

The Effect of File Sharing on Record Sales – An Empirical Analysis

Felix Oberholzer-Gee
Harvard University

Koleman Strumpf
University of North Carolina

Big Picture

- File sharing reduces control of copyright owners
- Policy question:
 - need to provide new powers to copyright owners?
- Key in answering:
 - what is economic damage from file sharing?

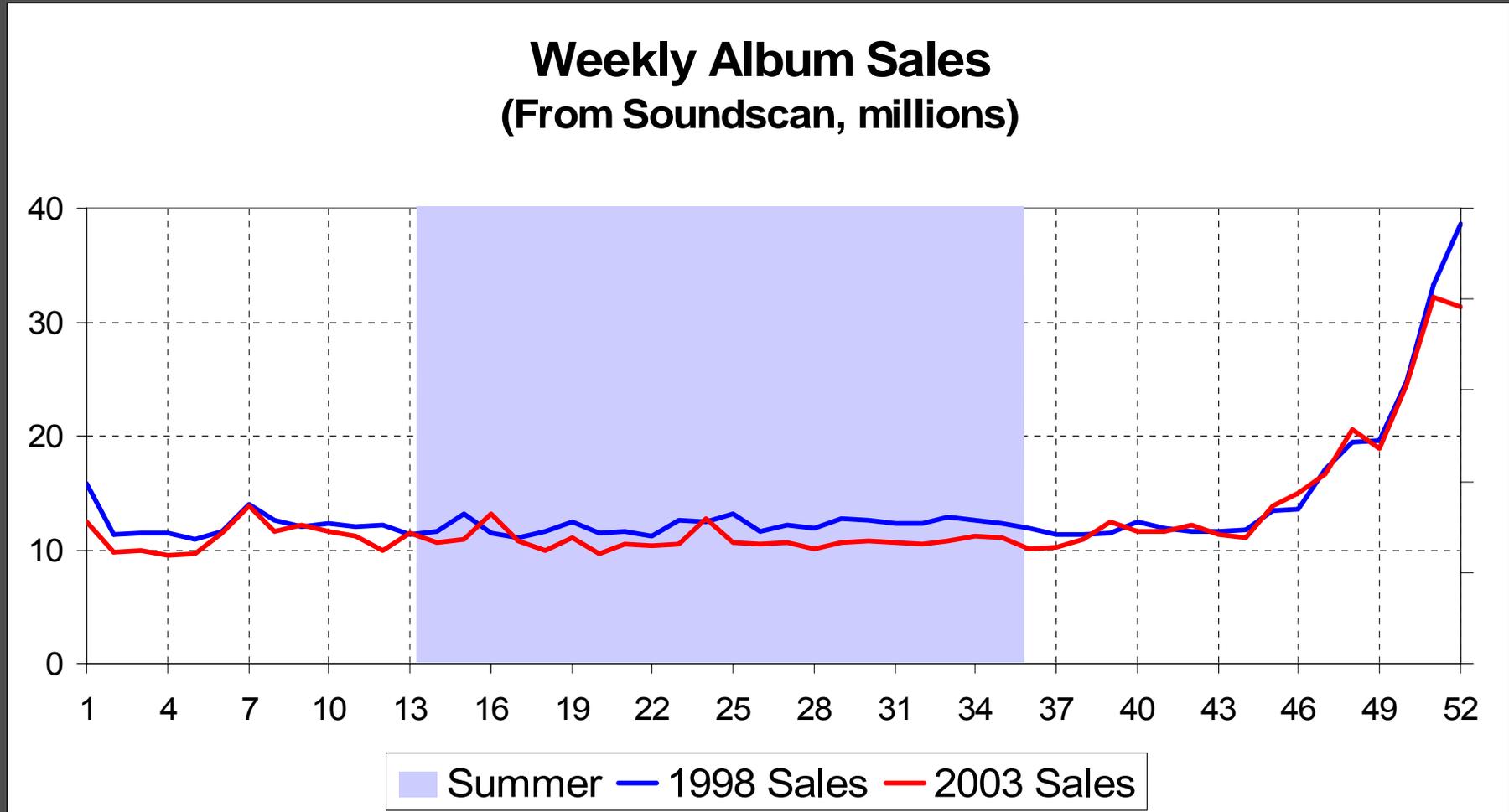
Impact of P2P on Music Sales

- 1998-2003: Album shipments ↓ 20%
- 1999: File-sharing (Napster) popularized
- Smoking gun???

P2P's Link to Sales Not Clear Cut

- Intuition not obvious since P2P...
 - ... allows learning
 - ... attractive to non-purchasers (time rich; \$ poor)
- Aggregate data:
 - Sales ↑ 1999, 2000, and 2004 (so far)
 - Other digital downloads (videogames) sell well
 - Summer sales
 - P2P ↓ by 15% over summer
 - Yet no change in summer sales
pre-P2P: 37.0%; post-P2P: 37.2%

Summer Sales Same/Higher in P2P Era



Evidence To Date

- Time Series correlations:
 - can rule out factors which have data on
 - but cannot show causation unless consider all factors
 - e.g. is sales ↓ due to Britney Spears hitting 20?!!
- Industry studies:
 - downloaders vs non-downloaders
 - correct counterfactual: behavior all people if no P2P
- Academic studies:
 - surveys of individuals:
 - survey bias; unrepresentative sample
 - proxies for downloads:
 - shared files ≠ downloads; internet use not random

Oberholzer-Gee and Strumpf

- First to look at files which actually downloaded
- Vast database: 1.75m downloads from 2002
- Idea:
 - Albums with more downloads → greater sales ↓?
- Important issue:
 - popularity drives both sales and downloads
 - look at factors influencing downloads but unrelated to sales (standard econometric approach)
 - song title misspellings; song length; internet congestion; international school holidays

Some Facts About Downloads

- Mainly current radio hits
 - 1-2 songs per album
- Entire albums rarely downloaded
- Suggests minimal crowd-out
 - individuals only want a couple songs/album
 - they would not pay \$18 for two songs!!
 - CDs remain popular as a format (~50% of sales on iTunes)

Results: Impact Downloads on Sales

- Small effect
 - small magnitude: <3m sales (<1% total) displaced
 - P2P slightly benefits lower selling artists (and limited negative impact on top-sellers)
- Statistical tests
 - cannot reject no effect of P2P
 - can reject even 1/4th of 2002 sales ↓ is due to P2P
 - P2P is not responsible for the majority of losses
 - *Economist*, 10/30/2004: study by major label comes to same conclusion

Robustness

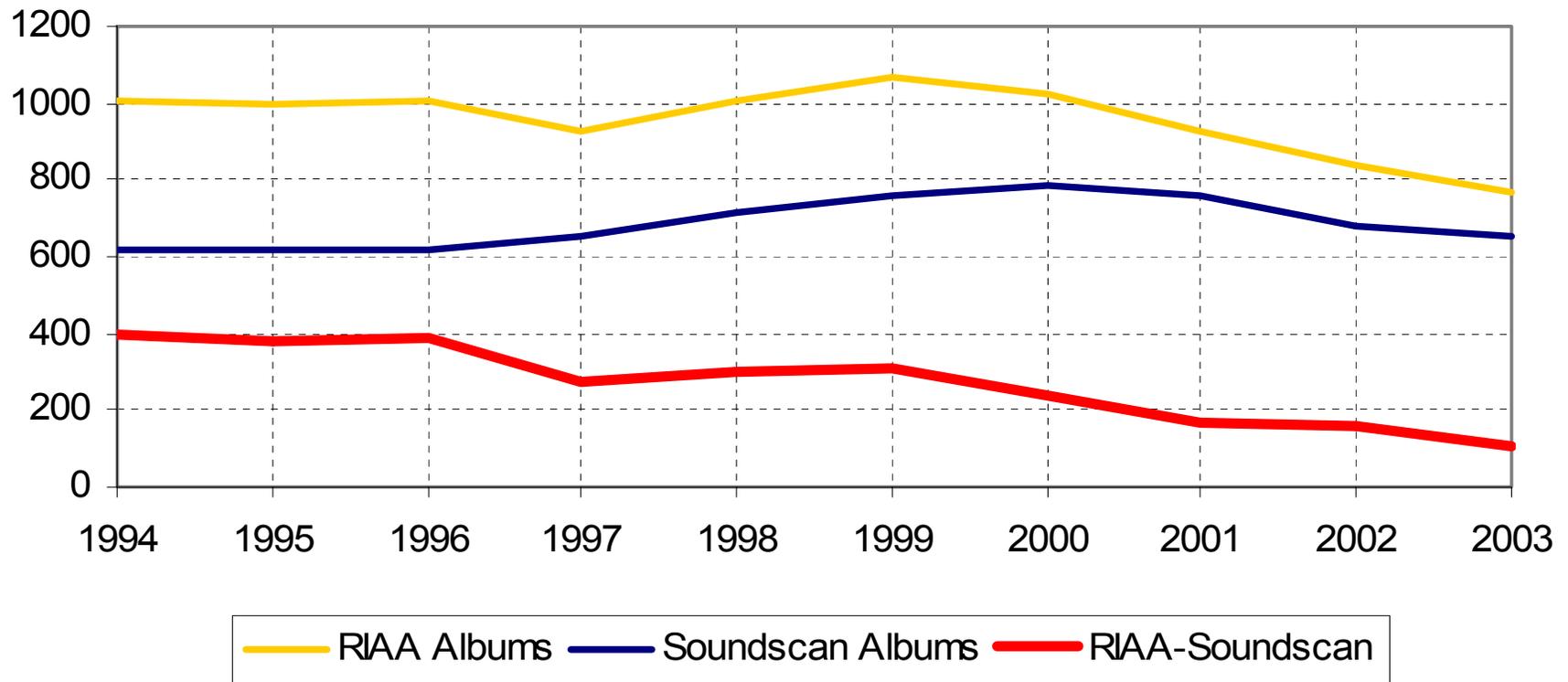
- Christmas effect
exclude December
- “Drop-out” hypothesis
inconsistent with surveys;
scale-up downloads (accounts for P2P growth);
long-term genre sales growth unaffected by P2P
- P2P shifts sales between albums
- Many others too ...

Conclusion

- Little evidence that P2P significantly impacted record sales in 2002
- What happened?
 - economy
 - ↓ inventories
 - 20% sales: record shops → discount retailers
 - half of reductions in shipments due to ↓ inventories
 - growth in entertainment alternatives
videogames, cell phones
 - end of vinyl/cassette replacement
1990s were atypical

Inventories Fell 200m 1999-2003...

Annual Album Sales (millions)



...Since Sales Shift To Discounters



THE RECORDING INDUSTRY ASSOCIATION OF AMERICA

2003 Consumer Profile

Phone: 202/775-0101

Web: www.riaa.com

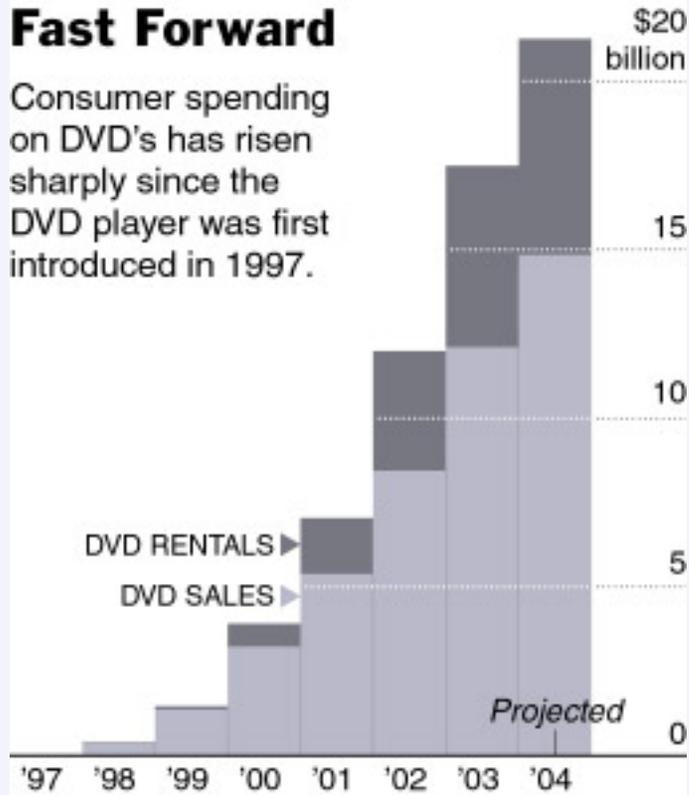
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
RECORD STORE	53.3	52.0	49.9	51.8	50.8	44.5	42.4	42.5	38.8	39.2
OTHER STORE	26.7	28.2	31.5	31.9	34.4	36.9	40.8	42.4	50.7	52.8
TAPE/RECORD CLUB TV, NEWSPAPER, MAGAZINE AD OR 800 NUMBER	3.4	4.0	2.9	2.7	2.9	2.5	2.4	3.0	2	1.5
INTERNET ⁷	NA	NA	NA	0.3	1.1	2.4	3.2	2.9	3.4	5.0

Source: www.riaa.com/news/marketingdata/pdf/2003consumerprofile.pdf

Home Movie Spend Increased \$8B 1999-2003 (Even with Decline of VHS)

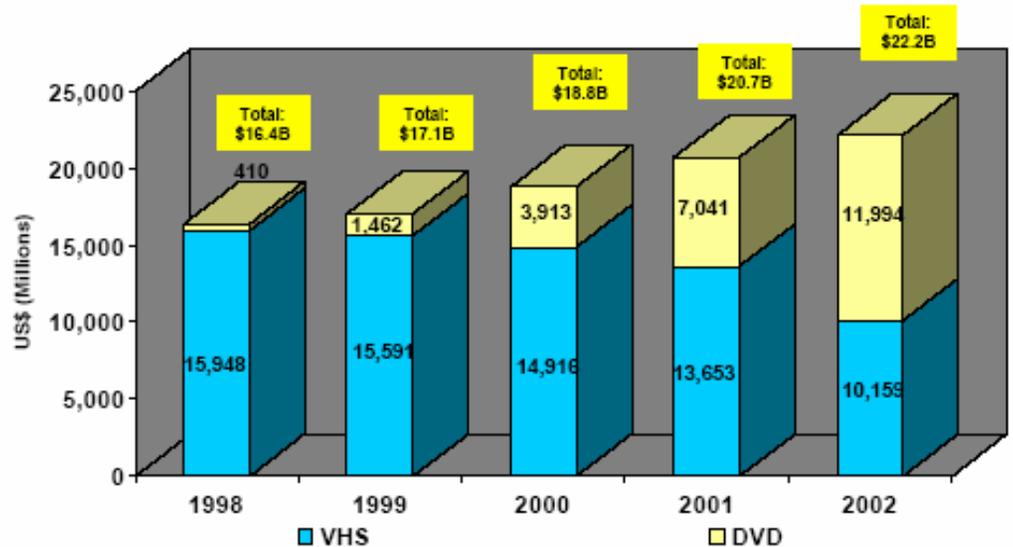
Fast Forward

Consumer spending on DVD's has risen sharply since the DVD player was first introduced in 1997.



Source: Adams Media Research

US Consumer Spend on Home Entertainment 1998-2002



Source: Adams Media Research

File Sharing User-base Continues to Increase (P2P Traffic also Increases)

