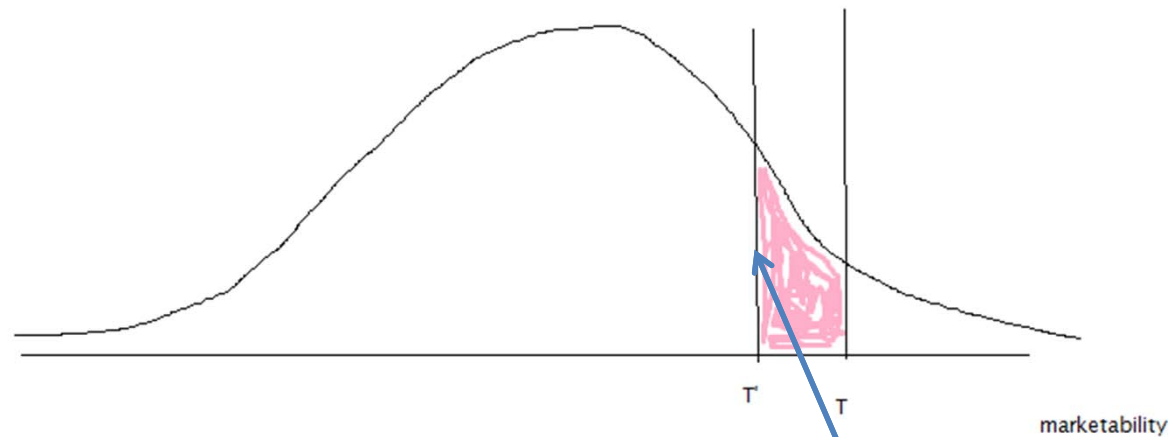
- Fundamental features of creative products
- “nobody knows anything”
  - Hard to predict appeal, few succeed
- Traditionally, it has been expensive to bring new works to market
  - IFPI: ≈\$1 million per album
- So labels bet on a few artists with high ex ante promise

# Along comes digitization

- It has become cheaper to bring products to market
- Do we end up discovering more artists with ex post value?
- *Yes, if appeal if unpredictable*

# Suppose appeal were predictable

- Then reduction in cost would bring more products



- But they would be of modest quality

# Reality: unpredictability

- Release all products with expected quality above the new lower-cost threshold
- Result: more products with quality throughout the distribution, *including above the old threshold*
  - (then some “ex ante losers” become “ex post winners”)

# If this explanation is right, then...

- More new products to choose from?
- ...including those with less ex ante promise?
  - E.g. independent vs major labels
- A changed information/promotion environment?
  - Do consumers have ways to learn about the proliferation of new music?

# Questions

- Changed paths to commercial success?
  - Roles of traditional radio, Internet, and critics
- Do the products with less ex ante promise – e.g. indie artists who would not have been released before digitization – account for a rising share of ex post success?

# Answers

- **Growth in releases?**
  - **Yes: tripling 2000 to 2010 in US, etc.**
- Changed information environment
- Success and promotional channels
- Ex ante promise and ex post success

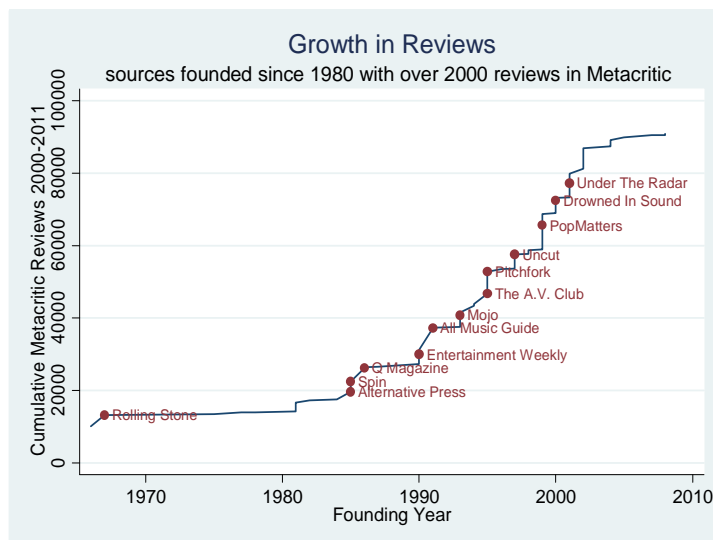
# Answers

- Growth in releases?
- **Changed information environment**
- Evolution of sales concentration
- Success and promotional channels
- Ex ante promise and ex post success



# Changed information environment

- Online “radio” plays a wider variety of artists than traditional radio
  - Pandora, Spotify, Deezer, YouTube,...
- Growth in online criticism



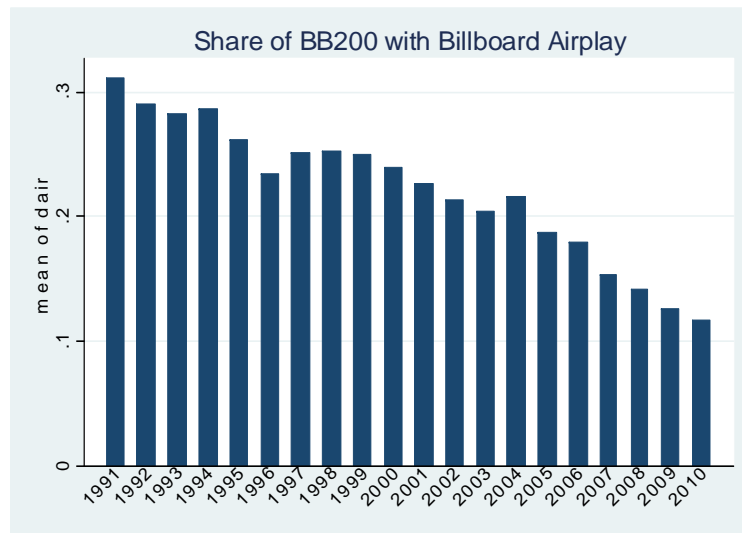
Of the music reviews at Metacritic, most are from sources born and/or distributed online

# Answers

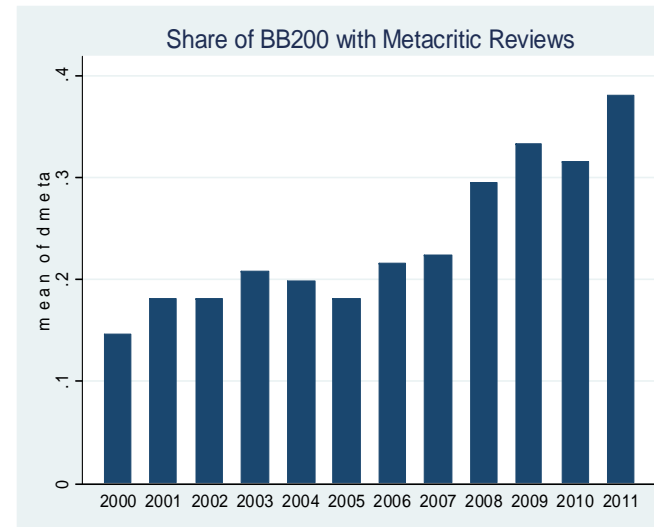
- Growth in releases?
- Changed information environment
- **Success and promotional channels**
- Ex ante promise and ex post success

# Shifting information channels

- Of albums that become commercially successful:



Airplay share declining



Rising share in Metacritic

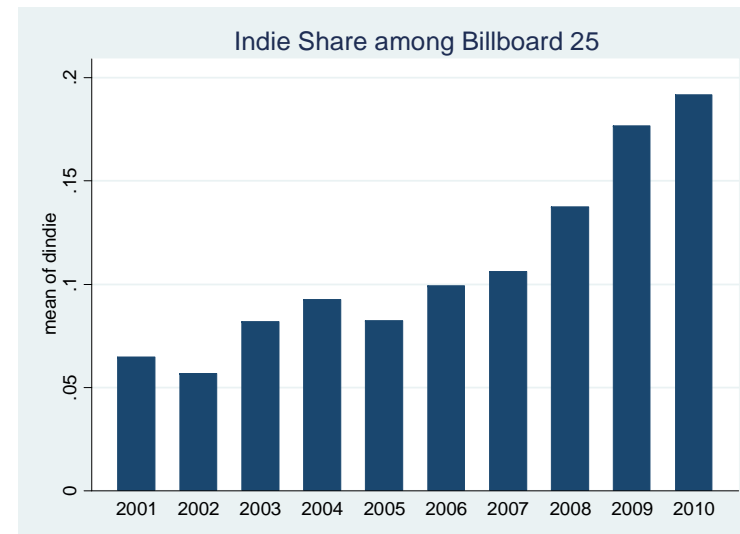
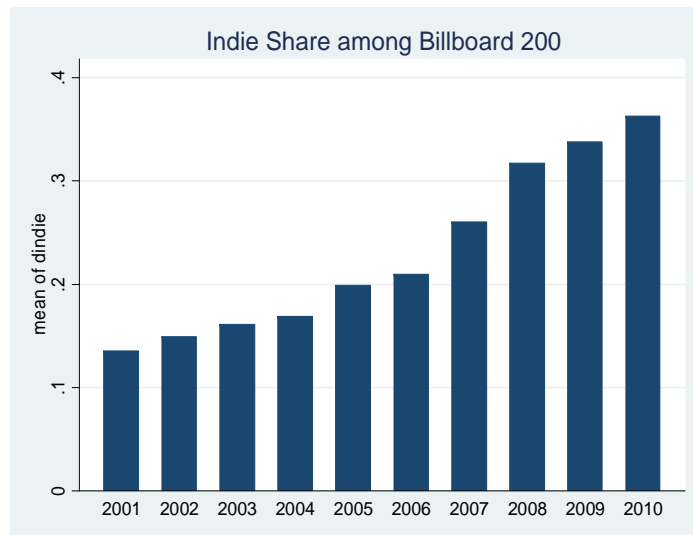
# Answers

- Growth in releases?
- Changed information environment
- Success and promotional channels
- **Ex ante promise and ex post success**

# Ex ante promise and ex post success

- Do artist with less ex ante promise – who would not have made it to market prior to digitization – now achieve sales success?
- Specifically, do indies account for a growing share of sales?

# Yes



- *“even the losers get lucky sometimes”*



# Recap of music improvement

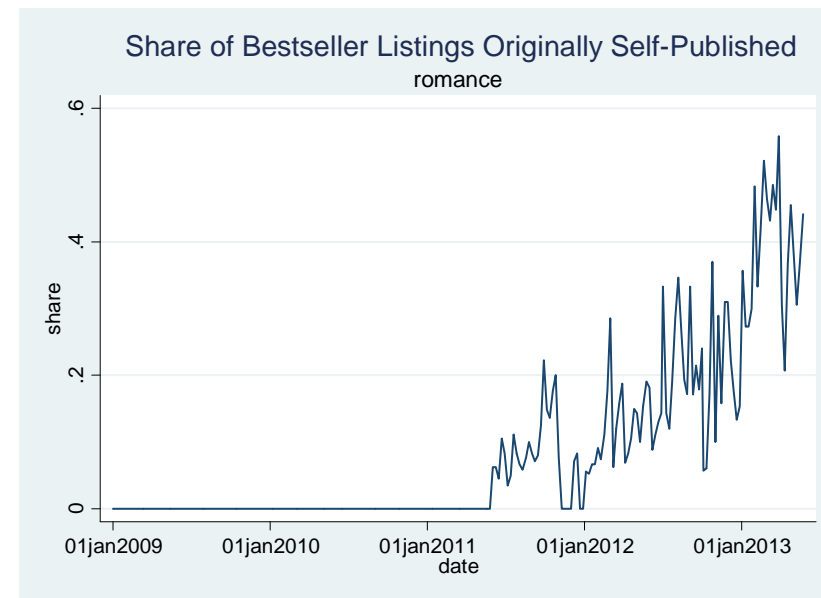
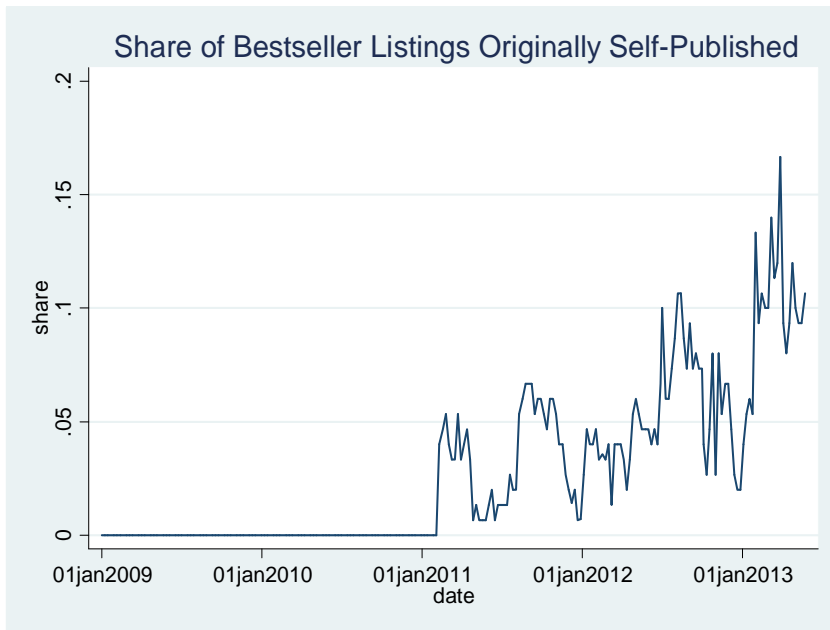
- Digital disintermediation provides possible explanation for increased “quality”
- Given unpredictability, more releases lead to discovery of additional “good” music
- Much of which would not have come to market before digitization

# Similar effects in other media

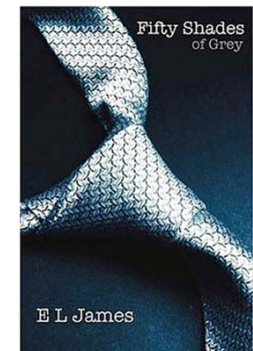
- Books:
  - Explosion of new products circumventing traditional gatekeepers
    - (self-published ebooks)
  - Lots of ex ante losers arriving in the market



# Share of originally self-published books among best-sellers

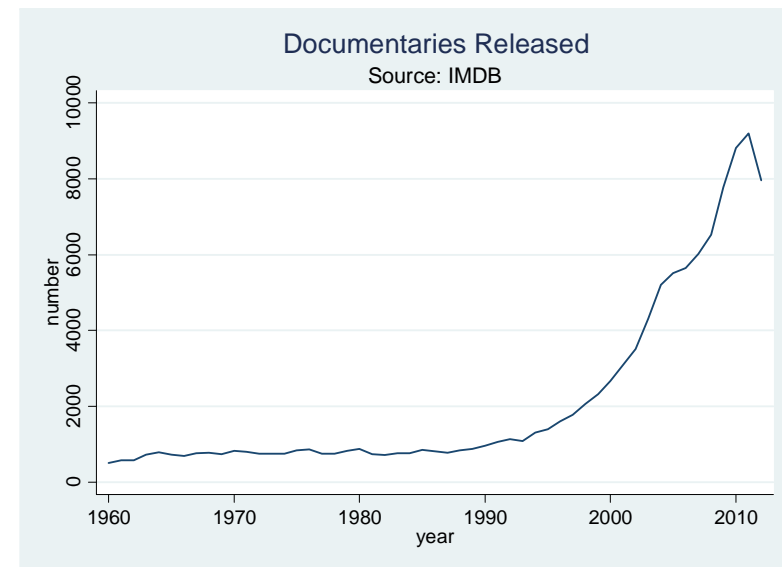
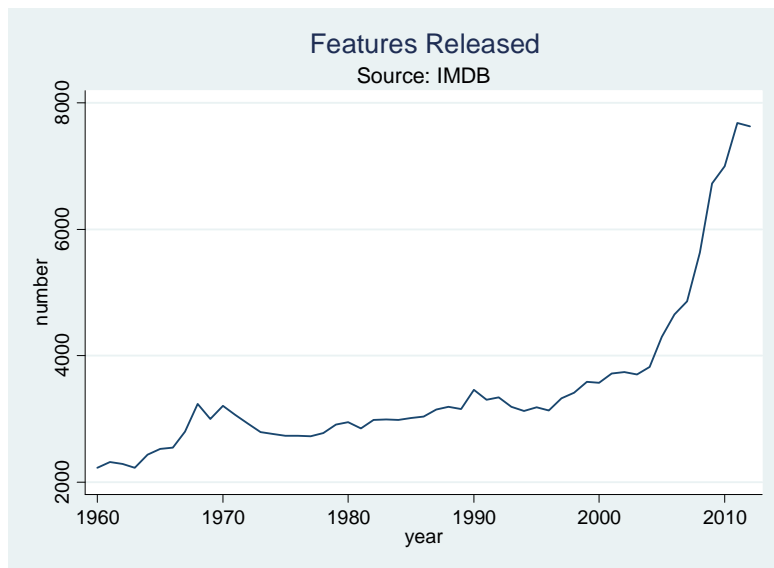


- From *Storming the Gatekeepers*, Waldfogel and Reimers (2013)



# Movies too

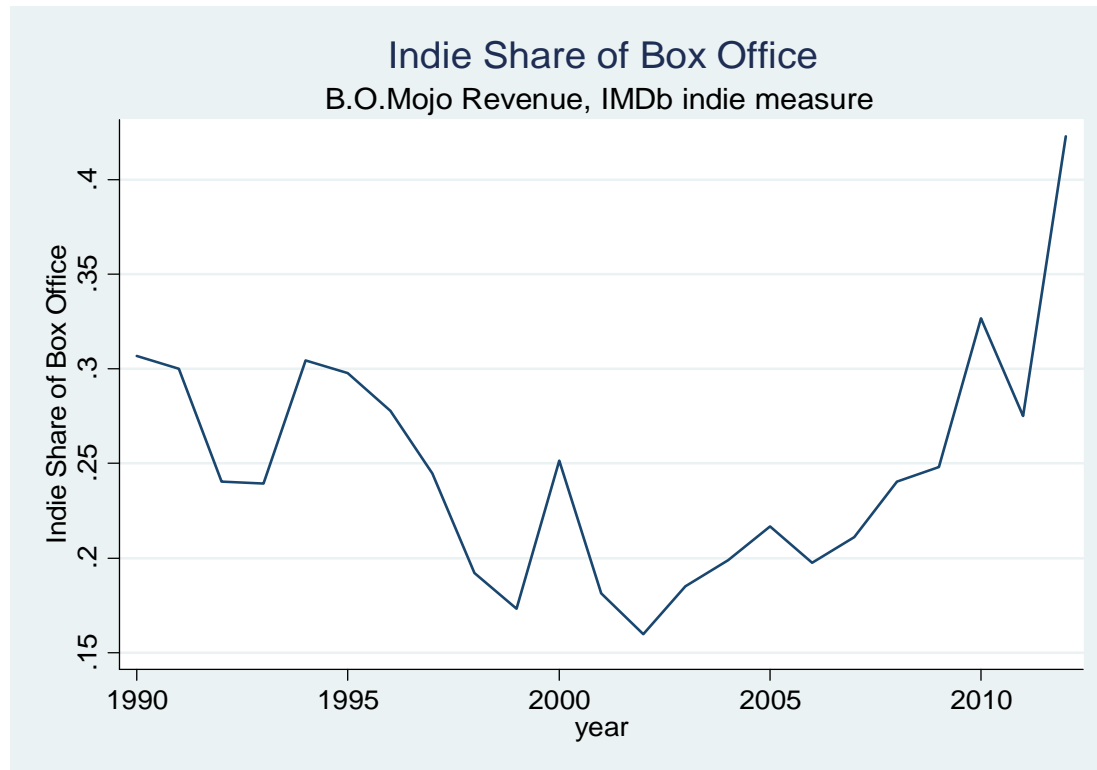
- Digitization has reduced costs of production, distribution, and promotion
- Large recent growth in movies made



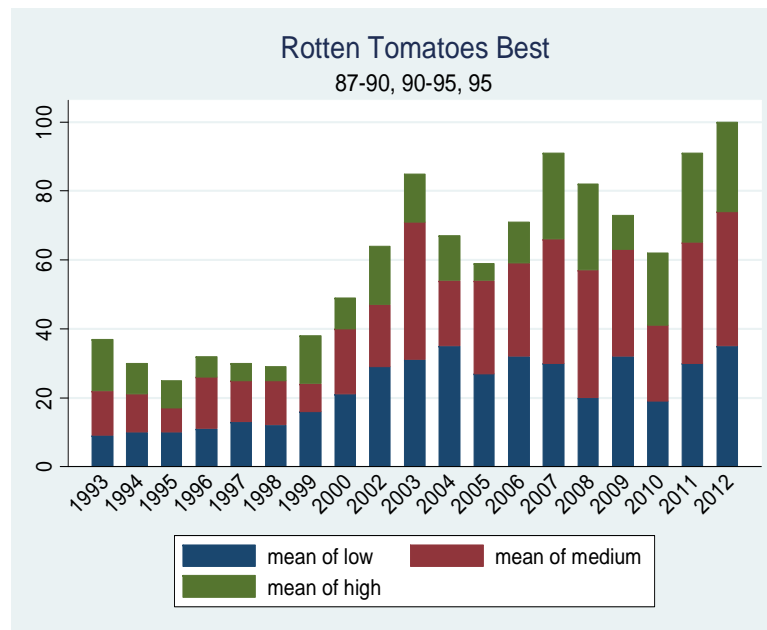
# Changes in movies

- New distribution channels
  - Netflix, iTunes, Amazon Instant Video
- Changed information environment
  - Lots of critical information available, professional and amateur
- Independent products achieving growing availability, success, and quality

# Growing “indie” share at box office



# Growth in good movies at Rotten Tomatoes



Growing share from “independents”

# Crisis?

- Yes, there has been a revenue crisis in music
  - With threats looming for other products
- But costs have fallen, and new product introductions are rising sharply
- A golden age of plentiful and appealing cultural products
- *Digital Renaissance*



# Implications

- IP enforcement
  - There are good reasons to strengthen enforcement, but a creative crisis is not one of them
- Cultural policy
  - the reduction in costs is great news for those seeking to promote local creation
  - production stimulation from tech change is equivalent to a very large subsidy