

Copyright, Technological Switch and Prerecorded Media Sales *A Case of Music Industry in Japan*

BRANISLAV HAZUCHA* AND MARCEL REŠOVSKÝ†

Abstract

This Paper examines the impact of innovation in audio devices and reproduction and communication technologies on the music industry and its incumbent and new business models. Since 1999 the sales of prerecorded music media have dropped down up to 10 per cent a year. Relying on the data for the 1990s and early 2000s, various empirical studies identify peer-to-peer file sharing, increases in retail prices, sale substitutions by different types of entertainment, and differences in strengths of copyright laws in different countries as factors affecting the sales of prerecorded music media.

By analysing data of music sales between 1960 and 2010 in Japan, this Paper argues that in addition to the abovementioned factors, the considerable decrease in music sales in Japan and possibly also worldwide has been caused (a) by the technological switch from tangible media to music downloading from authorized online services, such as iTunes Music Store or Amazon MP3; (b) by the change in the way of music consumption by consumers in the digital era; and (c) by the negative economic situation in Japan and worldwide, especially since the late 2000s.

Keywords: copyright, peer-to-peer, piracy, technological switch, music industry, factors affecting sales of prerecorded music media, Japan

Table of Content

I. INTRODUCTION	1
II. CONTEMPORARY EMPIRICAL STUDIES AND THEIR LIMITS	3
III. BEYOND PIRACY PARADIGM	6
3.1. Main Factors Affecting the Sales of Prerecorded Music Media	6
a) Economic Situation	7
b) Consumers' Income and Expenditure Preferences	9
c) Retail Prices	12
d) Population Demographics	14
e) Penetration of Sound Recording and Communication Technologies	16
3.2. Additional Factors Causing the Music Sales Decrease	17
a) Technological Switches	18
b) Changes in the Way of Music Consumption in the Digital Ages	21
c) Negative Economic Situation since 2008	23
IV. CONCLUSION	24

* LL.M. 1999 (Comenius University); Dr. jur. 2002 (Trnava University); LL.D. 2005 (Kyushu University); Associate Professor, Hokkaido University Graduate School of Law.

† M.Econ. 2010 (Technical University of Košice); PhD. Candidate, Technical University of Košice, Faculty of Economics.

I. INTRODUCTION

Since the late 1990s,¹ the sales of prerecorded music media have been steadily and considerably decreasing worldwide with a short temporary interruption in the mid-2000s, which has postponed, but has not changed their long-term declining trend. The late 1990s and the early 2000s are also characterized by several other important phenomena, which affect music sales and consumption. At that time, several technological and marketing innovations, which can partially or completely change the entire way of music consumption as known over the entire 20th century, emerged. MP3 audio compression² and peer-to-peer networking technologies,³ as well as various online services providing their customers with music files for downloading appeared in a span of few years.

The main record labels⁴ and their various trade associations on the global level, such as the International Federation of the Phonographic Industry (IFPI)⁵ worldwide, and on the national level, such as the Recording Industry Association of America (RIAA),⁶ the Recording Industry Association of Japan (RIAJ)⁷ and the British Recorded Music Industry (BPI)⁸ in the three largest markets for prerecorded music media, claim that online piracy, especially file sharing amongst millions of internet users on peer-to-peer networks, such as Napster,⁹ Aimster,¹⁰ Grokster,¹¹ KaZaA,¹² Gnutella, BitTorrent or LimeWire,¹³ and websites allowing massive uploads of large

¹ Please note that the exact year, from which the music sales started declining, varies amongst countries. For instance, the peak year in unit sales on the global level was 1996. In Japan and Germany the peak year was 1998, and in the U.S. it was the year of 1999. *See, e.g.*, THE INTERNATIONAL FEDERATION OF THE PHONOGRAPHIC INDUSTRY (IFPI), THE RECORDING INDUSTRY IN NUMBERS 2003 24, 47, 97 and 210 (London: IFPI, 2003)

² The term “MP3” commonly refers to the MPEG-1 Audio (MPEG-1 Part 3) technical standard, later extended in the MPEG-2 Audio (MPEG-2 Part 3) technical standard. The MP3 technology was designed and developed by the Moving Picture Experts Group (MPEG). Both standards were approved and published by the International Organization for Standardization (ISO) and by the International Electrotechnical Commission as ISO/IEC technical standards (MPEG-1 Part 3 as ISO/IEC 11172-3:1993 and MPEG-2 Part 3 as ISO/IEC 13818-3:1995, revised by ISO/IEC 13818-3:1998). The MP3 technology uses lossy compression allowing 1:11 compression of audio data at 128kbit/s speed.

³ Contrary to the conventional client-server networking architecture, the peer-to-peer networking technology reduces the role of servers in communication and allows direct communication between end-users’ computers on the level of peers. It thus eliminates the need to upload files on the server to make them accessible by other users. The end-users can directly search for files available on other users’ computers, which are online at that moment. For more details on peer-to-peer networking, *see, e.g.*, Nelson Minar and Marc Hedlund, *A Network of Peers: Peer-to-Peer Models Through the History of the Internet*, in ANDY ORAM (ED.), PEER-TO-PEER: HARNESSING THE POWER OF DISRUPTIVE TECHNOLOGIES 3 (Sebastopol, CA: O’Reilly & Associates, 2001)

⁴ Up to 2011, there were four major record labels worldwide. They were composed of Sony Music Entertainment, EMI Group, Warner Music Group and Universal Music Group. Since the end of 2011, the EMI Group has been in the process of dismembering between the Sony Music Entertainment and the Universal Music Group. The deals still have to be approved by national antitrust authorities in affected jurisdictions around the world.

⁵ For more details, *see* IFPI, *IFPI’s mission*, available at http://www.ifpi.org/content/section_about/index.html (last visited Feb. 22, 2012) (stating that “IFPI is a not for profit members organisation registered in Switzerland” and that it “represents the recording industry worldwide with some 1400 members in 66 countries and affiliated industry associations in 46 countries”).

⁶ *See generally* <http://www.riaa.com> (last visited Feb. 22, 2012).

⁷ *See generally* <http://www.riaj.or.jp/e/index.html> (last visited Feb. 22, 2012).

⁸ *See generally* <http://www.bpi.co.uk> (last visited Feb. 22, 2012).

⁹ *See A&M Records, Inc. v. Napster, Inc.*, 114 F. Supp. 2d 896, 2000 U.S. Dist. LEXIS 11862 (N.D. Cal. Aug. 10, 2000); *A&M Records, Inc. v. Napster, Inc.*, 239 F. 3d. 1004, 1020-21, 2001 U.S. Dist. LEXIS 5446 (9th Cir. Feb. 12, 2001).

¹⁰ *See In Re: Aimster Copyright Litigation*, 2002 U.S. Dist. LEXIS 17054 (N.D. Ill. Sept. 4, 2002), *aff’d*, 334 F.3d 643 (8th Cir. 2004).

¹¹ *See MGM Studios v. Grokster, Ltd.*, 259 F. Supp.2d 1029, 2003 U.S. Dist. LEXIS 6994 (C.D. Cal. Apr. 25, 2003); *MGM Studios v. Grokster, Ltd.*, 380 F.3d 1154, 2004 U.S. App. LEXIS 17471, 72 U.S.P.Q.2D (BNA) 1244 (9th Cir. Aug. 19, 2004); *MGM Studios v. Grokster, Ltd.*, 2005 U.S. LEXIS 5212 (Jun. 27, 2005).

¹² *See Universal Music Australia Pty. Ltd. v. Shaman License Holdings Ltd.* [2005] F.C.A. 1242.

files, such as RapidShare¹⁴ or Megaupload.com,¹⁵ are the main causes of long-term declining trend in music sales. The prevailing contemporary scholarly literature partially or completely confirms that claim by identifying peer-to-peer file sharing as one of main causes or the only cause leading to the music sales decline.¹⁶

This Paper attempts to broaden the scope of analysis beyond narrow piracy-based reasoning. It shows that the sales of prerecorded music media also depend on other factors than piracy, such as an actual situation within the entire economy as well as in consumers' income and expenditures, and a way of music consumption. Those factors are often partially or completely overlooked or marginalized in policy-making discussions¹⁷ and even in many empirical studies.¹⁸ Contrary to many studies, which limit their analysis mainly on the period of 1990s and early 2000s¹⁹ with a few exceptions examining also the second half of 2000s,²⁰ this Paper scrutinizes music sales data from Japan between 1960 and 2010. Extending the studied time period allows to identify and scrutinize factors, which have previously been overlooked. In addition to the factors listed above, this Paper also examine the following three additional factors: (a) the technological switch between tangible media and intangible music downloads provided by various authorized online services, such as iTunes Music Store or Amazon MP3; (b) the change in the way of music consumption in case of authorized online music downloads; and (c) the overall negative economic situation in Japan as well as worldwide in the late 2000s and early 2010s, caused by global financial and economic crisis. The Paper argues that the three factors can cumulatively explain the current situation in the sales of prerecorded music media.

Section II outlines contemporary empirical studies and points out their main advantages, limits and shortcomings. Section III looks beyond the piracy paradigm advocated by record labels as well as several scholars. It identifies main socio-economic factors, which affect the sales of prerecorded music media besides piracy. It then scrutinizes the three abovementioned additional

¹³ See *Arista Records LLC v. Lime Wire LLC*, 715 F. Supp. 2d 481; 2010 U.S. Dist. LEXIS 46638; 96 U.S.P.Q.2D (BNA) 1437; Copy. L. Rep. (CCH) P29,921 (S.D.N.Y., May 11, 2010).

¹⁴ See, e.g., *Perfect 10, Inc. v. Rapidshare*, No. 09-CV-2596 (S.D. Cal. May 18, 2010); *Atari Europe S.A.S.U. v. RapidShare AG* (Higher Regional Court of Düsseldorf Jan. 6, 2011).

¹⁵ See, e.g., U.S. Department of Justice, *Justice Department Charges Leaders of Megaupload with Widespread Online Copyright Infringement* (Jan. 19, 2012), available at <http://www.justice.gov/opa/pr/2012/January/12-crm-074.html> (last visited Feb. 22, 2012).

¹⁶ See, e.g., Martin Peitz and Patrick Waelbroeck, *The Effect of Internet Piracy on Music Sales: Cross-Section Evidence*, 1 REVIEW OF ECONOMIC RESEARCH ON COPYRIGHT ISSUES 71 (2004); David Blackburn, *On-line Piracy and Recorded Music Sales* (unpublished manuscript 2004), available at <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.117.2922> (last visited Feb. 22, 2012); Alejandro Zentner, *File Sharing and International Sales of Copyrighted Music: An Empirical Analysis with a Panel of Countries*, 5 TOPICS IN ECONOMIC ANALYSIS & POLICY ARTICLE 21 (2005); Rafael Rob and Joel Waldfogel, *Piracy on the High C's: Music Downloading, Sales Displacement, and Social Welfare in a Sample of College Students*, 49 JOURNAL OF LAW AND ECONOMICS 29 (2006); Stan J. Liebowitz, *Research Note—Testing File Sharing's Impact on Music Album Sales in Cities*, 54 MANAGEMENT SCIENCE 852 (2008); Joel Waldfogel, *Music File Sharing and Sales Displacement in the iTunes Era*, 22 INFORMATION ECONOMICS AND POLICY 306 (2010).

¹⁷ [...].

¹⁸ [...].

¹⁹ See, e.g., Peitz and Waelbroeck, *supra* note 16 (analysing data from 16 countries between 1998 and 2002); Blackburn, *supra* note 16 (examining the U.S. data covering 62 weeks between the weeks of September 29, 2002 and November 30, 2003); Lonnie K. Stevans and David N. Sessions, *An Empirical Investigation into the Effect of Music Downloading on the Consumer Expenditure of Recorded Music: A Time Series Approach*, 28 JOURNAL OF CONSUMER POLICY 311 (2005) (relying on the US quarterly data from 1990 to 2004); Zentner, *supra* note 16 (studying the data from 65 countries between 1997 and 2002); Rob and Waldfogel, *supra* note 16 (employing two surveys administered to 412 U.S. students between December 2003 and February 2004); Liebowitz, *supra* note 16 (analysing data for 99 U.S. cities between 1998 and 2003).

²⁰ See, e.g., Birgitte Anderson and Marion Frenz, *Don't Blame the P2P File-Sharers: The Impact of Free Music Downloads on the Purchase of Music CDs in Canada*, 20 J. EVOL. ECON. 715 (2010) (analysing the survey data collected by Decima Research in 2006); Waldfogel, *supra* note 16 (relying on data obtained from surveys administered to nearly 500 U.S. students in the second week of January in 2009 and 2010).

factors, which played a significant role in music sales declines between 1980 and 1987 as well as between 1999 and 2010.

The impacts of individual factors on the sales of prerecorded music media are showed on data describing the music industry and economic situation in Japan between 1960 and 2010. The record sales data, which are examined, were published by the RIAJ.²¹ The data on nominal and real gross domestic products (GDP), average monthly wages and consumer price index were obtained from www.MeasuringWorth.com.²² The data on the structure of Japanese population, the average monthly household expenditures and the penetration of various reproduction and communication technologies were acquired from the Statistics Bureau of Japan.²³

II. CONTEMPORARY EMPIRICAL STUDIES AND THEIR LIMITS

The contemporary empirical studies,²⁴ which attempt to identify the cause of recent music sales decline, can be divided into two main groups with several subdivisions. The first main group consists of diverse studies, which aim to find a measure for identifying the effects of peer-to-peer file sharing on the sales of prerecorded music media. But they widely vary in their methodology. They differ in the focus of studied data, such as data on music sales for individual cities,²⁵ countries²⁶ or albums and genre,²⁷ as well as in the measure of the size of peer-to-peer file sharing. Some studies rely on estimations on the size of peer-to-peer file sharing published by various market survey institutions,²⁸ or even on actual traffic data obtained from a server used for file sharing.²⁹ The others employ the data on penetration or prices of personal computers, CD burners or Internet as a proxy for file sharing and online piracy.³⁰

²¹ See RIAJ, *Related Data*, <http://www.riaj.or.jp/e/data/index.html> (last visited Feb. 22, 2012).

²² See MeasuringWorth.com, *What Were Japanese GDP, CPI, Wage, or Population Then?: Annual Observations in Table and Graphical Format for years 1879 to Present*, available at <http://www.measuringworth.com/japandata/> (last visited Feb. 22, 2012).

²³ See Statistics Bureau of Japan, *Historical Statistics of Japan*, available at <http://www.stat.go.jp/english/data/chouki/index.htm> (last visited Feb. 22, 2012).

²⁴ For a survey of empirical studies on economic effects of copyright, see Christian Handke, Paul Stepan and Ruth Towse, *Development of the Economics of Copyright*, in JOSEF DREXL (ED.), *RESEARCH HANDBOOK ON INTELLECTUAL PROPERTY AND COMPETITION LAW* 373, 390-94 (Cheltenham: Edward Elgar Publishing, 2008); Christian Handke, *Economic Effects of Copyright: The Empirical Evidence So Far* 19-22 (2011), available at https://blogs.commons.georgetown.edu/copyrightnrc/files/NRC-Copyright-Handke_National-Academies_1May1.pdf (last visited Feb. 22, 2012).

²⁵ See Liebowitz, *supra* note 16.

²⁶ See, e.g., Peitz and Waelbroeck, *supra* note 16 (analysing data from 16 countries); Blackburn, *supra* note 16 (examining the U.S. data); Stevans and Sessions, *supra* note 19 (relying on the US quarterly data); Zentner, *supra* note 16 (studying the data from 65 countries).

²⁷ See Felix Oberholzer-Gee and Koleman Strumpf, *The Effect of File Sharing on Record Sales: An Empirical Analysis*, 115 *JOURNAL OF POLITICAL ECONOMY* 1 (2007); Blackburn, *supra* note 16.

²⁸ See, e.g., Blackburn, *supra* note 16, at 58 (using the data provided by Big Champagne Online Media Measurement).

²⁹ See Oberholzer-Gee and Strumpf, *supra* note 27.

³⁰ See, e.g., Peitz and Waelbroeck, *supra* note 16, at 73-74 (using the data for penetration of broadband Internet, DVD players and CD-R devices); Zentner, *supra* note 16 (employing the data on Internet and broadband penetration); Alejandro Zentner, *Measuring the Effect of File Sharing on Music Purchases*, 49 *JOURNAL OF LAW AND ECONOMICS* 63 (2006) (relying on the data of broadband and Internet penetration); Liebowitz, *supra* note 16, at 855 (working with the data on broadband, dial-up and Internet penetration); Juan de Dios Montoro Pons and Manuel Cuadrado García, *Legal Origin and Intellectual Property Rights: An Empirical Study in the Prerecorded Music Sector*, 26 *EUR. J. LAW ECON.* 153, 163-64 (2008) (employing penetration for PC, cable TV, CD players and video consoles); Christopher C. Klein and Shea W. Slonaker, *Chart Turnover and Sales in the Recorded Music Industry: 1990-2005*, 36 *REV. IND. ORGAN.* 351 (2010) (relying on price indexes for expenditures on audio listening and recording devices and personal computers).

By comparing differences amongst 99 U.S. cities between 1998 and 2003, Stan J. Liebowitz explores the relationship between the Internet penetration amongst various age groups and the record sales. He finds the negative impact of peer-to-peer file sharing on the sales of prerecorded music media.³¹ Although most studies observe that peer-to-peer file sharing is only one of factors causing the music sales decline,³² Liebowitz argues that the peer-to-peer file sharing caused the entire decline of music sales during the studies period, which otherwise would have been a period of increasing music sales according to him.³³

The main drawback of Liebowitz's study is that it concentrates only on the period of late 1990s and early 2000s without taking into consideration the introduction of authorized online music downloading services, such as iTunes Music Store or Amazon MP3. The use of Internet penetration as proxy for peer-to-peer file sharing can also be misleading. It is true that some Internet users share music files via peer-to-peer file sharing networks, but the others use the Internet for completely lawful activities, such as sending mails, searching for information or shopping. In reality, the latter Internet users are the rule and the former ones are exception.³⁴ Moreover, the negative relationship between the Internet penetration and the music sales can also be interpreted as evidence of changes in spending leisure time.³⁵ In the so-called digital age, people can spend more time by sending e-mails, chatting with their friends or just searching for information than by buying and listening music.

The two other studies—one conducted by Felix Oberholzer-Gee and Koleman Strumpf³⁶ and the other by David Blackburn³⁷—examine the impact of file sharing on the sales of individual genres and albums during short periods of time covering 17 weeks in 2002³⁸ or 62 weeks in 2002 and 2003 respectively.³⁹ While the former study uses the actual traffic data from a file-sharing server,⁴⁰ the latter employs the reported fractions of Internet users sharing individual songs on file sharing networks.⁴¹ Both studies find that the impact of peer-to-peer file sharing on the sales of average CDs is negligible.⁴² With regard to its impact on the sales of famous and unknown artists, their findings differ. Blackburn concludes that the peer-to-peer file sharing has a positive impact on the music sales of relatively unknown artists.⁴³ The peer-to-peer file sharing thus helps unknown artists to become famous within peer-to-peer file sharing community. At the same time, Blackburn observes a strong negative impact on the sales of popular artists, who represent the majority of total music sales.⁴⁴ Accordingly, peer-to-peer file sharing has a negative impact on the overall music sales. Although Oberholzer-Gee and Strumpf found a positive correlation between the music sales of famous artists and peer-to-peer file sharing in the earlier version of their

³¹ See Liebowitz, *supra* note 16, at 858-59.

³² See, e.g., Peitz and Waelbroeck, *supra* note 16, at 78 (stating that “other factors than music downloads on file-sharing networks are likely to be responsible for the decline in music sales in 2003”); Pons and García, *supra* note 30, at 170-71; Stevans and Sessions, *supra* note 19, at 322 (noting that “music downloading was not the only cause of this decline”).

³³ See Stan J. Liebowitz, *Economists Examine File Sharing and Music Sales*, in GERHARD ILLING AND MARTIN PEITZ (EDS.), *INDUSTRIAL ORGANIZATION AND THE DIGITAL ECONOMY* 145, 163 (Cambridge: MA, MIT Press, 2006); Liebowitz, *supra* note 16, at 858-59.

³⁴ See, e.g., [...].

³⁵ For an impact of Internet penetration on various types of entertainment in the U.S., see Seung-Hyun Hong, *The Recent Growth of the Internet and Changes in Household-Level Demand for Entertainment*, 19 *Information Economics and Policy* 304 (2007).

³⁶ See Oberholzer-Gee and Strumpf, *supra* note 27.

³⁷ See Blackburn, *supra* note 16.

³⁸ See Oberholzer-Gee and Strumpf, *supra* note 27, at 6 (from September 8 to December 31, 2002).

³⁹ See Blackburn, *supra* note 16, at 15 and 56 (between the weeks of September 29, 2002 and November 30, 2003).

⁴⁰ See Oberholzer-Gee and Strumpf, *supra* note 27, at 6-7 (using the data from two OpenNap servers).

⁴¹ See Blackburn, *supra* note 16, at 16-17 and 58.

⁴² See Oberholzer-Gee and Strumpf, *supra* note 27, at 38; Blackburn, *supra* note 16, at 47.

⁴³ See Blackburn, *supra* note 16, at 47.

⁴⁴ See *id.*

study,⁴⁵ its published final version also concludes that the impact of file sharing on the music sales of popular artists is negative, but statistically insignificant.⁴⁶

Both studies rely on the data of music sales according to genre and albums obtained from Nielsen SoundScan.⁴⁷ Liebowitz has questioned the reliability of those data, since they show “extremely large changes over very short periods of time”.⁴⁸ Another criticism expressed by Liebowitz is that both studies just show an impact of peer-to-peer file sharing on certain individual albums, but its impact on the entire music industry can be different in aggregate.⁴⁹ As a response, Oberholzer-Gee and Strumpf point out that their study focus on albums, which are mainstream and present important share on the total music sales.⁵⁰

Several other studies in this group employ the data on record sales from several countries.⁵¹ Studying the data from 16 major national markets between 1998 and 2002, Martin Peitz and Patrick Waelbroeck find a significant and negative impact of Internet piracy on music sales.⁵² Similarly, Alejandro Zentner studies the data from 65 countries between 1997 and 2002, and finds a significant negative correlation between the wide Internet usage and the music sales decreases.⁵³ As these studies use cross-country data, Liebowitz questions, as their main limitation, the fact that the sales in different countries can be affected by diverse factors, such as different income per capita, organized piracy, record sales and penetration of reproduction and communication technologies, especially the Internet access and the use of CD or DVD burners.⁵⁴ As we emphasized above, even more severe criticism is that they are, like the other previously described studies, limited to a short time period, especially to the first few years after the beginning of music sales decline, *i.e.* the late 1990s and early 2000s. Accordingly, they study only limited periods covering 4 to 6 years of music sales decline, disregarding the periods before and after this specific period characterized by music sales decline and increasing Internet penetration.

The exception in this regard is the study made by Lonnie K. Stevans and David N. Sessions, where they use the US quarterly data from 1990 to 2004.⁵⁵ Although they examine the data before the major music sales decline since the year of 2000 in the U.S., the limitation of their study is that they analyse the data covering only the periods characterized by the sales of prerecorded music CDs, be they increasing or decreasing. They do not take into consideration the impact of legal music downloading services on the music sales since 2004. For instance, the iTunes Music Store as one of first successful authorized online music downloading services was opened on April 28, 2003. It took at least one year until iTunes started to play an important role on the music market. Stevans and Sessions could not thus fully take into account the impact of authorized music downloading services on the music sales. At the same time, they disregard the data on music sales for the first half of 1980s—another several year lasting period of music sales decline in the recent history of music industry. The early 1980s are quite similar to the early 2000s. It was also a period of switching from one prerecorded music media to another, *i.e.* from vinyl disks first to audiocassettes and later to CDs. Both periods are characterized by several years lasting declines in the sales of incumbent prerecorded music media, which were followed by steeped increases in

⁴⁵ See, e.g., Felix Oberholzer and Koleman Strumpf, *The Effect of File Sharing on Record Sales: An Empirical Analysis*, at 25 (March 2004), available at http://www.unc.edu/~cigar/papers/FileSharing_March2004.pdf (last visited Feb. 22, 2012) (concluding that “the impact of file sharing on [superstar albums] sales is likely to be positive”).

⁴⁶ See Oberholzer-Gee and Strumpf, *supra* note 27, at 38.

⁴⁷ See *id.*, at 6; Blackburn, *supra* note 16, at 14.

⁴⁸ See Liebowitz, *supra* note 33, at 166.

⁴⁹ See *id.*, at 159.

⁵⁰ See Oberholzer-Gee and Strumpf, *supra* note 27, at 8-9.

⁵¹ See, e.g., Peitz and Waelbroeck, *supra* note 16; Zentner, *supra* note 16.

⁵² See Peitz and Waelbroeck, *supra* note 16, at 75 (2004).

⁵³ See Zentner, *supra* note 16.

⁵⁴ See Liebowitz, *supra* note 33, at 158.

⁵⁵ See Stevans and Sessions, *supra* note 19.

the sales of new music media. But we leave this point aside for a moment and we return to it in our analysis of music industry in Japan in Section 3.2 below.

In comparison with the previous studies, the second group of studies employ completely different methodology. They use the data obtained from consumers' surveys.⁵⁶ Their advantage is that they can obtain data on consumers' spending habits directly. However, they face a problem that the collected responses might be biased to a certain degree. The respondents do not need to have the exact data on their spending habits at the moment, when they are approached with questionnaires. They can also intentionally provide incorrect responses in order to hide some sensitive circumstances, which they do not want or are ashamed to disclose to strangers. With a few exceptions,⁵⁷ most of these studies report that the respondents use peer-to-peer file sharing for obtaining necessary information on albums or singles they want to buy.⁵⁸ Many respondents thus claim higher spending on buying CDs after obtaining necessary information about available sound recordings on the market via peer-to-peer file sharing. The problem with this explanation is that the actual music sales do not fully reflect any story of this kind.⁵⁹

III. BEYOND PIRACY PARADIGM

3.1. Main Factors Affecting the Sales of Prerecorded Music Media

There are several main socio-economic factors affecting the sales of prerecorded music media. The contemporary empirical literature uses them inconsistently. Individual studies remarkably diverge in studied factors. The following analysis attempts to systemize the main socio-economic factors and their mutual relationships. It examines the following factors: a situation within the entire economy expressed through the size of GDP, consumers' income, prerecorded music media's retail prices, population's structure and penetration of various reproduction and communication technologies capable to affect music consumption.

Several studies also identify the level of copyright protection as an important factor affecting the sales of prerecorded music media.⁶⁰ However, they often overlook economic and other differences between individual countries, which depend on the level of country's economic development. For instance, Juan de Dios Montoro Pons and Manuel Cuadrado García argue that the differences in strengths of national copyright laws affect the sales of prerecorded music media in different countries.⁶¹ Although their hypothesis that a strong protection of intellectual property rights leads to high sales of prerecorded media is very tempting, their models are affected by putting countries with different economies and social background into same groups, such as France, Belgium and Netherlands is put together with Italy, Spain, Portugal, Turkey and even Mexico. This problem is even acknowledged by Pons and García.⁶²

⁵⁶ See, e.g., Alejandro Zentner, *Measuring the Effect of File Sharing on Music Purchases*, 49 JOURNAL OF LAW AND ECONOMICS 63 (2006); Rob and Waldfogel, *supra* note 16; Hong, *supra* note 35; Andersen and Frenz, *supra* note 20; Waldfogel, *supra* note 16.

⁵⁷ See, e.g., Zentner, *supra* note 56; Hong, *supra* note 35.

⁵⁸ See, e.g., Andersen and Frenz, *supra* note 20, at 733-34.

⁵⁹ See, e.g., [...].

⁶⁰ See, e.g., Pons and García, *supra* note 30; Stevans and Sessions, *supra* note 19; Xingle Long, *Intellectual Property Protection and Recorded Music Sales—Focus on 26 OECD Countries Panel Data*, 6 FRONT. ECON. CHINA 211 (2011).

⁶¹ See Pons and García, *supra* note 30.

⁶² See *id.*, at 170 (acknowledging that “the French group includes a mix of high and low GDP countries, some of them with low general levels of law enforcement, which could also explain their relative poor performance record on [intellectual property rights]”).

a) Economic Situation

The first of all, any entertainment consumption heavily depends on a situation in the entire economy. When the economic situation gets worse, the group of expenditures, which are restricted by consumers as first, comprises expenditures on entertainment, including the ones on acquiring prerecorded music media. Accordingly, it is hard to expect any increases in music sales, when economy stagnates or even declines. The importance of economic situation has been recognized directly⁶³ or indirectly via the impact of consumers' income on the music sales.⁶⁴ The actual size of the effect of economic situation on music sales varies amongst individual studies. It is caused by the differences in the used measure of economic situation, such as GDP and GDP per capita, and in the size of economies and the level of economic development between the countries studied in individual studies. Except for Stevans and Sessions' study,⁶⁵ which examines only the U.S. quarterly data, the studies rely on cross-country data, which slightly differ in studied countries.⁶⁶

Stevans and Sessions detect a strong positive effect of GDP in the U.S. with coefficients 0.59 prior to 2000 and 0.92 after 2000.⁶⁷ Pons and García observe a strong positive effect of GDP per capita with coefficient between 1.18 and 1.39 on their cross-country data.⁶⁸ Similarly, Peitz and Waelbroeck also find a strong positive effect of the GDP growth with coefficient between 1.85 and 2.04, but they warn that "this variable may capture other factors related to the domestic environment."⁶⁹

On the other hand, Xingle Long comes to a conclusion that GDP per capita has little or negative impact on the music sales,⁷⁰ but this finding is counterintuitive, especially the finding of negative relationship. Long's finding on negative relationship between economic situation and music sales might be caused by the study's time restriction. Long analyses data between 2000 and 2007,⁷¹ which are characterized by declining trend in music sales and increasing or at least stagnating trend in GDP per capita in many countries covered by the study.

The data from Japan between 1960 and 2010 show a positive relationship between music sales and situation within the entire economy in Japan during the most of studied period in Figures 1 and 2, which depict the relationships between unit music shipments and real GDP and between music shipments in Japanese yen and nominal GDP, respectively. In this regard, it should be noted that Figure 1 has its limitations. It reflects the actual situation of total music sales only up to 2003, because the unit shipments contain only the shipments of tangible media. Since the year of 2004, the online music downloads has started to play a more important role in total music sales, but it is not reflected in unit shipments. The problem with including online downloads into unit shipments data is that the online downloads are mainly counted in single-track downloads and one single-track download is not fully comparable with one album or single CD purchase. The inclusion of online downloads into Figure 1 would thus inflate the music sales, which would not reflect the actual situation in music sales. The problem is discussed in more details below, when

⁶³ See, e.g., Peitz and Waelbroeck, *supra* note 16; Long, *supra* note 60; Pons and García, *supra* note 30; Stevans and Sessions, *supra* note 19 (although using the term "disposable personal income", it seems that they use real GDP based upon the size of data).

⁶⁴ See, e.g., Zentner, *supra* note 56; Liebowitz, *supra* note 16.

⁶⁵ See Stevans and Sessions, *supra* note 19, at 312 and 323.

⁶⁶ See Pons and García, *supra* note 30, at 163 (analysing data from 28 OECD countries, except for Iceland and Luxemburg, where no data were available); Peitz and Waelbroeck, *supra* note 16, at 73 n. 4 (using data from 16 "countries with the largest markets for prerecorded music (in value), accounting for more than 90% of the world market value"); Long, *supra* note 60, at 218 (relying on data from "26 OECD countries ... account[ing] for nearly 80% recorded music sales in the world from 2000 to 2007").

⁶⁷ See Stevans and Sessions, *supra* note 19, at 321.

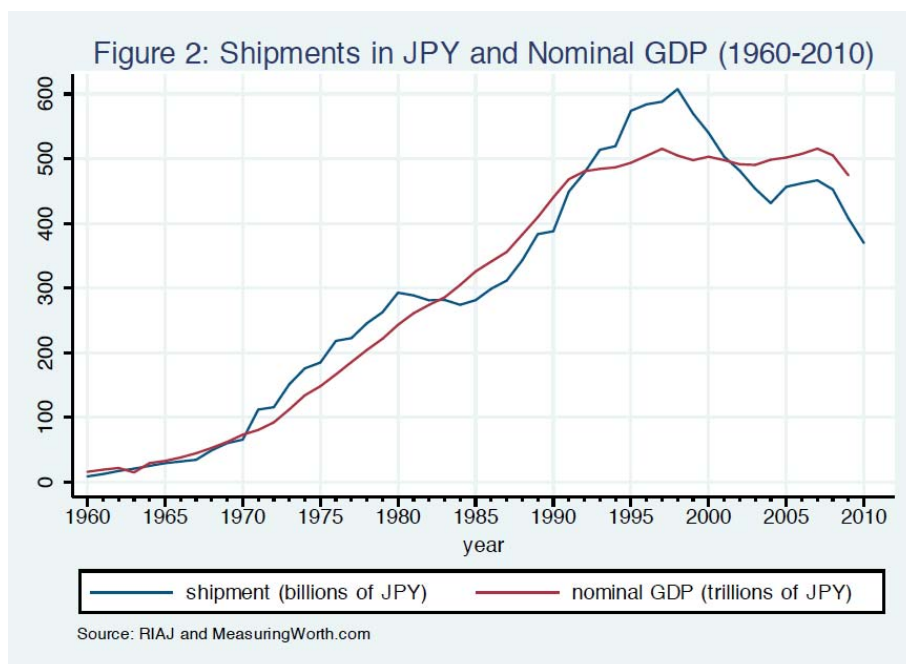
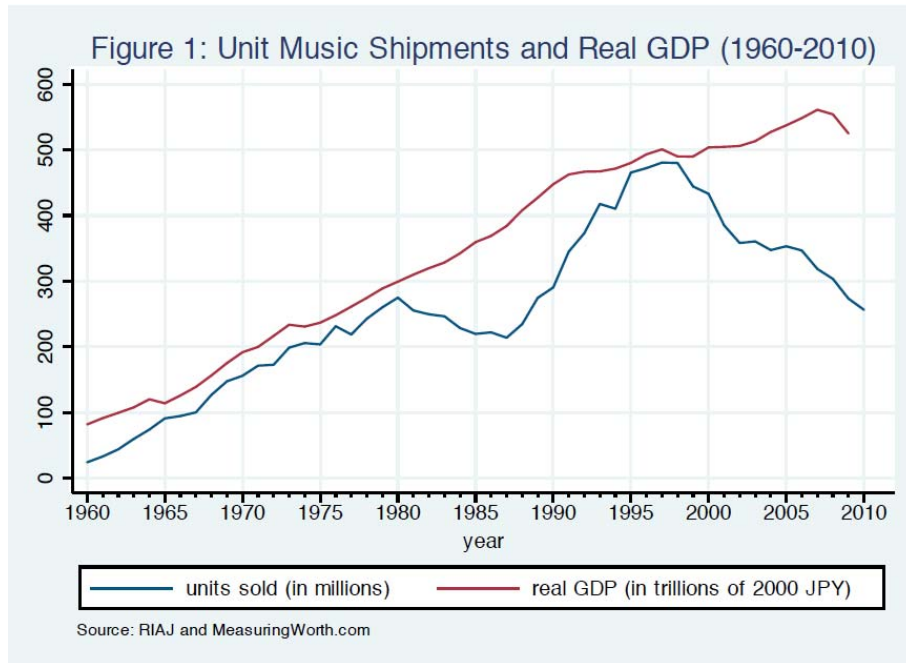
⁶⁸ See Pons and García, *supra* note 30, at 165-66.

⁶⁹ See Peitz and Waelbroeck, *supra* note 16, at 75.

⁷⁰ See Long, *supra* note 60, at 225.

⁷¹ See *id.*, at 218.

the changes in music consumption in the digital age are discussed. For now, this shortcoming can be avoided by examining the music shipments in Japanese yen in Figure 2, which also covers the revenues from authorized online downloading services, such as iTunes Music Store, Amazon MP3 and various local Japanese online services providing so-called full truetones (*chaku uta furu* in Japanese).



On the first glimpse, there are several periods, where the situation in the entire economy does not support the situation with music sales, especially during the first half of 1980s and the late 1990s and early 2000s. As mentioned above, the conventional explanation is that the decline in music sales during these periods despite the fact that the entire economy was growing or stagnating was caused by piracy. With regard to the decline in 1980s, it is often argued that the decline was caused by the introduction of portable audiocassette players and double-deck audiocassette recorders at the end of 1970s and the early 1980s. Similarly, Liebowitz puts forward

that the same factors are behind a comparable drop of music sales in the U.S in the early 1980s.⁷² The difference between the U.S. and Japan is that in addition to abovementioned reproduction technologies, the rental shops with prerecorded music media also emerged in Japan during the 1980s. While the rental shops are permitted under the Japanese copyright law, the U.S. copyright law grants exclusive rights to copyright holders who can effectively prevent any music rental services in the U.S. The period of late 1990s and early 2000s is also habitually explained by negative impact of piracy on the music sales, but this time in form of peer-to-peer file sharing.

This Paper argues that the conventional explanation misses several important points. However, we put this issue aside for a moment. We scrutinize both periods of music sales declines in more details in Section 3.2. below, when we examine the impact of technological switch from an incumbent music medium to a new one on the music sales.

b) Consumers' Income and Expenditure Preferences

The consumers' wages and especially the amount of their financial resources, which they can spend on entertainment, including buying prerecorded music media is an important factor affecting the music sales. The more financial resources the consumers can spend on buying prerecorded music media, the higher the music sales are.

The previous studies use this factor in two different ways. Except for Seung-Hyun Hong's study, which examines expenditures on various types of entertainment, including the expenditures on purchasing prerecorded music media,⁷³ the most of studies⁷⁴ employ the consumers' total income. As the income heavily depends on the situation of entire economy, several studies⁷⁵ also use GDP or GDP per capita as a proxy for consumers' income. While the studies using GDP as a proxy for income find its strong positive impact on the music sales, the studies employing consumers' income conclude in majority that the income's effect is not so clear. For instance, Zentner's study based on European consumers' surveys observes the impact of income only as insignificant.⁷⁶ Similarly, several other studies based on consumers' surveys determine the coefficients for household income as insignificant.⁷⁷ Birgitte Anderson and Marion Frenz explain it by a low share of music purchases on spending households' income.⁷⁸ Liebowitz, as one of few, finds a positive impact of income on the music sales.⁷⁹

The problem with using consumers' income as a factor affecting the music sales is that it does not need to be a very exact means for measuring consumers' actual expenditures on purchasing prerecorded music media. The income's division on individual types of expenditures can considerably depend on the amount of income, consumers' living expenditures and their preferences for specific leisure time activities. The composition of households' expenditures can thus be a more appropriate mean than the total income, since they depend more on consumers' preferences than the economic situation. But the only study,⁸⁰ which directly examines household expenditures, studies them as variables dependent on the level of Internet penetration and not as a factor affecting the music sales.

⁷² See Stan J. Liebowitz, *Will MP3 Downloads Annihilate the Record Industry? The Evidence So Far*, in GARY D. LIBECAP (ED.), *ADVANCES IN THE STUDY OF ENTREPRENEURSHIP, INNOVATION, AND ECONOMIC GROWTH*, Vol. 15, at 229 (Amsterdam: Elsevier, 2004).

⁷³ See Hong, *supra* note 35 (employing expenditures on different types of entertainment as dependant variables).

⁷⁴ See Zentner, *supra* note 56; Rob and Waldfoegel, *supra* note 16; Liebowitz, *supra* note 16; Andersen and Frenz, *supra* note 20.

⁷⁵ See, e.g., Peitz and Waelbroeck, *supra* note 16; Stevans and Sessions, *supra* note 19; Pons and García, *supra* note 30.

⁷⁶ See Zentner, *supra* note 56, at 78.

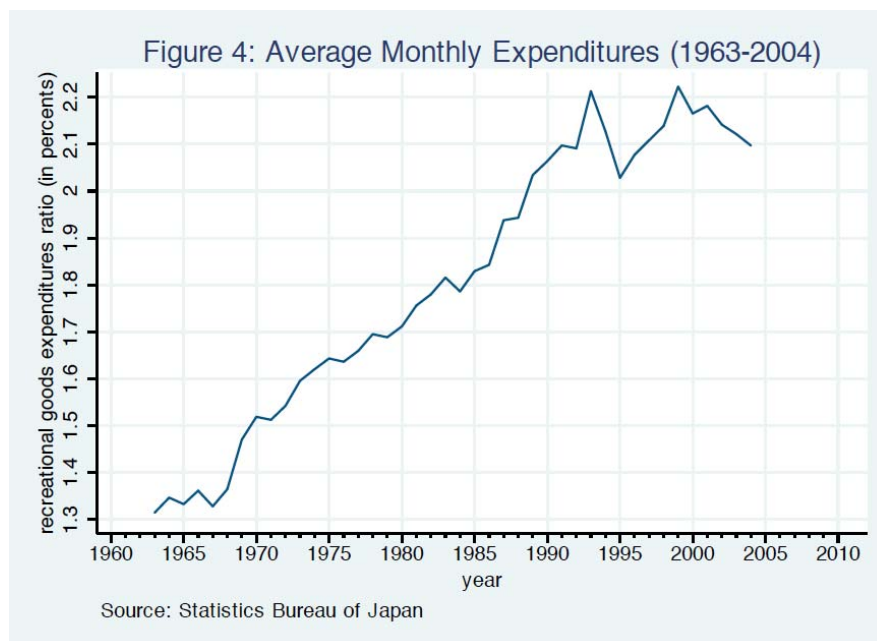
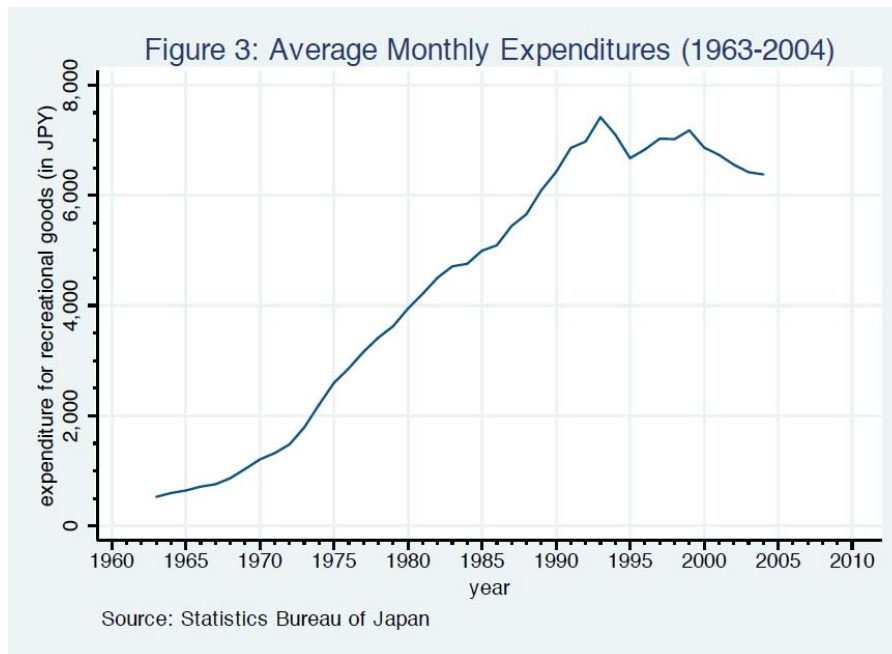
⁷⁷ See Rob and Waldfoegel, *supra* note 16, at 48-52; Andersen and Frenz, *supra* note 19, at 734.

⁷⁸ See Andersen and Frenz, *supra* note 19, at 734.

⁷⁹ See Liebowitz, *supra* note 16, at 855.

⁸⁰ See Hong, *supra* note 35.

In Japan, the nominal value of average monthly expenditures spent by Japanese households on buying various tangible recreational goods, including goods relying on copyrights such as prerecorded audio or audio-visual media, videogames and books, as depicted by Figure 3, and its share on the total monthly expenditures, as shown in Figure 4, were growing from the early 1960s up to 1993. The year of 1993 is also characterized by the burst of Japanese bubble economy, which was followed by a decade of stagnation and minimal economic growths, as can be observed in Figures 1 and 2. The period between of 1993 and 1999 was a period, during which the households' expenditures on tangible recreational goods were first decreasing until 1995 and then slightly increasing again until 1999. The year of 1999 is another crucial point in the history of average monthly expenditures. Since 1999 until 2004 (the end of our data on households' expenditures), the expenditures on tangible recreational goods were firmly decreasing.



Consequently, certain amount of music sales decline between 1999 and 2004 might be plausibly caused by the fact that average household expenditures on recreational goods decreased

during this period. Between 1993 and 2004, the expenditures decreased by 14% in nominal values. And only between 1999 and 2004, the expenditures shrank by 11.14% in nominal values. In a relative view, their share on the total household expenditures dropped down from 2.23% to 2.1% between 1999 and 2004.

Several scholars argue that different types of entertainment, especially DVDs and videogames, substituted a portion of music sales. They employ several ways of measuring the sale substitution effects, ranging from retail prices of substituting entertainment⁸¹ to the penetration of technologies necessary for consuming such entertainment⁸² and the number of substituting purchases.⁸³ Stevans and Sessions claim that “[a] 1% decline in the price of DVDs is associated with a 2.08% decline in the demand for recorded music” after the year of 2000.⁸⁴ Similarly, Christopher C. Klein and Shea W. Slonaker observe that “[a] 1% increase in the real price of movie tickets drives a 0.32% increase in the sales of recorded music.”⁸⁵ Stevans and Sessions also study the music sales substitution by videogames, but they determine its coefficient close to zero and statistically insignificant. They suggest that the result could be misleading because of using the price of computer software as a proxy for the price of videogames.⁸⁶ Employing data on penetration of various technologies, such as videogame consoles, personal computers and cable TV as proxies for alternative leisure time activities, Pons and García find only the penetration of personal computers and cable TV statistically significant with a negative sign.⁸⁷ The result concerning videogames might also be caused by a lower level of the penetration of videogame consoles in comparison with massive penetration of personal computers and cable TV.

Conversely, Andersen and Frenz’s results based on consumers’ survey show that there is no substitution effect between music on the one side and other types of entertainment, such as DVDs, videogames, cinema and concerts, on the other. Andersen and Frenz suggest that the factor affecting the consumption of various forms of entertainment is a “life-style choice of certain group of society”.⁸⁸ The positive correlation between purchasing music on the one side and buying DVDs and videogames on the other is also found by Zentner.⁸⁹ Various surveys of leisure time spending support this conclusion. They show that there is no substitution between listening of music and watching movies or doing other types of leisure activities. The music consumption is characteristic by the fact that it does not require the main focus of consumers’ attention. Once an individual listen to music, she can do several other activities at the same time. People often listen music on their ways to schools or work, or during doing other activities, such as jogging, cleaning, ironing, doing homework, surfing on the Internet and the like.

At the same time, we can observe the decreasing trend in expenditures on all tangible recreation goods, including CDs, DVDs and videogames, in Japan. The total cake for buying any tangible entertainment goods has been shrinking since 1999. On the other hand, comparing to the decreasing trend in the music sales, the revenues from live concerts have a growing trend.⁹⁰ The people spend more for attending live concerts than they did ten or twenty years ago. Furthermore, the households’ expenditures on other leisure time activities, such as travelling, also gradually grow in Japan.

⁸¹ See Stevans and Sessions, *supra* note 19; Klein and Slonaker, *supra* note 30.

⁸² See Pons and García, *supra* note 30.

⁸³ See Andersen and Frenz, *supra* note 19.

⁸⁴ See Stevans and Sessions, *supra* note 19, at 321.

⁸⁵ See Klein and Slonaker, *supra* note 30, at 367.

⁸⁶ See Stevans and Sessions, *supra* note 19, at 322.

⁸⁷ See Pons and García, *supra* note 30, at 168-69.

⁸⁸ See Andersen and Frenz, *supra* note 19, at 733-34.

⁸⁹ See Zentner, *supra* note 56, at 85.

⁹⁰ See, e.g., Juan de Dios Montoro Pons and Manuel Cuadrado García, *Live and Prerecorded Popular Music Consumption*, 35 J. CULT. ECON. 19 (2011).

c) Retail Prices

The music sales also depend on their retail prices. The retail prices together with disposable income on purchasing prerecorded music media affect affordability of prerecorded music media to consumers. The higher the consumers' disposable income is and the lower the retail prices are, the more units of prerecorded music media the consumers can afford to buy.

There are three main groups of consumers with regard to their responses to fluctuation of retail prices of music media. There are two extreme groups of consumers who are without any or only with very low price elasticity. They do not respond to changes in retail prices of prerecorded music media at all or only in a very limited extent. On the one side, there is a group of consumers composed of fans and other aficionados. As their priority in spending their limited financial resources is their favourite music on expense of other leisure time activities or expenditures, they do not respond to decreasing income or increasing retail prices by restricting their habits of purchasing prerecorded music media. Their price elasticity with regard to acquiring special editions of music albums or singles, or various souvenirs related to their idols, such as t-shirts, bags, rugs and scarfs, is much lower than the price elasticity of average customers.

On the other hand, there are consumers who have no interest in buying any prerecorded music media. They have either no interest in music or the price, which they are willing to pay, is much lower than the retail prices of prerecorded music media on the market. While the former consumers are irresponsive to any offer of music, the latter are the consumers who find their way of getting to music in which they have interest. Those are persons who make copies of prerecorded music media without obtaining any authorization from the concerned copyright holders. However, these unauthorized copies should not be considered as replacement of the sales of authorized prerecorded music media, since this group of consumers would not buy the authorized copies at all or at the retail price on the market.

Somewhere between the two abovementioned extremes are consumers who are willing to pay the retail prices of prerecorded media, but are not committed fans of bought artists. The consumers of this kind buy individual sound recordings, because they like them. These consumers' purchasing decisions heavily depends on the retail prices of prerecorded music media and the consumers' willingness to pay those prices. Hence, the size of their music consumption responds to fluctuations in retail prices and the amount of their available financial resources with higher price elasticity than in case of committed fans.

Most of empirical studies find the impact of retail prices of prerecorded music media on music media negative and highly statistically significant. Klein and Slonaker observe that “[f]or a 1% [real] price decrease, music sales increased by 0.39%.”⁹¹ Pons and García determine estimates for price elasticity ranging from -0.423 to -0.592.⁹² Stevans and Sessions state that “the advent of music file sharing after 2000 has reduced the demand for recorded music through its influence on price elasticity”,⁹³ where price elasticity has increased from -0.64% to -1.4%.⁹⁴ They thus conclude that “due to the increased availability of the substitute good, downloaded MP3 files, a 1% increase in the price of recorded music after 2000 was associated with a more than proportionate 1.4% decline in the quantity purchased – decreasing consumption and sales.”⁹⁵

Based on consumers' survey, Andersen and Frenz come to the impact of retail price on music sales close to zero. To explain this finding, they suggest that “people have different music price elasticities, even within the same CD price category.”⁹⁶ Examining consumers' assessment of

⁹¹ See Klein and Slonaker, *supra* note 30, at 367.

⁹² See Pons and García, *supra* note 30, at 165.

⁹³ See Stevans and Sessions, *supra* note 19, at 321.

⁹⁴ See *id.*

⁹⁵ *Id.*

⁹⁶ See Andersen and Frenz, *supra* note 20, at 733-34.

retail price, they find that “the substitution of CD being perceived as too expensive—is supported with ($b = -0.235$; $p < 0.001$).”⁹⁷

On the other hand, some studies argue that there is no fluctuation in retail prices of prerecorded music media and therefore there is no need to take it into consideration.⁹⁸ With regard to the U.S. market, Liebowitz states that the prices were constant over several years at the late 1990s and early 2000s.⁹⁹ Klein and Slonaker also observe on the data covering the U.S. market between 1990 and 2005 that “the real price of music shows very little variation, especially in the second half of the sample period.”¹⁰⁰ Conversely, Stevans and Sessions (2005) refer to the RIAA’s statement that the CD prices increased from USD14.31 in 1998 to USD17.09 in 2002.¹⁰¹ It is 19.4% increase over the five-year period.¹⁰² Similarly, Zentner outlines that while average price of album CD in the U.S. was USD14.19 in the early 2000s, 28 of the top 50 albums on the Billboard charts had a list price between USD 17.98 and USD19.98, and only seven are listed at USD14.98 or less.¹⁰³

One of factors affecting price fluctuation in music industry is the concentration of the entire industry and anticompetitive behaviour amongst main players with the position of oligopolists. It has repeatedly happened that the minimal prices of prerecorded music media were fixed by an agreement or concerted practice amongst major record labels. There have been several antitrust litigations of such anticompetitive practices around the world. Although the price fixing agreements or concerted practices have been found in violation of national antitrust laws in the U.S. and several other developed countries, the Japanese Fair Trade Commission (JFTC) has been tolerating a similar regime of price fixing between the main record labels in Japan.¹⁰⁴ This is one of reasons why the Japanese retail prices of prerecorded music media and authorized online music downloading services are much higher than the retail prices in other developed countries. JFTC has already instigated investigations of this regime for several times. So far, it has always been persuaded by the major record labels and RIAJ that the price-fixing regime is important for earning sufficient revenues to finance local Japanese music production and its diversity on the expense of higher prices which Japanese consumers have to pay.

Despite the existence of price fixing regime in Japan, the data published by RIAJ show that there are small changes in their prices as observed in Figure 5. The average prices in Figure 5 have been obtained by dividing the music shipments in Japanese yen by unit shipments. In this way, we got an average price per a unit of each tangible media on the Japanese market between 1960 and 2010. Figure 5 does not, however, contain the prices for online downloading. A single-track download in Japan costs approximately from USD1.8 to USD4.3, depending on the type of downloading services and the origin of sound recording. Though iTunes Music Store sells a single track for 99 cents in the U.S., the same track is sold for around JPY150 (approx. USD1.8) in Japan. In case of sound recordings made by Japanese singers or groups, the retail price is even higher and reaches JPY200 (approx. USD2.5). The limitation of iTunes Music Store services is that it is not accessible to Android smartphone users. They have to rely either on Amazon MP3, which has comparable prices to iTunes Music Store’s, but does not use any DRM technology, or on local online downloading services, which provide single tracks for more expensive prices, around JPY350 (approx. USD4.3), but dominate the Japanese online music market at the present.

The higher price for authorized online music downloads in Japan than in other developed countries and a different business model used online contrary to the market with tangible media can partially explain the reason why the music sales has not reach the level of sales at the end of

⁹⁷ See *id.*, at 733-34.

⁹⁸ See, e.g., Liebowitz, *supra* note 16, at 854.

⁹⁹ See Liebowitz, *supra* note 73.

¹⁰⁰ See Klein and Slonaker, *supra* note 30, at 367.

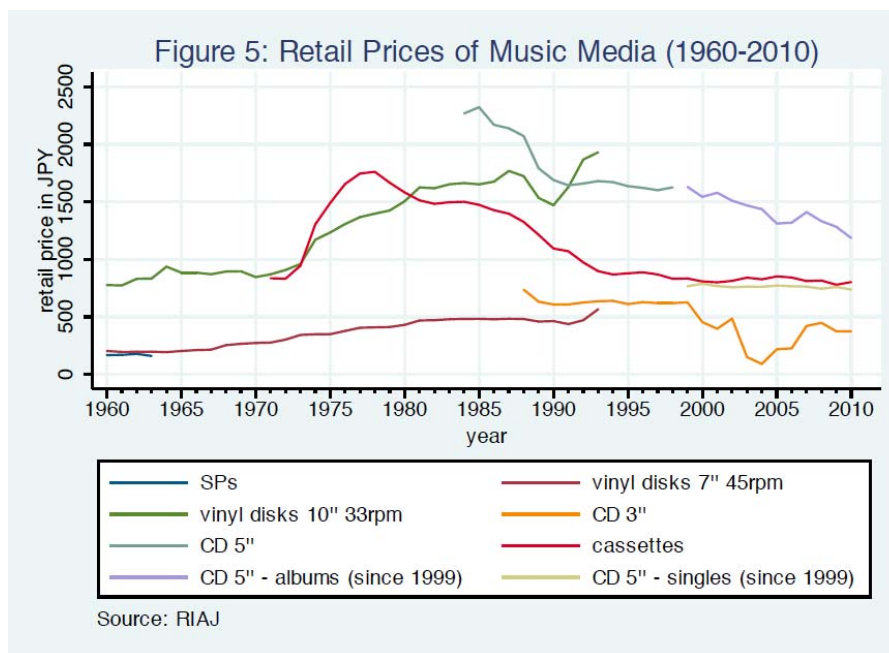
¹⁰¹ See Stevans and Sessions, *supra* note 19.

¹⁰² See J.K. Willcox, *Where Have All the CDs gone?*, Sound and Vision, June, 87 (2003).

¹⁰³ See Zentner, *supra* note 56, at 69.

¹⁰⁴ The Japanese resale price maintenance system, know as *saihanbai kakaku iji seido*, was established in 1953.

1990s after the commercial success of authorized online music downloading services after the year of 2003. We analyse this point in details below, when we examine the impact of change in music consumption related to the technological switch from tangible media to online music downloading services.



d) Population Demographics

The population demographics is another important factor, which affects the sales of prerecorded music media. The gender or age composition of population can influence the size of music sales. There is discussion in scholarly literature whether gender has any impact on the music sales. Males are conventionally considered to be more open to acquiring new technologies, as well as more frequent copyright infringers than female. Pursuant to the earlier version of Liebowitz's study, "[t]he share of males has no relationship to record sales in 1998 but seems slightly negative in 2003."¹⁰⁵ Later, he concludes that the share of males is negatively related to the music sales, but without statistical significance.¹⁰⁶ Conversely, Andersen and Frenz show completely opposite results.¹⁰⁷

Another feature of population, which influences the music sales, is its age composition. The size of young population and its proportion on the entire population are especially important factors, since the music industry targets young population with its mainstream music production. Although older generations are also important consumer groups, they frequently focus more on special genres, such as jazz, country, classical music or traditional ethnic music, than on the mainstream music production. It should, however, be pointed out that the role of young population in creating the sales of prerecorded music media is a bit mixed. It can have a positive as well as negative impact on the music sales.

Pursuant to Liebowitz's study, the share of population 12–29 years of age appears to be positively related to album sales per capita, but without statistical significance.¹⁰⁸ Andersen and Frenz do not observe any clear effect of age groups.¹⁰⁹ Conversely, Liebowitz in the earlier

¹⁰⁵ See Stan J. Liebowitz, *Research Note: Testing File-Sharing's Impact on Music Album Sales in Cities*, at 16, available at <https://www.utd.edu/~liebowitz/cities6f.pdf> (last visited Feb. 22, 2012).

¹⁰⁶ See Liebowitz, *supra* note 16, at 855.

¹⁰⁷ See Andersen and Frenz, *supra* note 20, at 732.

¹⁰⁸ See Liebowitz, *supra* note 16, at 855.

¹⁰⁹ See Andersen and Frenz, *supra* note 20, at 733-34.

version of his study find that “[s]urprisingly (because young people are supposed to be the more intense record purchasers), having more young people has a negative impact on record sales, but with a much greater magnitude in 2003.”¹¹⁰ Similarly, Klein and Slonaker determine the significantly negative effect of youngest age group (*i.e.* from 10- to 24-year old persons) on the music sales.¹¹¹ At the same time, they come to a conclusion that the age negatively affects the chart turnover. Put it more bluntly, an increase in the youngest age group yields more frequent new entries in, and leaves from, Billboard’s Top 200 albums chart, while an increase in older generations has a completely opposite effect bringing higher survival rate in charts.¹¹²

On the one hand, young people are the customers who buy a lot of music CDs and other prerecorded music media. On the other, they are also adopters of new technologies, which can threaten the sales of incumbent music media either by their replacement or by their copying without obtaining any authorization from the concerned copyright holders. In many cases, making of copies can lead to substituting the sales of authorized copies. A conventional view is that a person who acquires a copy of copyrighted sound recordings for free does not buy its authorized copy. But the actual situation with the sale substitution by music sharing amongst individuals is not so clear.

There is evidence that some copying of copyrighted sound recordings as sampling can lead to buying their authorized copies. Peitz and Waelbroeck prove it on a theoretical model.¹¹³ Andersen and Frenz observe on the data obtained from consumer’s survey that “a positive CD market creation effect derived from hearing a song in [peer-to-peer] networks prior to buying it on CD ... is supported with ($b = 0.196$; $p < 0.001$).”¹¹⁴ As mentioned above, there is also a group of consumers who would not buy originals for their retail sale prices at all. This type of consumers either has no interest in those sound recordings or they find the retail prices above the level upon which they are still willing to pay for them. Accordingly, it is hard to talk about any substitution effect and loss of music sales in case of this group.

Young population often faces the problem that its financial resources are very limited. The young people, especially those who are still students at high schools or universities, does not have sufficient and stable source of income. Some students have part-time jobs and some receive pocket money from their parents. Nonetheless, these sources of income are rarely sufficient to cover their actual demand for entertainment, including prerecorded music media. To a certain degree, their demands are satisfied by their parents who often give them the requested prerecorded music media as presents.

Due to the lack of sufficient financial resources to satisfy their demands of prerecorded music media, many students search for other ways of getting an access to the media they are interested in. They exchange their CD collections with other students at dorms. They go to rental shops in order to rent recordings in which they are interested. The rental shops also sell second-hand prerecorded music media, once recoup the initial investment of their acquisition via renting them to the clients. Some students even search for sound recordings of their favourite songs on the Internet via various services offering them without obtaining any authorization from the concerned copyright holders or via peer-to-peer file sharing services. However, it should be pointed out that the level of peer-to-peer file sharing in Japan is much lower than the one in other developed countries, such as the U.S., U.K., Germany or France. There might be several possible explanations of this situation, such as high conformity with law, low trust in sharing music with strangers and threat of being caught by major copyright holders who strongly monitor and enforce their exclusive rights on the Internet in Japan.

¹¹⁰ See Liebowitz, *supra* note 112, at 16.

¹¹¹ See Klein and Slonaker, *supra* note 30, at 366-67.

¹¹² See *id.*, at 367.

¹¹³ See Martin Peitz and Patrick Waelbroeck, *Why the music industry may gain from free downloading — The role of sampling*, 24 International Journal of Industrial Organization 907 (2006).

¹¹⁴ See Andersen and Frenz, *supra* note 20, at 733-34.

When young people graduate and find permanent jobs, their financial situation changes completely. Many young single people live with their parents and do not need to take care of their own families. They have sufficient source of income and they do not bear all costs of their living. Hence, they have suddenly abundant amounts of financial resources, which they can spend on buying the entertainment, including music CDs and other prerecorded music media, they always wanted. Various entrepreneurs and their advertisements in Japan therefore habitually target this group of people.

Once young people move from their parents' houses, settle and establish their own families, their music consumption habits change. They have to start spending considerable amounts of their revenues on paying mortgages, foodstuff and other things necessary for everyday life of families with small children. Their spending habits on prerecorded music media are thus restricted for some time. They buy less CDs and other prerecorded music media than they did earlier in their lives. This situation often lasts until their children grow to the age when they start to be interested in popular music. At that time, their music consumption increases again, but indirectly. They buy music CDs and other prerecorded media for their children as presents or since their children ask them to do so. And they can afford it. Their revenues are sufficient to cover not only everyday living expenses, but also to cover expenses on various forms of entertainment and leisure time activities.

In this regard, it should be noted that the Japanese population face two main problems—aging of entire population and even decreasing trend lasting for several last years. The last few years the Japanese population has not grown at all, but has been decreasing steadily. The crucial problem, especially for music industry, is the high percentage of old people on the composition of entire population. The young people play lower and lower role in the composition of Japanese population.

e) Penetration of Sound Recording and Communication Technologies

The last factor, which we take into consideration in this part of Section III,¹¹⁵ is penetration of various sound recording and communication technologies amongst the general public. The music industry is based on technologies, which rely on network effects, be they direct and indirect ones. The direct network effects depend on the size of technology users. The more people have cassette, CD or MP3 players, the more benefits the individual users have. The size of technology penetration also brings indirect network effects in form of complementary goods and services provided to the technology user. The broader the group of potential customers is, the more profitable the marketing of new sound recordings is. The larger the size of users is, the more customers can benefit from an array of prerecorded music media, which can be played on those players. Klein and Slonaker confirm this line of argument by finding a complimentary effect between audio listening devices and music sales. They observe that “[t]he real price of audio equipment has a fairly large effect on music sales with a cross-price elasticity estimated to be -0.37.”¹¹⁶ Based on consumers' survey, Zentner finds a positive correlation between buying music and owning complimentary analogue technologies, such as a Walkman or a hi-fi stereo.¹¹⁷ Similarly, using penetration of CD players, Pons and García also get its positive impact on music sales but without statistical significance.¹¹⁸

However, some sound recording or communication technologies can also have a negative effect on the music sales. It happens when they cause substitution of music sales by unauthorized copies of prerecorded music media or by other competing entertainments or leisure time activities. Accordingly, several scholars use the penetration of certain technologies, such as CD-R/RW or

¹¹⁵ As pointed out above, a few studies employ several other factors. However, their analysis in details goes beyond the scope of this Paper.

¹¹⁶ See Klein and Slonaker, *supra* note 30, at 367.

¹¹⁷ See Zentner, *supra* note 56, at 77.

¹¹⁸ See Pons and García, *supra* note 30, at 168.

DVD-R/RW burners,¹¹⁹ MP3 players,¹²⁰ personal computers¹²¹ or Internet,¹²² as proxies for piracy and thus for determining the level of copyright infringing activities in society. While most of studies employ the Internet penetration, there are still a few of them, which examine the impact of various other abovementioned reproduction devices. As the studies scrutinizing Internet penetration are outlined in Section II above, we focus on studies examining other reproduction technologies.

Pons and García determine that the penetration of personal computers has a significant negative effect on the music sales.¹²³ Peitz and Waelbroeck find negative influence of digital media players' penetration on the music sales. They suggest that "there could be a continued effect of music downloads on music sales due to people purchasing new equipment to listen to digital music, until the diffusion of [digital media players] is completed."¹²⁴ They also observe a negative effect of CD-R devices, but with little relevance.¹²⁵ On the other hand, Zentner finds positive correlation between music sales and owning a CD writer or an MP3 player.¹²⁶

The music sales substitution by other types of entertainment has already been scrutinized above with regard to the studies, which use changes in retail prices of competing media for examining their sales substitution effect on the sale of prerecorded music media. Similar results are also achieved by studies, which employ penetration of technologies used for consumption of competing entertainment to determine their sales substitution effect. While Pons and García observe significant substitution effect with regard to cable TV penetration, the penetration of videogame consoles yields no insignificant results in their study.¹²⁷ The limitations of substitution argument pointed out above therefore also apply to the studies employing technology penetration.

Besides the negative effect caused by an introduction of some reproduction and communication technologies in form of sales substitution, an introduction of technologies using a new type of prerecorded music media or format also brings negative effects on an incumbent technology in form of its replacement by new media or format. We develop this point in more details below, when we examine the impact of technology switches on the music sales.

3.2. Additional Factors Causing the Music Sales Decrease

The factors outlined above can explain the periods of growths in music sales in Japan between 1960 and 1980 and between 1987 and 1998. Nonetheless, they do not fully explain the periods of music sales declines between 1980 and 1987 and between 1998 and the present, especially when we take into account the fact that the GDP and wages were growing during these periods with some exceptions in the last two decades. In our following analysis we attempt to provide a feasible explanation for these periods of music sales declines. In our analysis, we concentrate on the following three aspects: (a) three technological switches and their impacts on music sales; (b) changes in music consumption caused by switching from tangible media to online music downloads; and (c) the negative economic situation caused by the global economic and financial crisis during the late 2000s and early 2010s.

¹¹⁹ See, e.g., Peitz and Waelbroeck, *supra* note 16; Zentner, *supra* note 56.

¹²⁰ See, e.g., Peitz and Waelbroeck, *supra* note 16; Zentner, *supra* note 56.

¹²¹ See Pons and García, *supra* note 30.

¹²² See, e.g., Peitz and Waelbroeck, *supra* note 16; Zentner, *supra* note 56; Pons and García, *supra* note 30; Liebowitz, *supra* note 16.

¹²³ See Pons and García, *supra* note 30, at 169.

¹²⁴ See Peitz and Waelbroeck, *supra* note 16, at 75.

¹²⁵ See *id.*, at 76.

¹²⁶ See Zentner, *supra* note 56, at 77.

¹²⁷ See Pons and García, *supra* note 30, at 169.

a) Technological Switches

An emergence of new prerecorded music media or format habitually negatively affects temporarily the music sales. The price sensitive consumers who plan to buy a new audio playing technology regularly wait until its retail price goes down to the level where they can afford it. During this time, many of them also reduce their acquisitions of new sound recordings on an incumbent music medium to a minimum and postpone many acquisitions, until they acquire the new technology. Depending on the share of such consumers on entire population, a sudden decrease in the sales of prerecorded music media can occur when a new audio playing technology is introduced into the market. The sudden decrease is commonly followed by a sudden increase in music sales, once the new technology acquired sufficient market penetration. Behind the sudden steep increase is the consumers' decision to realize all the postponed acquisitions of sound recordings. Some consumers even decide to substitute their collections of sound recordings on old music media by collections composed from new ones, after they acquire a new advanced media player with higher sound quality than the incumbent one.

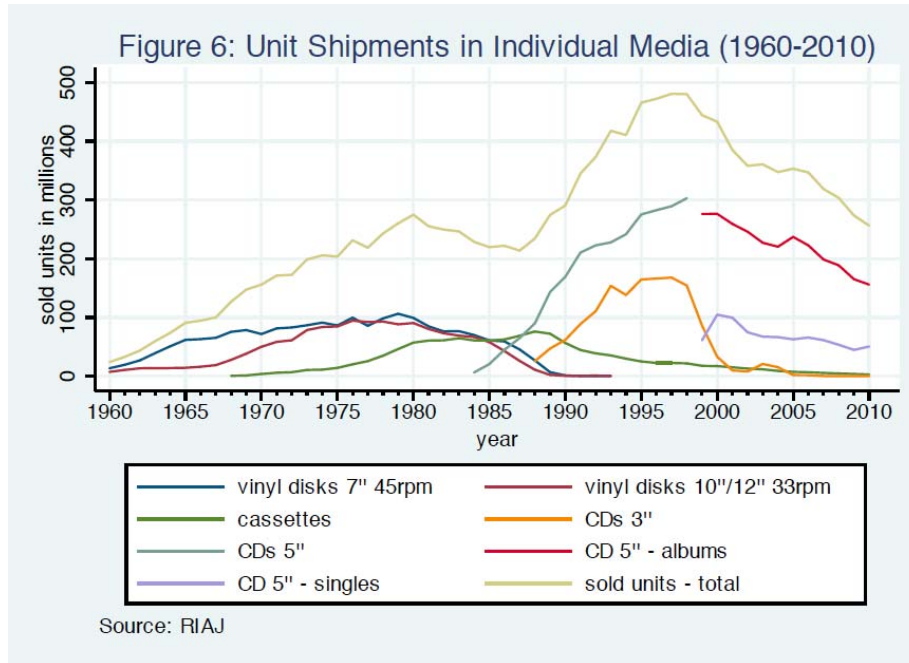
By examining the sales of prerecorded music media and authorized downloading services between 1960 and 2010 in Japan in Figure 2, we can observe two considerable drops in sales, which lasted for several years. The first decline occurred in the first half of 1980s and the second started in 1999 and lasts with a short interruption until the present. In 2000 yen, the drop in 1980s was a 14.5% decline and the drop from 1998 until 2004 was even a 22.6% decrease.

As explained above, the conventional explanation is that both music sales declines were caused by piracy, *i.e.* by the introduction of audiocassette recorders and portable audiocassette players together with the emergence of rental shops at the end of 1970s and the beginning of 1980s, and by the introduction of MP3 players and peer-to-peer file sharing in the late 1990s. The main problem with this explanation is that the normal expectation would be that piracy would affect the sales across all affected segments, but it has not fully happened in case of both periods of music sales declines. In case of music sales decline in 1980s, the most obvious target segment, which would have been expected to be affected by unauthorized copying of prerecorded music media on blank audiocassettes, was the market with prerecorded audiocassettes. However, when we look at the sales by individual tangible media shown in Figure 6, we can observe that the sales of prerecorded audiocassettes are the sales of only prerecorded music media, which were still growing during the most of 1980s until their peak in 1987. Since that time audiocassettes were slowly, but steadily substituted as an obsolete music medium by music CDs. Accordingly, the main market segment strongly affected by the drops in sales was the market with vinyl disks, be they albums or singles.

In 1982, the first music CDs were published and commercialized. Although a considerable portion of vinyl disks sales was substituted by prerecorded audiocassettes, which allowed a certain level of portability, there were also customers who decided to postpone their music acquisitions, until then new CD technology became more affordable to them. Figure 5 shows that the price of first prerecorded music CDs was also quite high in comparison to then incumbent media, *i.e.* audiocassettes and vinyl disks. Their retail price dropped quite significantly in the late 1980s and early 1990s, fuelling high growths in the sales of music CDs. The sale of CD albums took over the sales of LP vinyl disks in 1986. As to singles, the decline of single sales lasted until 1988, when then new 3'' CD sales took over the sales of 7'' vinyl disks. The later introduction of 3'' CD as substitution for 7'' vinyl disks as medium for singles caused that the decline in single sales lasted much longer and was much more significant than the decline of album sales.

Another abovementioned explanation conventionally put forward for the music sales decline in the early 1980s in Japan is based on the emergence of music rental shops. However, the actual numbers of rental shops shown in Figure 7 as well as the actual size of stocks in rental shops displayed in Figure 8 does not support that claim. Figure 7 shows that the highest growth of rental shops occurred in the second half of 1980s, *i.e.* the period when the sales stopped declining and suddenly started steeply growing. In this regard, the numbers of rental shops can be a bit

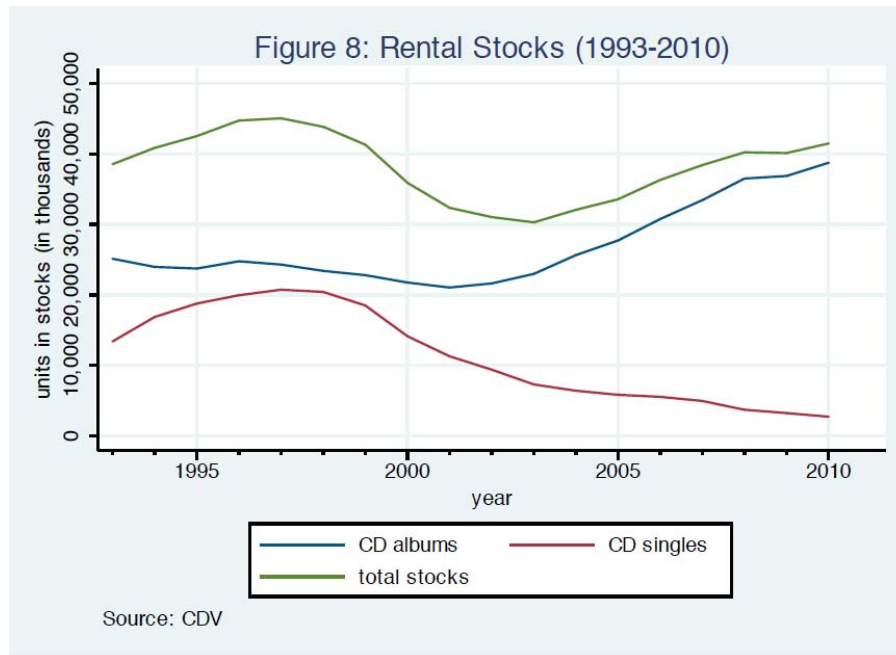
imprecise to determine the exact size of music rentals. The early years of music rentals were characterized by a large number of small independent rental shops. In the 1990s and 2000s, we can observe concentration in the music rental industry. While the number of rental shops was slowly shrinking, the stocks of prerecorded music media in rental shops were growing until 1997. Moreover, the size of rental shops also increased during the 1990s and 2000s. At the present, most of rental shops belong to several main rental shop chains.



The actual size of music renting can thus be depicted by the size of rental stocks as shown in Figure 8. In addition to the impact of music rentals on the music sales by substituting the music sales, the fluctuation in rental stocks can have a positive or negative effect on the music sales. On the one hand, the increase in rental stocks contributes to the increase in the music sales, because the rental shops purchase their stocks from the right holders. On the other hand, the decline in

rental stocks can have a negative impact on the music sales, since the decreased stocks is sold as second-hand goods, which can substitute the sales of new prerecorded music media.

The second period of music sales decline lasting for several years started in Japan in the year of 1999. There are several possible explanations for the reasons of decline. The first explanation relates to the introduction and massive use of MP3 audio compression technology. Although the standardization process for MP3 technology was completed already in 1993 and 1995 respectively, only the introduction of Nullsoft's audio player WinAmp software in 1997 led to massive popularity of MP3 files. The trend was even magnified by the introduction of first portable MP3 players in 1998. In 1997, the mp3.com website allowed its users—mainly starting singers and groups—to upload their music MP3 files and easily download them by the public.



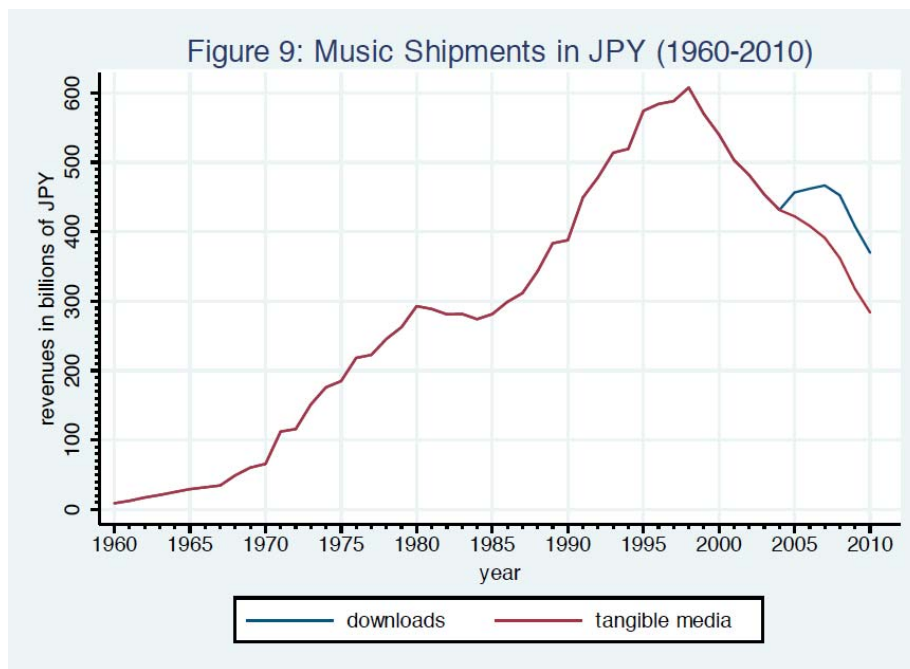
The difficulty to find any MP3 music files containing mainstream sound recordings at the Internet led a student Shawn Fanning in 1998 to developing a platform where individual users could share their MP3 music files amongst themselves without any need to upload them to a website, which could be turned down by copyright holders. The platform started its operation as Napster in June 1999. Its user base grew up mainly over the year of 2000, reaching the peak with 26.4 million users worldwide in February 2001.

In Japan, there were several peer-to-peer file-sharing networks, however, none of them obtained as high numbers of members as the networks in the U.S. and Western Europe. Even the data on the usage of peer-to-peer file sharing networks, which were obtained and published by record labels, show that less than 10% of young population have participated in file sharing in Japan. These numbers are much lower than the two-digit numbers from other developed countries.

Accordingly, another possible explanation might be that the period between 1998 and 2004 is comparable to the period between 1980 and 1987, *i.e.* the period of switching from one incumbent music medium to a new one. Figure 9 shows a considerable increase of music sales between 2004 and 2007, which has been caused by authorized online downloads.

The question arises why the music sales were dropping for several years, until the authorized online music downloading services started to play any significant role on the music market. The services offering music for downloading to cell phones were on the Japanese market since the early 2000s. A possible explanation of their failure might be found in similarity of both several years lasting declines of music sales in the music history. The first prerecorded music CDs were available at the market already in 1982, but the music sales were declining until 1987. The consumers waited until the prices of CD players as well as prerecorded music CDs decreased to

the level, which was affordable to them. Similarly, the available online music downloading services were quite expensive in their early days and did not provide services with functions and options demanded by majority of consumers.



The first commercially successful online music service worldwide is iTunes Music Store, which was opened only in 2003 in the U.S. It took iTunes Music Store around 1 year to start playing an important role on the U.S. as well as global music market. We can observe the commercial success of authorized online music downloading services in Japan in Figure 9. The segment of online music sales has been continuously growing since 2004, while the sales of tangible media, especially CDs, have been steadily declining.

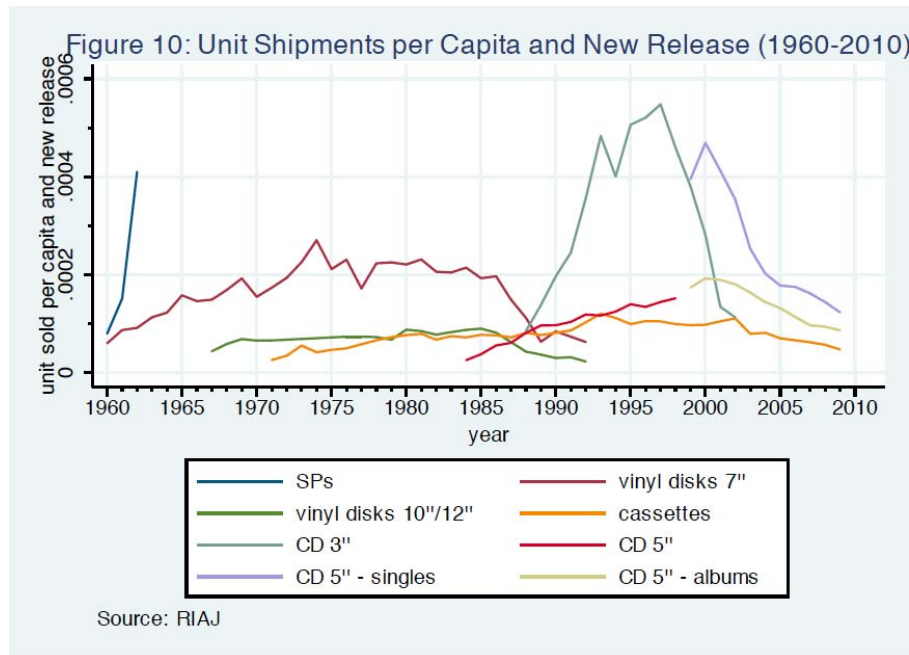
b) Changes in the Way of Music Consumption in the Digital Ages

If we take the technological switch from tangible media to online downloading services as a plausible explanation for the music sales decline between 1998 and 2004, we will face another problem. The problem is that the revenues for online music downloading services have not achieved the level of revenues from music CD sales in 1998 so far, as Figure 9 shows.

As mentioned above, some scholars argue that the CD sales have been inflated by replacing vinyl disks collections with CD collections by consumers. This phenomenon can apply to a portion of consumers, but it is not plausible that it significantly increased the sales of prerecorded music CDs. When we consider the average number of units sold per capita and per a new release (*see* Figure 10), it is obvious that the number of sold CDs per capita and per a new release is much higher than the average number of sold vinyl disks per capita and per a new release. A similar situation is also with the average number of sold CDs per capita and per a unit in the catalogue of available CD titles on the market in comparison with the average number of sold vinyl disks per capita and per a unit in the catalogue of vinyl disk titles.

Another possible explanation might be that the way of music consumption has changed by the technological switch from tangible media to intangible online music downloads. To examine this claim, several problems with processing available data on online music downloads have to be overcome. First of all, as mentioned above, there are two different platforms using distinctive business models. The first one is built only for cell phones and allows only single-track downloads. It also allows customers to download entire albums, but the transactions are processed

on a single-track basis. The customers therefore have to pay pursuant to the number of tracks available on an album. This platform does not provide any discount rate for downloading entire albums. To sum up, the data for this kind of online music downloading services are available on a single-track download basis, where the price for a single-track download is JPY350.



The second platform consists of online services, which can be accessed from computers as well as selected types of cell phones. An example can be the iTunes Music Store, which provides single-track downloads for JPY150 in case of foreign sound recordings and for JPY200 in case of domestic performers as well as downloads of entire albums for JPY1,500 or JPY1,800 depending on a title and artist. In this case, to download an entire album is much cheaper than to download all single tracks contained on the album. Moreover, the price for an entire album is comparable to prices of album CDs in brick-and-mortar shops. The drawback is that the iTunes Music Store is accessible only via iPhones or computers. The Android smartphone users cannot play the tracks downloaded from the iTunes Music Store. They have to use the abovementioned services, which were specially designed for the Japanese cell phone market, but are more expensive than services provided by the iTunes Music Store. A possible substitute for the iTunes Music Store is Amazon MP3, which does not restrict the accessibility only to iPhones, but does not control any significant market share at the Japanese market of online music downloading services so far.

In case of the first platform, it is thus hard to distinguish which single-track downloads substitute purchases of singles and which ones substitute purchases of albums. On the other hand, the second platform represented by iTunes Music Store, Amazon MP3 and similar online services distinguishes between single-track downloads and album downloads. Consequently, the following analysis focuses on the data from this platform.

Comparing the data on the sales of tangible media with those on the sales of intangible online downloads, it is obvious at the first glimpse that the proportion between single-track downloads and album downloads does not reflect the proportion between single and album sales. While in case of online downloads the album downloads represent around 5%-6% from all online downloads in segment covering single track and album downloads, the album sales in case of tangible media represent 62%-72% from all unit sales of tangible prerecorded music media. One possible explanation might be that the consumers have a strong preference to purchase single tracks in case of online music downloading services. Another possible explanation might be that the consumption habits have been changed in case of online music downloads.

While the hard-core fans continue buying entire albums, the other customers have an option to purchase only those single tracks, which they like. Under the current business model of music industry and album formation, an average album contains from 2 to 4 songs, which can attract attention of broad audience. The rest of songs on albums often targets a niche market of the performers' committed fans. Only the fans of concerned singers or music groups are familiar with those songs and have any interest in them. Accordingly, the online music downloading services allow customers to decide whether they buy an entire album or just the best songs from the album.

One might argue that a similar option also offers CD singles in case of tangible music media. However, the CD singles are based upon completely different business model. They target consumers who are willing to pay more for special editions of certain songs. They offer special bonus versions of particular songs. In addition, the price of average CD single is roughly around 40%-50% of the retail price of entire album. Accordingly, the CD singles mainly target the committed fans of concerned performers. As this group of consumers have lower price elasticity than average consumer, they are willing to pay more for those special editions made by their favourite performers.

Comparing to CD singles, single tracks for downloading are sold for 10% or less of the retail price of entire album in case of platforms providing entire albums for downloading. Hence, the business model employed by online music downloading services is slightly different in comparison to tangible CD singles. They target consumers, which respond to changes in prices for music. The consumers can thus decide whether they buy the entire album or only the songs in which they have interest. It should be noted that the online music downloading services also provide special editions of selected songs for downloading, but their price is much higher than the price of normal single track. Accordingly, this type of single tracks has similar characteristics to tangible CD singles.

To sum up, the change in music consumption brought by the introduction of online music downloads, which allow to buy either individual single tracks or entire album, can explain why the sales from online downloads have not reached the sales of CDs from the second half of 1990s and why the share of album downloads on total downloads does not reflect the share of CD albums on the total sales of tangible prerecorded music media.

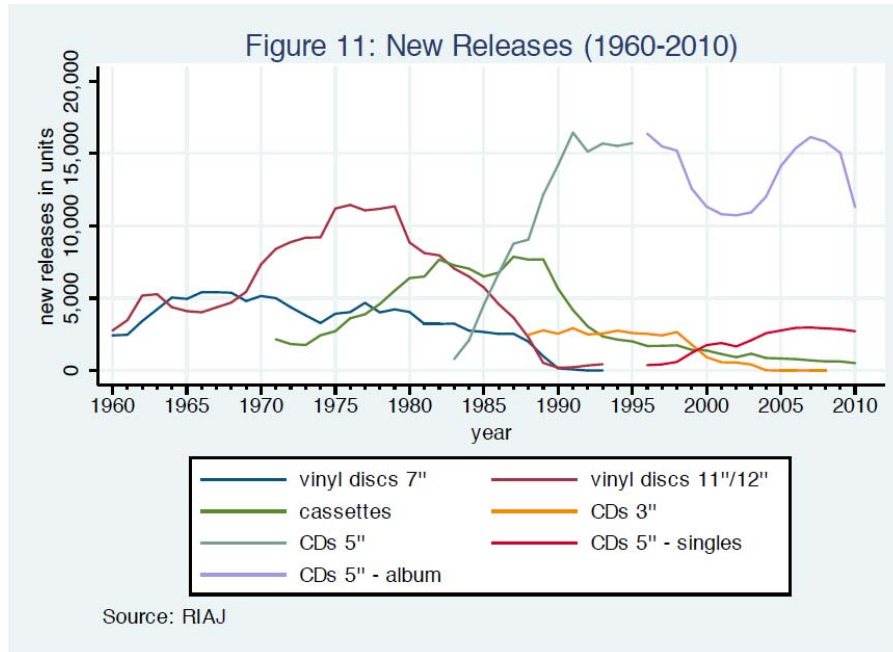
c) Negative Economic Situation since 2008

Figures 2 and 9 show that the music sales increase between 2004 and 2007 stopped in 2008. As Figure 2 depicts, the drop of music sales in 2008 and 2009 can be explained by an economic and financial crisis lasting since 2008 in Japan as well as worldwide. It is hard to expect any increase in music sales when the other areas of economy dive due to a negative economic situation in the entire economy. The bad economic situation is not only specific for Japan, but it affects the entire global economy.

Figures 3 and 4 show that the average household expenditures for recreational goods have a decreasing trend since 1999. As pointed out, a part of sales decline could be caused by decreasing expenditures for recreational goods and by changes in consumers' preferences in leisure time spending. Some of these changes are also caused by a negative economic situation in the entire economy in Japan, which causes decline of consumers' income and changes in their expenditure habits. In case of negative economic situation, one of first expenses restricted by consumers are expenses on entertainment, what also causes redistribution of limited financial resources between various types of entertainment and leisure time activities.

The music sales also depend on the number of new releases, which is affected by several factors. If the number of new releases declines, it can lead to the decline of music sales. Although one might argue that the decline of releases will lead to higher quality, since those sound recordings, which have no chance to succeed on the market, will never be produced. Nonetheless, it seems that it is not always the case. Figure 11 shows that the considerable declines of new releases coincide with the significant declines of concerned prerecorded media. For instance, the

period since 1979 is characterized by declines of new releases of vinyl disks, as well as the period since 1980 is characterized by declines in the sales of vinyl disks. Similarly, the period since 1989 is characterized by declines in new releases as well as sales of audiocassettes. Finally, the period since 1998 to 2003 is the period when the new releases of CD albums significantly declined or stagnated. The period since 2006 is also characterized by the decline in new releases of CD albums. At the same periods, the sales of CD albums dived.



The question arises what is the cause and what is the result, *i.e.* whether the decline in new releases caused the decline in the sales of concerned prerecorded media or whether the decline in the music sales caused that the record labels decided to issue fewer new releases. As shown in Figure 11, the decline in new releases, in many cases, started one year before the beginning of decline in the sales of concerned media. Accordingly, it seems that the sales of prerecorded media depends on the number of new releases and not vice versa.

A similar conclusion can be achieved when we look at the sales of prerecorded music media per capita and per new release. In Figure 10, we can observe that the sales of individual music media per capita and per new release were not considerably affected at the time when the total sales of concerned prerecorded media were declining. The sales of vinyl disks per capita and per new release were quite stable until 1986 despite the decline in total music sales since 1980. A similar situation can be observed with regard to the sales of prerecorded audiocassettes.

The difference is only period after 2000, where the sales of CDs per capita and per new release, be they singles or albums, declined notably. Please note that Figure 10 does not show the sales of CD 3" after the year of 2002. At that time, the sales of CD 3" did not represent high volume sales anymore, since they were mainly substituted by singles on CD 5". For this reason, the sales of prerecorded music CD 3" per capita and per new release were omitted. Due to the low number of new releases on that media, its sales per capita and per new release increased significant.

IV. CONCLUSION

The analysis of data on music sales in Japan between 1960 and 2010 shows a close relationship between socio-economic situation and music sales. The exceptions were only the years between 1980 and 1987 and between 1998 and 2004. During these time periods the music sales dropped

considerably despite the growing trend of entire economy in real numbers. Although the conventional explanation is piracy as a cause of these decreases in music sales, the analysis in this Paper showed that the declines lasted only temporarily and were followed by fast growths in music sales, once the market switched from an incumbent music media to a new type of music media, *i.e.* from vinyl disks to audiocassettes and CDs in 1980s and from CDs to online music downloading services between 1999 and 2004. Another aspect, which considerably affected the transition from CDs to online music downloading services, is the change in consumers' consumption habits in case of online music. While the consumers have no other option than buying entire albums on tangible CDs in case of brick-and-mortar shops, the online music downloading services allow many consumers to pick up the songs they like without any need to pay for the rest of albums composed of songs in which the consumers do not have any interest. The last aspect, which affected the music sales especially since 2008, is the negative economic and financial situation in Japan and worldwide. As the entire global economy and many national economies dive, it is hard to expect miracles in form of increasing music sales.