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BAD FOR UNIVERSAL – BUT UNIVERSALLY BAD? THE UNEVEN EFFECTS OF THE CURRENT CRISIS IN THE GERMAN PHONOGRAM INDUSTRY

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ABSTRACT. This paper analyses empirical data from the German phonogram industry in order to assess the effects of an ongoing crisis on supply. To do so, it investigates recent data on the number of record companies operating in Germany and the number of titles supplied. The central finding is puzzling. The analysis cannot confirm any positive relationship between turnover in the German phonogram industry and copyright protection on the one hand, and incentives to produce and disseminate recordings on the other. The supply of different titles on tangible phonograms has continued to grow during crisis, albeit less rapidly than during the preceding boom period. The number of record companies has increased during crisis with a large number of small record companies entering the market. The main conclusions are, first, that other factors appear to offset much of any adverse effects the crisis might have on the supply of recordings. Secondly, the crisis appears to have uneven effects on different types of intermediary firms. The crisis appears not to be uniformly and unequivocally harmful.

1. INTRODUCTION

During the last years, demand for tangible phonograms has fallen significantly. The subsequent falls in turnover coincide famously with explosive growth in so-called "piracy", the circumvention of copyrights to musical recordings. The availability of nearly free "pirated" copies through powerful digital copying technology and consumer networks, namely Internet based peer-to-peer file-sharing networks and CD-burners, has blown a hole into rightholders' control over access to digitally codified works. A downwards shift in demand and decreased copyright protection are the two major elements in the perception of an ongoing crisis in the phonogram industry.

This crisis has become emblematic in the wider discourse on adaptations of copyright legislation to changing information and communication technology (ICT). Whether there is a strong causal link between falling revenues to the phonogram industry and "piracy" is a contentious issue, however. Today's "leading copyright story" (Liebowitz 2004) in the public perception revolves around the harm that "piracy" may or may not inflict on phonogram producers and their ability to host or support creativity by diverting demand for authorised copies. The answer to this question is significant in determining whether a reinforcement of copyright protection should be a priority for businesses in the creative industries more generally. It also has a role to play in establishing whether public measures to support such efforts can be justified.

So far, relevant research has largely focused on the demand side. Severe adverse effects of a downwards shift in demand on the supply side are taken for granted. For the wider public, the crisis in the phonogram industry is problematic because diminished revenues to producers and reduced copyright protection can be expected to erode incentives to supply new cultural works on phonograms. Paradoxically, the very popularity of pirated copies illustrates the value of recordings that, so it is feared, might not be forthcoming unless the crisis is resolved. However, the extent to which the ongoing crisis has already affected incentives to produce and disseminate recordings has not been systematically studied. This paper analyses data on the number of record companies operating and the number of phonograms published. The aim is to establish a better understanding of the nature and magnitude of the adverse effects that the current crisis has had on the phonogram industry's performance.

The accumulated data used in this paper is on the German *Tonträgerindustrie* (phonogram industry). The German market for phonograms is currently the fourth largest worldwide after the USA, Japan and the United Kingdom. An estimated decline of real revenues to phonogram producers of 38.6% between 1997 and 2003 marks the German market as one of the most severely affected in the global crisis of the phonogram industry. What is more, the German phonogram industry is characterised by a strong, single collecting society administering the secondary use of recordings and head-organisations covering a relatively large share of active firms. This has facilitated the notoriously challenging task of accessing reasonably comprehensive, accumulated data from this industry. The time period investigated covers the ongoing crisis that began in the late 1990s and the boom period of the mid-1990s that preceded it. This period allows for a comparison between the years prior to significant growth in "piracy" and significant falls in turnover on the one hand, and more recent years in which less effective copyright protection has coincided with falling sales.

The central finding is puzzling. The available data cannot confirm any positive relationship between turnover in the German phonogram industry and copyright protection on the one hand, and the observed indicators for incentives to produce and disseminate recordings on the other. First, the supply of different titles on tangible phonograms has continued to grow during crisis, albeit less rapidly than during the preceding boom period. Secondly, the number of record companies appears to have grown more rapidly during crisis with a large number of small record companies entering the market.

2. COPYRIGHTS AND INCENTIVES TO PRODUCE PROTECTED WORKS

Copyrights are the main legal framework for cultural production. Copyrights endow creators with a temporary monopoly – the exclusive right to permit or prohibit the reproduction, the making available to the public, the distribution or the modification of an original work she created. Many legal traditions distinguish between copyrights *per se* and "related" or "neighbouring rights". The former apply only to the creator of the first fixation of an original work. The latter are the "property rights of performers for their fixed performances and of firms in the cultural industries that create works […]" (Towse 2002: xvi). Where not otherwise stated, in this paper the term copyright is used to refer to both these sets of rights, which are not as clearly distinguished in the Anglo-Saxon tradition. In practice, creators generally transfer, assign, or license economically significant copyrights to intermediaries.

From the classics onwards, economists have been in two minds about copyrights. On the one hand, copyrights are seen as safeguarding incentives to create and publish protected works. On the other, copyrights establish monopolies in the market for such works. This results in higher prices and excludes those consumers and users, who value a protected work but are unwilling or unable to pay monopoly prices (cf. Towse 2004a).

Justifications of copyrights include, first, the moral notion of authors' natural rights to their creations. Secondly, it is argued that it is desirable to allocate rights to immaterial or informational goods unequivocally, so that a market can operate (cf. Bone and Gordon 1999:193 / Coase 1977). The approach of this paper rests on a third, related, understanding of copyrights as a means to redress market failure due to the characteristics of creative works as "quasi-public goods" (Bone and Gordon 1999: 191) Informational content regularly represents the bulk of the value of cultural goods and services such as phonograms. In the presence of effective copying technology, content tends to be inexhaustible. That is consumption by one user does not diminish the value of the informational content for others. Information also tends to be non-excludable. That is others than those involved in buying or selling it benefit from it.

Landes and Posner (1989) specified the following problem deriving from these characteristics of cultural works: such works entail considerable "costs of expression" – e.g. the costs of producing the first fixation of an original work. Simultaneously, the marginal costs of reproduction are low. Without exclusion efforts, free-riding producers of copies could avoid the fixed costs of expression, as well as the risk of testing the market that creators of original recordings incur (Towse 2000: xvi). Prices of copies would approach the costs of reproduction, so that producers could not recover their fixed costs. In a competitive market, free-riding would thus harm producers by undermining their ability to profit from the value they create. Competitive markets result in the "underproduction" of such quasi-public goods, below the socially desirable optimum achieved when all value created is reflected in prices (Landes 2002: 12). In this way, temporary monopoly control via copyrights can be justified in terms of an argument as to market failure, the threat of underproduction and the need to foster incentives in order to safeguard a socially optimal level of supply. However, Landes and Posner emphasise costs to both present creators as well as wider society that copyright regimes incur. First, administrative and enforcement costs create a dead-weight loss. Secondly, copyright regimes create "access costs". Consumers who value the work by more than the cost of making additional copies, but less than the price being charged are excluded. What is more, some creators will be deterred from building upon prior works because they are unwilling to pay the price the copyright holder demands. It follows that "(p)aradoxically, too much copyright protection can reduce the number of new works created" (Landes 2002: 13).

According to this current understanding "copyright protection […] trades off the costs of limiting access to a work against the benefits of providing incentives to create the work in the first place" (Landes and Posner 1989:326). From this perspective, copyrights' use and justification is neither a given, nor to be rejected outright. It depends on the benefits of a copyright regime in terms of promoting the production and dissemination of works in relation to its costs. The economic debate largely revolves around specifying a range of factors determining these costs and benefits of copyrights and their relationship. Attempts to adapt the copyright regime to technological change in the regulated information industries aim at striking the right balance in an underproduction / underutilization trade-off.

Positive standard economics thus provides a limited rationale for copyright regimes as means to foster incentives to suppliers on the basis of theoretical arguments. Nonetheless, although copyrights can be justified on the basis of economic theory, empirical investigations of copyrights' effects on "authors' supply" rarely support the view that copyrights as they are significantly foster supply (cf. Towse 2000:117).

3. SOURCES AND DATA

There are substantial problems with the availability, reliability, validity and comparability of up-to-date quantitative data on the creative industries (cf. Malm and Wallis 1992: 32ff. / Towse 2000: 108). Due to a relative neglect of creative industries in public statistics, it regularly falls upon interested parties such as industry head organisations to assemble and publish the most comprehensive statistics available.[1] One strategy employed in this paper to alleviate problems with the available data is the cross-validation of findings with data from various sources wherever possible.

The data used comes from three different sources:

- the 'Bundesverband der Phonographischen Wirtschaft' (Federal Association of the Phonogram Industry / BV Phono) and the closely associated German branch of the 'International Federation of the Phonographic Industry' (IFPI Germany);
- the 'Verband unabhängiger Tonträgerunternehmen' (German Association of Independent Labels, Publishers and Producers / VUT);
- the collecting society 'Gesellschaft zur Verwertung von Leistungsschutzrechten' (GVL).

3.1 **Industry head-organisations.**

3.1.1 *Bundesverband Phono / IFPI Germany.* The major source of accumulated data on the German phonogram industry used in this paper is the BV Phono that regularly publishes data on the German phonogram industry in cooperation with the IFPI Germany. It is the policy of both organisations to exclusively accept firms that operate as record companies in order to reduce conflicts of interest within the organisation. The "major" transnational record companies – Universal Music, SonyBMG, Warner Music, and EMI – play a strong role in both BV Phono and IFPI Germany. These head-organisations have thrown their weight behind campaigns to reinforce copyright protection.

In November 2004, BV Phono had 17 full members and 78 associated members. IFPI Germany had 14 full members and 332 associated members. Nearly all BV Phono members are also members of IFPI Germany. As head organisation of the German phonogram industry, BV Phono membership provides opportunities for information exchanges essential for networking and lobbying. Associated membership in BV Phono costs €1,200 annually. Full members finance the remaining budget needs according to an assessment of their market share, which also determines the weight of their vote in the main decision making body, that is the "*Mitgliederversammlung*" (general meetings). Associated members are allowed to participate in general meetings but hold no voting rights on this level.

Associated membership in IFPI Germany costs €875 annually. As in the case of BV Phono, an assessment of the market share determines the contribution of full members to the remaining budget needs as well as the weight of their vote in the general meeting. In IFPI Germany, associated members generally cannot participate in the general meeting. They elect a representative whose vote is given the same weight as that of the single most significant full member. Thus, networking opportunities and control over lobbying activities are curtailed for associated members. Membership is attractive mainly due to a 20% rebate with the author's collecting society 'Gesellschaft für musikalische Aufführungs- und mechanische Vervielfältigungsrechte' (GEMA) that IFPI has negotiated for its members. That is, there are direct economic incentives for membership to record companies whose savings from a reduced GEMA fee can be expected to outweigh the IFPI membership fee.[2]

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[1] One of the few official statistics covering aspects of the music and phonogram industry is DESTATIS data on German firms' obligatory registration of taxable value added (see www.destatis.de). For the purposes of this paper, this data is hardly useful, however. Amongst other issues, firms are classified according to their "main activity". The resulting data is thus unreliable in an industry where firms can be expected to conduct several functions simultaneously. While this source exhibits findings that are roughly consistent with the other sources used here, it seems excessively flawed to include it into the analysis.

[2] Due to a multitude of different categories for phonograms and respective entitlements collected by GEMA, it is not possible to calculate a single turnover figure at which membership would pay for itself. Agreements between IFPI Germany and GEMA provide a range of more minor concessions such as a limited ability to rebate unsold phonograms once they are taken off the market for larger record companies or in return for securities.

3.1.2 *The German Association of Independent Labels, Publishers and Producers / VUT.* Many smaller intermediaries in the music industry have coalesced in the VUT. Founded in 1993, the VUT initially accepted record companies ("labels"), recording studios and distributors/wholesalers, as members. Since 1996, music publishers can also become members. According to the voluntary reporting of members that is prompted when applying for membership, and as at November 2004, there were 676 members (73%) operating as record companies or "labels", 247 conducted other music publishing, 117 operated as distributors (wholesalers) of phonograms and 121 members ran recording studios. Firms can report more than one activity. Of the VUT members, 52 (5.6%) reported they were also members of IFPI Germany.

At 925 paying members in November 2004 – of which 676 are record companies – the number of member organisations in VUT far outnumbers that of BV Phono or IFPI Germany respectively, while the members of BV Phono and IFPI Germany account for the bulk of turnover generated by record companies in Germany. The annual costs of VUT membership are €275 and firms that claim to generate turnover below €50,000 with their combined activity as record labels and music publishers can request a rebate to €150. According to the VUT's managing director, about 2/3 of all members pay the reduced membership fee. As in IFPI Germany, there are direct economic incentives to participate in VUT via a (non-cumulative) 20% rebate for members with GEMA, while some further concessions are only available to IFPI Germany members.

3.1.3 *The collecting society GVL.* A fourth major source of data on the phonogram industry is the collecting society 'Gesellschaft zur Verwertung von Leistungsschutzrechten' (GVL) that holds a *de facto* monopoly in the administration of certain secondary uses of recordings. On behalf of its members, the GVL monitors, collects and distributes fees for the broadcasting, making available, reproduction, rental and distribution via cable of recordings. "Recording artists" and "producers of phonograms" – i.e. record companies and their representatives – are the main recipients of royalties from copyright "related rights" administered by the GVL. The GVL has had individual agreements (*Wahrnehmungsverträge*) with 5,087 "producers of phonograms" in 2003. Each agreement is registered with a "label code" to facilitate administration and the identification of rightholders. In 2002, the GVL distributed more than €124 million to its members, of which more than €53 million went to registered "producers of phonograms" in 2002 (GVL 2003b: 5).[3]

Eligible firms have a strong direct economic incentive to register their repertoire with the collecting society GVL. Enforcing the secondary rights administered by the GVL individually tends to be prohibitively expensive. Membership is free of charge if the member receives no royalties via the GVL. The collecting society finances itself by retaining a share of the collected royalties. Furthermore, the GVL runs the central directory of performers, phonogram producers and their published works. Thus, GVL registrations very probably provide a comprehensive indicator for developments in the number of record companies in Germany.

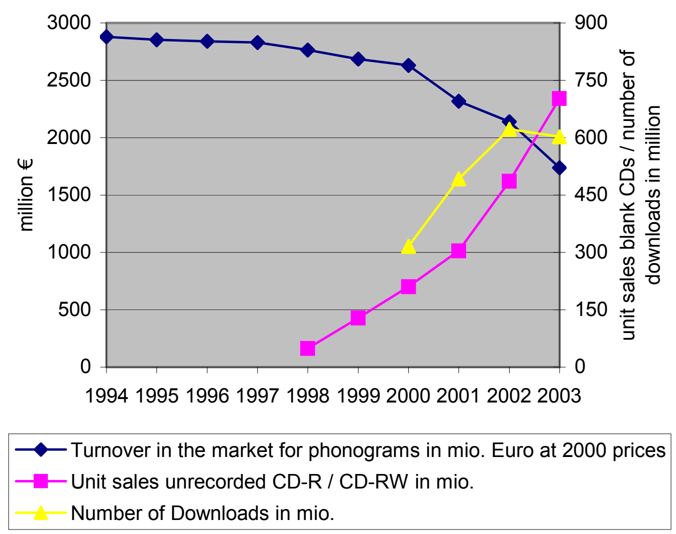
4. THE PERCEPTION OF CRISIS IN THE PHONOGRAM INDUSTRY

The German market for phonogram broadly reflects developments in the "globalised" market for phonograms, of which it forms a major part. According to BV Phono (1995) statistics on

[3] This figure is dwarfed by a turnover of €2,212 million in the primary market for phonograms. Yet, in the primary market, a wider range of contributors participate in income generated. Furthermore, it is the very point of the GVL to minimize costs to record companies in administering those secondary uses in their realm. That is, the significance of GVL payments for record companies' profits should be more significant than suggested by the absolute size of GVL payments in comparison to the size of the primary market.

turnover in the German market for phonograms[4], the mid-1980s and early 1990s had been good years for the phonogram industry in Germany. Turnover in the German market for tangible pre-recorded phonograms more than doubled in nominal terms from DM2.01 billion (ca. €1.03 billion) in 1984 to DM4.66 billion (ca. €2.38 billion) in 1994. One major factor contributing to this expansion was the emergence of the CD as the dominant and highly valued sound carrier. Another one was German unification adding roughly 18 million individuals to the domestic market now encompassing about 82 million. Real turnover (including VAT and at retail value) in the German market for phonograms remained roughly stable at this high level between 1994 and 1997 (see graph 1).

Graph 1: **Real turn-over in the German market for tangible phonograms, unit sales of blank CDs*, and the number of downloads***



Sources: DESTATIS / BV Phono 2004 / GfK 2002 / 2004 (the figures on the unit sales of blank CDs and the number downloads during the year 2000 capture the period between 04/00 to 03/01)

In 1998 this picture began to change. Since that year, real turnover has fallen by more than 2% annually. The years 2001, 2002 and 2003 exhibit dramatic falls of up to 19.0% in 2003. In total, real revenue from sales of pre-recorded sound carriers – the majority of which contain popular music – has fallen by 38.6% since 1997 and stood at €1.74 billion in 2003. The bulk of this decline in real turnover is due to falling unit sales that decreased by more than a third (33.5%) during the same period, while prices per unit have remained nearly stable in nominal terms.

A simultaneous decline in unit sales and real unit prices indicate a downwards shift in demand for tangible phonograms. The more vociferous parts of the industry – not least via the main head organisations – identified the explosive growth of what they called "piracy", CD-burning and p2p-file-sharing ignoring intellectual property rights, as the reason for such a shift in demand. The BV Phono commissions the 'GfK Panel Services Consumer Research

[4] BV Phono turnover data combines data collected by the association and extrapolations from representative consumer studies. According to BV Phono management, turnover figures collected by the association itself are based on voluntary reports of about thirty of the largest distributors/wholesalers of phonograms. This data is supposed to cover about 90% of the market. As distributors tend to co-operate with a number of record companies, BV Phono figures probably incorporate a number of titles published by record companies that are not BV Phono / IFPI Germany members. To assess the size of the market not covered by distributors' reports, BV Phono falls back on extrapolations from representative consumer studies by the GFK.

GmbH' (GfK) to monitor private CD-burning and music downloading in Germany as part of the GfK's extensive "consumer tracking" activity (GfK 2002 / 2004)[5]. Their extrapolations document a rapid diffusion of CD-burners and blank CDs since 1998, when only 2% of all households contained a CD-burner and 49 million blank CDs were sold in Germany. By 2003 unit sales of unrecorded CDs stood at 702 million and more than one third of all households are estimated to contain a CD-burner. Of 714 million recordable CDs used for storing data in 2003, an estimated 44% – that is 316 million – contained musical recordings while the estimated number of individual users that burned CDs with musical content has fallen slightly from 22.5 million in 2002 to 21.4 million in 2003. Massive music file-sharing via the Internet broke onto the scene slightly later, with the emergence of Napster in June 1999. The GfK provides extrapolations for downloads of musical recordings starting from the year 2000. By 2003, an estimated 7.3 million individual users downloaded 602 million music files via a multitude of peer-to-peer (p2p) file-sharing networks.

As graph 1 illustrates, a period of rapid growth in the unit sales of blank CDs since 1997 and explosive growth of Napster and p2p-file-sharing networks since June 1999 does match falling demand for tangible phonograms in terms of magnitude and temporal coincidence in Germany. This reflects the situation in many of the other major markets and is consistent with a pronounced positive relationship between revenues to suppliers and copyright protection. In slogans such as "copy kills music"[6], "piracy" was communicated as nothing short of a lethal threat to the phonogram industry or even the entire music industry. The crisis of the phonogram industry was communicated as a copyright story, probably *the* copyright story of late. The IFPI website provides an overview over studies on the effect of downloading on sales of phonograms[7] as well as a multitude of quotes and statements illustrating the wide international backing for increased copyright protection from within the phonogram industry.

Legislators both in the United States and the European Union clearly accepted the need to adapt and reinforce copyright legislation in view of the diffusion of improved copying technology and rising estimates of "piracy". The current understanding of copyrights implies – other things being equal and if the previous level of copyrights was not excessive – that the massive erosion of copyright protection will adversely affect demand for authorised, more expensive copies. Without reinforced copyright protection the expectation is that incentives to publish recordings on phonograms will be eroded. Some producers will seek alternative occupations or lose their jobs. Less recordings are going to be published. "Piracy" is expected to explain some or all of the falling sales and thus can be expected to diminish supply. Landes (2002: 13) suggests that "given the speed and low cost of copying, as well as the difficulty of employing private measures to prevent copying, we would expect a decrease in the number of new works created […]" unless copyright protection is reinforced. On the basis of such reasoning, substantial reforms of copyright legislation attempt to counter adverse effects on the supply of creative works by extending and strengthening copyright owner's rights. The explicit intention is to safeguard incentives to produce and disseminate works (cf. DIR 2001/29/EC Preamble, paragraphs 4 and 9). Such adaptations to the copyright regime will unquestionably have much wider implications. In this sense, the phonogram industry has been a main battleground in determining the rules of a prospective "information society".

Nevertheless, the question to what extent such current decline in demand for tangible phonograms is the result of "piracy" remains contentious amongst academics. Inappropriate use of data by interested parties to support claims of extensive damages has been criticised

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[5] The GfK traces developments in German end-consumers' media-use in panel and survey based research with 10,000 individuals.
[6] see German IFPI web-site, http://www.ifpi.de/recht/re17.htm
[7] dito http://www.ifpi.org/site-content/press/20041007c.html

(cf. Liebowitz 2004a).[8] Systematic empirical studies frequently tend to provide more conservative estimates of the adverse effect of "piracy" on demand for legitimate copies. Liebowitz (2003) for example, investigates a wide variety of factors that might explain shifts in demand from macro-economic developments, demographics, changing carrier formats and "listening equipment", as well as changes in the supply of substitutes. He concludes that these factors can only partially explain falling sales and thus downloading does harm the phonogram industry, albeit hardly as much as has sometimes been claimed by industry lobbies. Other empirical studies indicated that Napster users were actually more likely to purchase music[9], or that "downloads have an effect on sales that is indistinguishable form zero" (Oberholzer and Strumpf 2004). Alternative explanations of the crisis have pointed, *inter alia*, towards an economic downturn in the major markets, demographic change and competition by new media (e.g. mobile phones) for the spending power of the phonogram industry's main target groups, or even a creative crisis of the industry. On a theoretical level, "indirect appropriability" (Liebowitz 1985) and network effects, in particular with regard to consumer information (cf. Peitz and Waelbroek 2004) and the appropriation of ideas (Landes and Posner 1989) might offset all or some of any adverse consequences of downloading.

This paper does not elaborate on the contentious inverse relationship between "piracy" and turnover in the market for pre-recorded phonograms that is central in the debate over copyright adaptations to technological change. By themselves, turnover data cannot provide sufficient information to determine what the acceptable costs of measures designed to counter the ongoing crisis – such as increased copyright protection – would be. Assuming that it is improbable that the market for legitimate phonograms will continue to shrink infinitely, a specification of the sensitivity of supply to a limited fall in revenues is essential to determine what precisely is at stake in the current crisis. Thus, this paper sets out to gauge the expected adverse impact of the ongoing crisis on the supply side. By how much have diminished revenues to producers, whatever their cause, adversely affected incentives to produce and disseminate recordings? Or, in other words, what can be said about the elasticity of supply and how has the industry structure been affected? To shed some light on these questions, this paper reviews data on the number or record companies operating in Germany and the supply of phonograms during the ongoing crisis and the years preceding it.

5. THE NUMBER OF RECORD COMPANIES

Turnover in the German market for phonograms has fallen roughly simultaneously with diminished copyright protection. Together, these two phenomena are the central elements in the public perception of an ongoing crisis in the phonogram industry. In order to study the effects of this crisis with incentives to produce and disseminate recordings, this paper partitions the decade under investigation into three periods. First, the (end of) "boom" years 1993-1997 during which the industry was humming along at historically high, if stagnating, levels of turnover. Secondly, the "crisis" years 2000-2003 during which both CD-burners and file-sharing networks were widely used while the phonogram industry reported consecutive, mostly drastic falls in turnover for each year. The related external shocks of massive CD-burning and downloading allowing the massive uncontrolled trafficking in musical recordings emerged very rapidly in 1998 and 1999 respectively. By the year 2000 both had developed into the challenge of significant and intensifying "piracy". Therefore the third period of "transition" years, 1998 and 1999, during which first CD-burning and than file-sharing emerged as

[8] As Liebowitz (2004a:4) demonstrates for the figures from the USA, industry head organisations tend to exaggerate the fall in revenues. The RIAA has also been criticised for severely exaggerated estimates of the "damage" done to phonogram producers by multiplying estimates of albums downloaded with retail prices.

[9] Jupiter Communications (2000) *Selling Music Online*, presentation at Popkomm conference, Cologne, August 2000

mass phenomena, is relatively short. In assessing the crisis of the phonogram industry, piracy is interesting for its alleged effects on revenues to creators. What is more, turnover is far better grasped in a single measure than "piracy" or copyright protection. Thus, turnover will be used wherever a singular measure for the intensity of the "crisis" facilitates the analysis.

Informational content typically accounts for the major part of the value generated in creative industries (cf. Towse 2000: 120/1). The phonogram industry is no exception.[10] Record companies are the pivotal type of intermediary firms in the phonogram industry. The working definition of record companies employed here is: 'any legal person that acquires mechanical reproduction rights (cf. §19 (2) Urheberrechtsgesetz) and publishes recordings'. Note that the definition of 'record company' employed here includes creators that publish recordings of their own creations or retain all related rights when co-operating with intermediaries in doing so.

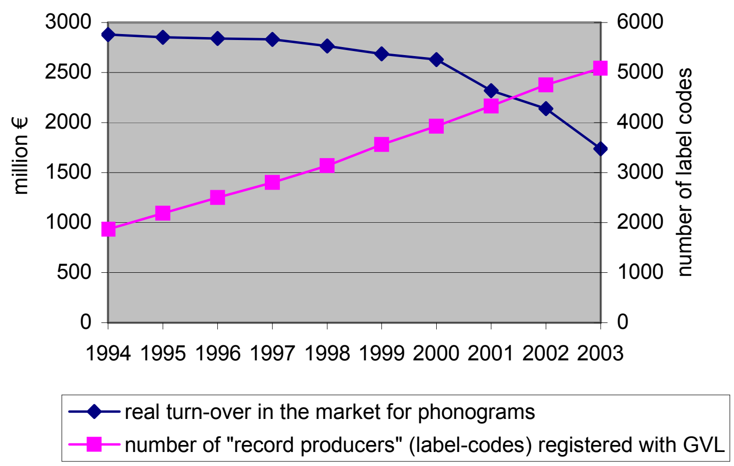
As rightholders, record companies can be expected to directly participate in most sorts of income from the marketing of phonograms. This very probably makes developments amongst record companies a more suitable proxy for the phonogram industry – the sum of all contributors to the production and dissemination of recordings – than those amongst any other type of contributors to the industry. Publishers of compositions (publishers), composers and performing artists usually directly benefit from other ways of marketing music such as the live music business. Sound recording studios, manufacturers of phonograms, distributors and retailers do not directly participate in income from secondary use of recordings.

5.1. **GVL statistics.** For this paper, internal figures of the collecting society GVL on the number of "*Tonträgerproduzenten*" (phonogram producers) registered with them were available. In this source the number of registered (record) label codes are presented, that is legal entities other than creators that hold secondary rights to recordings. As record companies can be defined as intermediary firms that attain and exploit copyrights to recordings, this GVL data is probably the most selective data-set on the population of record companies in Germany available. According to GVL management, amongst 5,087 members only three organisations that do not fit this definition are registered as "record producers". These are the foreign collecting societies PPL (Britain), CENA (the Netherlands), and SPPF (France).

Graph 2 presents real turnover in the German market for phonograms and the number of label codes registered with the GVL. The number of labels registered has grown significantly throughout the last decade in what resembles an uninterrupted approximately linear growth pattern since at least the beginning 1990s. The growth in the number of label codes between 1994 and 2003 can be described quite precisely with a linear equation achieving a correlation coefficient (r^2) of 0.9972 (see appendix 1). That is, no substantial changes to this trend are apparent in the transition or crisis period. The counter-intuitive observation is that the dramatic changes in revenues to phonogram producers has had no apparent impact on the growth in the number of labels registered. A linear regression of the number label registrations with real turnover in the market for phonograms reveals a relatively strong (r^2 = 0,8255) *inverse* correlation (see appendix 2).

[10] The costs of manufacturing a tangible copy of a given recording on the predominant sound-carrier format CD were already "closely contained" to below one US$ per complete phonogram including case and booklet in the mid-1990s (Vogel 1998:146).

Graph 2: The number of label codes registered with the GVL and real turnover in the German market for tangible phonograms 1994-2003

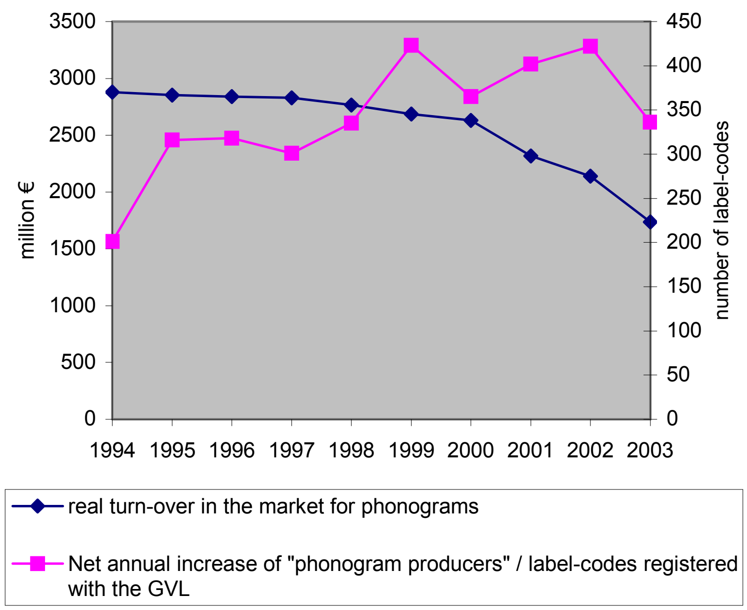


Sources: DESTATIS / BV Phono 2004 / GVL 2004

Labels registered by firms ceasing to publish new recordings can remain registered until all their rights expire, that is regularly 50 years after publication. Exits due to expirations of all royalty entitlements should be rare, as the German phonogram industry of the 1950s was relatively small. Voluntary premature exits should also be rare, as a label code once registered entails no minimum fixed running costs and modest administrative efforts to the rightholder. What is more, if a record company merges or is taken over by another firm and all related rights registered pass into new ownership, the new owner may choose to retain the label code, so that such an acquisition might not have any consequences for the number of “record producers” registered by the GVL.

Therefore, the absolute number of labels registered with the GVL is likely to be a relatively poor indicator of how many different firms are *active* in the sense of producing / publishing recordings in a given year. One can assume, however, that firms newly registering a label are very likely to be active as record companies at the time of registering. Thus, the net growth in the number of registered labels should be a better indicator for changes to the number of record companies currently operating in Germany than the absolute number of registered labels. Graph 2 presents the annual net increase in the number of label codes registered with the GVL. Again, the real turnover in the German market for phonograms as calculated on the basis of BV Phono statistics is included as reference.

Graph 3: Net annual increases in the number of label-codes registered with the GVL and real turnover in the German market for phonograms 1994-2003



Sources: DESTATIS / BV Phono 2004 / GVL 2004

The counter-intuitive observation is that the number of newly registered labels has been relatively high during the crisis years characterised by pronounced falls in the turnover generated in the market for phonograms. The average (arithmetic mean) additional number of labels registered with the GVL each year has been 224 between 1991 and 1997. It was substantially higher, at an average of 381 additional labels per year, as the crisis unfolded between 2000 and 2003. Only during the transition years 1998 and 1999 was this increase even higher with an average net increase of 379 firms. In 2003, the net growth of registered labels has declined considerably but remains higher than during any year in the boom period. For the entire period under investigation, a linear regression of the net annual increase in the number of GVL label registrations with turnover in the market for phonograms reveals a weak ($r^2 = 0{,}203$) *inverse* correlation (see appendix 2).

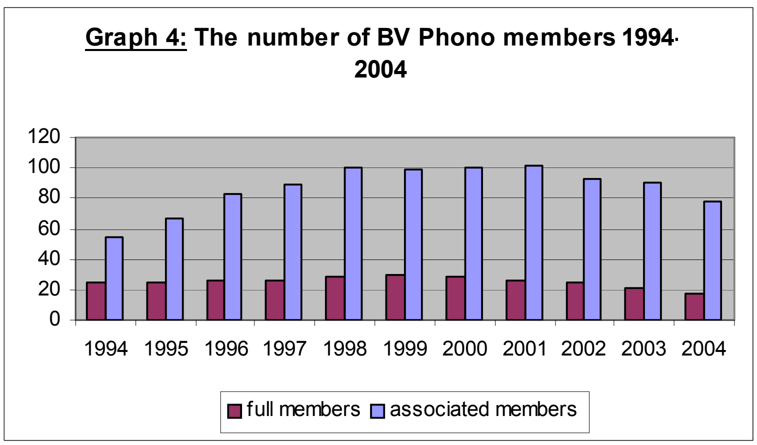
There are two problems with inferring from trends in the number of label-registrations on trends in the number of record companies operating in Germany. These are multiple registrations and cross-border registrations. The main potential source of error could be changes to the average number of labels each record company registers with the GVL. In particular larger record companies regularly register several labels separately, e.g. to facilitate separate accounting for semiautonomous business units. While there is no obvious evidence of a changed record company / label registration ratio, the possibility cannot be dismissed that such changes might distort the degree to which label-registration reflects changes to the number of firms operating as record companies.

Secondly, cross-border registrations could be a source of error. Phonogram producers based in some other territories, mainly from another EU member state, are entitled to register with the GVL (§6 Urheberrechtswahrnehmungsgesetz). In practice, the first foreign firms have registered with GVL in the mid-1990s. After what staff describe as “gradual growth”, today they account for ca. 400 label registrations, that is ca. 8% of the total. How many German firms have registered (only) abroad cannot be determined on the basis of data accessible for this paper.

For the purposes of this paper, GVL data must be used with caution. In particular because of the problem in controlling for multiple registrations, a range of other data will be used to validate and extend on observations made on the basis of this data.

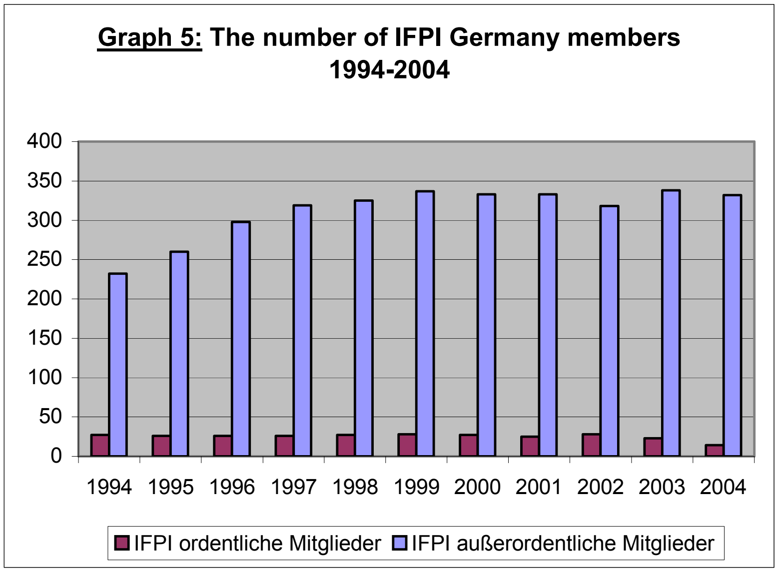
5.2 **Head-organisation membership.** The number of members in head-organisations catering for record companies are probably not as comprehensive as GVL statistics but should still reflect changes in the population of active record companies, in particular given straightforward economic incentives for membership as described in section 3. Head-organisation membership is costly. There should be little problems with registrations of organisational units that ceased to operate. What is more, much of the fees are charged on a fixed contribution per organisational unit registered as member. Where this applies – i.e. for all of the VUT data and all data on associated members of BV Phono and IFPI Germany – multiple registrations should be rare. This does not hold for the relatively small number of full members in BV Phono or IFPI Germany, where membership fees and voting rights are determined by the size of the organisational unit registering as a member.

5.2.1 *BV Phono / IFPI Germany.* Full membership in BV Phono fell from a peak of 30 in 1999 to 17 in 2004. Associated membership that had expanded substantially during the boom period and the transition year 1998, has fallen from 102 in 2001 to 78 in 2004.



Sources: Assembled from published member listings of IFPI Germany and BV Phono, BV Phono 1994-2003 / www.ifpi.de

Virtually all BV Phono members are also members in IFPI Germany. Full membership in IFPI Germany as the larger of the twin head-organisations catering for the more sizable German record companies stopped growing in 1998, the first year of the transition period, and has fallen from a peak of 28 in 1998 to 14 in 2004. Simultaneously, associated members stopped growing in 1999 and stood at 332 in 2004, having fluctuated without obvious pattern between 338 and 318 members since 1999.

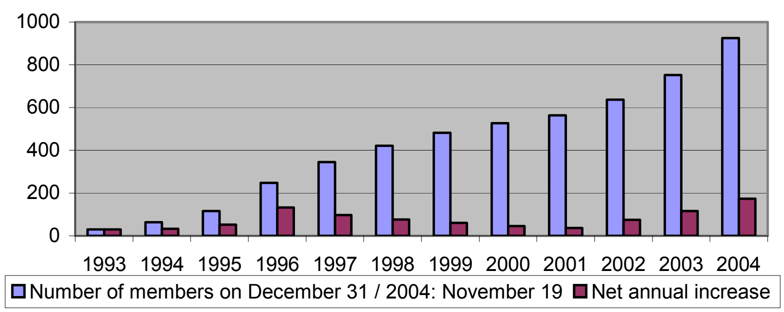


Sources: Assembled from published member listings of IFPI Germany and BV Phono, BV Phono 1994-2003 / www.ifpi.de

That is, the number of full members registered with either BV Phono or IFPI Germany has fallen significantly during crisis. The number of associated members in BV Phono as the most exclusive head-organisation has decreased recently. These types of membership in the two major head-organisations do not confirm a growth in the number of record companies during crisis as suggested by GVL data. Instead, a period of growth was interrupted during the transition period. However, the more comprehensive data set on associated IFPI Germany members indicates an inconsistent and modest growth in the number of firms since the end of the boom period. Overall, membership data from these two head organisations appears most consistent with a relatively stable number of record companies for which these organisations are attractive in the context of falling revenues from the market of phonograms.

5.3 *VUT*. The VUT was founded in 1993 and initially catered for “independent” – that is smaller enterprises with no or limited ties to the “major” multinationals – record companies, record distributors and recording studios. Since 1996, music publishers are also accepted as members. As seen above, firms operating as record companies make up nearly three quarters of all members. This share in record companies in overall members is perceived to be stable by VUT management so that the registration of other types of members shall be assumed to be a limited problem.

Graph 6: The number of VUT members and net annual increases 1993-2004

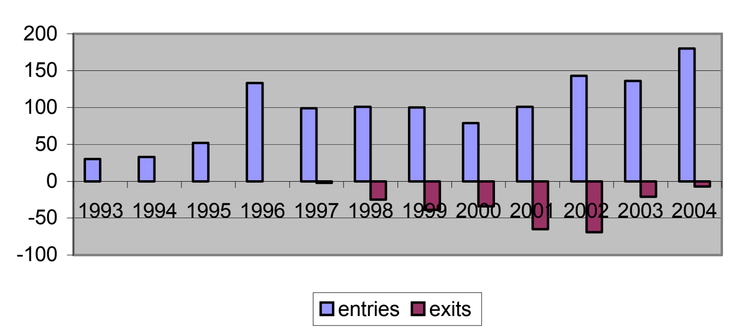


Source: VUT member database

The VUT was founded relatively recently in 1993. Shortly after foundation as well as after extensions of the type of eligible firms, some changes to the number of members independent of changes to the total number of active firms in Germany are to be expected. Incentives for membership will also depend on costs and benefits for members. In October 1995, a 20% GEMA-rebate for VUT members became effective. Together with newly eligible publishers joining, increased incentives for membership due to record companies membership due to the GEMA agreement could largely explain intensive growth in 1996. Between 1997 and 2000 the annual net increase of members flattened out. At this point one could assume that a high growth phase immediately after foundation of the organisation that allows no inferences on the actual population of eligible firms has ended. Increased growth of membership since 2000, in the absence of obvious other factors such as cost reductions or additional benefits of membership, appears to corroborate indications of a growing number of record companies in Germany as identified on the basis of GVL data.

For this paper, data on exits and entries was only accessible for VUT members (see Graph 7). Possible reasons for exits from VUT include that members cease to trade as record companies or that they are taken over. Furthermore, companies might no longer value any head-organisation membership. Given the GEMA rebate, this should apply mainly to extremely small firms. Firms that grow might exchange IFPI Germany membership for VUT membership as the benefits of some minor, additional privileges with GEMA for IFPI Germany members offset higher membership fees and/or to participate in the more intense lobby work of the larger head-organisation.

Graph 7: VUT membership exits and entries 1993-2004



Source: VUT member database

VUT entries had a peak in 1996 with 133 new members, after the GEMA rebate had been introduced the previous year and music publishers became eligible for membership. The average annual number of entries during the boom period from 1993 to 1997 was 69. There are no exits until 1996 and only two firms cancelled their membership in 1997. During the two transition years 1998 and 1999, an average of 32 firms exited, while an average of 100 firms became new members. During the crisis years 2000 to 2004 an average of 128 firms became new members annually while an average of 39 exits occurred. Within the crisis years there are substantial variations. There is an upwards trend in the number of new members since the year 2000, while the number of exits has fallen considerably since 2002.

VUT data thus indicates an increased turbulence amongst smaller firms in the record industry with comparatively elevated numbers of market entries and exits by small firms during transition and crisis. This data also indicates that the crisis of the market for phonograms in Germany seems to have had a relatively immediate effect on the viability of smaller enterprises as number of exits increased substantially through the transition and the first two years of crisis, up to the year 2002. Three insights are surprising, however: first, the number of entries was higher in the crisis years 2002 to 2004 than during any other year. Secondly, the net effect of exits and entries on VUT membership remained clearly positive throughout transition and crisis adding up the growth in the number of members discussed above. Thirdly, since 2002 the trend of increasing turbulence seems to have reverted to a more uniform growth in the number of VUT members in spite of an aggravating decline of turnover in the overall market for phonograms.

5.4 **Sub-conclusions.** The available data on the number of firms operating as record companies in Germany provides two main insights. First, the more comprehensive sources coincide in suggesting that the number of firms operating as record companies in Germany has not fallen in line with turnover in the market for phonograms. GVL and VUT data – covering relatively large numbers of organisational units – indicate that, if anything, the number of record companies has risen during transformation and crisis. Indeed, the growth in the number of firms appears to actually have picked up with the end of the boom. We find an inverse correlation between the number of firms / market entries and turnover levels. This raises the question why the number of record companies should increase during a steep downturn in turnover.

Secondly, the growth of the number of firms observed is inversely related to firm sizes covered by a data set. The number of small firms – as constitute the bulk of VUT members – has grown. The number of intermediate firms – as are prevalent amongst the associated members of IFPI Germany and BV Phono – has remained relatively stable. The number of regularly relatively large organisational units committed to full membership in IFPI Germany and BV Phono has decreased. This second insight might provide an explanation for rising firm numbers during crisis. Where record companies are concerned, a restructuring – or atomisation – of the phonogram industry appears to be taking place that coincides with the decline of the overall market.

This finding is consistent with two explanations for the establishment of small enterprises that are frequently raised by industry insiders. First, staff laid-off by established enterprises in the phonogram industry seek to employ their specialised expertise and, in the absence of employment opportunities in the sector, set up new record companies. Secondly, creators who find it difficult to strike a deal with incumbent record companies at times of tight budgets market their own creations on phonograms and thus begin operating as record companies. Sometimes, these new company formations are dismissed as hasty attempts documenting the degree of desperation amongst producers rather than the emergence of new, viable businesses. However, from the data analysed here, the trend of a growing number of record companies appears to be long-standing. What is more, the number of firm exits as indicated by VUT data seems relatively limited and falling. It seems inadequate to entirely dismiss the growing number of record companies as reflecting a short-lived aberration. Many of the great number of smaller firms appear to have found a sustainable mode of operation in spite of a severe crisis affecting the industry.

In other words, the current crisis has uneven effects on larger and smaller enterprises. This appears to be the main conclusion to be drawn from data on the number of record companies. To be sure, data indicating changes to the number of record companies operating says little about the number of individuals involved, let alone formal employment opportunities within the industry. Nevertheless, an elevated rate of firm entries during crisis does challenge the notion that the current crisis is uniformly or unequivocally harmful to record producers.

6. THE NUMBER OF RECORDINGS PUBLISHED

A rising number of record companies might also raise some doubts as to the extent to which incentives to produce and disseminate recordings have been diminished in a context of falling revenues and increased piracy. Other things being equal – including the assumption of equivalent works – the number of different titles published on phonograms provides a direct indication of incentives to produce and disseminate recordings. The diversity of supply of creative works is also an important maximand in cultural policy. Other things being equal, falling revenues in the market for phonograms will lead to a decrease in the number of different works supplied. In as far as copyright protection determines revenues to producers, it is thus predicted to be positively related to the number of works supplied.

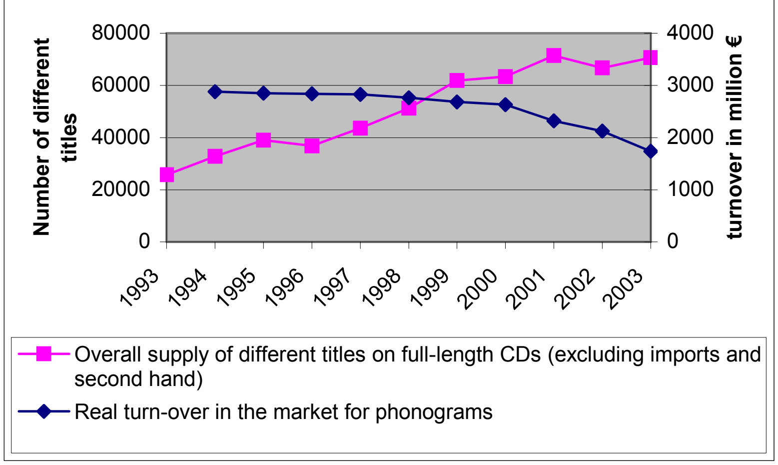
The only available data on the number of titles released comes from one single source, the BV Phono. While the data directly measures the phenomenon of interest, use of this data is not unproblematic. BV Phono management acknowledges that their figures need to be understood as a very rough estimate. It is estimated that BV Phono figures capture only about half of the entire number of phonograms released. However, they do presumably capture the bulk of those releases that eventually become easily available to a wider public.

The full-length CD is the predominant sound carrier format in the German market for phonograms throughout the period under investigation. In 2003, full-length CDs accounted for 77% of unit sales of tangible phonograms and nearly 90% of unit sales of full-length phonograms (calculated on the basis of BV Phono 2003:32 / 2004:24).[11] Emergent markets for recordings disseminated without tangible carriers have so far remained marginal as sources of income to record companies. Until very recently, marketing ringtones as commercial downloads onto mobile phones generally required an adaptation and simplification of works. This means that music publishers are the aspect of the established music industry benefiting through the years investigated, although this might be about to change at the time of writing. Legitimate commercial platforms offering music downloads via the Internet – a high growth sector at least since Apple's itunes opened up its service in Germany on 15 June 2004 – do not yet make up any substantial share of the market for recordings. While in 2004 "record companies have seen their first year of significant revenues from digital sales" (IFPI 2004c:3) combined overall turnover in the US, the UK and Germany is estimated optimistically at "several hundred million [US] dollars" (IFPI 2004c:6) within three markets worth well over

[11] Regarding other tangible sound carrier formats, sales of music cassettes (MCs) as the second most important carrier format have declined substantially between 1993 (20% of all phonograms sold) and 2000 (7%). BV Phono figures since 2002 are not comparable anymore due to the exclusion of a major producer of MCs. The BV Phono (2004) assumes sales of MCs have remained nearly stable between 2000 and 2003. DVDs and SACDs are a new high growth sector but accounted for less than 1% of all unit sales in 2003. What is more, average full-length CD prices are higher than prices for any type of singles of MCs. That is, full-length CDs should account for an even greater share of turnover than sales in the market for phonograms. Music video sales have picked up recently, as DVD-Video sales have grown exponentially since 2000. Music videos nevertheless make up just about 5% of all phonogram and music video sales.

US$15 billion in 2003 (IFPI 2004a). Finally, revenues to record companies from secondary use administered by the GVL (b: 2003 / 2000) have expanded only modestly from ca. €40 million in 1997 (for 1996) to ca. €53 million in 2002 (for 2001) nominally. Data for revenues from secondary use not administered by GVL and licenses was not available for this study. In summary, there is no evidence that increased revenues from secondary use would have offset more than a fraction of the falling revenues from sales of phonograms.

Changes to the supply of different titles on full-length CDs will be used as a proxy for the overall supply of recordings. Using this one, predominant type of sound carrier to estimate the supply of phonograms in Germany helps to avoid problems with double-counting of the same content released on several types of carriers or various distribution systems. It also limits distortions from pronounced fluctuations in the share of the low-cost format of singles in accumulated unit sales of all phonograms.



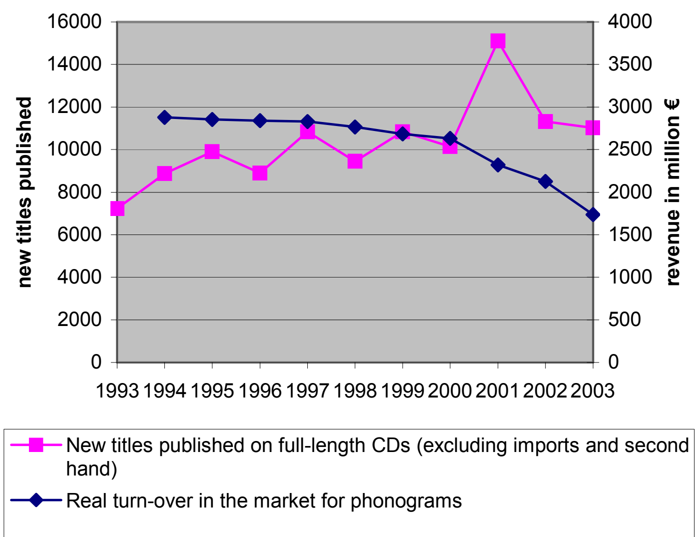
Graph 8: Overall supply of different titles on full-length CDs by record companies operating in Germany and real turnover in the German market for phonograms 1993-2003

Sources: DESTATIS / BV Phono 2003 / 2004

Graph 8 illustrates the overall supply of different titles on full-length CDs by record companies operating in Germany in the years between 1993 and 2003 (BV Phono 2003 / 2004). These figures do not include imports or the second hand market. The data indicates a significant total increase from below 26,000 different publications made available in 1993 to over 70,000 in 2003. A comparison of the industry's performance during boom, transition and crisis provides the following results. The average number of releases per year during the boom period between 1993 and 1997 was 35,593. The supply of individual full-length CD-releases available rose by 69.7% during the four year period between 1994 and 1997. The average rate of growth per year was 13.9%. For the transition period 1998 and 1999, the average number of releases per year was 56,588. The supply of individual full-length CD-releases available rose by 41.9% during these two years. The average rate of growth per year stood at 21.0%. During the crisis period between 2000 and 2004, the average number of releases per year was 68,044. The supply of individual full-length CD-releases available rose by 14.0% during these four years and the average rate of growth per year was 3.5%.

The vast majority of these different titles supplied were from a back catalogue of titles first published in previous years. Thus, changes to the overall supply of different titles mainly provides insights regarding incentives to disseminate existent recordings, rather than to produce new recordings. This data indicates an ambiguous picture. On the one hand, the overall supply of different full-length CDs has continued to grow through boom, transition and crisis. On the other hand, the rate of growth of this accumulated active repertoire has decreased significantly during crisis.

Graph 9: The number of different new titles published on full-length CDs by record companies operating in Germany and real turnover in the German market for phonograms 1993-2003



Source: DESTATIS / BV Phono 2003 / 2004

To investigate incentives to produce new recordings and publish them on phonograms, the supply of new titles – published first during a specific year – needs to be considered. Graph 9 shows the number of different new titles published on full-length CDs between 1993 and 2003. Again, real turnover in the market for phonograms is included as a reference. The average number of new releases per year during the boom period between 1993 and 1997 was 9,148. The supply of new titles on full-length CDs rose by 50.0% during the four year period between 1994 and 1997. The average rate of growth was 12.5% per year. During the transition period 1998 and 1999, the average number of releases per year was 10,146. The supply of individual full-length CD-releases available did not grow (0-growth) during these two years in comparison to the last year of the boom period. For the crisis period between 2000 and 2004, the average number of releases per year was 11,896. The supply of individual full-length CD-releases available rose by 1.5% during these four years and the average rate of growth was 0.4% per year.

Again, these findings are ambiguous. The number of new titles released on full-length CDs has not fallen in line with the severe declines in turnover in the crisis period. The number of new releases on the tangible carrier CD stands at historically high levels through much of the crisis period. The most recent figures for the years 2001, 2002 and 2003 are the three highest during the last decade and very probably the highest ever. On the other hand, a period of intensive growth in the number of new releases during the boom period has given way to a more moderate rate of growth since the transition period with the exception of the outlier 2001. In the two last years, the number of new releases was comparatively high but declining.

For the period between 1994 and 2003, a linear regression with the overall supply of different titles on full-length CDs by record companies operating in Germany and real turnover in the German market for phonograms between 1994 and 2003 reveals an *inverse* correlation (r^2=0,6444 / see Appendix 4). For the same period, a linear regression with the number of different new titles published and real turnover reveals a weaker (r^2=0,258) *inverse* correlation (see Appendix 5).

6.1 **Sub-conclusions.** These findings conflict with *ceteris paribus* assumptions of a positive relationship between revenues to producers and/or copyright protection on the one hand, and the number of different titles supplied on phonograms on the other. The available data indicates that overall supply of recordings on the predominant tangible carrier format CD has not diminished during crisis. Neither has the number of new titles produced and published. To be sure, this data does not assess the quality of individual releases. However, with this caveat, it can be concluded that incentives to produce and disseminate works are not decisively determined by falling revenues and/or diminished copyright protection. Other factors offset much of any adverse effects a crisis as indicated by measures of turnover and copyright circumvention might have had.

7. CONCLUSIONS

This paper set out to investigate the extent to which the ongoing crisis in the phonogram industry has already diminished incentives to produce and disseminate recordings on phonograms and thus the supply of these cultural works. However, the data analysed here cannot confirm a positive relationship between turnover in the market for phonograms and incentives to produce and disseminate works at all. Instead, the number of firms operating as record companies and the number of works supplied on phonograms appears to have increased during a prolonged period of rapidly falling turnover in the market for phonograms and diminished copyright protection. These results conflict with theoretical predictions as well as intuition.

To the extent that one accepts the data used to provide valid insights, current developments in the market for phonograms appear to have uneven effects in at least two ways. First, the crisis has had inconsistent effects on larger and smaller companies within the phonogram industry. Larger corporations struggle to retain profitability through layoffs and reinvigorated merger activity and a number of minor companies ceased to trade. These developments were widely reported and predominate in the public perception. Meanwhile, a longstanding growth in the number of record companies has continued as market entries by smaller, “independent” record companies has picked up. Many of these small firms appear to be sustainable. How so many firms manage to sustain themselves and why numerous market-entries occur within a market that has declined substantially during at least five consecutive years requires explanation.

Secondly, we observe uneven effects on alternative indicators of the industry’s performance – turnover generated, works supplied, and firms sustained – usually regarded to be positively related. The current crisis is defined by falling revenues to producers that may or may not be linked to a simultaneous erosion of the copyright regime. For the years investigated, diminished demand for authorised phonograms does not correlate with generally diminished incentives to supply recordings on phonograms. It follows that revenues to producers and/or the level of copyright protection do not appear to decisively determine incentives to produce and disseminate recordings on tangible carriers. Other factors appear to overlap with these two determinants of incentives to supply phonograms and to offset much of any diminishing effects of declines in turnover, whether the latter are caused by diminished copyright protection or not. Regarding the magnitude of falls in turnover, these other factors need to have a very substantial combined effect of boosting the productivity and/or incentives of phonogram producers. Regarding the intensity of growth in the number of releases throughout the period investigated, some significant factors promoting incentives to produce and publish recordings on phonograms appear to be long-standing. They precede the crisis period of significantly falling sales, intense CD-burning and file-sharing.

It is not immediately obvious what these factors boosting incentives to produce and disseminate recordings consist in. Four theoretically possible explanations can be suggested tentatively: (1) growth in alternative sources of revenues, (2) cost reductions and increased competition perhaps in the context of technological change, (3) an amateurisation of aspects of the industry, or, at least in theory, (4) the transition from an excessive or flawed copyright regime to a more efficient one.

Looking first at the growth of alternative sources of revenues to record companies – e.g. royalties form secondary use, the marketing of ringtones or legitimate downloads – these do not appear to offset more than a small fraction of declining revenues from sales of tangible phonograms during the time under investigation (see section 6). If anything, expectations of a significant growth in future revenues from other ways of marketing music might foster present incentives to produce.

Secondly, many of the observations made in this paper would be consistent with falls in the costs of production for recordings and increased competition, perhaps due to swift technological change. Perhaps the effects of ICT in back-office applications, the co-ordination of production processes as well as digital sound recording and sound processing on productivity might deserve more attention.

Furthermore, more general concepts developed in the economic analysis of artists' behaviour might help to explain some of the counter-intuitive findings. It has been observed that artists, including some musicians, do not seem to respond rationally to pecuniary rewards and many create value as more or less unpaid amateurs (Towse 2001). These observations have been explained either by systematically exaggerated expectations of future rewards (Towse 2001), by "intrinsic motivation" (Frey 2000) or "cultural incentives" (Throsby 2001). No attempts have been made to explore how far such "irrational" behaviour extends into activities related or complementary to the creative process in the creative industries. It will almost certainly apply to some of the "self-publishing" creators that are frequently seen behind a considerable number of new record companies.

Finally, according to Landes and Posner's model and related analysis of copyrights, it is theoretically possible that copyright protection might have been excessive or flawed previous to CD-burning and Napster. The costs of existent copyright regimes might be underestimated and/or their benefits overestimated, so that rather than eroding incentives to produce, diminished protection increases efficiency. What is more, if copyrights are significant in explaining the current crisis and its uneven effects at all, the "distribution effects" of copyrights (Towse 2004b) not only between creators and intermediaries but also amongst different types of intermediaries require more systematic attention.

Which of such or further factors are behind an apparent disjuncture of revenues and incentives to supply remains to be seen. Regarding the ongoing debate on the adaptation of copyrights to technological change, the finding of an inverse correlation between revenues and incentives to supply phonograms during crisis conflicts with one extreme position in the copyright debate, namely accounts of mortal harm to the entire phonogram industry and thus the supply of creative works on phonograms in the context of falling sales and increased piracy. By definition, the current crisis entails "harm" in the shape of falls in accumulated revenues to producers. Nevertheless, data on record companies operating in Germany suggests that, judging by their numbers, small record companies thrive throughout the crisis. So far, the industry appears not to be in demise, but rather to be caught up in a restructuring or perhaps atomisation. It seems that a number of small and new intermediaries operate successfully in a low-protection environment. For established firms adversely affected by the crisis, further analysis of such competitive businesses should shed some light on best-practice and complement exclusion efforts. What is more, the number of different titles supplied has continued to grow during crisis, albeit less rapidly in comparison to the boom years 1993 to 1997. The public interest in a diverse supply of cultural works might not have been harmed to the extent that is sometimes claimed.[12] The analysis in this paper suggests that so far the crisis appears not to have been uniformly or unequivocally harmful to suppliers nor consumers more generally. The available evidence implies that the diversity of supply has increased during falling expenditure on phonograms. Consumers have enjoyed (slightly) more potential choice in music for considerably less money. Adverse effects on the industry's performance in terms of providing a diverse supply of cultural output appear to be surprisingly limited and/or late to arrive more than half a decade after the boom period has ended and file-sharing as well as CD-burners exploded onto the scene. Could such a situation be sustainable or will a much more serious adverse impact on supply materialise after all?

Time, and further data, might tell. In the former case, the need for a reinvigorated copyright regime to counter the ongoing crisis will not be assessed adequately on the basis of turnover data alone. The available evidence implies two general challenges in assessing the current crisis in the phonogram industry and the role of copyrights within it: first and foremost, further significant factors determining incentives to supply content need to be identified and included in the analysis to avoid overabstraction and spurious results. It seems the challenge is to assess the current crisis and counter-measures in a more dynamic environment than is usually allowed for in the leading studies. Secondly, regarding the uneven effects of the ongoing crisis on different types of producers, the potential for significant distribution effects of any adaptation of the copyright regime should be included in the analysis.

[12] Some related statements are presented at http://www.ifpi.org/site-content/press/20040330.html. Of course, it cannot be determined here to what extent the available revenue would have expanded in the context of more stable revenues to producers.

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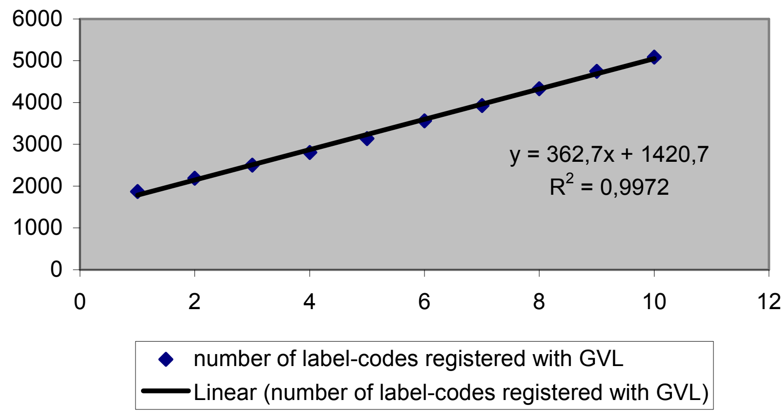
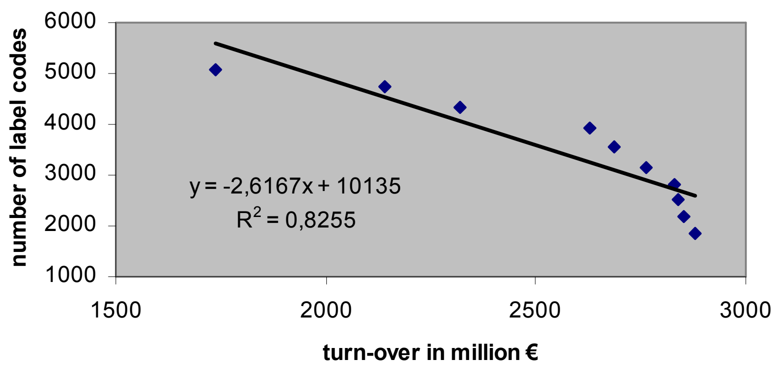
APPENDICES

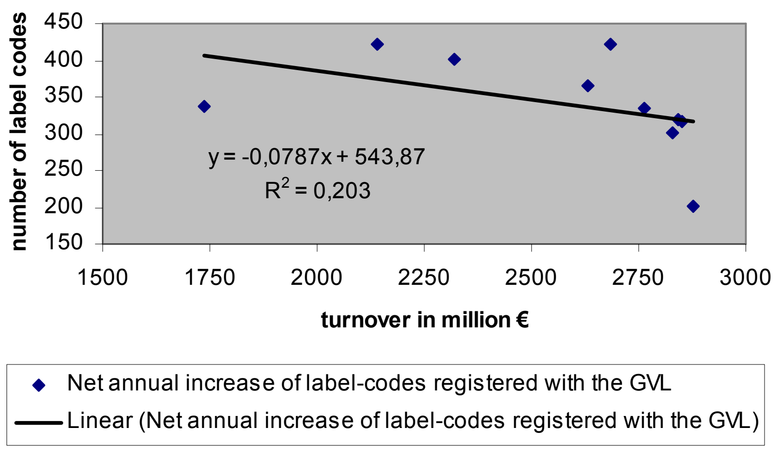
Appendix 1: Linear regression (least squares) of the number of label codes registered with the collecting society GVL in the years 1994-2003 (1994=1)



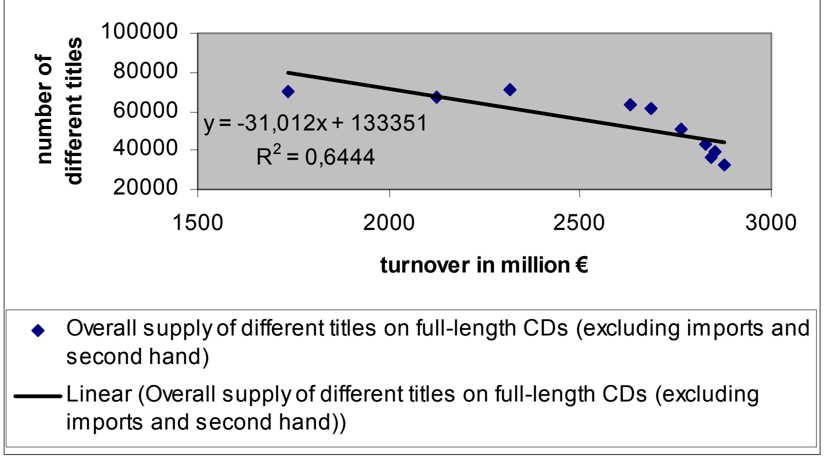
Appendix 2: Linear regression (least squares) - real turn-over in the German market for phonograms and the number of label-codes registered with GVL 1994-2003



<u>Appendix 3:</u> Linear regression (least squares) / Net annual increase of record labels registered with the GVL and real turnover in the German market for phonograms 1994-2003



<u>Appendix 4:</u> Overall supply of different titles on full-length CDs by record companies operating in Germany and real turnover in the German market for phonograms 1994-2003



Appendix 5: The number of different new titles published on full-length CDs by record companies operating in Germany and real turnover in the German market for phonograms 1994-2003