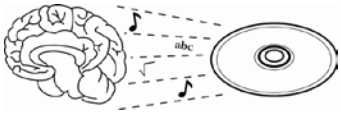

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Online Sales, Music Downloads, and the Decline of Retail Music Specialty Stores

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Online Sales, Internet Use, File Sharing, and the Decline of Retail Music Specialty Stores

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This paper uses phonebook records of music retailers in the United States for the years 1998 and 2002 to examine how Internet use, file sharing, and online sales of records have affected the entry and exit of brick and mortar music specialty retailers. By merging music store information with data on Internet activity and broadband connectedness at the Metropolitan Statistical Area (MSA) level, with the number of broadband providers at the zip code level, and with a database of the location of universities, I analyze how online purchases, broadband, and Internet use affected the survival probability and the change in the number of music stores between 1998 and 2002. I further study whether the number of employees and chain membership affected the survival probability. I find that broadband connectedness increased the death rate of brick and mortar music stores and reduced their number. I also find that the presence of a university led to a reduction in the number of music specialty stores in the zip code.

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Introduction

The last Tower Records store was closed in December of 2006. Online sales of CDs and both legitimate and illegitimate downloads may render traditional music specialty stores obsolete. Low search and distribution costs, tax advantages, low start up costs, and no monetary price for illegal downloads are factors likely to alter the landscape of the retail music business. Additionally, the Internet in itself may have affected the use of leisure time. These new sources of competition may change the traditional music business in several ways. First, they may reduce the survival probability and the number of traditional music specialty stores. Second, the survival probability may be heterogeneous for stores with different characteristics. Third, music specialty stores may reconstitute themselves by, for example, adding new product lines or participating in the online business.

In this paper I examine empirically how the new economy has affected the entry and exit of brick and mortar music retailers, employing phonebook records of music retailers for the entire US for the years 1998 and 2002. Using data on Internet activity and broadband penetration at the Metropolitan Statistical Area (MSA) level, information on the number of broadband providers at the zip code level, and a database of the locations of universities, I first address the exit decision by studying how online purchases, the Internet, and the speed of Internet connections affected the survival probability of music stores. I then address the decline of brick and mortar music stores due to exit and entry by analyzing the change in the number of stores between 1998 and 2002. I further discuss the extent to which Internet and broadband penetration can be used as proxies for file sharing.

This paper documents that the number of traditional music specialty stores experienced a decline of about 7% between the years 1998 and 2002. Legal downloads cannot explain this decline because they were insignificant during the period of analysis. The results show that the level of broadband use is an important determinant in explaining the death rate of brick and mortar music stores and in explaining the reduction in their number. I also find that the presence of a university leads to a reduction in the number of stores within the zip code. The results do not support a conclusion, however, that online purchases of physical CDs have also negatively affected traditional music specialty stores during the period of analysis. The low share of aggregate sales of physical CDs over the Internet and the low variation in this share during the period under consideration may explain that finding.

Studying the decline of stores with heterogeneous characteristics, I find a smaller survival probability for stores having a lower number of employees and for stores that belong to larger chains. However, contrary to the conventional idea that "mom and pop" stores operations are being displaced by corporate music specialty chains, this paper documents that the number of smaller music stores increased between 1998 and 2002. My results thus suggest that the creation rate of small music stores was even higher than the destruction rate.

The paper proceeds in five sections. The next section reviews the related literature. Section II summarizes some relevant aspects of the music business. Section III describes the data used in this paper and presents summary statistics. Section IV presents the empirical strategy and the results. The last section concludes.

I- Related Literature

This study is related to two strands of academic research. First, it relates to the literature studying the effect of the Internet on the retailing business. The Internet reduces search costs relative to visiting traditional stores. Many papers have analyzed the effect of the Internet on price levels and price dispersion.[1] On the other hand, few studies have analyzed the relationship between online purchases and the number of traditional stores. Two exceptions are Sinai and Waldfogel (2004) and Emre, Hortacsu, and Syverson (2005). Sinai and Waldfogel (2004) use the 1997 Economic Census to study whether consumers make more online purchases of music, books, and clothing in places having a lower number of brick and mortar establishments. They find that isolation from retail establishments induces Internet users to spend relatively more on books and clothing over the Internet, but they do not find conclusive evidence that isolation from retail establishments induces relatively more online purchases of music. Emre, Hortacsu, and Syverson (2005) use the County Business Pattern (CBP) database by the Census Bureau to study whether the number of brick and mortar travel agencies and bookstores experienced a larger decline where consumers' use of e-commerce grew fastest.

Second, this paper relates to the literature measuring the effect of copying on the music industry. The effect of file sharing on music sales was first addressed in the expert reports prepared in the Napster legal case, and since then has been addressed in several

[1] See Brynjolfsson et al. (2000), Sorensen (2000), Morton et al. (2001), Brown et al. (2002), and Wan (2005).

academic papers.[2] Most of these studies, with the exception of Oberholzer and Strumpf (2007), find that copying causes some reduction on sales.

II- The Retail Music Industry and Online Sales[3]

Retail sales of prerecorded music show trends from 1999 to 2003 toward sales in department stores (including Wal-Mart, K-Mart, and Target), toward hardware and audiovisual stores (including Best Buy and Circuit City) and also online retail, and against sales in music specialty stores and record clubs (Table 1). The trend toward reduced sales in music specialty stores started before 1999; the share of music sales in

[2] Liebowitz (2003) analyzes whether a variety of reasons other than file sharing could explain the drop in music sales, and concludes that these alternative reasons cannot explain the observed reduction in sales. Zentner (2006) uses a cross section of 15,000 individuals and, employing measures of Internet sophistication and the speed of the Internet connection as instruments, estimates that peer-to-peer usage reduces the probability of buying music by an average of 30%. Rob and Waldfogel (2006) use individual-level data on album illegal downloads and purchases by 500 college students. They find evidence that each album download reduces music purchases by 0.2 albums in the OLS specification, and they estimate a much higher displacement effect when using the speed of the Internet connection as an instrument. Hui and Png (2003) use country level data for years 1994-1998 and conclude that commercial piracy may also cause a decline on music sales. Bhattacharjee et al. (2006a) study the impact of file sharing on albums survival on ranking charts. Zentner (2005) finds that countries with higher Internet and broadband penetration have suffered higher drops in music sales, and also finds some evidence that file sharing may induce a larger reduction in sales of types of music that are being shared more heavily. Peitz and Waelbroeck (2004) also use country-level information and present evidence that online piracy may explain a reduction in sales. Liebowitz (2008) uses sales of music and Internet connectedness across US cities and concludes that file sharing induces a decline on sales of a magnitude that is at least of the size of the observed decline. Oberholzer and Strumpf (2007) and Blackburn (2004) use album sales and the number of illegal downloads. Both papers use shocks in the supply of albums in peer-to-peer systems to address simultaneity. Oberholzer and Strumpf (2007) estimate that illegal downloads have an effect on sales that is indistinguishable from zero, and Blackburn (2004) finds that illegal downloads may explain an important reduction in sales. Michel (2006) and Hong (2004) exploit repeated cross sections from the Consumer Expenditure Survey (CEX). They employ a difference-in-differences approach, using access to the Internet and ownership of a computer as proxies for downloading music, finding that file sharing may cause a reduction in sales of 5% and 7.6%, respectively. Bhattacharjee et al. (2006b) analyze the effect of the legal actions against individuals on the availability of music files on file sharing networks. A related set of studies focuses on the effect of copying on live performances. Krueger (2005) finds that copying may erode the complementarities between album sales and concert tickets, which might have caused the observed large increase in the price of concert tickets. Mortimer and Sorensen (2005) find that file sharing may have reduced profits from CD sales but increased the profitability of live performances.

[3] See Zentner (2006) for a more detailed analysis of the music industry.

Table 1
Sales of Music in Physical Format By Retail Channel-USA

Retail Channel	1999	2000	2001	2002	2003
Record Store	44.5%	42.4%	42.5%	36.8%	33.2%
Department Store	19.0%	19.0%	20.0%	23.0%	26.0%
Hardware Store/AV Store	7.0%	9.0%	8.0%	11.0%	13.0%
Bookshops	5.0%	5.0%	6.0%	6.0%	6.0%
Internet	2.4%	3.2%	2.9%	3.4%	5.0%
Tape/Record Club	7.9%	7.6%	6.1%	4.0%	4.1%
TV, Newspaper, Magazine, 800 number	2.5%	2.4%	3.0%	2.0%	1.5%
Other	11.7%	11.4%	11.5%	13.8%	11.2%

Source: IFPI 2004. Other includes unclassified mass merchants, discounters, electronics, and book stores.

these stores in 1995 was 52.0%. Brick and mortar bookstores (including Borders) do not represent an important source of sales of music in the US, nor have they shown an important increase in the participation in total sales over the last few years. The share of Internet sales of music in physical format in the US is lower than the share in some European countries; in 2003 the share was 8% in the United Kingdom and 11.8% in Germany, compared to 5% in the US.[4]

The online delivery of purchased music in digital format – as opposed to sales of physical CDs online - became available in 2001. Globally, there are over 100 companies selling digital music. Among the biggest companies are iTunes, Napster, Rhapsody, and Musicmatch. Most services offer permanent burnable downloads for about US$1 per song. Sales of digital singles in the US outsold physical singles by three to one in the second half of 2003 (IFPI, 2004). Sales of singles in 2003 amounted to 12.1 million units. Assuming a price of US$1 per song, sales of downloads in 2003 amounted to US$36.3 million, or 0.25% of total music sales. Therefore, legal digital downloads were a trivial component of the market during the years of analysis in this research – this paper uses a listing of music stores for the year 2002 and yellow pages are usually compiled early in the year (iTunes was launched in 2003). This paper does not analyze the effect of legal downloads on traditional retailers.[5]

[4] Since companies offering legal downloads were launched earlier in the US, it may be argued that legal downloads compete with Internet sales of music in physical format. Legal downloads in the US in 2003 were of too small a magnitude to have a serious impact, ruling out this hypothesis as an explanation for the entire difference between Internet sales of music in physical format in the US and in Europe.

[5] Legal downloads were almost non-existent in the period of analysis. However, the anticipation of a growth in the importance of legal downloads may have had an important impact on entry and exit decisions. Entrant brick and mortar stores, which have to pay a fixed cost to enter the market, are more likely to be affected by an expected growth in legal downloads. Studying the destruction probability - as opposed to the change in the number of stores - has the advantage of restricting the analysis to stores that were already in the market and had already paid the fixed entry cost.

III- Data and Descriptive Statistics

Music Stores Data

I use store-level data from InfoUSA for the years 1998 and 2002. InfoUSA is a company that collects data mainly for marketing purposes. They claim to collect this data using 5,200 yellow pages[6] and other business white pages directories, and calling every store one to four times each year for verification purposes.[7] The database used in this paper is composed of all stores listed in the yellow pages for the entire country under the heading "Compact Discs, Tapes, and Records-Retail." For each store, the database lists the name, location, and primary line of business (SIC code – coincides with the NAICS code for this activity). It also contains size groupings for the number of employees and yearly sales measured in current dollars for all individual stores. However, the sales volume variable is not collected but modeled, and based only on the number of employees.

Table 2 shows the breakdown of stores by number of employees for the years 1998 and 2002. The table only includes the stores reporting the SIC code 5735-01 as their primary line of business, which is the code for "Records, Tapes, & Compact Discs-Retail." The number of stores decreased 6.8% in this period. Interestingly, the number of the smallest music stores (one to four employees) increased both in share and absolute

[6] Bresnahan and Reiss (1991) have made use of yellow pages to analyze entry and competition in concentrated markets.

[7] They also claim to use data from leading business magazines and newspapers, county courthouses, the Secretary of State, annual reports, 10Ks and other SEC filings, new business registration and incorporations, and postal service information including National Change of Address, ZIP+4 carrier route, and Delivery Sequence Files.

Table 2
Records, Tapes, and Compact Discs Retail Stores-Primary SIC 5735-01

Number of Employees	Number of Stores 1998		Number of Stores 2002	
Between 1 and 4	5,524	57.88%	5,606	63.09%
Between 5 and 9	2,576	26.99%	2,050	23.07%
Between 10 and 19	1,077	11.28%	921	10.36%
Between 20 and 49	290	3.04%	240	2.70%
Between 50 and 99	62	0.65%	62	0.70%
Between 100 and 249	15	0.16%	7	0.08%
	9544	100.00%	8886	100.00%

number. This is contrary to the conventional idea that "mom and pop" stores are being displaced by corporate chains.

To analyze the creation and destruction of stores between 1998 and 2002, I merged the two years of data by using telephone numbers. There are several practical issues when merging the data. Some stores are eliminated because of duplicates, missing address, and different formats for the name of the store and the address. Some stores with different names share the same address. I called these stores in the state of Illinois and corroborated that in many cases they were located in shopping malls with several record retail stores. The results of the merge show a large rate of turnover: 4,761 stores survived from 1998 to 2002, 4,800 exited the market, and 4,137 entered the market.

There is no evidence of downsizing among surviving stores. The data indicates that 961 out of 4,761 stores experienced changes in the number of employees. Among these 961 stores, the mean of the number of employees changed from 10.6 in 1998 to 12.0 in 2002.

Usually, it is possible to identify stores belonging to a chain by name.[8] One difficulty in determining the number of stores in a given chain is the different naming formats in its stores. According to this database, the biggest music chains in 1998 were Blockbuster Music with 385 stores nationwide (this chain was bought by Wherehouse Music in 1998), Sam Goody with 343 stores, Camelot Music with 300 stores, and Music Land with 291 stores.

Some stores with a primary line of business SIC code other than 5735-01 advertise in the yellow pages under the heading "Compact Discs, Tapes, and Records-

[8] Some corporations operate stores under different names, making it difficult to identify the boundaries of chains.

Retail."[9] Since the production of yellow pages is decentralized, and therefore the inclusion of stores with an alternative primary line of business under the heading "Compact Discs, Tapes, and Records-Retail" might vary geographically, the analysis below is restricted to stores reporting 5735-01 as their primary SIC code.

In summary, the analysis below is restricted to the stores that advertise in the yellow pages under the heading "Compact Discs, Tapes, and Records-Retail," and among that group only those that report 5375-01 as their primary line of business. Therefore, stores that also sell videos and books and department stores are not included in the analysis unless they report 5375-01 as their primary SIC code.

Measures of Internet Activity

I employ data on Internet use from three different sources. The first source is the Current Population Survey (CPS) by the U.S. Bureau of Labor Statistics. The CPS contains information on Internet use at the Metropolitan Statistical Area (MSA) geographical level. Table 3 presents summary statistics of total Internet access, broadband access at home, and the percentage of people who use the Internet to make purchases of goods or services online. Since there was no survey in 2002, I use statistics

[9] Two examples in the data are "Video Tapes & Discs-Renting and Leasing" and "Book Dealers-Retail." The number of video stores in the database went up from 158 stores in 1998 to 252 in 2002. It is interesting that 123 stores that reported "Records, Tapes & Compact Discs-Retail" to be the primary SIC code in 1998 reported "Video Tapes & Discs-Renting and Leasing" to be the primary SIC in 2002, which may suggest a reconstitution process of music stores by changing the line of business. It should be noted that most of the stores (102) changing the SIC code belong to a single chain: "Wherehouse, Inc." The number of bookstores in the database went down from 505 stores in 1998 to 421 in 2002. The database lists 110 "Borders Books" stores in 1998 and 214 in 2002. However, I called some stores listed as new entrants and all the respondents existed before 1998. On the other hand, the phonebook for 1998 lists a total of 17 "Barnes and Nobles" stores and even though all of them disappear from the 2002 list of record stores, the ones I called actually still exist. The database includes a total of 10,896 stores in 1998 and 10,203 in 2002.

Table 3
Internet Penetration-Summary Statistics

	Mean	SD	Max	Min
Percentage of Internet Users (total) (MSA) (2001)	55.1%	9.4%	79.9%	17.8%
Percentage of People with Broadband Internet Connection at Home (MSA) (2001)	11.3%	6.8%	32.9%	0.0%
Percentage of People who Bought Goods or Services Online (MSA) (2001)	20.5%	7.2%	43.5%	0.0%
Percentage of People who Bought Goods or Services Online (MSA) (1998)	6.4%	3.5%	23.2%	0.0%
Number of MSAs		241		
Zip Codes (within MSAs) with at Least One Music Store in 1998 or 2002		4,432		
Number of Zip Codes with One to Three Broadband Providers		470		
Number of Zip Codes with Four Broadband Providers		530		
Number of Zip Codes with Five Broadband Providers		563		
Number of Zip Codes with Six Broadband Providers		550		
Number of Zip Codes with Seven Broadband Providers		528		
Number of Zip Codes with Eight Broadband Providers		466		
Number of Zip Codes with Nine Broadband Providers		425		
Number of Zip Codes with Ten Broadband Providers		349		
Number of Zip Codes with Eleven Broadband Providers		231		
Number of Zip Codes with Twelve Broadband Providers		134		
Number of Zip Codes with Thirteen Broadband Providers		89		
Number of Zip Codes with Fourteen Broadband Providers		56		
Number of Zip Codes with Fifteen Broadband Providers		25		
Number of Zip Codes with Sixteen Broadband Providers		10		
Number of Zip Codes with Seventeen Broadband Providers		4		
Number of Zip Codes with Eighteen Broadband Providers		2		

from September of 2001. This should not cause a significant problem since the yellow pages are usually compiled early in the year.

The second source of data is from the Federal Communication Commission (FCC). Since 2000 the FCC has published the number of broadband providers by zip code for the entire country. For each state in which they provide more than 250 connections, broadband providers are required to identify each zip code in which they provide at least one high-speed Internet connection. For the zip codes with at least one music store in either 1998 or 2002, Table 3 also presents the distribution of zip codes by the number of providers in 2001. Some zip codes have a strikingly high number of broadband providers. Since some of these alternatives might only be available to businesses and not to households, this variable measures with error the actual broadband alternatives that are available to households.

File sharing has been a popular activity among college students since its introduction. Indeed, Napster and its successors were banned in many universities because the very fast connections apparently induced so much file sharing that there was little available bandwidth left for anything else. For example, in the case of the University of Illinois at Urbana-Champaign, this amounted to 75% of the total bandwidth (BusinessWeek, 2000). The last source of data is a database of the locations of universities offering a four-year program of study at the undergraduate level in the fall of 2001. This data is from the Integrated Postsecondary Education Data System (IPEDS) by the Department of Education. There are 2,405 universities in the database located in 1,978 zip codes.

IV- Empirical Strategy and Results

I examine the entry and exit of traditional music stores in a cross section of locations. To study the exit of music stores I analyze the relationship between the destruction probability of stores and the magnitudes of file-sharing activity and of online purchases. I consider the following model:

$$(1) \qquad EP_{ik} = a + bFS_{k02} + c(OP_{k02} - OP_{k98}) + d(X_{k02} - X_{k98}) + eZ_i + u_{ik}$$

where EP_{ik} is a {0,1} variable indicating if store i in location k exited the market between 1998 and 2002, FS_{k02} is the (unobserved) level of file sharing in year 2002 in location k, OP_{k98} and OP_{k02} are the levels of online purchases in location k in years 1998 and 2002, X_{k98} and X_{k02} are characteristics of location k in years 1998 and 2002, respectively, Zi are characteristics of store i, and u_{ik} is the error.

Since file sharing did not exist in 1998, the model only includes the level of file sharing in 2002 (the level of file sharing in 1998 was zero). On the other hand, online purchases of CDs predated 1998; therefore the equation includes the increase in the level of online purchases between the years 1998 and 2002.

Not only the destruction, but also the creation of retail music stores might have changed in locations with high online purchases and high downloading activity. To analyze this I consider a two period model in which the number of music stores in location k and period t (NS_{kt}) is determined by:

$$(2) \qquad NS_{kt} = \alpha + \beta d2002_t + a_k + bFS_{kt} + cOP_{kt} + dX_{kt} + v_{kt}$$

where $d2002_t$ is a dummy variable that equals one when t=2002, a_k represent location specific and time invariant variables, FS_{kt} is the level of file sharing in location k and time t, OP_{kt} is the level of online purchases, X_{kt} are location specific and time variant variables, and v_{kt} is the error. Substituting FS_{k1998}=0 and taking differences, the change in the number of stores is:

$$(3) \quad NS_{k2002} - NS_{k1998} = \pi + bFS_{k2002} + c(OP_{k2002} - OP_{k1998}) + d(X_{k2002} - X_{k1998}) + v_{k2002} - v_{k1998}$$

The model analyzes how the change in the number of stores between these two years correlates with the amount of file sharing activity and with the change in online purchases. The fixed effects by location (a_k) may capture the effect of demographics with low variation during the period of analysis. Relative to studying the destruction probability of individual stores, this analysis has the advantage of providing a complete picture of the turnover of stores. The disadvantage is that it does not make use of the store level characteristics that are available in the database of music stores (see also footnote 5).

Results at the MSA level

Measures of file sharing activity at the MSA level are not available. Under the assumption that broadband penetration and Internet usage are irrelevant in explaining the survival probability of music stores in the absence of file sharing, these variables could

be used as proxies for the proportion of people practicing file-sharing, as for example in Hong (2004), Liebowitz (2005), Peitz and Waelbroeck (2004), and Zentner (2005). Broadband use has also been employed as an instrument for file sharing (Hong 2004, Rob and Waldfogel 2006, and Zentner 2006).[10]

Broadband and Internet access are not perfect proxies for file sharing. As pointed out by Peitz and Waelbroeck (2005), the Internet "offers new ways to spend leisure time. Among these 'digital' activities, looking for information on hobbies, products, travel, and reading the news are prominent." For this reason, broadband and Internet access may be complements or substitutes for music listening and for purchases of music, for reasons not related to file sharing.[11] For example, the Internet allows streaming radio which is likely to induce music listening, but may reduce or raise music purchases – depending on which effect is larger between the substitution of records and the advertisement of records.

Another problem of using Internet and broadband use as a proxy for file sharing is that consumers may acquire an Internet or a broadband connection in order to download music, causing an endogeneity problem. The use of broadband as a proxy for file sharing would lead to an underestimation of the impact of file sharing if consumers with an unobserved strong preference for music are more likely to acquire a broadband connection. On the other hand, conditional on music preferences, consumers who have an unobserved high preference for free music downloads will adopt a broadband connection,

[10] In addition to individual-level self-reported broadband access, Rob and Waldfogel (2006) employ broadband access variation at the school level as an alternative instrument. Hong (2004) uses individual-level Internet use as a proxy for file sharing.

[11] Internet and broadband penetration might capture the penetration of CD writers and other technological options to share and copy music. The results of file sharing should probably not be attributed to peer-to-peer Internet file sharing exclusively, but also to sharing files employing these alternatives.

which would lead to an overestimation of the file sharing effect. The analysis at the zip code level in the next section uses the number of broadband providers, which is not a choice for consumers and may be unrelated to the willingness to download music.

Column I of Table 4 presents estimates of Equation 1 using broadband and Internet usage at the MSA level as proxies for file sharing - marginal effects computed at the mean are presented.[12] Including broadband and Internet use as separate variables in the regression allows to distinguish the effect of file sharing on the destruction of music stores for locations with downloaders employing different Internet connection speeds. Another advantage of including broadband and Internet use as separate variables in the regression is that, for some leisure activities that the Internet allows, a high speed connection does not provide a large advantage compared to a dial-up connection (ex. reading the news online). This implies that broadband may be a better proxy for file-sharing than total internet use is. Conditioning on Internet use may control for the impact on the assignment of leisure time caused by the Internet activities that do not require a high speed Internet connection, and their potential effect on music purchases even abstracting from file sharing.

The standard errors are clustered by MSA to allow for spatial autocorrelation within the MSA. The regression includes dummies by the number of employees and by the number of stores in each chain. The results suggest that stores located in places with higher broadband penetration experienced a higher destruction probability. The coefficient on broadband penetration in column I of Table 4 implies that if file sharing did not exist, the exit probability of music stores would have been 5.3% lower (0.11 times

[12] The database of music stores contains the zip code for each individual store. Zip codes were assigned to MSAs using the University of Missouri's MABLE/Geocorr2K system.

Table 4
Destruction Probability and Change in the Number of Music Stores-MSA

	I Probability of Destruction (Probit-Marginal Effect at the Mean)	II Probability of Destruction (Probit-Marginal Effect at the Mean)	III Probability of Destruction (Probit-Marginal Effect at the Mean)	IV Change in the Logarithm of the Number of Stores-MSA (OLS-weighted by population)
% of Broadband (MSA) 2001	0.4915**	0.5786***	0.5572**	-0.7582*
(Mean (MSA) 0.11, SD 0.06)	(0.2023)	(0.2095)	(0.2231)	(0.3974)
% Have an Internet Connection at Any Place 2001 (MSA)	-0.1991	-0.3037	-0.2988	0.3111
(Mean (MSA) 0.55, SD 0.09)	(0.2432)	(0.2493)	(0.2495)	(0.5080)
Absolute Increase 1998-2001 in % Buy Good or Services	-0.1809	-0.1652	-0.1681	0.8269
Online (MSA) (Mean (MSA) 0.14, SD 0.06)	(0.2601)	(0.2776)	(0.2774)	(0.6296)
Number of Stores in the Chain	na	-0.0002**	-0.00005	na
(Mean 50.5 , SD 95.5)	na	(0.0001)	(0.0002)	na
Number of Employees	na	-0.0027***	-0.0043***	na
(Mean 6.8, SD 11.2)	na	(0.0007)	(0.0016)	na
Absolute Increase 1998-2001 in Income (MSA)	0.0039	0.0056	0.0056	-0.0085
(Mean (MSA) 4.1, SD 5.3)	(0.0031)	(0.0035)	(0.0035)	(0.0068)
Number of Stores per capita in the MSA	1,112.8	1,324.5	1,325.7	na
(Mean (MSA) 0.000033, SD 0.000013)	(1,567.7)	(1,622.6)	(1,623.1)	na
Population in the MSA (in Millions)	-0.0005	0.0020	0.0021	0.0029
(Mean (MSA) 0.9 , SD 1.2)	(0.0090)	(0.0092)	(0.0092)	(0.0152)
Interaction - Number of Stores in the Chain and % of Broadband	na	na	-0.0013	na
	na	na	(0.0014)	na
Interaction - Number of Employees in the Store and % of Broadband	na	na	0.0119	na
	na	na	(0.0101)	na
Dummies by Number of Stores in the Chain (40 categories)	yes	no	no	no
Dummies by Number of Employees in the Store (6 categories)	yes	no	no	no
R2	0.058	0.011	0.011	0.0409 (Model in Differences)- 0.98 (Fixed Effects)
Number of Observations	7889	7889	7889	241

The mean probability of destruction is 0.51.
The mean of the change in the logarithm of the number of stores is -0.11 and the standard deviation is 0.36.
The standard errors in columns I, II, and III are clustered by MSA. Robust standard errors are presented in column IV. *** 1% significance. **5% significance. *10% significance.

0.49).[13] On the other hand, higher Internet usage (% Have an Internet Connection at Any Place) has an effect on the destruction probability that is statistically indistinguishable from zero.

One potential interpretation of the statistically non-significant relationship between Internet use and the destruction probability of music stores is that the Internet per se is a complement for music buying, and that downloaders with a dial-up connection do not significantly reduce music purchases to overcompensate for this potential positive effect. For example, an individual with a dial-up connection may buy a record to play while reading the news online. Users with a high speed Internet connection have a significantly lower cost in time of downloading music. An individual with a broadband connection may choose to instead download the record to play while reading the news online. Under this interpretation, the coefficient on broadband connectedness would be an underestimate of the impact of file sharing on the probability of destruction.

The regression indicates that a larger increase in online purchases of CDs does not have a significant impact on the survival probability. The low share and the low variation in the share of aggregate sales of CDs over the Internet in the period of analysis (Table 1) may explain this result. It is also possible that the stores most affected by this form of online competition exited the market before 1998, which may create a selection problem in the data - if surviving stores are the less vulnerable to this type of competition. Sales of CDs over the Internet in the US have shown a large increase since 2002, reaching a share of 8.2% in 2005 (RIAA, 2005). A detailed analysis of the effect of online sales of CDs on

[13] In computing this effect it is assumed that consumers cancel their dial-up connection when adopting a broadband connection. This allows holding fixed the level of Internet connectedness when increasing broadband connectedness. In any case, the coefficient on Internet connection is not statistically significantly different from zero.

the destruction of brick and mortar music stores would require the use of more years in the analysis.[14]

Column II of Table 4 treats the number of employees and the number of stores in each chain as continuous. This regression shows that larger stores, as measured by the number of employees, have a higher survival probability. Coupling this result with the statistics presented in Table 2 - showing that the number of small music stores rose - indicates that both the creation and the destruction of smaller stores were higher. Chains with more stores are also more likely to survive.

In order to study whether the impact of having a broadband connection differs for small and large stores and that it also depends on the size of the chain, column III of Table 4 includes interactions between the percentage of broadband connectedness and two variables: 1) the number of stores in the chain; 2) the number of employees in the store. The interaction terms are not statistically significant and economically small. Even if the conventional idea that small stores are being displaced by corporate chains were true (however, see Table 2), column III suggests that this is unrelated to the level of broadband connectedness.

Stores located in areas with large increases in online purchases and high downloading activity may reconstitute themselves and circumvent death by, for example, adding new product lines or participating in the online business. Unfortunately, the data

[14] A lower number of brick and mortar stores in an MSA may increase the search cost of buying offline relative to the cost of buying online. Consumers may buy more records online because record stores exited the market, making it difficult to interpret a relationship between online purchases of records and a higher death rate of record stores as causal. However, the MSA fraction of online purchases in 1998 is positively correlated with the number of stores in an MSA and the number of stores per capita in 1998, even after controlling for the MSA income level in 1998. While this argument may suggest that the relative cost of buying records offline is not significantly higher for more isolated consumers, it does not prove that a reduction in the number of stores within an MSA does not *increase* the relative cost of buying offline. Recall that Sinai and Waldfogel (2004) do not find conclusive evidence that isolation from retail music stores induces relatively more online purchases of music.

does not contain store-level information on product lines or changes in product lines - beyond the inclusion of stores that sell music as a secondary activity – or shares of sales offline versus online. Since stores may avoid death by reconstituting themselves, the reconstitution option biases the estimates towards reducing the impacts of online sales and file sharing on the destruction probability. The data indicates that surviving stores did not downsize by reducing the number of employees. On the other hand, table 2 shows evidence of an increase in the share and the number of the smallest music stores; therefore, on average, entrants use fewer employees than older cohorts of stores did.

A potential shortcoming of the regressions is that they do not control for the number of department stores and hardware and audiovisual stores in each location. This may cause a bias if the increase in the number of these stores in metropolitan areas is not uniform, and is correlated with the level of broadband connectedness. The broadband coefficient would be biased upwards if the entry of these stores is more pronounced in areas with higher broadband penetration. The regressions do control for the number of people in each location, which may help to alleviate a potential bias if the creation of these department stores is larger in larger urban areas. Additionally, the interaction terms in column III show that the number of employees or the fact that a store belongs to a larger chain do not affect the impact of broadband on the survival probability. This may help to separate the effect of broadband from the impact of the birth of department stores, if department stores are only harmful to a given size-category of music stores and broadband is correlated with the entry of department stores.[15] The coefficient on the non-

[15] This is valid if the true unknown impact of broadband penetration does not differ for small and large stores and does not depend on the size of the chain. Under these assumptions, and if broadband is correlated with the entry of department stores, the interaction term would provide information on whether department stores are more harmful to a given size-category of music stores.

interacted broadband term would reflect the effect of broadband for the size-categories of music stores that are unaffected by department stores.

Not only destruction, but also creation of retail music stores may be higher in MSAs with high online purchases and high downloading activity. To analyze this possibility, I study the change in the number of stores between 1998 and 2002. Collapsing the data by MSA leaves 241 observations. Since broadband, Internet, and online purchases are measured in per capita terms, the dependent variable is the change in the logarithm of the number of stores – approximately the percentage change in the number of stores.

The results in column IV of Table 4 show that MSAs with higher broadband penetration experienced a higher reduction in the number of stores. Online purchases of CDs do not have a statistically significant effect on the change in the number of stores. The level of broadband penetration weighted by population is 0.09. The size of the coefficient on broadband penetration implies that file sharing may explain a net death rate of 6.7% stores at the mean MSA (0.09 times 0.75).[16] As a reference, the population weighted average reduction in the number of stores at the MSA level is 9.3%.[17]

In summary, the results at the MSA level suggest that broadband penetration may explain a decrease in the survival probability of music stores by about 5.3% and a reduction in its number by about 6.7%. The regressions indicate that the speed of the Internet connection is an important factor in explaining the decline of retail specialty music stores.

[16] The regression is weighted by population. This provides the appropriate results if the goal is to match the overall drop in the number of stores – since larger cities have a larger impact on the overall number of stores. Weighting by population has the additional benefit of assigning more weight to observations that are measured with smaller measurement error (see Liebowitz 2005).
[17] Recall that the overall reduction in the number of stores is 7%.

Analysis at the Zip Code Level

The purpose of this section is twofold. First, to analyze whether the existence of a university within the zip code increases the decline in the number of music stores - as the high level of file sharing among college students would indicate. Second, I use a different measure for the level of broadband penetration.

The number of broadband providers at the zip code level may be used as a measure of the level of competition among providers. Higher competition among broadband providers is likely to reduce the price and increase the odds of having a high-speed Internet connection at home. The advantage of using the number of high-speed Internet providers - instead of broadband penetration, which is a choice for consumers - is that this variable might increase downloading while being unrelated to the willingness to download music. On the other hand, the data from the FCC is not correctly measured for the purpose of my analysis, since it includes high speed Internet alternatives that are only available to businesses and not to households. While more broadband choices to businesses may imply more choices to households, the relationship between these two variables is likely noisy.

Since online purchases at the zip code level are not available, I attribute the MSA characteristics to all zip codes in an MSA, in order to distinguish the effects of the Internet with different speeds and control for the increase in online sales of CDs.

The results in column I of Table 5 show that the presence of a university in a zip code does not affect the survival probability of stores. In the expert report prepared in the

Napster legal case, Fader (2000) noted that sales in brick and mortar stores near universities were falling even before the introduction of Napster. This may create a survivorship bias if stores near universities were exiting the market before 1998, which would explain a lower destruction rate of stores near universities between the years 1998 and 2002. Unfortunately, the data of music stores does not include older years which would help to test this hypothesis.

The estimates in column I also show that the number of broadband providers increases the death rate of music stores by 3.0% (6.8 times 0.0044) between 1998 and 2002. The coefficient on the number of broadband providers is statistically significant when clustering the standard errors by zip code to allow for spatial autocorrelation within the zip code, but it is not significant when clustering the standard errors by MSA.

Column II of Table 5 shows that stores with more employees and stores that belong to chains with more stores had a higher survival probability. I use interaction terms to study whether the impact of the number of broadband providers varies by the size of the store and the size of the chain. The interactions between the number of broadband providers with the number of stores in each chain, and with the number of employees in each store are not statistically significant (column III).

The dependent variable in column IV of Table 5 is the change in the number of stores in each zip code.[18] This regression indicates that zip codes containing a university within their boundaries experienced a statistically and economically significant reduction in the number of stores. The actual average reduction in the number of stores at the zip code level weighted by population was of 0.15 stores per zip code. Thus, the results of

[18] It is not possible to compute the logarithm of the number of stores since many zip codes have zero stores in one of the two periods. See the appendix for alternative specifications.

Table 5
Destruction Probability and Change in the Number of Music Stores-ZIP Code

	I Probability of Destruction (Probit-Marginal Effect at the Mean)	II Probability of Destruction (Probit-Marginal Effect at the Mean)	III Probability of Destruction (Probit-Marginal Effect at the Mean)	IV Change in the Number of Stores-ZIP Code (OLS-weighted by population)
Dummy for the Existence of a University in the ZIP code	-0.0086	-0.0108	-0.0109	-0.1985**
	(0.0163)	(0.0165)	(0.0166)	(0.0807)
Number of Broadband Providers (ZIP Code)	0.0044††	0.0037††	0.0012	-0.0041
(Mean 6.8, SD 3.2)	(0.0035) (0.0021)†	(0.0035) (0.0020)†	(0.0040)	(0.0187)
% Have an Internet Connection at Any Place 2001 (MSA)	-0.1026	-0.2404	-0.2383	0.1131
(Mean 0.55, SD 0.09)	(0.3208)	(0.3421)	(0.3449)	(1.2309)
Absolute Increase 1998-2001 in % Buy Good or Services	-0.1153	-0.0354	-0.0377	1.8922
Online (MSA) (Mean 0.14, SD 0.06)	(0.2741)	(0.2925)	(0.2931)	(1.2352)
Number of Stores in the Chain	na	-0.0002***	-0.0003	na
(Mean 50.4 , SD 95.4)	na	(0.0001)	(0.0002)	na
Number of Employees	na	-0.0026***	-0.0050**	na
(Mean 6.8, SD 11.2)	na	(0.0006)	(0.0020)	na
Absolute Increase 1998-2001 in Income (MSA)	0.0039	0.0060*	0.0060	-0.0225*
(Mean 4.1, SD 5.3)	(0.0034)	(0.0037)	(0.0036)	(0.0133)
Number of Stores per Capita in the ZIP Code	15.4448	9.9613	10.7392	na
(Mean 0.00009, SD 0.0002)	(26.3803)	(24.2404)	(24.2519)	na
Population in the Zip Code (in Thousands)	-0.0003	0.0001	0.0001	-0.0010
(Mean 29.4, SD 16.7)	(0.0006)	(0.0006)	(0.0006)	(0.0030)
Interaction - Number of Stores in the Chain and Number of Broadband Providers	na	na	0.0003	na
	na	na	(0.0002)	na
Interaction - Number of Employees in the Store and Number of Broadband Providers	na	na	0.00001	na
	na	na	(0.00002)	na
Dummies by Number of Stores in the Chain (38 categories)	yes	no	no	no
Dummies by Number of Employees in the Store (6 categories)	yes	no	no	no
R2	0.054	0.007	0.007	0.008 (Model in Differences)- 0.85 (Fixed Effects)
Number of Observations	7869	7869	7869	4432

The mean probability of destruction is 0.51.
The mean of the change in the number of stores is -0.124 and the standard deviation is 1.34.
The standard errors are clustered by MSA unless otherwise stated. † Standard error clustered by ZIP Code.
*** 1% significance. **5% significance. *10% significance. †† Significance is conditional on which standard error is considered.

Table 5 taken together suggest that the reduction in the number of stores near universities is explained by a lower creation of music stores in these locations. The effect of the number of broadband providers is not statistically significant.

V- Conclusion

This paper uses phonebook records for the years 1998 and 2002 to analyze how online sales of records, Internet use, and file sharing affected the creation and the destruction of brick and mortar music specialty record stores. I document that the number of traditional music specialty stores experienced a decline of about 7% between the years 1998 and 2002.

The results show that broadband connectedness increased the death rate of brick and mortar music stores and reduced its number. The results at the MSA level suggest that broadband penetration may explain a decrease in the survival probability of music stores by about 5.3% and a net reduction in its number by about 6.7%. While many papers have employed Internet and broadband use as proxies and instruments for file sharing, they are not perfect proxies for file sharing for several reasons, as discussed above.

My estimates show that the presence of a university leads to a reduction in the number of music specialty stores in the zip code. The use of a university as a source of variation in file sharing is less problematic since is exogenous. Additionally, it is unlikely that the entry of department stores is related to the location of universities. On the other hand, students may use universities' Internet connections for other leisure activities that

are not related to file sharing, which may be complements or substitutes for purchases of music for reasons not related to file sharing.

The regression results do not support that online purchases of CDs have also negatively affected traditional music specialty stores, which may be explained by a low share and low variation of sales of CDs over the Internet during the period of analysis.

Analyzing the decline of stores with heterogeneous characteristics, I find a smaller survival probability for stores with a lower number of employees and of stores that belong to larger chains. However, the paper also documents that the number of smaller music stores increased between 1998 and 2002, which implies that for small music stores the creation rate was even higher than the destruction rate. This change in the distribution of store sizes may indicate that new stores are being created with a lower number of employees than the number they would have hired in the absence of file sharing. A complementary hypothesis is that supermarkets and department stores are a closer substitute to large music stores than to small stores that may specialize in certain collections not available in department stores.

This paper starts a research agenda of studying the recent changes in the retail music business. Extending the period of analysis to further study how sales of CDs over the Internet affect traditional music retailers, as well as to study how legal downloads affect traditional retailers, are high priorities for future research. Another extension of this research left for future study is to investigate how sales of CDs in supermarkets, department stores, bookstores, and audiovisual stores affect brick and mortar music retailers.

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Appendix: Robustness Checks

Table 1A- Destruction Probability-MSA

Column I of Table 1A presents OLS estimates of a linear probability model and column II restricts the probit regression to MSAs with population higher than 500,000. The purpose of restricting the regression to larger MSAs is that statistics from the Current Population Survey may be less reliable for smaller MSAs (see Liebowitz, 2005). The results of the linear regression and the regression restricted to large MSAs are qualitatively similar to the results in columns I through III of Table 4. Column III does not include the level of Internet penetrations as a covariate and column IV does not include the level of broadband penetration. These regressions suggest that the speed of the Internet connection is an important determinant in the destruction of stores.

Table 2A-Change in the Number of Music Stores-MSA

Column I of Table 2A shows estimates of a median regression in order to restrict the weight of outliers. The results are qualitatively similar compare to OLS estimates of column IV of Table 4. Column II includes an interaction variable between the level of

broadband penetration and the population in the MSA. This regression shows that the larger the MSA the larger the impact of broadband on the percentage reduction in the number of stores. Column III shows that the unweighted results are significantly different – the estimates imply that the level of broadband penetration increases the number of stores. The results of column III are explained by smaller MSAs since restricting the analysis to larger MSAs, as done in column IV, gives results similar to the weighted OLS and median regressions. Columns V and VI suggest that the speed of the Internet connection is an important determinant in explaining the percentage change in the number of stores.

Table 3A- Destruction Probability-ZIP Code

Column I of Table 3A presents OLS results of a linear probability model, which show that a linear regression gives similar estimates to the nonlinear probit marginal effect estimates computed at the mean. Column II does not include the number of broadband providers as a covariate and column III does not include the level Internet penetration. Similar to the results in Table 5, the number of broadband providers is statistically significant when accounting for the spatial autocorrelation within the zip code, but is not significant when accounting for the spatial autocorrelation within the MSA.

Table 4A-Change in the Number of Music Stores-ZIP Code

As mentioned in footnote 18, it is not possible to compute the logarithm of the number of stores since many zip codes have zero stores in one of the two periods. Column I of Table 4A uses the change in the number of stores per capita as the dependent variable – instead of the change in the number of stores. The results using this alternative dependent variable are qualitatively and quantitatively similar to the estimates in column IV of Table 5. The existence of a university reduces the number of music stores per capita by -0.0051. This implies that a zip code with the mean population of 30,000 would experience a reduction of 0.15 stores (30 thousand times 0.0051). Column II shows that the unweighted counterparts to the estimates of column IV of Table 5 are similar.

Table 1A
Destruction Probability

	I	II	III	IV
	(Linear Probability Model)	(Probit-Marginal Effect at the Mean) Population > 500,000	(Probit-Marginal Effect at the Mean)	(Probit-Marginal Effect at the Mean)
% of Broadband (MSA) 2001	0.4676**	0.6908***	0.4419**	na
(Mean (MSA) 0.11, SD 0.06)	(0.1900)	(0.2619)	(0.1812)	na
% Have an Internet Connection at Any Place 2001 (MSA)	-0.1899	-0.3591	na	-0.0617
(Mean (MSA) 0.55, SD 0.09)	(0.2283)	(0.3506)	na	(0.2183)
Absolute Increase 1998-2001 in % Buy Good or Services	-0.1669	-0.0590	-0.3823*	-0.1120
Online (MSA) (Mean (MSA) 0.14, SD 0.06)	(0.2443)	(0.4253)	(0.2229)	(0.2613)
Absolute Increase 1998-2001 in Income (MSA)	0.0037	0.0090	0.0039	0.0045
(Mean (MSA) 4.1, SD 5.3)	(0.0029)	(0.0059)	(0.0031)	(0.0033)
Number of Stores per capita in the MSA	1,047.6	1,678.6	1,120.4	1,183.9
(Mean (MSA) 0.000033, SD 0.000013)	(1,470.0)	(2,272.9)	(1,549.8)	(1,538.0)
Population in the MSA (in Millions)	-0.0005	-0.0022	0.0007	-0.000004
(Mean (MSA) 0.9 , SD 1.2)	(0.0085)	(0.0094)	(0.0097)	(0.0093)
Dummies by Number of Stores in the Chain (40 categories)	yes	yes	yes	yes
Dummies by Number of Employees in the Store (6 categories)	yes	yes	yes	yes
R2	0.072	0.060	0.057	0.056
Number of Observations	7889	6541	7889	7889

The mean probability of destruction is 0.51.
The standard errors are clustered by MSA. *** 1% significance. **5% significance. *10% significance.

Table 2A
Change in the Logarithm of the Number of Music Stores-MSA

	I	II	III	IV	V	VI
	(Median Regression)	(OLS-weighted by population)	(OLS-unweighted)	(OLS-unweighted) Population > 500,000	(OLS-weighted by population)	(OLS-weighted by population)
% of Broadband (MSA) 2001	-0.7953**	-0.0242	0.1404	-0.7751*	-0.6835*	na
(Mean (MSA) 0.11, SD 0.06)	(0.3539)	(0.5261)	(0.3705)	(0.4548)	(0.3576)	na
% Have an Internet Connection at Any Place 2001 (MSA)	0.1686	0.2176	-0.1021	0.2208	na	0.1265
(Mean (MSA) 0.55, SD 0.09)	(0.3174)	(0.4980)	(0.4046)	(0.5467)	na	(0.4669)
Absolute Increase 1998-2001 in % Buy Good or Services	0.7002*	0.8908	0.5153	0.6431	1.1410***	0.7017
Online (MSA) (Mean (MSA) 0.14, SD 0.06)	(0.3629)	(0.6246)	(0.5578)	(0.8712)	(0.4215)	(0.6435)
Absolute Increase 1998-2001 in Income (MSA)	-0.0078*	-0.0080	-0.0006	-0.0029	-0.0082	-0.0091
(Mean (MSA) 4.1, SD 5.3)	(0.0040)	(0.0067)	(0.0046)	(0.0103)	(0.0069)	(0.0068)
Population in the MSA (in Millions)	0.0129	0.0466	0.0121	0.0087	0.0012	0.0017
(Mean (MSA) 0.9 , SD 1.2)	(0.0111)	(0.0286)	(0.0157)	(0.0160)	(0.0164)	(0.0159)
Interaction - Population in the MSA and % of Broadband	na	-0.4051	na	na	na	na
	na	(0.2995)	na	na	na	na
R2	0.046 (Model in Differences) 0.90 (Fixed Effects)	0.052 (Model in Differences) 0.98 (Fixed Effects)	0.009 (Model in Differences) 0.97 (Fixed Effects)	0.033 (Model in Differences) 0.97 (Fixed Effects)	0.037 (Model in Differences) 0.98 (fixed Effects)	0.023 (Model in Differences) 0.98 (Fixed Effects)
Number of Observations	241	241	241	103	241	241

The mean of the change in the logarithm of the number of stores is -0.11 and the standard deviation is 0.36.
Robust standard errors. *** 1% significance. **5% significance. *10% significance.

Table 3A
Destruction Probability

	I (Linear Probability Model)	II (Probit-Marginal Effect at the Mean)	III (Probit-Marginal Effect at the Mean)
Dummy for the Existence of a University in the ZIP code	-0.0082	-0.0056	-0.0085
	(0.0155)	(0.0159)	(0.0162)
Number of Broadband Providers (ZIP Code)	0.0041††	na	0.0044††
(Mean 6.8, SD 3.2)	(0.0033) (0.0020)†	na	(0.0035) (0.0021)†
% Have an Internet Connection at Any Place 2001 (MSA)	-0.0975	-0.1071	na
(Mean 0.55, SD 0.09)	(0.3022)	(0.3259)	na
Absolute Increase 1998-2001 in % Buy Good or Services	-0.1026	-0.0793	-0.2369
Online (MSA) (Mean 0.14, SD 0.06)	(0.2578)	(0.2764)	(0.2811)
Absolute Increase 1998-2001 in Income (MSA)	0.0036	0.0041	0.0038
(Mean 4.1, SD 5.3)	(0.0032)	(0.0034)	(0.0033)
Number of Stores per Capita in the ZIP Code	14.2750	19.1982	16.4271
(Mean 0.00009, SD 0.0002)	(24.3576)	(27.6283)	(28.4897)
Population in the Zip Code (in Thousands)	-0.0003	-0.0001	-0.0003
(Mean 29.4, SD 16.7)	(0.0006)	(0.0007)	(0.0007)
Dummies by Number of Stores in the Chain (38 categories)	yes	yes	yes
Dummies by Number of Employees in the Store (6 categories)	yes	yes	yes
R2	0.068	0.054	0.054
Number of Observations	7869	7869	7869

The mean probability of destruction is 0.51.

The standard errors are clustered by MSA unless otherwise stated.† Standard error clustered by ZIP Code.

*** 1% significance. **5% significance. *10% significance. †† Significance is conditional on which standard error is considered.

Table 4A
Change in the Number of Music Stores-ZIP Code

	I Change in the of the Number of Stores per capita-ZIP Code (OLS-weighted by population)	II Change in the of the Number of Stores-ZIP Code (OLS-unweighted)
Dummy for the Existence of a University in the ZIP code	-0.0051**	-0.1686**
	(0.0022)	(0.0681)
Number of Broadband Providers (ZIP Code)	-0.0002	-0.0098
(Mean 6.8, SD 3.2)	(0.0005)	(0.0154)
% Have an Internet Connection at Any Place 2001 (MSA)	0.0065	0.3727
(Mean 0.55, SD 0.09)	(0.0311)	(0.9405)
Absolute Increase 1998-2001 in % Buy Good or Services	0.0392	1.0273
Online (MSA) (Mean 0.14, SD 0.06)	(0.0347)	(0.9257)
Absolute Increase 1998-2001 in Income (MSA)	-0.0005	-0.0133
(Mean 4.1, SD 5.3)	(0.0003)	(0.0096)
Population in the Zip Code (in Thousands)	na	-0.0010
(Mean 29.4, SD 16.7)	na	(0.0021)
R2	0.003 (Model in Differences) - 0.83 (Fixed Effects)	0.006 (Model in Differences) - 0.84 (Fixed Effects)
Number of Observations	4432	4432

The mean change in the number of stores per capita is -0.002 and the standard deviation is 0.296. The mean of the change in the number of stores is -0.124 and the standard deviation is 1.34.
The standard errors are clustered by MSA.
*** 1% significance. **5% significance. *10% significance.