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INFORMATION ASYMMETRY AND 360-DEGREE CONTRACTS IN THE RECORDED MUSIC INDUSTRY[1]

Maya Bacache-Beauvallet[2], Marc Bourreau[3], François Moreau[4]

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1. INTRODUCTION

Since the late 1990s, recorded music sales have collapsed, whereas other music revenues such as performance rights (especially from radio and TV broadcasters), synchronization rights (when recorded music is used in a movie for instance), and above all concert revenues have increased. For instance, between 2006 and 2011, worldwide live music revenues increased from $16.6 billion to $23.5 billion[5] (+ 42%), while recorded music sales dropped from $22.4 billion to $16.6 billion[6] (– 26%).

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2 Telecom ParisTech, Department of Economics and Social Sciences, F-75013 Paris, France. E-mail: maya.bacache@telecom-paristech.fr.

3 Telecom ParisTech, Department of Economics and Social Sciences, F-75013 Paris, France. E-mail: marc.bourreau@telecom-paristech.fr.

4 University Paris 13, Sorbonne Paris Cité, CEPN (CNRS, UMR 7234) and Labex ICCA. F-93430 Villetaneuse, France. E-mail: francois.moreau@univ-paris13.fr [corresponding author].

5 This figure includes concert tickets sales, tour merchandising, music event sponsorships and other forms of concert-related revenues. Source: eMarketer (Global Music - Tuning Into New Opportunities).

6 Source: International Federation of the Phonographic Industry (IFPI).

Up to now, the record companies' business model has relied mainly on recorded music sales, which increased worldwide by 34.5% between 1991 and 2000. Record companies, and especially the three "majors" (Universal/EMI, Sony, Warner), which account for about 75% of worldwide music sales, used to view live music as useful only to the extent that it increased recorded music sales.[7] One reaction of record labels to the downturn in music sales has been to try to change the contractual terms governing their relationship with artists, and to obtain a share of the growing revenue streams usually returned to artists (e.g., revenues from live music). This has given rise to so-called 360-degree deals, also called "multiple rights deals" or "equity deals", under which record labels receive a percentage of the earnings not only from record sales but also from concerts, merchandise sales, endorsement deals, etc. In exchange, the labels undertake to fund and manage these activities and to develop new opportunities for the artists.

The British pop star Robbie Williams signed one of the first 360-degree contracts in 2002 with EMI. However, this model began to receive a lot of attention when Live Nation signed a highly publicized $120 million deal with Madonna (Karubian, 2009, p. 422). In 2008, Warner Music Group CEO Edgar Bronfman announced that his label "*now requires all new artists to sign 360 deals, and about a third of their already-signed artists are under such contracts*."[8] Hence, whereas in early deals artists had the choice *not* to sign a 360-degree contract, and received massive advances for the assignment of their rights (to compensate for the earnings in ancillary markets they signed away), most artists signing 360-degree contracts today do not obtain much in the way of advances and are often not given the choice of another type of deal.

Among the abundant academic literature devoted to the analysis of the impact of digitization on the music industry[9], a specific stream deals with the impact of music piracy on ancillary markets, especially on

7 This is why they used to provide artists with tour support without expecting any return on concert revenues.

8 http://techcrunch.com/2008/11/08/360-music-deals-become-mandatory-as-labels-prepare-for-free-music/ (accessed January 19, 2015).

9 The bulk of this literature focuses on music piracy, from either a theoretical perspective (see Belleflamme and Peitz (2012) for a survey) or an empirical perspective (see Waldfogel (2012) for a survey).

the live music market. Gayer and Shy (2006), Curien and Moreau (2009) and Dewenter et al. (2012) show that due to the existence of a positive externality from the recorded music market to the live music market,[10] file-sharing, while possibly hurting records sales, should enhance revenues from the live music market by increasing the audience of artists.[11] Likewise, 360-degree contracts should be considered as profit-enhancing for both artists and record companies, since they allow the internalization of market externalities between the recorded music market and ancillary markets, especially the live music market. For an artist, releasing an album with a record label is a necessary condition to obtain radio airplay and to benefit from marketing expenses. This of course favors recorded music sales but in turn it also helps the artist to find dates for live shows (producers of live concerts take a signature with a record label as a signal of credibility) and to fill the concert venues (thanks to airplays and marketing expenses). Craig Kallman, chairman of Atlantic Records, sums up these market externalities as follows: "*If we weren't so mono-focused on the selling of recorded music, we could actually take a really holistic approach to the development of an artist brand.*"[12] However, a decade after their first appearance, 360-degree contracts are still very far from representing a significant revenue stream for the recorded music industry. According to the BPI (the trade organisation of the British recorded music industry), equity deals generated extra revenue of £76 million for UK record companies in 2011 (an increase of 14% on the previous year). However, they still represent less than 8% of the total revenue of UK record labels,[13] and record companies seem to encounter difficulties in implementing such 360-degree deals.

10 The existence of such an externality from recorded music to live music consumption is empiricaly validated by Montoro-Pons and Cuadrado-Garcia (2011). Note that Dewenter et al. (2012) consider the positive externalities between live music and recorded music in both directions.

11 Mortimer et al. (2012) provide empirical evidence that file-sharing does indeed increase live music revenues, at least for the less well-known artists (for "stars", the impact is negligible). Using survey data, Bacache-Beauvallet et al. (2015) show that for artists under contract with a record company, the more they perform on stage, the more tolerant towards file-sharing they are.

12 http://www.nytimes.com/2007/11/11/arts/music/11leed.html?pagewanted=all&_r=0 (accessed June 8, 2016).

13 http://www.bpi.co.uk/media-centre/diversifying-income-streams-boost-2011-records-lab.aspx (accessed January 19, 2015).

Our paper aims to investigate this paradox. What makes artists reluctant to sign contracts that should theoretically be profit-enhancing for them? We argue that 360-degree deals face a major obstacle to their development due to an information problem that arises in the contractual relations between artists and their record companies. Artists suffer from an information asymmetry on the actual revenue their recorded music generates, allowing their record labels to increase their bargaining power in terms of income-sharing. We argue that this makes artists reluctant to share all their revenue with a label as required by 360-degree deals, and this prevents these efficient contracts from being implemented.

As stressed by Dionne (2013), the empirical measurement of information problems is a difficult task. Researchers are not privy to more information than decision-makers: the information not observable for the uninformed agent is not observable for the econometrician either. Two solutions have been adopted to overcome this difficulty: (1) using confidential surveys, and (2) developing econometric strategies that can isolate the desired effect. Our empirical strategy mixes these two solutions. From a survey, we obtained information on various characteristics of a representative sample of several hundred music artists. Although information asymmetry is not directly observable, we argue that we can use proxies to evaluate the effects of information asymmetry and explain the attitude of artists towards 360-degree deals, conditional on a wide range of observed characteristics. These proxies are based on the contractual situation of an artist (allowing us to distinguish lesser and better informed artists) and on the extent of his ancillary revenues (allowing us to approximate his opportunity cost).

The rest of the paper is organized as follows. Section 2 describes the way traditional contracts are designed in the recorded music industry, presents 360-degree contracts, and introduces our research hypotheses. The data are presented in Section 3, while Section 4 is devoted to our empirical strategy and our estimation results. The results are discussed in Section 5 and Section 6 concludes.

2. CONTRACTS IN THE RECORDED MUSIC INDUSTRY

In this section we describe how standard record contracts work in the music industry. We show that they involve an information asymmetry between artists and record labels that strengthens the latter's bargaining power in income sharing. Whereas such contracts should in theory be profit-enhancing for both parties, we argue that the fear of being in a weak bargaining position for all of their revenue streams reduces the willingness of artists to sign 360-degree contracts. We then propose two testable hypotheses to explain this puzzle.

2.1. Standard record contracts

Releasing an album is a highly risky process. The "nobody knows" rule states that in cultural industries, the success of a project is highly unpredictable (Caves, 2000). Due to the nature of music as an experience good, the potential value of an album remains unknown until it is released. Not surprisingly, the standard contract between a record company and a music artist shares the risk between both parties. The artist receives a percentage of record sales (royalties), while the record company funds the fixed costs of releasing the album (mainly in the form of recording, promotion and distribution costs). The record company may also pay the artist an "advance against royalties" (which is recoupable) while recording the album (Krasilovsky and Shemel, 2003). This sort of contract raises two potential issues. First, in its negotiation with the artist the record company could take advantage of the information asymmetry on the actual revenues an album generates. Second, these contracts turn out to be suboptimal, since they do not take into account the positive externality between the recorded music market and the live music market. We discuss these two issues in more detail below.

2.1.1. Bargaining power and income-sharing

A typical record contract generates a strong information asymmetry between the record company and the artist. The amount of record sales, which determines the artist's royalties, remains unobservable to the artist,

"*because the label keeps the books that determine the earnings remitted to the artist*" (Caves, 2000, p. 65). For instance, "*in a long dispute between the Beatles and EMI and its U.S. subsidiary Capitol, undercounts of sales for royalty calculation were alleged, as were transfers of 'free' promotional records to subsidiaries that released them for commercial sale*" (Caves, 2000, p. 65). This information asymmetry, which provides music labels with a strong advantage in the bargaining for income sharing, is well-documented by industry professionals. For instance, according to George Howard, former president of Rykodisc (now a subsidiary of Warner Music Group)[14] "*if you don't believe this information asymmetry still exists, [...] get your hands on a royalty statement from most labels to artists. I defy you to make heads or tails out of it, even if you're an accountant and it's your money.*" He adds that "*virtually every artist believes that any agreement presented to them by a label/publisher is severely skewed in the favor of the label. Whether this is true or not is irrelevant; it speaks to the lack of ethical fiber – based on information asymmetry and lack of transparency – endemic to this business.*"

Furthermore, the effective value of the nominal royalty rate is reduced by what Passman (2003) calls a series of "cheats" that the labels include in the standard contract. For instance, the royalty rate is reduced by an arbitrary "packaging charge" or, until recently, by a breakage charge introduced in the 1950s when music was recorded on fragile shellac records (Caves, 2000). Moreover, if the album is successful enough for the artist's share of the profits to exceed the advance, the artist will have to reimburse the whole advance to the label. Music video production costs ($50,000 to $100,000) and about half of marketing and promotion costs are also recoupable (Karubian, 2009). Finally, most contracts specify that if the costs of one album remain unrecouped, the deficit can be repaid from the excess earnings of a past or future album. This is called "cross-collateralization". Hence, incurring substantial costs in recording one album could leave an artist in debt for the rest of his major label career (Karubian, 2009).

How can we explain the persistence of such unfavorable – and possibly unfair[15] – contractual terms that prevent artists from collecting a signif-

14 http://blog.tunecore.com/2011/07/information-asymmetry-in-the-recorded-music-business.html (accessed January 19, 2015).

15 Klein (1980) emphasizes that some contractual provisions, "*although voluntarily agreed upon in the face of significant competition*", can be considered as unfair.

icant share of the revenues their albums generate? The first explanation is that up to now artists did not have any viable outside options. In an oligopoly such as the recorded music market, controlled by a few major companies, not being signed by one of the majors means being deprived of the benefit of significant promotion and marketing expenses and (most of the time) radio airplay, which has long been the main driver of recorded music sales (Peitz and Waelbroeck, 2005). Hence, until the 1990s, only low-potential artists chose to self-release their albums (Burke, 1997). The second and probably the main reason is that even if it produces no direct revenue for the artist, recording an album generates positive externalities on ancillary markets, especially on the live music market (see, among others, Gayer and Shy, 2006). This is why for an unsigned artist "*any deal is a good deal*" (Karubian, 2009, p. 437). Radio airplay, video broadcasts, advertising and media interviews, which are usually made possible by the release of an album with a music label, are also very favorable to the live music careers of artists. It is indeed on stage that most artists make the bulk of their revenues (Connolly and Krueger, 2007).[16]

2.1.2. The suboptimality of standard record contracts

The existence of positive externalities between the recorded music market and the live music market, in both directions, makes standard record contracts suboptimal because these externalities are not internalized.[17] 360-degree deals (where the recording company manages both activities) and self-releasing albums (where the artist manages both activities) are two forms of vertical integration that allow these market externalities to be internalized and that could lead to higher aggregate profits than running each activity separately. Dewenter et al. (2012) show that under pervasive piracy, the integration of record and concert management can lead to higher profits for the label. In a theoretical setting with no mar-

16 Concerts provide a much larger source of income for artists than record sales or publishing royalties. Connolly and Krueger (2007) report that 73% of the average income for 35 top artists who toured in 2002 came from live concerts, while less than 10% came from recording sales and 7% from publishing rights.

17 Only the positive externality from the live music market towards the recorded music market was internalized to some extent, since in some contracts the record company provided the artist with "tour support". Performing live was considered to boost recorded music sales.

ket expansion, they show that significant network effects from concert attendance on record sales lead labels to charge higher prices in the concert ticket market. Stimulating record sales by reducing concert ticket prices is less rewarding with pervasive piracy. Curien and Moreau (2009) also show in a theoretical model that artists could benefit from sharing their ancillary revenues with their record companies, which should lead to wider exposure through higher quality releases. The artist then benefits from an increase in the demand for CDs, as well as for live performances and ancillary goods.

Yet up to now, neither self-releasing nor 360-degree deals have been considered relevant business models in the recorded music industry. As pointed out above, self-releasing an album used to be a very risky strategy, since it often denies the artist access to promotion channels and efficient distribution networks. Up until the early 2000s, record companies considered 360-degree deals to be of little interest, because the cost of diversification exceeded the expected benefit. First, the key skills required in the recorded music market are different from those in ancillary markets (including live music market), and few labels possessed the necessary expertise in these business areas.[18] To acquire this expertise, music labels had to rely on costly mergers and acquisitions. For example, in June 2007, Universal Music Group purchased Sanctuary Group for about 88 million dollars. The most valuable assets of the target were not its famous music labels but rather its artist career management, merchandising and live music businesses.[19] Second, in the early 2000s, the value of the live music market was small compared with the recorded music market; in the US in 1999, the turnover of the live music market only amounted to 10% of revenues from recorded music sales.[20]

18 "*The labels do not know how to do anything besides sell records. They don't know how to sell concert tickets or T-shirts. Why should I give them a chunk of my money unless they add something? I'd rather share that money with a concert professional or a T-shirt specialist.*" Peter Paterno, Attorney for Dr. Dre, Pearl Jam, Metallica, etc. See: http://articles.latimes.com/2005/sep/12/ business/fi-korn12 (accessed January 19, 2015).

19 See: http://articles.latimes.com/2007/jun/16/business/fi-universal16 (accessed January 19, 2015).

20 Source: Pollstar Magazine for the live music business; RIAA for recorded music sales.

2.2. The rise of 360-degree deals

Over the period 1999-2010, the value of the live music market increased threefold, while turnover in the recorded music market was reduced by half. In 2010 in the US, the live music market was worth 61% of the recorded music market. This is why record companies now show a much greater interest in 360-degree deals. However, although 360-degree deals can solve the suboptimality problem of record contracts, they do not solve the problem of the weak bargaining power of artists, as we explain below. In this respect, 360-degree deals can even present a major pitfall. The loss that the artist suffers by sharing his tour revenues with his label is more certain than the potential benefit. The former is clearly defined in the contract as a percentage of the various revenues included in the deal[21] (x% of tour revenues, y% of merchandise sales, etc.), whereas the benefits are far more intangible. It is far from easy to define objective criteria for the efficient management of an artist's activities, new career opportunities, or the benefits of the internalization of market externalities.

We argue that inequality in bargaining power in conventional recording contracts has an impact on artists' willingness to sign 360-degree contracts. Artists with large ancillary revenues are better placed to secure a profitable 360-degree deal.[22] Yet they may actually be more reluctant, because their high direct loss (due to a lower share of the revenues from ancillary markets) may not be counterbalanced by the potential benefit (in terms of market expansion), which depends on their ability to secure a good deal. By contrast, artists who are not currently under contract have no choice but to accept such a deal. An unprofitable contract is better than no contract, because it allows artists to release an album (without bearing the production costs) that will – with a degree of luck – be widely distributed and benefit from promotion efforts by the label.

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21 Here is an extract from a 360-degree deal contract (Karubian, 2009, p. 460): "*You hereby irrevocably grant and assign to Label and Label is entitled to receive, collect, and keep for Label's own account throughout the Term an amount equal to _____ percent (__ %) of Artist's Net Touring Receipts*."

22 Karubian (2009, p. 442) states that "*armed with statistics of their recent tours, merchandise sales, and album sales, established artists and their managers can negotiate with labels to arrange an exchange of relatively equitable assets: high upfront payments and favorable terms, such as higher royalty rates, in return for interest in projected future revenue streams*".

2.3. Research hypotheses

Based on the insights above, we construct two research hypotheses. First, artists who have had a contract in the past may have already experienced difficulties in obtaining and securing a good deal with record companies. They are therefore less naive than artists who have never had a contract with a record company. Hence, we can state our first hypothesis:[23]

Hypothesis 1. *Among the artists who are not currently under contract, those who have had a contract with a record label in the past are more reluctant to sign a 360-degree deal.*

Moreover, artists with large ancillary revenues have a high opportunity cost of signing a 360-degree deal, because it means, in a negotiation in which they have a weak bargaining power, giving up a share of large revenues to the label without tangible benefits. To isolate the "weak bargaining power" effect we only compare the impact of large ancillary revenues for artists who are or have been under contract with a record label. We can therefore state the second hypothesis as follows:

Hypothesis 2. *Artists who are or have been under contract and who earn large ancillary revenues, i.e., who tour a lot, are more reluctant to accept 360-degree deals than artists in the same contractual situation but with low ancillary revenues.*

3. DATA

Our dataset comes from a postal survey[24] conducted during the autumn of 2008 among French musicians who are members of Adami, the French organization for the collective administration of performers' rights.

23 Another possibility would be to test whether artists under contract (and thus now aware of their weak bargaining power with record labels) are less willing to sign 360-degree deals than unsigned artists. However, such a test is biased because, whatever the behavior of the record label, the expected gain of an artist under contract is lower than the expected gain of an unsigned artist (for the former, it is the profit arising from a 360-degree deal minus the profit arising from a standard contract; for the latter, it is just the profit arising from a 360-degree deal).

24 The survey was conducted through a specialized survey company, ISL.

Adami, which collects the sums paid for the use of artists' recorded works, had over 9,000 musicans among its members in 2008. Only musicians who have already participated in an album commercialized by main retailers can join Adami. There are also strong incentives for professional musicians to join, because Adami guarantees the collection of royalties on their music, especially from radio airplay and TV broadcasts. We addressed a questionnaire survey to approximately 4,000 musicians, randomly drawn from the 9,000 musicans who are members of Adami. With a response rate of about 18%, we ended up with 710 artists in our database.[25] However, among them 206 artists did not answer to the question which allows us to construct our dependent variable. The 504 remaining artists constitute the sample we use in this paper.[26]

3.1. Dependent and explanatory variables

Our dependent variable (*360DEAL*) is binary and takes the value 1 if the artist answered the following question in the affirmative: "*Given your present situation, do you consider that a 360-degree contract would be favorable to you?*"[27] It takes the value 0 if the artist answered that he considers that a 360-degree contract would be fairly or very unfavorable to him.

To test our first hypothesis, among the artists not under contract at the time of the survey, we distinguish between those who have previously had a contract with a record company (*CONTRACT_BEFORE* = 1), and thus may have experienced their weak bargaining power, and those who have not (*CONTRACT_BEFORE* = 0). In the regressions below, as far as the contractual situation is concerned, the reference category corresponds to the artists who are not and have never been under contract with a record label.

The dummy variable *LIVE* takes the value 1 if the artist performed a lot on stage in 2007 (11 times or more), and the value 0 otherwise. We use *LIVE* as

25 The information available on the members of Adami allows us to compare our sample to the full population in terms of gender, age, region of residence, and amount of royalties that the artists receive from Adami. The comparison shows that the composition of our sample is relatively close to that of the full population.

26 We deal with the possible sample selection issue in the robustness section.

27 We aggregate two positive answers: "very favorable" and "fairly favorable". We discuss this aggregation in the robustness section.

a proxy for the intensity of the artist's activity in ancillary markets.[28] We also introduce two dummy variables to distinguish, among artists under contract, between those who have a high level of live activity (*CONTRACT_LIVE*) and those with a low level (*CONTRACT_NOLIVE*). We construct the dummy variables *CONTRACT_ BEFORE_LIVE* and *CONTRACT_BEFORE_NOLIVE* in a similar way.

3.2. Main control variables

Besides their weak bargaining power with a record company, there is another reason why artists may be reluctant to sign 360-degree deals. In the digital age, their outside option - self-releasing their music - became much more viable. Of course, self-release strategies have existed for a long time. However, according to Burke (1997), up until the 2000s this practice mainly concerned musicians rejected by record labels. In the digital age, lower entry barriers[29] have led to a dramatic increase in the number of new artists who record and distribute their music on their own. In May 2009, more than 5 million rock, pop, hip-hop and punk musicians or bands were registered on MySpace (Ifpi, 2010). Digitization also allows "stars" to self-release their music - see for instance the well-known example of the rock band Radiohead, who profitably self-released and self-distributed their album *In Rainbows* online in 2007. The new opportunities offered by the "do-it-yourself" (DIY) model should reduce the willingness to sign 360-degree deals for the artists who feel able to follow such a path.

We therefore control for the entrepreneurial abilities of artists, through their self-release experience. The dummy variable *SELFRELEASE* takes the value 1 if the artist is not currently under contract but has self-released an album during the three years preceding the survey, and the value 0 otherwise. We also take into account the fact that artists who have already used digital technologies for production and/or promotion may be more prone to choose the DIY model. For the recording stage, we use a dummy variable

28 We have no information on other ancillary markets such as merchandising or sponsoring. However, the live music market is the most important of these ancillary markets. See footnote 16.

29 Byrne (2007) points out that with digitization, recording costs have sharply declined, manufacturing and distribution costs approach zero and promotion costs are also much lower (online promotion is almost free through Facebook, blogs, etc.).

reflecting the use of a homestudio (*HOMESTUDIO*). A homestudio is composed of a computer, some relevant software and additional devices, and it allows artists to record their music with almost professional quality. For the distribution/promotion stage, we use a variable that reflects the extent to which artists use MySpace to promote their music towards public or professionals (record companies, concert promoters, etc.). MySpace is a social network founded in 2003, which was, at the time of our survey, the main social network for musicians (it has now been superseded by Facebook). In 2008, about 120 million users and 5 million musicians had a page on MySpace. Usually, an artist's page offered songs for download or streaming, photos, videos, a biography, tour dates, and a list of the artist's friends. MySpace offered a free promotion tool, and negotiations with local concert promoters were much easier when the artist could boast of many "friends" on MySpace living in the region. In our survey, artists were asked how frequently they updated their MySpace page: at least every week (reference category), every month (*MYSPACE2* = 1, 0 otherwise), or less frequently (*MYSPACE1* = 1, 0 otherwise). We also consider artists who had no MySpace page (*MYSPACE0* = 1, 0 otherwise).

3.3. Other control variables

Our main assumption is that an artist who has already experienced difficulties in securing a good deal with a record label will be more reluctant to sign a 360-degree deal. However, this reluctance may be mitigated for some artists. For instance, an artist's level of education could have a positive effect on his willingness to sign a 360-degree deal: the more educated an artist is, the more able he is, or believes himself to be, to bargain with a record label. We therefore introduce a dummy variable (*HIGHEDUCATION*), which takes the value of 1 if the artist has at least a Master's degree. Likewise, successful artists should exhibit a higher bargaining power because they are able to obtain a contract from several record companies. *GOLD* is a variable that reflects the artist's success; it takes the value 1 if the artist has already won a music award and/or a gold record. We expect successful artists to be less reluctant to sign a 360-degree deal. We also include the dummy variable *MANAGER*, which takes the value 1 if the artist has a manager helping him to find and negociate commitments and business opportunities, and in particular a 360-degree deal. Conversely, artists with managers may be more aware of the pitfalls of record contracts and

of the difficulties in avoiding them, and they may therefore be more reluctant towards 360-degree deals. Thus, the overall effect of the *MANAGER* variable is indeterminate.

We include as independent variables the artists' ages (*AGE1* to *AGE5*: from 25 years old or less to 65 years old or more), whether they live outside the Paris area (*NONPARIS*), and their gender (*GENDER* equals 1 if the artist is a female). We also control for other characteristics that could affect the artists' attitudes towards 360-degree deals. An artist's annual personal income (*INCOME1* to *INCOME5*: from less than 9,000 euros to more than 60,000 euros) could affect the way he views 360-degree contracts: the higher his income, the lower his willingness to share his revenues with his label. We also include a dummy variable to identify artists who perform "popular" genres of music (*POPULAR*), that is to say a music that targets large audiences and mass distribution. Since the first and highly-publicized 360-degree deals were signed by popular music artists such as Robbie Williams and Madonna, this could positively influence the opinion of other popular music artists about the opportuneness of signing such deals. We also include a variable to account for a specificity of the French music market: the *intermittence* system. This system allows artists who experience periods of unemployment during a given year to receive benefits provided that they reach a minimal threshold of activity within that year. *INTERMITTENT* is a dummy that takes the value of 1 if the artist did receive such benefits during the previous year. An artist who benefits from the intermittence system has to negotiate frequently with professionals in the music industry, including record labels if he works as a session musician. He is therefore probably more aware of the potential behaviour of music labels and should be more reluctant towards 360-degree deals.

Finally, we also consider the impact of the piracy issue on the willingness to sign a 360-degree deal. Piracy may reduce the ability of a record company to internalize the positive externalities that exist between the recorded music market and the live music market. By reducing the value of the recorded music market, piracy reduces the potential additional gain that 360-degree deals generate, and thus reduces the artists' willingness to sign such deals. We therefore include the dummy variable *PIRACY*, which takes the value of 1 if the artist thinks that digital piracy has a very negative or fairly negative impact on his album sales, and 0 otherwise.

Descriptive statistics are given in Table 1 below and the contruction of the variables is described in Table 5 in the Appendix.

Tableau 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.
360DEAL	504	.464	.499
CONTRACT	504	.242	.429
LIVE	498	.524	.500
CONTRACT_LIVE	498	.165	.371
CONTRACT_NOLIVE	498	.077	.267
CONTRACT_BEFORE	484	.397	.490
CONTRACT_BEFORE_LIVE	478	.176	.381
CONTRACT_BEFORE_NOLIVE	478	.220	.414
SELFRELEASE	484	.385	.487
HOMESTUDIO	497	.644	.479
MYSPACE3	504	.244	.430
MYSPACE2	504	.149	.356
MYSPACE1	504	.163	.369
MYSPACE0	504	.425	.495
AGE1	504	.022	.146
AGE2	504	.119	.324
AGE3	504	.310	.463
AGE4	504	.319	.467
AGE5	504	.216	.412
INCOME1	475	.234	.423
INCOME2	475	.223	.417
INCOME3	475	.324	.469
INCOME4	475	.185	.389
INCOME5	475	.034	.181
GENDER	503	.417	.494
HIGHEDUCATION	494	.496	.500
NONPARIS	504	.528	.500
POPULAR	504	.256	.437
INTERMITTENT	501	.445	.497
GOLD	504	.202	.402
MANAGER	500	.194	.396
PIRACY	490	.569	.496

Note: The number of observations varies across variables because of questions not answered by some artists.

4. EMPIRICAL STRATEGY AND RESULTS

A basic descriptive analysis of our data supports our hypotheses. As shown in Table 2, artists currently under contract or who have previously been signed by a music label – and who are thus aware of the information asymmetry they suffer in their relationship with their label – are less likely to consider a 360-degree deal as a favourable opportunity for them (Hypothesis 1). Artists with large ancillary revenues are also less interested by a 360-degree deal probably because their opportunity cost is higher (Hypothesis 2).

Tableau 2. Descriptive analysis of our hypotheses

Artist's situation	Consider a 360-degree deal as favourable for him (*360deal* = 1)
	Frequency (%)
Under contract	39.3
Not under contract but have had a contract previously	42.7
Never under contract	55.3
Under contrat with an intensive live music activity	30.5
Not under contract but have had a contract previously with an intensive live music activity	38.1
Never under contrat with an intensive live music activity	53.6
Whole population	46.4

These descriptive results should of course be confirmed by an econometric analysis. Since our dependent variable (*360DEAL*) is binary, we estimate the following probit model:

$$P_t = Pr\,(360DEAL = 1) = \Phi(\beta_o + \beta X_t)$$

where P_t is the probability that *360DEAL* = 1 for observation t, X_t is a vector of explanatory variables (including control variables), and β is the parameter vector to be estimated. All results presented below include robust standard-errors to encounter for possible heteroscedasticity.

4.1. Main results

In our regressions, the reference category is the artists who do not have a contract and never have had one. We compare the attitude towards 360-degree deals of this subpopulation with the attitude of three other subpopulations: artists without a current contract but who have had one in the past, artists under contract with intensive live activity and artists under contract with no live activity. We first test Hypothesis 1. Regression (1) in Table 3 allows us to check that *ceteris paribus*, artists without a current contract but who have had one in the past (*CONTRACT_BEFORE*) are significantly more reluctant to accept a 360-degree deal than artists who have never had a contract (the reference category). Since both types of artists are not currently under contract, the only difference that could explain their attitude towards 360-degree deals is their past experience of record companies and the difficulties in bargaining they have experienced.

Table 4 presents the marginal effects[30]. It shows that for artists not currently under contract, previous experience of a contractual relationship with a music label reduces the probability of considering 360-degree deals to be favorable by 12 percentage points, compared with artists who have no such experience.

Regressions (1) and (2) in Table 3 validate our second hypothesis. The higher the revenues that an artist under contract may have to share with his record label – because he tours a lot (*CONTRACT_LIVE*) – the less likely he is to consider 360-degree deals to be favorable. Being under contract and touring a lot reduces the probability that an artist will consider 360-degree deals to be favorable by 22 percentage points, compared with artists who have never had a contract. This is not the case for artists under contract who perform little on stage (*CONTRACT_NOLIVE*). We obtain a similar result, though to a lesser extent and less significantly, when *CONTRACT_BEFORE* and *LIVE* are interacted. Artists without a current contract but who have had one in the past are less willing to sign 360-degree deals when they perform a lot on stage. Note that when the *LIVE* variable

30 The calculation of marginal effects in a Probit model can be tricky in the presence of interaction terms (Norton et al., 2005). However, in our Probit model we don't estimate joint effect and single effect but only joint effect. Thus, we don't face the problem expressed in Norton et al. (2005).

is not interacted, it turns out to be non-significant (see regression (3)). Intensive live activity *per se* does not make an artist more reluctant to sign a 360-degree deal. The reluctance actually comes from the combination of touring a lot and having previous experience of a relationship with a record label.

Tableau 3. Main probit regressions

360DEAL: Dependent variable	(1)	(2)	(3)	(4)
CONTRACT			−0.407**	
			(0.204)	
LIVE			−0.105	
			(0.157)	
CONTRACT_LIVE	−0.619***	−0.625***		−0.645***
	(0.238)	(0.239)		(0.175)
CONTRACT_NOLIVE	−0.103	−0.092		0.027
	(0.268)	(0.268)		(0.224)
CONTRACT_BEFORE	−0.303**		−0.314**	−0.328**
	(0.152)		(0.154)	(0.134)
CONTRACT_BEFORE_LIVE		−0.377*		
		(0.199)		
CONTRACT_BEFORE_ NOLIVE		−0.238		
		(0.185)		
SELFRELEASE	−0.336**	−0.333**	−0.322**	
	(0.162)	(0.161)	(0.161)	
HOMESTUDIO	−0.340**	−0.359**	−0.353**	
	(0.147)	(0.149)	(0.149)	
MYSPACE0	−0.274	−0.293	−0.283	
	(0.183)	(0.185)	(0.183)	
MYSPACE1	−0.109	−0.118	−0.107	
	(0.199)	(0.201)	(0.201)	
MYSPACE2	−0.315	−0.330	−0.316	
	(0.210)	(0.211)	(0.209)	
MYSPACE 3	(reference category)			
AGE 1[31]	(reference category)			
AGE2	0.095	0.092	0.052	
	(0.474)	(0.476)	(0.474)	
AGE3	0.080	0.076	0.031	
	(0.463)	(0.465)	(0.464)	

31 Since only a few artists belong to the category *AGE1*, we also use as the reference category *AGE1* and *AGE2* grouped together. This generates no change in our results.

AGE4	0.154	0.147	0.122	
	(0.465)	(0.467)	(0.467)	
AGE5	0.249	0.239	0.239	
	(0.475)	(0.476)	(0.478)	
INCOME1	(reference category)			
INCOME2	0.166	0.183		
	(0.201)	(0.202)	(0.201)	
INCOME3	−0.122	−0.104	−0.125	
	(0.197)	(0.198)	(0.197)	
INCOME4	0.163	0.177	0.146	
	(0.231)	(0.232)	(0.233)	
INCOME5	−1.000**	−0.979**	−0.982**	
	(0.432)	(0.434)	(0.433)	
GENDER	−0.135	−0.143	−0.127	
	(0.144)	(0.144)	(0.144)	
HIGHEDUCATION	0.365***	0.360***	0.356***	
	(0.134)	(0.134)	(0.133)	
NONPARIS	−0.023	−0.027	−0.033	
	(0.134)	(0.134)	(0.133)	
POPULAR	0.370**	0.371**	0.360**	
	(0.159)	(0.158)	(0.157)	
INTERMITTENT	−0.264*	−0.242*	−0.265*	
	(0.142)	(0.146)	(0.150)	
GOLD	0.070	0.085	0.100	
	(0.168)	(0.170)	(0.168)	
MANAGER	−0.360**	−0.363**	−0.405**	
	(0.183)	(0.184)	(0.182)	
PIRACY	0.028	0.030	0.033	
	(0.134)	(0.134)	(0.134)	
CONSTANT	0.417	0.426	0.521	0.135
	(0.486)	(0.488)	(0.493)	(0.097)
N	424	424	424	478
Prob > chi2	0.000***	0.000***	0.000***	0.001***
Pseudo-R2	0.105	0.105	0.100	0.026
chi2	59.861	59.786	56.745	16.527

* p < 0.1; ** p < 0.05; *** p < 0.01

Robust standard errors in parentheses.

Since some artists do not answer to questions used to construct our independent variables, the sample used in our regressions (424 observations) is smaller than the sample of artists who have answered to the question that allows us to build our dependent variable (504 observations).

Tableau 4. Marginal effects

Variables	Changes in probability (a)	
	(1)	(2)
CONTRACT_LIVE	−0.227***	−0.229**
CONTRACT_BEFORE	−0.118**	
CONTRACT_BEFORE_LIVE		−0.143**
SELFRELEASE	−0.131**	−0.129**
HOMESTUDIO	−0.134**	−0.141**
INCOME5	−0.318**	−0.313**
HIGHEDUCATION	+0.142***	+0.141***
POPULAR	+0.146**	+0.147**
MANAGER	−0.137**	−0.138**

* p < 0.1; ** p < 0.05; *** p < 0.01

(a) changes in the probability that *360DEAL* = 1 are for discrete changes of each explanatory dummy variable from 0 to 1

As far as the main control variables are concerned, entrepreneurial experience, as well as using digital tools at the production stage, have the expected effect on artists' attitudes towards 360-degree deals. We find that artists not under contract but who have self-released an album in the past three years, reflecting entrepreneurial abilities, are less likely to consider 360-degree deals to be favorable than artists who have not self-released an album (–13 percentage points in the probability of considering such a deal to be favorable). Likewise, artists who use a homestudio are less interested in 360-degree contracts (–13 percentage points). However, digitization at the promotion level has no impact on artists' attitudes towards 360-degree deals. Artists who update their MySpace page frequently are not significantly less willing to sign a 360-degree deal. We might have expected that the more an artist is active on MySpace, the more he considers himself able to self-promote. He should therefore be less willing to accept a 360-degree deal. This result is consistent with other work that shows that although musicians are very active on social networks (posting videos on YouTube, tweeting, etc.), this activity is not yet reflected in any significant increase in their audience (Bourreau et al., 2014). Self-promotion online is probably more difficult than was anticipated.

We also note that high income artists (*INCOME5*) are less likely to consider as favorable a 360-degree deal that would entail sharing some of this

income with his record label. The marginal effect is 32 percentage points compared with artists belonging to the lowest category of income. Most of the other control variables are also significant and have the expected sign. The coefficient of *POPULAR* is positive and significant. Artists who have at least degree-level education (*HIGHEDUCATION*) are also significantly more favorable towards 360-degree deals. Finally, artists who hired a professional to help them to manage their career (*MANAGER*) are significantly more reluctant to sign a 360-degree deal. Conversely, digital piracy (*PIRACY*) does not seem to affect the willingness of artists to sign a 360-degree deal and successful artists are not less reluctant to sign a 360-degree deal (*GOLD* is not significant). This suggests that these artists might also encounter difficulties in negotiating with record labels (see the example of the Beatles/EMI dispute on sub-section 2.1).

4.2. Robustness checks

A potential pitfall with our empirical estimation is the possible endogeneity of the *CONTRACT* and *LIVE* variables. An unobserved variable might simultaneously affect both the contractual situation or concert activities of an artist and his attitude towards 360-degree deals. The celebrity and/or success of an artist, his bargaining power, or his ability to secure a good deal could play such a role. Note that we already take into account the success/fame of an artist in our regressions with the variable *GOLD*. Likewise, we also include the variable *MANAGER*, which captures at least part of an artist's bargaining power and his ability to secure a good deal. However, we test for the exogeneity of the two variables *CONTRACT* and *LIVE* (see Appendix 2 for an explanation of the exogeneity test undertaken).

A second potential issue is that we are not observing the equation for the population as a whole, since 29% of the artists in our sample did not answer the question on 360-degree contracts. It is possible that only the artists who felt capable of or interested in signing such a contract answered the question. When compared with the remaining artists, the proportion of artists currently under contract is lower among these 206 artists. They also use digital tools less often to record their musical projects. Our results might therefore suffer from a selection bias that the Heckman selection estimation can solve by estimating the probability of being favorable to 360-degree contracts, conditional on whether or not the artist answered

the relevant question. We ran such a Heckman selection estimation[32]. The first equation is a probit on a dummy variable that takes the value 1 if the artist answered the question on 360-degree contracts (*SELECTION*). The second equation is our previous probit equation. We add to the exogenous variables a dummy variable (*BROADBAND*) that takes the value 1 if the artist has broadband Internet access at home. As required, this exogenous variable affects the probability that the artists answer to the question on 360-degree contracts.[33] A simple probit between *SELECTION* and *BROADBAND* shows that such a correlation is very significant ($p < 0.000$). We checked that the exclusion condition is verified by estimating the main regression and adding the variable *BROADBAND* which is not significant. Indeed there is no reason to believe that having a broadband Internet access at home could directly affect the attitude towards 360-degree deal.[34] Table 8 in Appendix 3 shows that our estimations do not suffer from a selection bias (formally we cannot reject the independence of both equations, since we cannot reject the hypothesis that $\rho = 0$).

We also made several other robustness checks.[35] First of all, we checked that our results are robust when we use sample weights that adjust for differences between our sample and the full population of Adami members, according to gender, age, region of residence, and amount of royalties the artist receives from Adami[36]. In the survey, artists were asked how many times they had performed on stage in the last twelve months, and four answers were proposed: 0, 1 to 10, 11 to 50, and more than 50 times. We aggregated the first two and the last two modes, since this configuration provides more significant results. However, we also ran our regression with live concerts taken as a continuous variable, without signifi-

32 We ran an estimation following Van de Ven and van Praag (1981) that adapt the standard Heckman procedure to allow for a double probit selection.

33 Generally speaking, *BROADBAND* is also very significantly negatively correlated with the number of questions non-answered in the survey.

34 Whereas using the social network Myspace could have affected this attitude – because Myspace is a tool for self-promotion – having a broadband Internet access at home reflects more widely familiarity of the artist with technological progress.

35 The regression results relating to these robustness checks are available upon request from the authors.

36 Standard errors are relatively high (Table 1) and could be due to the relative small size of our sample

cant changes in our results. Likewise, four answers were proposed for the question on 360-degree deals ("very favorable"/"fairly favorable"/"fairly unfavorable"/"very unfavorable"). In our main regressions, we constructed the binary variable *360DEAL* by grouping together the first two and the last two answers. Though this binary variable best fits our data, we also ran estimations with an ordered probit with the four answers, and obtained similar qualitative results. Our *SELFRELEASE* variable identifies artists who self-released an album in the past three years and who are not currently under contract. We checked that our results remain unchanged when we consider self-release behavior whatever the present contractual situation of the artists. Finally, our database contains a few inactive artists, who could have a biased opinion on 360-degree deals. We therefore ran our estimations on the subsample of "active" artists, that is, artists who had either worked on recording sessions or performed live at least once in the last twelve months. Our main results remained unchanged.

5. DISCUSSION

Our results confirm that the contractual experience of artists with record companies reduces the willingness of the former to sign 360-degree deals. Without being currently under contract, the mere experience of a past contractual relationship with a record label is sufficient to make artists consider 360-degree deals to be unfavorable. In our regressions, since we control for a large set of variables (age, musical genre, self-release experience, use of digital technology, piracy, etc.) only this contractual experience – and therefore the real experience of the difficulties encountered to secure a favorable deal with a record label – seems able to explain the difference in attitudes. Interestingly enough, artists who hired a manager – and are thus probably more aware of the harshness of contractual relationships within the music industry – are more reluctant towards 360-degree deals.

Artists under contract who play a lot of concerts are also less willing to sign such contracts. They seem to fear that the benefits they can obtain by internalizing the positive externality that recorded music generates for ancillary markets will be lower than their opportunity cost. They are

certain to lose a share of their high revenues from live concerts but are not sure to be able to secure a good deal with their record label. They tend to be therefore more reluctant to sign 360-degree deals.

Finally, our results explain the difficulties that recording labels encounter in implementing profit-enhancing 360-degree deals and thus why they still represent a small share of music industry revenues (see the introduction). The artists who are more favorable to such contracts are the lesser-known artists, who are not, and never have been, under contract. For them, "any deal is a good deal", and their lack of experience of a contractual relationship with a record label may lead them to underestimate the opportunistic behavior of labels. However, artists not under contract but with experience of self-releasing, and who therefore probably have some entrepreneurial abilities, are less prone to sign 360-degree contracts. Likewise, the most profitable artists, i.e., those under contract and who play a lot of concerts, are also reluctant to sign 360-degree deals. They prefer to keep a traditional contract in which they manage and retain most of the revenues from concerts. Finally, digitization, which is the *raison d'être* of 360-degree contracts, also weakens them by enhancing the potential of the do-it-yourself model.

6. CONCLUDING REMARKS

The recorded music industry considers 360-degree deals as one way to counteract the downturn in music sales they have experienced since the beginning of this century and the rise of digital music. Such deals allow music labels to benefit from the growing ancillary markets (including the live music market) whose growth comes at least partly from the positive externality that recorded music (whether legally or illegally consumed) generates for them. In the present paper, we have studied whether the interests of music labels and artists are aligned in such deals. Theoretically they should be, since the internalization of this externality increases the total surplus and should allow record labels to improve their profits while maintaining at least stable revenues for artists. Furthermore, the greater the market externality, the greater the benefits of the internalization should be for both parties. Hence, the most successful artists should be the most willing to sign 360-degree deals.

Yet 360-degree deals remain quite scarce, and mainly involve either stars (in exchange for massive cash advances) or artists signing their first contract. In this paper we have analyzed the incentives and pitfalls artists encounter in signing 360-degree deals. In particular, we have investigated whether artists fear that their weaker bargaining power relative to that of the record labels will prevent them from securing a good deal, and whether this can explain why they are reluctant to let labels manage all of their music-related activities.

Using a representative survey of professional musicians in France, our main findings support the hypothesis that artists fear that signing a 360-degree contract will not be favorable for them. For artists currently without a contract, having had a contract in the past reduces the willingness to sign a 360-degree deal, all other things being equal. This suggests that these artists are aware of the difficulties inherent in contractual relationships with record labels. Moreover, the greater the revenues an artist has to share, i.e., the more he performs on stage, the more reluctant he will be to sign a 360-degree deal. Finally, the artists who are the most willing to accept such deals are those who do not have and never have had a contract with a record label. However, they are also probably the least profitable artists for the record labels.

REFERENCES

BACACHE-BEAUVALLET M., BOURREAU M. AND F. MOREAU (2015). "Piracy and Creation: The Case of the Music Industry", *European Journal of Law and Economics*, 39(2), 245-262.

BELLEFLAMME P. AND M. PEITZ (2012). "Digital Piracy: Theory", in M. Peitz and J. Waldfogel (eds.), *The Oxford Handbook of the Digital Economy*. Oxford University Press.

BLAIR R. AND F. LAFONTAINE (2005). *The Economics of Franchising*. Cambridge University Press, New York.

BOURREAU M., GENSOLLEN M. AND F. MOREAU (2012). "The Impact of a Radical Innovation on Business Models: Incremental Adjustments or Big Bang?", *Industry & Innovation*, 19(5), 415-435.

BOURREAU M., MAILLARD S. AND F. MOREAU (2014). "Stars vs. Underdogs in Online Music Markets: The Effect of IT on Visibility, Artists' Broadcasting, and Fans' Activities". Mimeo. Telecom ParisTech.

BURKE A. E. (1997). "Small Firm Start-up by Composers in the Recording Industry", *Small Business Economics*, 9, 463-471.

BYRNE D. (2007). "Survival Strategies for Emerging Artists – and Megastars", *Wired*, issue 16:01.

CAVES R. E. (2000). *Creative Industries: Contracts between Art and Commerce*. Harvard University Press, Cambridge.

CONNOLLY M. AND A. KRUEGER (2007). "Rockonomics: the Economics of Popular Music", in V. A. Ginsburgh and D. Throsby (eds.), *Handbook of the Economics of Art and Culture*, North-Holland.

CURIEN N. AND F. MOREAU (2009). "The Music Industry in the Digital Era: Towards New Contracts?", *Journal of Media Economics*, 22(2), 102-113.

DEWENTER R., HAUCAP R. AND T. WENZEL (2012). "On File-sharing with Indirect Network Effects Between Concert Ticket Sales and Music Recordings", *Journal of Media Economics*, 25(3), 168-178.

DIONNE G. (2013), "The Empirical Measure of Information Problems with Emphasis on Insurance Fraud and Dynamic Data", in G. Dionne (ed.). *Handbook of Insurance*, Springer, New York.

EL HARBI S., GROLLEAU G. AND I. BEKIR (2014). "Substituting Piracy with a Pay-What-You-Want Option: Does it Make Sense?", *European Journal of Law and Economics*, 37(2), 277-297.

GAYER A. AND O. SHY (2006). "Publishers, Artists, and Copyright Enforcement", *Information Economics and Policy*, 18(4), 374-384.

HALONEN-AKATWIJUKA M. AND T. REGNER (2009). *Digital Technology and the Allocation of Ownership in the Music Industry*. The Centre for Market and Public Organisation 09/228, Department of Economics, University of Bristol.

IFPI (2010). *Digital Music Report*. International Federation of the Phonographic Industry.

KARUBIAN S. (2009). "360 Deals: An Industry Reaction To The Devaluation of Recorded Music", *Southern California Interdisciplinary Law Journal*, 18: 395-462.

KLEIN B. (1980). "Transaction Costs Determinants of 'Unfair' Contractual Arrangements", *American, Economic Review*, 70(2), 356-362.

KRASILOVSKY W. M. AND S. SHEMEL (2003). *This Business of Music: The Definitive Guide to the Music Industry*. Watson-Guptill (9th Edition).

LAYNE-FARRAR A., LLOBET G. AND J. PADILLA (2014). "Patent Licensing in Vertically Disaggregated Industries: The Royalty Allocation Neutrality Principle", *Communications & Strategies*, 95.

MONTORO-PONS J. D. AND M. CUADRADO-GARCIA (2011). "Live and Prerecorded Popular Music Consumption", *Journal of Cultural Economics*, 35(1), 19-48.

MORTIMER J., NOSKO C., AND A. SORENSEN (2012). "Supply Responses to Digital Distribution: Recorded Music and Live Performances", *Information Economics and Policy*, 24(1), 3-14.

NORTON E., WANG H. AND CH. AI (2005). "Computing interaction effects and standard errors in logit and probit models", *The Stata Journal*, 4(2), 154-167.

PASSMAN D.S. (2003). *All You Need to Know of Music Business*. Free Press, New York.

PEITZ M. AND P. WAELBROECK (2005). "An Economist's Guide to Digital Music", *CESifo Economic Studies*, 51(2-3), 359-428.

REGNER T. (2004). *Efficient Contracts for Digital Content*. The Centre for Market and Public Organisation 04/108, Department of Economics, University of Bristol.

REGNER T. AND J. A. BARRIA (2009). "Do Consumers Pay Voluntarily: The Case of Online Music", *Journal of Economic Behavior and Organization*, 71, 395-406.

VAN DE VEN M. AND B. VAN PRAAG (1981). "The Demand for Deductibles in Private Health Insurance: A Probit Model with Sample Selection", *Journal of Econometrics*, 17(2), 229-252.

VARIAN H. (2005). "Copying and Copyright", *Journal of Economic Perspectives*, 19(2), 121-138.

WALDFOGEL J. (2012). "Digital Piracy: Empirics", in M. Peitz and J. Waldfogel (eds.), *The Oxford Handbook of the Digital Economy*. Oxford University Press.

WOOLDRIDGE J. (2002). *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, Cambridge, Massachusetts.

APPENDIX 1

Tableau 5. Description of the variables

Variable	Description
360DEAL	takes the value 1 if the artist declared to be interested in signing a 360 degree deal, and 0 otherwise.
CONTRACT	takes the value 1 if the artist is under contract, and 0 otherwise.
LIVE	takes the value 1 if the artist performed more than 10 times on stage during the previous year, and 0 otherwise.
CONTRACT_LIVE	takes the value 1 if both CONTRACT and LIVE take the value 1, and 0 otherwise.
CONTRACT_NOLIVE	takes the value 1 if CONTRACT takes the value 1 and LIVE takes the value 0, and 0 otherwise.
CONTRACT_BEFORE	takes the value 1 if the artist is not under contract but has been under contract with a record label in the past, and 0 otherwise
CONTRACT_BEFORE_LIVE	takes the value 1 if both CONTRACT_BEFORE and LIVE take the value 1, and 0 otherwise.
CONTRACT_BEFORE_NOLIVE	takes the value 1 if CONTRACT_BEFORE takes the value 1 and LIVE takes the value 0, and 0 otherwise.
SELFRELEASE	takes the value 1 if the artist is not currently under contract but had self-released an album during the three years preceding the survey, and 0 otherwise.
HOMESTUDIO	takes the value 1 if the artist has a homestudio, and 0 otherwise.
MYSPACE3	takes the value 1 if the artist updates his MySpace page at least every week, 0 otherwise
MYSPACE2	takes the value 1 if the artist updates his MySpace page at least every month, 0 otherwise

MYSPACE1	takes the value 1 if the artist updates his MySpace page less frequently than every month, 0 otherwise
MYSPACE0	takes the value 1 if the artist does not have a MySpace page, 0 otherwise
AGE1	takes the value 1 if the artist is less than 25 years old, 0 otherwise
AGE2	takes the value 1 if the artist is between 25 and 34 years old, 0 otherwise
AGE3	takes the value 1 if the artist is between 35 and 44 years old, 0 otherwise
AGE4	takes the value 1 if the artist is between 45 and 54 years old, 0 otherwise
AGE5	takes the value 1 if the artist is more than 54 years old, 0 otherwise
INCOME1	takes the value 1 if the artist earned less than €9,000 in 2007, and 0 otherwise.
INCOME2	takes the value 1 if the artist earned between €9,000 and €15,000 in 2007, and 0 otherwise.
INCOME3	takes the value 1 if the artist earned between €15,000 and €30,000 in 2007, and 0 otherwise.
INCOME4	takes the value 1 if the artist earned between €30,000 and €60,000 in 2007, and 0 otherwise.
INCOME5	takes the value 1 if the artist earned more than €60,000 in 2007, and 0 otherwise.
GENDER	takes the value 1 if the artist is a woman, and 0 otherwise.
HIGHEDUCATION	takes the value 1 if the artist holds a Master's degree (at least), and 0 otherwise.
NONPARIS	takes the value 1 if the artist does not live in Paris or in the «Ile de France» region (i.e., in the Paris area), and 0 otherwise.
POPULAR	takes the value 1 if the artist declares that his main musical genre, is popular music, and 0 otherwise.
INTERMITTENT	takes the value 1 if the artist receives a monetary compensation during the previous year from the *intermittence* system, and 0 otherwise
GOLD	takes the value 1 if the artist has already won a music award and/or a gold record, and 0 otherwise.
MANAGER	takes the value 1 if the artist has a manager, and 0 otherwise.
PIRACY	takes the value 1 if the artist considers that piracy hurts his own recorded music sales.

APPENDIX 2

To test for the exogeneity of the *CONTRACT* variable, we use as instrumental variable (IV) the variable *WEBPAGE*, which is a dummy variable that takes the value 1 if the artist has a web page, and the value 0 otherwise. We argue that *WEBPAGE* satisfies exclusion and inclusion restrictions. First, there is no reason to believe that having a web page could have a direct effect on the dependent variable (the opinion on 360-degree deals). A web page is indeed really different from a MySpace page and is often merely devoted to an information role, not to an active promotion. Second, *WEBPAGE* is correlated with *CONTRACT* (the p-value is lower than 0.01 in a simple probit model with *CONTRACT* as dependent variable and *WEBPAGE* as independent variable). The inclusion restriction of our IV is thus also satisfied. Since our potentially endogenous variable (*CONTRACT*) is binary, we cannot use an IV procedure to test for the exogeneity of *CONTRACT* using *WEBPAGE* as an instrumental variable. As suggested by Wooldridge (2002), we run a bivariate probit with our structural probit, and a second probit using *CONTRACT* as the dependent variable and including our IV in the covariates. A bivariate probit approach provides a test of exogeneity. Under the exogeneity assumption, the error terms of both corresponding underlying equations included in the bivariate probit are not correlated, that is, the null hypothesis of exogeneity can be stated as $\rho = 0$. A likelihood ratio test of the significance of ρ is thus a direct test of the exogeneity of *CONTRACT*. If $\rho \neq 0$, only the results of the bivariate probit have to be considered. But if $\rho = 0$, it is appropriate to use the univariate probit model. In Table 5 below, columns 2 and 3 display the results of the bivariate probit. The second column corresponds to the regression with *CONTRACT* as the dependent variable, and includes the IV. It confirms that the instrumental variable *WEBPAGE* is correlated with *CONTRACT*. Table 6 also reports that the estimated value for the parameter ρ is not significantly different from zero. These results suggest that *CONTRACT* is indeed exogeneous (formally, we cannot reject the exogeneity of *CONTRACT*, using *WEBPAGE* as an instrumental variable, since we cannot reject the hypothesis that $\rho = 0$). Finally, for the same reasons, we could imagine the *LIVE* variable is also endogenous. Talent or bargaining power could impact both the success on stage of an artist and his or his willingness to sign a 360-degree deal. Using *WEBPAGE* as an instrumental variable (which is positively correlated with *LIVE* in a simple probit with $p < 0.000$), we find that we cannot reject the exogeneity of *LIVE* (see Table 7).

Tableau 6. Biprobit to check for endogeneity of the *CONTRACT* variable

	BIPROBIT	
	360DEAL	***CONTRACT***
CONTRACT_LIVE	−0.674*	
	(0.378)	
CONTRACT_NOLIVE	−0.238	
	(0.442)	
LIVE		0.439
		(0.312)
CONTRACT_BEFORE	−0.340*	−13.136***
	(0.182)	(0.745)
SELFRELEASE	−0.353*	−11.397***
	(0.199)	(0.588)
HOMESTUDIO	−0.318**	0.707***
	(0.150)	(0.269)
MYSPACE0	−0.290	−1.254***
	(0.189)	(0.362)
MYSPACE1	−0.102	−0.468
	(0.200)	(0.367)
MYSPACE2	−0.283	−0.381
	(0.208)	(0.474)
AGE2	0.047	−0.631
	(0.476)	(0.912)
AGE3	0.071	−1.061
	(0.462)	(0.866)
AGE4	0.155	−0.703
	(0.462)	(0.862)
AGE5	0.229	−0.458
	(0.472)	(0.868)
INCOME2	0.135	−0.207
	(0.201)	(0.413)
INCOME3	−0.130	0.452
	(0.195)	(0.410)
INCOME4	0.132	−0.067
	(0.230)	(0.486)
INCOME5	−0.993**	6.394***
	(0.436)	(0.555)
GENDER	−0.159	−0.711***
	(0.144)	(0.266)
HIGHEDUCATION	0.375***	0.573**
	(0.133)	(0.255)

NONPARIS	−0.027	0.182
	(0.133)	(0.251)
VARIETY	0.368**	−0.555*
	(0.157)	(0.308)
INTERMITTENT	−0.258*	−0.407
	(0.140)	(0.342)
GOLD	0.097	0.138
	(0.165)	(0.309)
MANAGER	−0.349*	0.746**
	(0.193)	(0.366)
WEBPAGE		1.222***
		(0.300)
CONSTANT	0.488	0.101
	(0.507)	(0.865)
ρ	0.095	
	(0.300)	
N	428	
P	0.000***	
chi2	5113.36	
LR test of $\rho = 0$:	chi2(1) = 0.1007	Prob > chi2 = 0.7510

* p < 0.1; ** p < 0.05; *** p < 0.01

Tableau 7. Biprobit to check for endogeneity of the *LIVE* variable

	BIPROBIT	
	360DEAL	***LIVE***
CONTRACT_LIVE	−0.589**	
	(0.242)	
CONTRACT_NOLIVE	−0.129	
	(0.283)	
CONTRACT		0.286
		(0.225)
CONTRACT_BEFORE	−0.310**	−0.121
	(0.151)	(0.171)
SELFRELEASE	−0.318**	0.109
	(0.160)	(0.179)
HOMESTUDIO	−0.330**	−0.467***
	(0.145)	(0.173)
MYSPACE0	−0.273	−0.328
	(0.182)	(0.219)
MYSPACE1	−0.095	−0.394*
	(0.199)	(0.227)

MYSPACE2	−0.282	−0.307
	(0.208)	(0.223)
AGE2	0.056	0.286
	(0.477)	(0.512)
AGE3	0.073	0.055
	(0.465)	(0.510)
AGE4	0.157	−0.155
	(0.465)	(0.509)
AGE5	0.227	−0.396
	(0.475)	(0.519)
INCOME2	0.134	0.223
	(0.200)	(0.223)
INCOME3	−0.134	0.499**
	(0.194)	(0.213)
INCOME4	0.134	0.817***
	(0.231)	(0.258)
INCOME5	−1.015**	0.542
	(0.430)	(0.455)
GENDER	−0.152	−0.411***
	(0.142)	(0.159)
HIGHEDUCATION	0.373***	−0.137
	(0.133)	(0.145)
NONPARIS	−0.024	0.008
	(0.133)	(0.148)
VARIETY	0.371**	0.106
	(0.157)	(0.177)
INTERMITTENT	−0.253*	1.209***
	(0.141)	(0.155)
GOLD	0.091	0.584***
	(0.165)	(0.191)
MANAGER	−0.367**	0.382*
	(0.184)	(0.206)
WEBPAGE		0.386**
		(0.182)
CONSTANT	0.437	−0.510
	(0.479)	(0.534)
ρ	0.006	
	(0.100)	
N	428	
P	0.000***	
chi2	219.473	
LR test of ρ = 0:	chi2(1) = 0.0037	Prob > chi2 = 0.9517

* p < 0.1; ** p < 0.05; *** p < 0.01

APPENDIX 3

Tableau 8. Heckman probit selection model

	SELECTION	*360DEAL*
CONTRACT_LIVE	0.322	−0.622***
	(0.236)	(0.215)
CONTRACT_NOLIVE	1.231***	−0.380
	(0.381)	(0.273)
CONTRACT_BEFORE	0.050	−0.275*
	(0.135)	(0.143)
SELFRELEASE	0.055	−0.313**
	(0.146)	(0.148)
HOMESTUDIO	0.283**	−0.362***
	(0.137)	(0.136)
MYSPACE0	−0.126	−0.169
	(0.177)	(0.183)
MYSPACE1	−0.126	−0.031
	(0.202)	(0.188)
MYSPACE2	−0.105	−0.206
	(0.210)	(0.200)
AGE2	0.013	0.065
	(0.483)	(0.450)
AGE3	−0.200	0.123
	(0.461)	(0.439)
AGE4	−0.498	0.297
	(0.458)	(0.439)
AGE5	−0.353	0.331
	(0.467)	(0.448)
INCOME2	−0.034	0.112
	(0.179)	(0.181)
INCOME3	0.123	−0.168
	(0.178)	(0.179)
INCOME4	0.236	−0.002
	(0.223)	(0.225)
INCOME5	−0.388	−0.737
	(0.349)	(0.504)
GENDER	−0.162	−0.093
	(0.135)	(0.134)
HIGHEDUCATION	0.192	0.250*
	(0.129)	(0.145)

NONPARIS	0.151	−0.061
	(0.127)	(0.123)
VARIETY	0.033	0.289*
	(0.153)	(0.158)
INTERMITTENT	0.151	−0.260**
	(0.133)	(0.132)
GOLD	0.269	0.004
	(0.172)	(0.163)
MANAGER	0.209	−0.380**
	(0.191)	(0.171)
BROADBAND	0.535**	
	(0.217)	
CONSTANT	0.012	0.752
	(0.525)	(0.461)
artrho	−1.083	
	(0.919)	
rho	−0.794	
	(0.339)	
N	567	
chi2	54.04	
LR test of $\rho = 0$:	chi2(1) = 1.89	Prob > chi2 = 0.1695

* p < 0.1; ** p < 0.05; *** p < 0.01