

Hardly for the money!



The impact of copyright revenues on the incomes of Swedish composers

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Introduction

"Copyright generates more rhetoric than money for the majority of composers and performers in the music industry"
Ruth Towse, past president of The Association for Cultural Economics International

My general field of interest is the study of the intellectual property rights regulations providing revenues for individual copyright owners and for the development of both the cultural industries and society as a whole. In this paper I take a first, very small step into this vast field. Part I is by no means a final, closed-end presentation. Regarding the final case study in Part II, based on a task-specific dataset from a questionnaire, I believe, however, that I present what can be found in it. What I would like to study in more depth in the future is e.g.:

1. The early economic history of musical copyrights (using historical research methods),
2. The complexity of music as an IPRs object:
 - actual knowledge
 - true artisanship
 - technology shifts
 - design developments
 - originality vs imitation
 - related IPRs used in the music industries for various products
3. The economic impact of collective musical copyright licensing, i.e. the 20th century economic history which can be studied using econometric methods.

Jurisdiction developments within IPRs have been researched by others. My interest is the economic impact of the IPR legislation. Maybe my concern could generally be described as "the artist as entrepreneur" within a Neoinstitutional Economics framework. Where two keywords are "innovation" in general and "copyrights" in particular. Swedish society seems to have an interest in fair professional circumstances for composers of music which is currently not commercially successful but the existence of which is vital according to the cultural policies declared by parliaments on all levels of society. Of course, there is also an economic growth and business development interest. The entertainment industries are becoming more and more vital for our economies as we develop further and further from a mere subsistence level. The commitments of composers are crucial for a wide range of other professions with lots of employees depending on the music created.

The internet technology has put a strain on the hitherto developed copyright jurisdiction. Currently (as of January 2009) the member nations of the EU are trying to make their parliaments accept national applications of new EU regulations concerning the rights of copyright owners to investigate into the ownerships of IP-addresses to make it possible to find and fine persons downloading illegally. From the Swedish debate it seems that some think of this as a more severe trespassing of personal integrity than that performed by the downloaders versus copyright owners. The same kinds of private policing with infringement fees charged on discovered free riding are, however, customary within e. g. public transports and parking lots.

The arguments in the Swedish debate resemble those that occurred in the 17th century when the property rights for authors were first discussed and eventually introduced in national legislation. Who benefits from what kind of regulation? How should the public interest in new ideas be assessed versus the financial and moral interests of the authors of them? Knowledge as such versus the Fruits of Knowledge. The current debate puts such issues in new focus.

The debate has its emphasis clearly on moral questions. The idea of illegal downloading as theft. But what is the use of the moral if what is discussed has only limited relevance financially? If the owned property renders no or only limited returns why do property rights have to be considered in the first place? Even the ownership of tangible assets is not necessarily legally upheld. The Nordic "Allemansrätt/Every Man's right" to wild flowers, berries and mushrooms is unique in international comparison. It seems that many Swedes now consider file-sharing of information goods and cultural products a part of the same kind of "Every man's right".

The key questions for this paper are threefold

1. *Which is the impact of IPR revenues for Swedish composers of art music today?*
2. *Does the highly competitive music industry and the IPRs attributed to it benefit only a few?*
3. *Is there an IPR revenue critical mass that enables a composer to leave other sources of income?*

This paper investigates the actual copyright revenues for Swedish composers of today. I have for now limited my interest to focus on the composers of "art music" as distinguished from "popular music". An item of art music might very well be commercially rewarding. But the composers of this kind of music have the benefit of possible public funding as they, supposedly, contribute to a more vital and diversified culture. The established art music composers belong to national composers unions. In the Swedish case the union is called FST/*Föreningen Svenska Tonsättare* (The Association of Swedish Composers). After an historical and theoretical first part the paper presents the findings of a questionnaire processed in collaboration with the FST. Membership in the FST is granted only for those who are accepted by the union itself based primarily on qualitative assessments of the music composed. The criteria for membership are mainly based on the quality of the music presented to FST. There are also clauses regarding diffusion of works in several genres and the degree of connection to Swedish music life. There are no autodidacts among the respondents and I suspect that, although relevant higher education is not among the criteria, all members have acquired such education. Of appr. 280 FST members 85 were interested enough in their financial situation to take the time to fill in the web-page form.

The dataset was designed to give information e.g. on the recent progress of total incomes, copyright revenues, supporting income sources, output quantities, age, domicile and education.

PART I MUSIC AND COPYRIGHTS

1. HISTORY AND PHILOSOPHIES

There has been a lot of philosophical debate on why mankind created formalised societies instead of living in "the state of nature". Somewhere along the line of human development the idea, conscious or unconscious, of a "social contract" evolved. That we all have both rights and obligations to each others and our communities. Socrates defence speech when he was sentenced to death was filled with rhetoric on the obligations he had as a citizen of Athens. He had to accept the verdict although it was wrong in his own view. He refused to flee although he was offered the opportunity. Grotius and Hobbes revived the same kind of ideas which eventually ended up in Rosseau's "Du Contrat Social" and the many oeuvres by Locke. Of course, it is easy to find earlier traces of the same kind of logic. Christianity's Golden Rule is vital to the later developments of explicit property rights. Economist Ronald Coase would say that the underpinning idea was to minimize transaction costs in the brutish state of nature.

1.1 The propositional and the prescriptive knowledge

The Hobbes idea of the brutish state of nature is maybe contradicted in The Book of Genesis where life before man ate the fruits from the Tree of Knowledge (of Good and Evil) was a state of Paradise. This passage (chapters 2 and 3 in The Book of Genesis) has, of course, been the topic of vivid debate among theologians. It is easy to reflect oneself: was there knowledge before Eve tasted the fruit? Was it inevitable that she ate of the forbidden fruit as curiosity is one of the strongest energies which humans have been equipped with?

In relation to the question of property rights a distinction between knowledge as such and the offspring of the knowledge is usually made.

Mokyr focuses on the concept of "useful knowledge" (attributed by Mokyr to Simon Kuznets) which he divides into (Mokyr, p.4)

1. *propositional* knowledge or "episteme" knowledge called Ω -knowledge (omega-knowledge)
2. *prescriptive* knowledge or "techne" knowledge called Λ -knowledge (lambda-knowledge)

The economic growth of later centuries was made possible by an immense widening of Ω -knowledge from which mainly Λ -knowledge in the form of microinventions emerged. Λ -knowledge is largely possessed only by some while Ω -knowledge should be possible for everybody to find and internalise. From this is derived that the goods that are the results of Λ -knowledge are based on some individual's labour in acquiring not only the Ω -knowledge available for all but also to develop skills and techniques that are his own.

Ω -knowledge is a good that should be in the public domain. It cannot be anything else. Λ -knowledge can be created by one single individual but it is hard to claim property right for it. It seems that Mokyr's general idea regarding Λ -knowledge is that the creation of it suffers from the lack of an institution making it possible to get a more substantial reward from it. But on the other hand the part of Λ -knowledge that is possible to disclose is made part of the total Ω -knowledge base. (Mokyr p. 33).

The laws generally do not exclude the possibility to rob someone from his private property through competition - the introduction of better goods and services. There are, however, restrictions on the acquisition of Λ -knowledge through espionage. But they are perhaps founded more on issues of trespassing of premises than on the knowledge sharing itself.

The main focus of IPR legislation that evolved was not to rest on the intellectual idea per se but on the tangible offsprings of it.

1.2 The stake-holders

In this study the focus is on composers. But the interests of other parties are also invested in the IPRs institutions. There are primarily three lines of music distribution: 1. music prints, 2. live music and 3. recorded music. All three require **composer**. The two latter involves one or more musician/s.

1. *Music prints*

This was the first kind of music needing IPRs. Frequently, also today, the music has been **printed** and **published** before it is played.

2. *Live music*

in order to be presented to a **live concert audience** there is a need for a **concert promoter/producer** and a **concert venue**

3. *Recorded music*

here the value adding production line has more steps. A **recording studio** is necessary. The stored music can be presented directly through a *broadcasting net* (radio, TV, internet). **Consumer equipment** is needed to make sound waves from the broadcasted information to be enjoyed by **the listener**. Alternatively the recorded file is copied on CDs which are, in turn, broadcasted or sold through **dealers** to be enjoyed by **the buyers**.

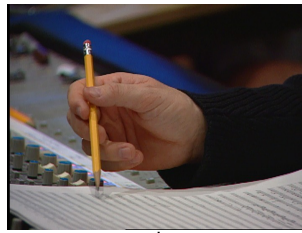
In all the interactions marketing activities are necessary.

There are several kinds of IPRs which are relevant for the different stages of value adding activities necessary for the end use of consumers (concert audiences, listeners and buyers). They have emerged when technology shifts have made them useful.

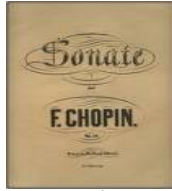
All activities are based on the work of a composer. No wonder then that composers frequently claim that the revenues attributed to them are too small in comparison to the financial importance of their contributions.

All these businesses and the joy that they bring to the consumers have economic growth and welfare implications on **society**.

Many claim that art music has inherent merits for **mankind** which are not easily measured as financial values.



Composer

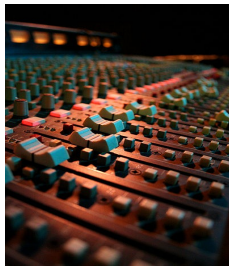


Publisher, printer

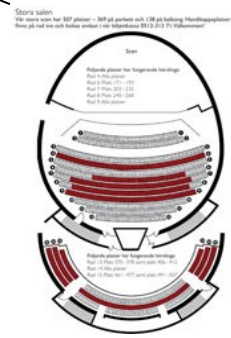
Buyer



Musician



Studio



Concert promoter/
venue

Record company



Broadcaster



Audience



Producer of
equipment



Dealer



Listener

Buyer



1.3 Proto-copyright: Crown Privileges and Censorship

The term "proto-copyright" is used by Kretschmer & Kawohl for the Renaissance version of protection for the printing of books and musical scores. The privileges were useful for both printers and the rulers after the introduction of the Gutenberg printing press in the latter part of the 15th century. (Frith & Lee, p 22).

The Crown privilege, a letters patent/*litterae patentes* (an "open document" for all who wish to read as opposed to "letters closed"/*litterae clausae*), was in effect not only a monopoly right for a printer to solely print and sell a book or a set of books -sometimes for a limited time. It was also a go-ahead from the censors! This latter was of great importance for the authors and printers as governments were shifted frequently and letters patents gave a kind of amnesty. Monopoly rights like these were usually awarded against a fee. (Frith & Lee, p 23)

According to Kretschmer & Kawohl the earliest known privilege for exclusive rights to print and sell music was granted in 1498 by the Venetian signoria to an Ottaviano dei Petrucci for a term of twenty years. In France 1575 and in the Germanic federation 1581, "The Holy Roman Empire of the German Nations", the famous Dutch composer Orlando di Lasso was granted crown privileges. In England Queen Elizabeth I granted 20 years of privileges to Thomas Tallis and William Byrd for their *Cantiones Sacrae* series. (Frith & Lee, p 23-24).

Until the end of the 18th century composers (like authors) negotiated with publishers regarding one single payment for their manuscript. English publishers then applied for privileges which, if they were granted, were entered into the registering book at the Stationers' Hall in London. In Saxony a Bücherkommission had the same kind of control over printed materials after 1687.

The renowned composer/musician of the Danish Christian IV court orchestra, John Dowland (or rather his wife), passed over the ownership of the *Second Booke of Songs or Ayres* in the year 1600 for £20. The 2007 equivalent value ranges from the retail price index amount of £2823 to the average earnings index of £38950 (Officer).

Beethoven offered his compositions to several publishers for different markets. The editions, Beethoven decided, were to be published simultaneously to avoid competition between the publishers. The markets were distinctly separated between Austria and politically fragmented Germany (including Leipzig, Bonn, Berlin and Mainz) as well as France and Britain. In a letter of 1807 from Beethoven to Ignaz and Camille Pleyel in Paris he offered them the French privilege for one symphony, the *Coriolan* overture, one violin concerto (including a version with piano), three string quartets and a piano concerto. All for the sum of "1200 Gulden Augsburg Current" (information acquired from Beethoven-Haus, Bonn¹).

Beethoven in this way sold his works to various publishers for limited geographic markets. Quite often he negotiated with more than one regarding the same piece of

¹ The Augsburg Gulden was worth appr 10 grams of silver at the time, the international price of silver was appr \$0.45 per gram. Thus the value Beethoven suggested was appr \$540. In December 2008 the same amount of silver was worth \$4440. More than eight times the value of 1807. If measured as wage for unskilled labour (as I have not been able to find indices for composers or even skilled labour!) the amount would have risen to \$128000 in 2007. The US Consumer Price Index has risen appr 18-fold during this period. I have not yet been able to trace Pleyel's reply. Samuel H. Williamson, "Six Ways to Compute the Relative Value of a U.S. Dollar Amount, 1790 to Present," MeasuringWorth, 2008. URL <http://www.measuringworth.com/uscompare/>

music on the same market. At this time Napoleon was at the peak of his powers and modern French copyright laws were implemented all over Europe. As soon as Napoleon was conquered the Habsburg Empire refuted most of them and was very slow in re-adopting them (Petri 2008, p. 208-212).

Infant industry protection for new inventions was provided in the form of monopolies in the pre-capitalism societies of Europe. The Statute of Monopolies became the model for most national patent legislations after its introduction in England 1623. The copyrights for authors had to wait until 1710 to have the same kind of legislation in The Statute of Anne (Petri 2008, p. 21; Scotchmer p. 9). Not until 1787 a law for the protection of patterns, The Designing & Printing of Linen Act, was introduced in England (web-page of The Intellectual Rights Office, UK). The same kind of protection, “design-patent”, was introduced in the US in 1842 (Scotchmer p. 81).

1.4 The moral and legal rights

The idea of the social contract between the individual citizen and society as introduced by Grotius and Hobbes and developed by Samuel von Pufendorf, John Locke and Jean Jacques Rousseau transcends the diversity of religions and seeks to generalise what is common and/or necessary for all societies. These words are often cited as the new Lockean way of identifying property in general, and thus also intellectual property rights, as the product of labour:

“Though the earth, and all inferior creatures, be common to all men, yet every man has a property in his own person: this no body has any right to but himself. The labour of his body, and the work of his hands, we may say, are properly his. Whatsoever then he removes out of the state that nature hath provided, and left it in, he hath mixed his labour with, and joined to it something that is his own, and thereby makes it his property. It being by him removed from the common state nature hath placed it in, it hath by this labour something annexed to it, that excludes the common right of other men: for this labour being the unquestionable property of the labourer, no man but he can have a right to what that is once joined to, at least where there is enough, and as good, left in common for others.” (Locke, ch. 5, 3rd sec)

Filmer, Bentham and Mills generally believe that there are no natural rights (Petri 2008, p.92). Thus all rights have to be codified. In the words of Bentham: *“Right is with me the child of law A natural right is a son that has no father”* (Wolff, p. 116). They derive civil rights as the consequences of the duties assigned to all citizens.

One of the tricky issues in the copyright debates over the centuries has been if protection of what nowadays is called “information goods” should be regarded as a natural/moral or a legal/civil right. If it is a natural right no jurisdiction should be necessary. Alternatively one should regard jurisdiction as derived from natural rights. If, on the contrary, we accept the idea that there are no natural rights, copyrights, if there should be any, must be codified. As there are those who believe that it is only a legal right also those who consider it a natural right have to accept codified copyrights.

1.5 Utilitarianism - Statute of Anne and revolutionary IPRs

The solomonic solution not ending the disputes between moral and legal rights advocates but at least providing a break-through for IPR jurisdiction was the English Statute of Anne accepted by Parliament in 1710. It broke with the privileges that should be granted on application. Instead it was enough only to advertise in the official newspaper *The Gazette* or, still, use the Stationers' Register. The medieval apprentice time of seven years was the base of the patent time limit regulations for product inventions in the Statute of Monopolies from 1623. It was now doubled in the Statute of Anne to 14 years for the duration of the authors sole right to decide on publishing matters. It was prolonged with another 14 years if the author was still alive after the initial period (Petri 2008, p 107). It seems that although the printing, publishing and selling of sheet music was profitable very few, at first, bothered to register for copyright! *"For music publishers, the maintenance of copyright protection over 14 or 28 years was unnecessary, as most musical works would not remain in fashion that long"* (Hunter 1986, p. 276).

A very broad interpretation of the Statute of Anne is that it accepts the intellectual property rights embedded in a fruit of knowledge item of the one with the intellect and the knowledge. But it combines this with the utilitarian view that the knowledge and the products that are produced from it should be put in use for the happiness of the consumers. The economist's interpretation of the limited duration monopoly will be discussed below.

The idea of limited duration of IPRs was challenged after the introduction of the Statute of Anne. Incidentally it was not the authors who did it but competing publishers and printers. The 1770s' *Donaldson vs. Becker* case was probably one of the most discussed IPR court proceedings ever! In 1768 the Scottish printer Donaldson deliberately published a new edition of a contemporary best-seller for which he knew the London printer Becker would claim perpetual IPR after the death of both the author and the first edition printer. The verdict was in favour of Donaldson indicating that copyright in fact was created and limited by the statute. Not a source of perpetual income for the London printer based on natural rights (Frith & Marshall, p. 28-29, Petri 2008, p. 113-118).

The idea of limited duration monopoly was included in the US Constitution from September 1787. It includes a copyright clause. One of the "Powers of Congress" is *"to improve the Progress of Science and the useful Arts, by securing for limited Times, to authors and Inventors, the Exclusive Right to their respective Writings and Discoveries"* (Article 1, section 8, clause 8). This is mentioned before e.g. the right to declare war!

But the parallel idea of piracy has been with IPRs from the start. In the first US Copyright Act from 1790 section 5 says: *"Nothing in this act shall be construed to extend to prohibit the importation or vending, reprinting, or publishing within the United States, of any map, chart, book or books, written, printed, or published by any person not a citizen of the United States"*.

The French revolutionary IPR jurisdiction draw from the libertarian ideas presented by Locke and the utilitarian ideas of Bentham and Mills. The ideas in the Statute of Anne and the US Constitution are also apparent in the several revolutionary acts on copyrights presented between 1791-1793. The act of July 1793 extends the IPR of the author to a post mortem ownership of ten years (Hesse, p. 128).

1.6 German Idealism

Johann Gottlieb Fichte, a pupil of Kant (who had written on IPRs in "*Von der Unrechtmäßigkeit des Büchernachdrucks*" in 1781), developed the idea of separation between the thought on the one hand and the verbal form it took on the other in his 1792 article "*Beweis von der Unrechtmäßigkeit des Büchernachdrucks*" (Fichte):

"This spiritual content is namely further differentiated into: the material, the content of the book, the thoughts it presents; and into the form of these thoughts, the fashions, and the links between them, of expressions and of words by which they are presented." (my translation from the German original).²

This results in three different aspects of property in a book (Frith & Lee, p 32):

1. the physical book is a full property of the buyer/owner and it can be kept, burnt, sold or whatever by him according to his own decision
2. the ideas after being shared with the readers become common property of the author and the readers
3. but the abstracted form necessarily remains the author's property because it is physically impossible to be appropriated by another person.

Hegel in the beginning of the 19th century elaborated the third property right - the true IPR - into a property of the author's personality. Meaning that the property right of the personality can never be transferred to someone else.

It took some time also in the Germanic states before this concept was implemented. Carl Maria von Weber's publisher, Adolph Martin Schlesinger, filed a complaint at the Berlin town court in 1822 against a piano arrangement of *Der Freischütz*. Both for the bad quality of the unauthorised arrangement and for the printing of it. The poet and composer E.T.A Hoffmann was asked by the court to give an expert opinion. He came up with the idea that "*reprint of a composition would only take place when an original would be 'reengraved' and reprinted identically with the original*". He thus denied any claims for the kind of personality abstraction which Hegel suggested. Schlesinger, who lost this first case, filed several more similar complaints in Prussian courts and legislators started to lean towards the hegelian view. Finally, in 1837, they decided on a new act for the "Protection of Property in Works of Scholarship and the Arts from Reprint and Reproduction".

If the Anglo-American and French copyright laws at this time were fully based on Lockean liberalism and utilitarianism the next step of IPR evolution would include the German Idealism as well.

1.7 The emergence of IPRs in Sweden

The Lund University was established in 1666, a few years after the Scania province had been seized from the Danes, in order to reform the population into proper Swedes. One of its first prominent scholarly imports was the internationally acclaimed philosopher Pufendorf from Saxony. In Lund he published a famous book on natural rights and just war theories: "*De jure naturae et gentium libri octo*". The privilege, printed in the book, was, however, issued by the emperor in Vienna in 1672. This was the first

² "Dieses Geistige ist nehmlich wieder einzutheilen: in das *Materielle*, den Inhalt des Buchs, die Gedanken die es vorträgt; und in die *Form* dieser Gedanken, die Art wie, die Verbindung in welcher, die Wendungen und die Worte, mit denen es sie vorträgt."

publication in Sweden with a copyright claim printed in it (Petri 2008, p. 241).

The Enlightenment had its advocates also among Swedish intellectuals. One of the first and foremost was Anders Nordencrantz who served as member of Parliament in the mid 1700s. He was very much in favour of the concept of freedom of the press. His many petitions on the subject were an inspiration for Anders Chydenius, the priest from Ostrobothnia/*Österbotten*, who in *Den Nationale Winsten*/The National Gain presented, in Swedish, the same kind of free trade arguments that made Adam Smith famous 11 years later (Petri 2008, p. 258). Neither Nordencrantz nor Chydenius lived to see their ideas fully implemented in the new "revolutionary" Swedish constitution from 1809-1810. The loss of the eastern part of the Swedish landmass to the Russians (who transformed it into the Grand Duchy of Finland) and the subsequent coup d'état overthrowing king Gustavus Adolphus IV opened up for the new enlightenment inspired constitution. The copyright issues were addressed as items belonging to the law on freedom of press. It says:

"Every publication remains the property of the author or the lawful owner. Whomever prints or reprints the publication without the author's or the publisher's written permit will lose the edition or is fined its full value, the plaintiff's business" (my translation from Swedish)³(Petri 2008, p. 293)

This formulation gave a perpetual ownership! In this the Swedish law was internationally unique. Soon this was observed and debated. At last it was altered in a legislative revision of 1877. The duration of the copyright remained long: 50 years after the death of the artist (Petri 2000, p. 139).

1.8 Performance rights - The Berne Convention

In the copyright laws taken by the parliaments of Prussia (1837) and the UK (1842) were, for the first time, copyright restrictions put also on the performance of music. The duration of the post mortem rights were in the Prussian law 30 years for sheet music publishing and 10 years for public performances. The UK Copyright Act stated 7 years post mortem rights for performances and 42 years for publications. Sweden introduced a law on performing rights for both theatre and music in 1855 (Petri 2000, p. 137). Not least among the German speaking countries there was a wide variety of IPR legislations. The Habsburg Empire long promoted piracy policies to support its own publishers. But eventually the IPRs we still have today were internationally accepted at a conference in Berne in 1886. After a revision at a conference in Berlin in 1908 it was implemented by most Western countries. With the major exception of the US which as late as 1989, after pressure from Hollywood, adopted them as part of the TRIPs Agreement (Trade Related Aspects of Intellectual Property Rights) within the WTO regulations.

The minimum post mortem auctoris is in the Berne Convention 50 years whereas both the EU and the US have adopted an extension to a total of 70 years. The IPR legislation in Sweden, too, is more or less a direct copy of the Berne Convention with the EU extension on post mortem auctoris duration. Sweden became a full member of the The Berne Convention in 1919 after a major revision of the Swedish copyright regulations. The post mortem auctoris was, temporarily, reduced to 30 years. During the 20-ies music for public dance purposes was excluded. After the integration also of this kind of

³ "Hvarje skrift ware Författarens eller dess lagliga rätts innehafwares egendom. Hwilken som skrift trycker eller eftertrycker utan Författarens eller Förläggarens skrifteliga tillstånd, miste upplagan eller böte dess fulla värde, målsägandens ensak."

music in the Swedish copyright regulations in 1931 there was finally a full copyright coverage for all kinds of music in Sweden.

The Berne Convention called for the organisation of copyright licensing and revenue collection. The first such body, the French SACEM, was established in 1851. It took until 1923 to form a similar organisation in Sweden: STIM/The Swedish Performing Rights Society. It was founded by FST which was established a few years earlier.

List 1. Three stages of IPR evolution

<i>Protected good</i>	<i>IPR owner</i>	<i>Exclusive rights</i>	<i>Duration</i>
Statute of Anne 1710 for the Encouragement of Learning			
"Useful" books	Authors or "Purchaser"	print, reprint or import	14 years from publication
		sell, publish or expose to sale	right returned to author after first 14 y for another 14 y
Prussian Act 1837 for Protection of Property in Works of Scholarship and the Arts			
works of scholarship and art	author and those who derive their authority from the author	publication distribution reprinting	life plus <i>post mortem auctoris</i> 30 y for publications
books and yet unpublished manuscripts, lectures and sermons		public performances prior to publication of dramatic and musical works	10 y for public performance
musical compositions		adaption of musical compositions	
Berne Convention 1886 with Berlin revisions 1908 for the Protection of Literary and Artistic Works			
"every production in the literary, scientific and artistic domain"	author	original intellectual creation	life plus <i>post mortem Auctoris</i> 50 y
		(not "news of the day" or "miscellaneous information")	

2. ECONOMIC THEORIES AND INTELLECTUAL PROPERTY RIGHTS

2. Various goods

The normal item produced and marketed is a rivalrous and excludable one. What I buy no one else can acquire. When I possess it no one else can use it without my consent. The allocation of resources in the production and marketing such a "private good" is explored in detail by classical economic theory. A private good cannot be overexploited as there is a limited number of it and the items are possessed by individual property right owners. Until all who desire it possess it there will most likely be more investments in the production of it. With the equilibrium price mechanism putting a restraint on supply and demand quantities. The overexploitation of music is hard to envisage. The lack of investment in it is, however, a definite suboptimal possibility.

Paul Samuelson was the first economist to develop the theory of "public goods". In his classic 1954 paper *The Pure Theory of Public Expenditure* he defined a public good, or "a collective consumption good" as he initially called it, as follows:

“...[goods] which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtractions from any other individual's consumption of that good...” (Samuelson, p. 387)

A private good can only be enjoyed by one person (at a time) whereas a public good is not actually “consumed” but “utilised” by the individual and the use of one does not limit the use for others. Normally these public goods will be provided by the state through tax funding. Common goods are owned by no one in particular and can thus be captured and consumed or used by anybody. James Buchanan introduced the idea of club goods and the four boxes of the rival/non-rival and excludable/non-excludable matrix can thus be described:

	<u>Excludable</u>	<u>Non-excludable</u>
<u>Rivalrous</u>	PRIVATE GOODS CD:s, concert tickets	COMMON GOODS water, fish, Allemansrätten
<u>Non-rivalrous</u>	CLUB GOODS	PUBLIC GOODS

The free rider problem, extremely vital to the current internet piracy debate, occurs when a person does not refrain from the use of a good but is unwilling to contribute to the cost of its production. If all of us were free riders the good in question would not be produced.

The “tragedy of the commons” is not as obviously a part of copyright debate as music - at least not the sound of music - is not rivalrous. The tragedy occurs when the common goods are exploited to such a degree that there is a severe lack. In the case of the prosperous cod-fishing in the Atlantic outside Newfoundland it was even worse. The sea was left empty from fish.

The nation can be the provider of club goods! In this case its citizens are the members. But as Buchanan explained the limited membership “club” could be a more efficient alternative to government intervention.

2.2 The IPRs goods

The IPR legislative way of dealing with the free rider problem normally creates a club goods situation. The access for use of the copyrighted goods is only given to those who are members of a “club” or, in James Buchanan's words: “a consumption ownership-membership arrangement”. The membership is acquired through a license or a fee. (Buchanan, p. 1).

This is the case for most modern “information goods”. I, personally, find the concept difficult and sometimes misleading. The actual “information” part of the information goods is the set of binary codes that is stored in a file from which a device can inflate the information to letters that can be read, music that can be played through speakers, films that can be watched etcetera. As “information”, interpreted in the classical way as knowledge, by most is considered something that should be distributed free of charge (at least Ω -knowledge) a widespread argument among free riding pirates on the internet is that also what comes out of the binary information should be free of charge. As it is

“information”. Here the distinctions between knowledge, the fruits of knowledge, the individual and genuine form knowledge takes in a piece of art (Fichte) and these forms as the result of the artist's personality (Hegel) have to be reassessed. Information is not knowledge any longer. Information now is like the printed letters in a book. Not the knowledge that is conveyed through the letters.

On some more private goods, like e.g. blank CDs, fees to licensing agencies are put which makes it legal in most countries to copy legally protected material onto them for private use.⁴

According to the present interpretation of the IPRs laws everything is protected regardless of if it is still in the market-place or not. Which makes a Pirate Bay downloader of rare music and rare older recordings not obtainable in record stores equally criminal as the downloader of the latest Madonna album. In some early IPRs legislations the rights were only applicable if the book was sold in first hand markets.

2.3 Neoclassical economic theory pertaining to IPRs

After a detailed description of the characteristics of public vs private goods and the connections to neoclassical ideas regarding e.g. the price mechanisms Jones presents the situation where a non-rivalrous good, that has a lot of innovation and development costs for its very first copy, has a more or less zero marginal cost of production already for the second copy (Jones, p. 83). The neoclassical idea of price = marginal production cost cannot be applied here as there will be no return on investments and sunk costs. These costs have to be covered from sales, as well. This dilemma is solved by IPRs! (Scotchmer, p. 31). What is good for the inventor and the producer is good also for society as the innovation in question would not attract investors if there was no chance for protection from competitors applying a marginal production cost pricing. This, the incentive case, is also the main argument among information-goods producers in the present internet piracy debate.

Adam Smith's arguments must be considered in their economic contemporary context. What Smith so violently, always eloquently, opposed was the monopolies which were created by the mercantilist system of privileges:

“The interest of the dealers, however, in any particular branch of trade or manufactures, is always in some respects different from, and even opposite to, that of the public. To widen the market and to narrow the competition, is always the interest of the dealers. To widen the market may frequently be agreeable enough to the interest of the public; but to narrow the competition must always be against it, and can serve only to enable the dealers, by raising their profits above what they naturally would be, to levy, for their own benefit, an absurd tax upon the rest of their fellow-citizens.” (Smith, p. 157)

Thomas Babington Macaulay, Scotsman like Adam Smith and poet, historian and whig politician, said in an often cited House of Commons speech (Macaulay): *“It is good that authors should be remunerated; and the least exceptionable way of remunerating them is by a monopoly. Yet monopoly is an evil. For the sake of the good we must submit to*

⁴ According to the oral information provided by a French researcher (I have forgotten his name) at the Association for Cultural Economics International conference in Vienna in 2006 the issuing of copying protection on the original CDs/DVDs is therefore banned in France as it makes it impossible for the payer of the fee to make use of the copyright that she has bought.

the evil; but the evil ought not to last a day longer than is necessary for the purpose of securing the good." (Macaulay objected to the post mortem auctoris remuneration ideas)

Josef Schumpeter, when discussing patents rather than copyrights though, claimed that monopolies could not be very evil as the process of creative destruction will result in a competing oligopoly or even a small firm eventually producing a new, better product making the monopoly of the first manufacturer practically worthless. (Aghion and Howitt - who refer to a famous 1942 Schumpeter book: *Capitalism, Socialism and Democracy*).

Scotchmer discusses the consequent monopoly situation for the patent holder. Which in effect is the same as for the copyright owner. As monopolies always create dead-weight losses the situation is suboptimal (Scotchmer, p. 36). There are primarily two alternative ways to avoid this: 1. the good being provided by the state free of charge (R&D costs covered by tax-payers, and R&D performed by universities or governmental bodies, music by composers on public salaries⁵), and/or 2. competitions and awards. The virtues of the first case are contradicted by the fact that the patent/ copyright will instead spread the development costs only on the actual consumers/users of the good and leave non-consumers financially unattached (Scotchmer, p. 38).

According to STIM chairman Gunnar Petri the performance license collecting societies, STIM and its international partners, declare themselves to be founded on the idea of "natural monopoly". This kind of monopoly has the virtue of creating the lowest price for the customer through scale effects. Hence free market competition will eventually produce this sole provider of the service. The decision from the EU bureaucracy issued last summer demanding competition of several performance license collecting societies in all national markets is therefore, STIM and its partners argue, pointless. It is not in the interest of neither the music industry nor the single customers.

Scotchmer gives a very convincing description of the pros and cons of innovation prizes, awards and contests. She distinguishes between ex ante prizes targeted towards desired outcomes and ex post awards ("blue-sky prizes") given to innovators based on actual outcomes of their efforts. The same kind of remuneration for authors, composers, film directors etcetera are provided through public and private awards, grants, scholarships and pension schemes. (Scotchmer, ch. 2.3 and 2.5).

2.4 Neoinstitutional Economics and IPRs

The main criticism that neoclassical economists face is that of their theories being relevant only for static states and the difficulties they have when trying to incorporate time in them. One of the foremost opponents has been Douglass North who have built on ideas from e.g. Veblen and Galbraith and incorporated Coase's transaction cost concept. The Jones claim that the neoinstitutionalistic idea "*the development of IPRs..... is responsible for modern economic growth*" seems, however, a bit mono-dimensional (Jones, p. 89). The neoinstitutionalists rather regard IPRs as an "institution" with the limited object to eradicate or, at least, decrease transaction costs and put goods on the market which otherwise would not have been there (North 1990). The IPRs are by neoinstitutionalists not motivated only by their neoclassical economic virtues but also by

⁵ Regarding the composers on public salaries the fact that we now live in a globalised world makes this solution more difficult. It will work only in closed national societies. Or else there is a free riding possibility for listeners from other countries. This, on the other hand, might be what nationalistic cultural policies aim at.

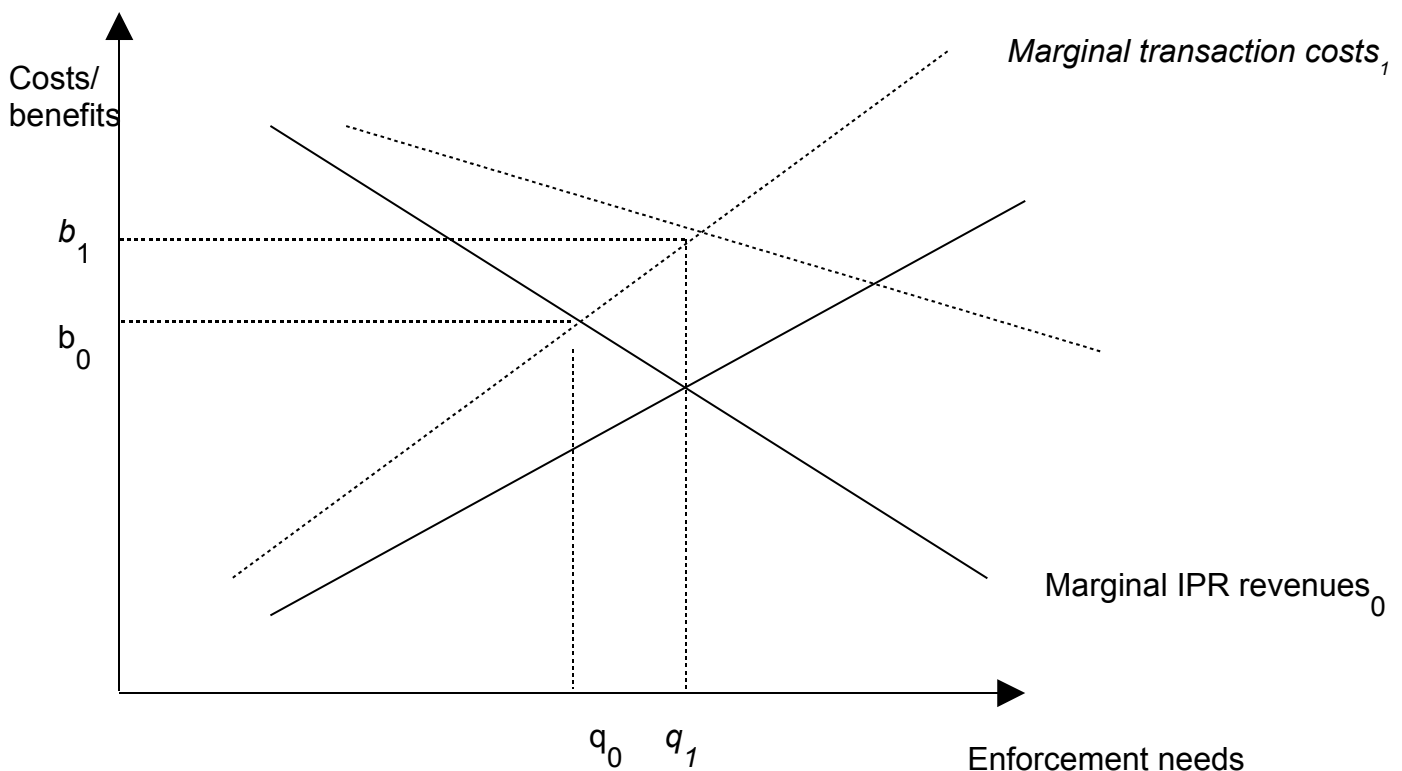
their vital position in a chain of institutions ranging from implicit cultural norms via e.g. democracy, jurisdiction, agents of enforcement, banking and education to the individual verbal agreement or explicit contract. This whole set of institutions promotes innovation and is the decisive force behind the economic growth of the last few centuries.

Ronald Coase prefers to regard inputs as bundles of rights rather than as physical objects. Eggertsson presents the example where the right to use the airspace by an airline results in an opportunity cost in the form of noise incurred on residents on the ground (Eggertsson, p. 103-104). More so close to airports. If there were no transaction costs - i.e. no costs for negotiation on issues of property rights and the willingness-to-pay for the right to fly and the opposing right for silence - the market would take care of the problem. But as transaction costs occur most often there is a need for institutions to establish the trade-off balances.

The technology developments call for changes in institutions to keep transaction costs in a point of equilibrium where the marginal benefits are as high as the costs for the transaction. If benefits were substantially higher than transaction costs it would, of course, be favoured by producers. But that set of IPR institutions would not be in the interest of consumers and users.

In Graph 1 the b_1q_1 point is the new equilibrium after e.g. a change in technology creating a need for new enforcement measures to be taken and the b_0q_0 point is forced out of relevance.

Graph 1 **Equilibrium level of IPR formation**



In the music case such changes of IPRs have occurred after substantial technology changes as e.g.

Gutenberg printing press ≈1450

Litography ≈1800

Phonograph ≈1880, gramophone

radio ≈1895

TV ≈1935

Tape recorder ≈1945

PC ≈1980

2.5 The Bundle of Rights

So the place we are at currently in the history of IPRs is one where copyright ownership consists of not only one single but of a bundle of rights. The copyright provides the holder of them with the exclusive rights to (Frith and Marshall, p. 7-10):

1. copy the work
2. make adaptations of the work (or prepare derivative works)
3. issue copies of the work to the public
4. perform the work in public
5. broadcast or send a cable transmission of the work

In Europe the copyright also includes:

6. the paternity right (*droit à la paternité*) - the right to be identified as the author of a work. (There is also a right not to have a work falsely attributed to oneself)
7. the right of integrity (*droit à l'intégrité*) - the right to object to derogatory treatment of the work. This right is post mortem perpetual and is in the Swedish case for music upheld by the Royal Swedish Music Academy.

In many continental European countries authors and composers have:

8. the right to determine when and whether a work shall be published (*droit de divulgation*) and
9. a withdrawal right for works already published (*droit de retrait*).

The Swedish composers of art music have all these rights. But they normally transfer the rights which include issues of remuneration to sheet music publishers, record companies and performing rights societies which operate on the behalf of the composers.

The commission fee that occurs when a composer is contracted and paid to write a piece for a particular event, company, ensemble or artist is below considered as a copyright revenue. The rationale for this is the explicit claim that the FST maintains. Namely, that what is sold through the commission contract is the right to a first performance/ première.

In the introduction I presented three main questions:

1. Which is the impact of IPR revenues for Swedish composers of art music today?

3. *Is there an IPR revenue critical mass that enables a composer to leave other sources of income?*

My interest is focused on the financial impact. What is studied in Part II are the effects of rights no 4 and 5.

2. *Does the highly competitive music industry and the IPRs attributed to it benefit only a few?*

I suspect that the fact that music mostly - not in all its aspects and physical forms though - is non-rivalrous will, in combination with the bundle of rights, result in an income distribution which is skewed in favour of the most successful and leaving the majority less well off.

PART II THE CASE: SWEDISH COMPOSERS OF ART MUSIC

3. HOW DID SWEDISH COMPOSERS OF YESTERDAY SURVIVE?

Of all the Swedish composers who were active before the introduction of modern IPRs regarding performance and commission fees in 1919 probably no one was a full time composer. Like today most had professional assignments within music. Many were 1. musicians, 2. music instructors, 3. conductors and 4. critics. But there were also some more unlikely combinations with music like officer, orthopedist, glasswork manager, telegraph operator and prince.

List 2 Income bases apart from composition for Swedish composers active mostly before 1919

Composer	Income base (apart from composition)				
	Musician	Music instructor	Conductor	Critic	Other
Johan Helmich Roman (1694-1758)			3		
Joseph Martin Kraus (1756-1792)			3		
Johan Wikmanson (1753- 1800)	1	2			
J.C.F. Haeffner (1759-1833)			3		
Bernhard Crusell (1775-1838)	1				translator
Frans Berwald (1786-1868)					orthopedist, glassworks manager
Adolf Fredrik Lindblad (1801-1878)		2			
Oscar Byström (1821-1909)			3		officer
Albert Rubenson (1826-1901)		2	3		
Ivar Hallström (1826-1901)		2			
Gustaf Bernadotte (1827-1852)					prince
Ludvig Norman (1831-1885)		2	3		
August Söderman (1832-1876)			3		
Elfrida Andrée (1841-1929)		2			telegraph operator
Helena Munktell (1852-1919)					not known
Valborg Aulin (1860-1928)	1	2			
Andreas Hallén (1846-1925)		2	3	4	
Jacob Adolf Hägg (1850-1928)	1				
Emils Sjögren (1853-1918)	1		3		
Wilhelm Peterson-Berger (1867-1942)				4	
Wilhelm Stenhammar (1871-1927)	1		3		

Most of these composers were not born in Stockholm but a vast majority spent their professional years there. Those who chose to live elsewhere lost in fame and also today Viking Dahl (Varberg), Knut Håkansson (Borås), Josef Jonsson (Norrköping), John Fernström (Lund) and Gustaf Paulson (Helsingborg) are known only in their home-towns. And hardly that in most cases. If there presently is a difference in income depending on where composers live will be shown below.

The list above does not prove that there were no full-time composers in historic times. But it is not likely. If they desired full-time commitment or not is not known. Probably the idea was more or less unthinkable in Sweden. The notion of the full-time professional composer is probably rather recent. Elsewhere in Europe there where, however, from Beethoven and onwards a number of well-known composers who could provide for themselves more or less solely through their work as composers. Most composers listed combined composition with active work as musician or conductor. This is nowadays a rare practice but educational work is still common.

According to Gunnar Petri the Swedish publishers of printed materials in the 19th century received roughly half of their revenues from music scores. This business is now of marginal importance but it was very lucrative before the age of recorded music. When every family, or at least someone in it, should be able to entertain their guests with their own playing. The main IPR revenue for composers before the performance rights were introduced in the early 19th century thus was attributed to the licensing of printing rights to publishers.

4. QUESTIONNAIRE

There is a very limited amount of systematic data on Swedish composer's incomes available. These data could most likely be collected from the tax authorities. But that requires 1. an extended time budget and 2. personal identification information. The scope of this paper had to be more limited because of the assigned dead-line. In collaboration with the FST a web-based questionnaire was constructed in order to collect some rudimentary quantitative and qualitative information. As the identities of the respondents were not interesting the questionnaire did not include personal identification information. 85 of the appr 280 members of FST filled in the intranet form. A greater interest was anticipated. On the other hand it seems that the received forms show a wide range of incomes including both financially successful composers and composers who cannot anticipate high IPR revenues because of limited outputs. Also regarding other variables like age and domicile there is a wide variety of replies which seem to be representative.

The overall questions directing the questionnaire were:

- is there a difference in income between composers depending on
 - domicile
 - age, duration of FST membership, year of finished education
 - quantity and direction of musical output
- what were the
 - total incomes 2007
 - revenues from commissions 2007
 - revenues from performance licensing 2007

- general trends from 2002 and 1997 respectively - more or less?
- Do composers generally wish to compose full-time?
- Is there a crucial income from IPR revenues that makes the composer leave other jobs

We also included open-ended, free-text questions in order to capture qualitative reflections from the composers regarding

- the professional role of the composer in our present society
- the job satisfaction

The full questionnaire (in Swedish) is in Appendix 1. The full set of responses can be obtained from the author or FST.

There were a few strange responses that had to be dealt with in various ways. A few declared to have no income from commissions and/or performance rights revenues from STIM in 2007 but still claimed that they had even less in 2002 and/or 1997. Only one respondent filled in the form in such a manner that the observations could not be used.

4.1 Characteristics of respondents

Age	Stockholm			Göteborg and Malmö			Rest of Sweden			Abroad			All		
	No of resp	total no	resp/tot %	No of resp	total no	resp/tot %	No of resp	total no	resp/tot %	No of resp	total no	resp/tot %	No of resp	total no	resp/tot %
< 30	2	2	100	0	2	0	0	0	0	0	0	0	2	4	50
30-39	8	14	57	2	9	22	2	10	20	1	5	20	13	38	34
40-49	15	41	37	6	16	38	6	15	40	2	4	50	29	76	38
50-59	9	43	21	3	10	30	10	18	56	1	4	25	23	75	31
60-69	4	24	17	0	6	0	7	11	64	1	1	100	12	42	29
-70	2	22	9	0	2	0	3	9	33	0	0	0	5	33	15
All	40	146	27	11	45	24	28	63	44	5	14	36	84	268	31

The response rate for all ages below 70 are more or less close to the rate for the full sample. Response rates for Stockholm and Göteborg/Malmö are almost the same whereas the rate for the rest of Sweden is substantially higher.

11% of the FST members are females. The share in the sample is not known.

4.2 The self-expressed view on the role in society of the composer

Some replies on the free-text question on the role in society for composers of art music were long and rich with insights. Others were short and one-lineish. Here are some quotes on the role of the composer in society. I have tried to sort them under four labels although many of them perhaps could be listed under more than one. The way I have connected the ideas to Locke, Bentham and Hegel can be disputed, I suspect. Composers themselves would probably quote other, more recent, thinkers regarding the philosophic foundations of their role.

The moral view

I suspect that the “moral view” will influence composers positively in that they will stick to their trade although remuneration might be low. It will be a source of high life appreciation.

The artistic view

The number of replies in this category was small and it is difficult to suggest any assumptions regarding the influence from an artistic role description preference on any other variable.

The instrumental view

My assumption here is that the composer who argues for his/her profession in an instrumental way has a clearer view on where to find funding. He/she can identify his/her position in professional life from the outside in a positive manner.

The masochistic view

The obvious guess is that composers who express themselves in a masochistic way are less likely to have high incomes. At least from composing.

List 3. Quotations regarding the role in society

	The moral view	The artistic view	The instrumental view	The masochistic view
Locke	<p>”Giving people insight into other values than the materialistic and short-termed”</p> <p>”When one is searching for truth in one’s art one becomes extremely careful in relation to what is considered true or false in one’s surroundings.”</p>			<p><i>(anti-Locke!)</i></p> <p>”Artists have a marginalised role in society in relation to their education and ambitions. We influence nobody and change nothing”</p>
Bentham	<p>”Contribute with insights regarding the necessity of the meaningless and the purposeless.”</p>	<p>”Most of the music is not yet composed - hence the composer is needed!”</p> <p>”I do not have any other task than to present my music for musicians and audiences”</p> <p>”It is important with a music of deeper artistic value where where....</p>	<p>”We personify the development and safeguarding of art music”</p> <p>”Artistic activity is generally immensely important as a creator of values and as a pioneering force in society”</p> <p>”The composer has an important role in providing Sweden with a cultural identity”</p> <p>”During financial crises like the current we need visions, hope and relief”</p> <p>”The composing of art music resembles non-commercial research”</p> <p>”It is important to work towards inspiring others to acquire more liberty and to examine and experiment with their expressions, their knowledge and skills and with their way of living”</p>	<p><i>(anti-Bentham!)</i></p> <p>”Currently pointless”</p> <p>”composing is a luxurious narcissistic endeavour rather unnecessary in a wider societal perspective.”</p>
Hegel	<p>”Creative people express themselves through art and contribute to the spiritual survival of society”</p> <p>”A kind of dazzling, existential oasis - a financial catastrophe and socially alienating”</p> <p>”Artists are the prophets necessary to the new society. In an increasingly consumistic and economical spiritual climate the composer has a central task: to open a slot into a numinous reality, to provide catharsis.”</p>	<p>numerous personalities can express themselves”</p>		<p>”An extremely self-centred occupation”</p> <p>”We are a kind of pauper aristocracy - everybody wants our jobs but no one wants our salaries”</p> <p><i>(anti-Hegel!)</i></p> <p>”The composer has an exaggerated view on his/her importance”</p>

The number of quotes above is small so it is not possible to assess differences in IPR revenues between the different views with any significance. But nevertheless there seems to be some sharp differences with those labelled as having a moral view on average having an IPR income of 181 000 SEK while those labelled as having artistic views scoring only 11 500 SEK! In between we find the instrumental view, 34 000 SEK, and the masochistic view, 44 000 SEK. The full sub-sample had the same average IPR revenues as the full dataset: 65 000 SEK. Perhaps it is financially rewarding to have a broader perspective on the role of the composer than the narrowest - the one involving only music itself. Even if that broader outlook only renders cynicism as in the masochist case.

Taking the philosopher view on the average IPR revenues we instead find a much higher income for Lockeanes, 340 000 SEK, than for Hegelians, 171 000 SEK, and Benthamians, 59 000 SEK. (Those cited as “anti” were deleted from these calculations).

These findings are not substantial. But perhaps they give some food for thought. Maybe issues like these could be further investigated.

4.3 Domicile influence

Composers in Sweden outside of the three biggest cities have higher mean incomes than the others but their mean IPR revenues are much lower! They depend more on income from other sources than IPRs. The number of respondents from Göteborg and Malmö is not very big - but probably a rather representative share. But obviously they (those who responded at least) are decisively more successful when it comes to being commissioned and earning from STIM! The capital city attracts most of those who consider themselves belonging to the nation's artistic elite. But it seems that this choice of domicile not necessarily guarantees a place in the lime-light (at least if measured in incomes).

Table 1 Mean incomes and incomes from IPR revenues 2007 for domicile cohorts

<u>Domicile</u>	<u>no of respondents</u>	<u>Mean total income</u>	<u>Mean rev from comm</u>	<u>Mean rev from STIM</u>
Stockholm	40	231580	50257	20138
Göteborg and Malmö	11	229550	78027	32646
Rest of Sweden	28	280710	27619	12941
Other countries	5	222000	29001	25400
All	84	247940	45349	19655

The overall statistics show that, on average, the FST members get 26% of their incomes from IPRs. The mean IPR income 2007 was 65 000 SEK. The standard deviation is extremely big: 99 200 SEK which indicates that there is a substantial spread with many receiving very little and others getting a big share of the IPR revenues.

Table 2 Mean output of works with duration of more than 20 min

<u>Domicile</u>	<u>orch works</u>	<u>operas</u>	<u>chamber mus</u>	<u>EAM</u>
Stockholm	1,75	1,58	5,45	1,65
Göteborg o Malmö	1,45	2,45	2,30	0,82
Rest of Sweden	1,93	0,61	5,07	2,04
Other countries	1,20	0,80	5,20	0,80
All	1,74	1,38	4,93	1,60

The higher number for operas by composers from Göteborg and Malmö probably explains the higher IPR revenues in table 1 above! The royalties for operas are substantially higher than for instrumental music or EAM/Electroacoustical music. The number of commissions per annum for operas from Swedish opera houses is very small! It is not clear from the questionnaire if the opera outputs have been commissioned or if they were composed without contracts. It is also not clear if they have actually been performed! Some operas are most certainly composed with no definite production decided upon ("blue-sky" operas). But as operas demand a heavy workload it is probably not the normal case. On the other hand there are also operas being commissioned by opera houses but never actually performed!

4.4 Full-time vs. part-time composing

23% of the respondents were full-time composers in 2007. Thus 77% were not! Of these 60% declared a wish to become full-time composers. It is apparent that those who declare this have lower total incomes and lower IPR revenues than those who are part-time composers without this desire.

Table 3 Mean total income and IPR revenues depending on declared degree of time devoted to composing

	<u>mean total inc</u>	<u>mean rev comm</u>	<u>mean rev STIM</u>	<u>% IPR rev</u>	<u>% of comp</u>
Full-time	225740	91806	38537	58	23
undesired part-time	228380	25134	14749	17	40
Part-time	278890	39185	13204	19	37

Those who declared themselves to be full-time composers only received 58% of their total incomes from composing! This could perhaps be a matter of consistency concern. But as also people who declare themselves to be full-time professionals in other areas of work may have some or lots of extra-duty incomes this issue is left aside here. The percentage, after all, is almost three times higher than that of the part-time groups.

Part-time composers without a desire to compose full-time have higher total incomes than full-time composers. The latter, not surprisingly, earn more than the others from IPR revenues. The decision concerning full- or part-time composing is obviously a highly personal choice which is influenced by e.g. personal interests, the family situation and the desired living standard. The three respondents who declared a total income 2007 of 500 000 SEK or more belonged one each to each of the categories. Thus one of them wants to become a full-time composer but regard the present IPR revenue of 500 000 SEK too small. There are other full-time composers in the dataset that declare total incomes of appr. 100 000 SEK. So the choice is definitely very personal.

But as the mean IPR revenues are much higher for full-time composers it is reasonable to assume that there might be a point where IPR revenues are big enough for composers to leave other assignments. I will search for this in two ways: 1. median and first quartile incomes and 2. regression analysis.

Table 4 Mean, median, minimum and maximum IPR revenue depending on declared degree of time devoted to composing

	Full-time	Undesired part-time	Part-time	All
Number of composers	19	33	30	82
Mean	130340	39883	52389	65004
Median	60000	24000	29276	40000
Minimum	0	0	0	0
Maximum	550400	180000	351500	550400
Standard deviation	164500	42183	74934	99198

The median income is that which divides the observations in two groups with higher and lower values respectively. For full-time respondents this 50/50 dividing point is at 60 000 SEK. The lower quadriple where only 25% has lower incomes is at 8 500 SEK (which seems irrelevant).

The regression analysis does not quite meet the requirements for the OLS (ordinary least square) method regarding normal distribution and homoskedasticity of residuals - see Appendix 2:1 (most of the OLS estimations below suffer from some such mismatches in relation to the OLS prerequisites - this will only be commented on in the appendices). But the regression results as such are fairly good with a coefficient for the full-time dummy variable that meets the 0.1% level of significance!

The IPR revenues 2007 relate to the full-time factor according to the following function:

$$\text{IPR revenue 2007} = 45\,383 \text{ SEK for all} + 84\,504 \text{ SEK if you are full-time composer}$$

This should not be interpreted as a causality pattern but strictly as a description of the relation between the IPR revenues of full-time composers in comparison to part-time composers. Neither part-time with nor without the wish to become full-time composers showed results with satisfactory levels of significance. The unsatisfactory coefficient was negative for part-time composers with that wish.

I suspect that the alternative to enter into full-time composing is, more typically than not, considered when the IPR revenue reaches an amount between the constant 45 000 SEK and the median of 60 000 SEK. But this is based on a weak determination degree of only 12%.

A general assumption would be that the possibility to work full-time will generate both 1. better and/or 2. more music. Good music does not necessarily pay off financially. But if there is only a small difference in output quantities between full-time and part-time composers it can be assumed that the quality of the work by full-time composers is assessed higher by those who buy or use the music. According to the results in appendix 2:2 full-time composers actually compose a little less output than do part-time composers. But this output pays off better as we saw in appendix 2:1.

If there in an OLS estimation with the music output as dependent variable is a higher coefficient for (dummy) variable full-time than for (dummy) variable "part-time with a declared wish to become full-time" one can at least suspect that full-time work provides

the possibility to increase the output quantity. The result in appendix 2:3 shows that there definitely is a higher output for full-time composers!

4.5 Main regression model for explanation of total income 2007

The most important factor explaining total income of 2007 is prior total incomes. But as variables total2002 and total1997 can suffer from collinearity problems (which is bad for a regression model) other factors will be considered. The Göteborg/Malmö dummy variable was first tested but was found to lack significance. A suitable model is this:

<u>Variable</u>	<u>Anticipated influence</u>	<u>Comment</u>
age	+	age, as a proxy for experience, is normally vital for income in all professions
opera >20 min	+	it seems from our previous findings that operas with long durations will increase the income!
chamber<20 min	-	chamber music seems to have little influence on the income, there is a small output for Göteborg/Malmö which shows the highest incomes!
Part-time	+	this variable can be interpreted as additional income more than a lack of opportunities for choice of full-time

Full model output in Appendix 3. Regression result in plain words:

total income 2007 will:

increase with: 19 100 SEK per additional opera
 50 000 SEK if the composer works part-time (has additional incomes)
 4 700 SEK per additional year of age (experience)

decrease with 1 100 SEK per chamber music piece of <20 min

These results are all satisfactory at the 10% level of significance. The determination degree is 82% which must be considered high.

4.6 Main regression model for explanation of IPR revenues 2007

The most important factor explaining IPR revenues 2007 is prior IPR revenues. But as IPR2002 and IPR1997 can suffer from collinearity problems other factors will be considered. The Göteborg/Malmö dummy variable was first tested but was found to lack significance. A suitable model is this:

<u>Variable</u>	<u>Anticipated influence</u>	<u>Comment</u>
age	+	age, as a proxy for experience, is normally vital for income in all professions
age ²	-	slight decrease for "third age"

opera >20 min	+	it seems from our previous findings that operas with long durations will increase the IPR revenue!
chamber <20 min	-	chamber music seems to have little influence on the IPR revenues, there is a small output for Göteborg/Malmö which shows the highest revenues!
full-time	+	this can be suspected based on the findings above

The inclusion of (dummy) variable full-time is not due to its possible causality effect. Rather, by the inclusion of it in the model the effect of full-time is controlled for.

Full model output in Appendix 4. Regression result in plain words:

IPR revenues 2007 will:

increase with: 20 400 SEK per additional opera
 44 400 SEK if the composer works full-time
 2 400 SEK per additional year of age (experience)

decrease with 600 SEK per chamber music piece of > 20 min
 slightly for composers in their "third age"

These results are all satisfactory at the 5% level of significance. The determination degree is 53% which must be considered sufficient.

4.7 The winner takes it all - IPR revenue distribution

It is a well-known fact that music is an extremely competitive business. This is certainly shown in this study as 10% of the FST members collect 47% of the 2007 revenues from commissions and 10% of them receive 35% of the 2007 STIM revenues.

According to the German music copyright society GEMA's 1996 yearbook 5% of its members received 60% of the total distribution. But that is for both composers of art music and, the vast majority I guess, composers of commercial music. Kretschmer and Kawohl claim to *"have calculated that in both the UK and Germany between 500 and 1500 composers can live substantially off copyright royalties"* (Frith & Marshall, p. 44). If the same rate is applicable for Sweden there will be 30 - 90 composers of any kind of music who are able to support themselves from IPR revenues.

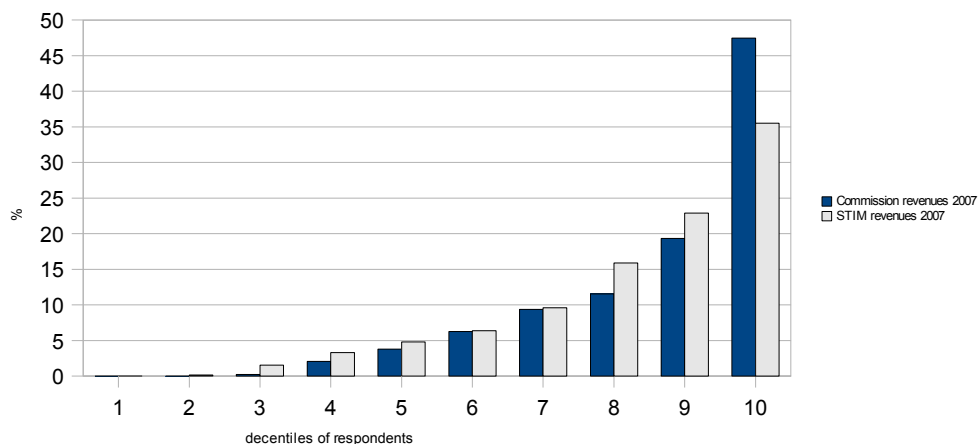
If music was not a non-rivalrous public/club good there would be a more evenly spread IPR income. If every single piece of music would evaporate and be fully consumed after, let's say, 100 performances there might be more attention targeted on now unknown pieces. Or, alternatively, music would generally play a much more minor role in our lives. And the great cultural heritage would not be created.

Also for many of the full-time composers the title of this paper seems applicable. It is hardly for the money involved that they toil with their creative work. Many of them claim extra income sources. The main such sources for both full- and part-time composers are musicianship and/or teaching within music (20% for each). Other sources of income mentioned are research assignments, music administration, producer, critic, bus driving, elderly care, cultural politics, juror, pensions and unemployment support.

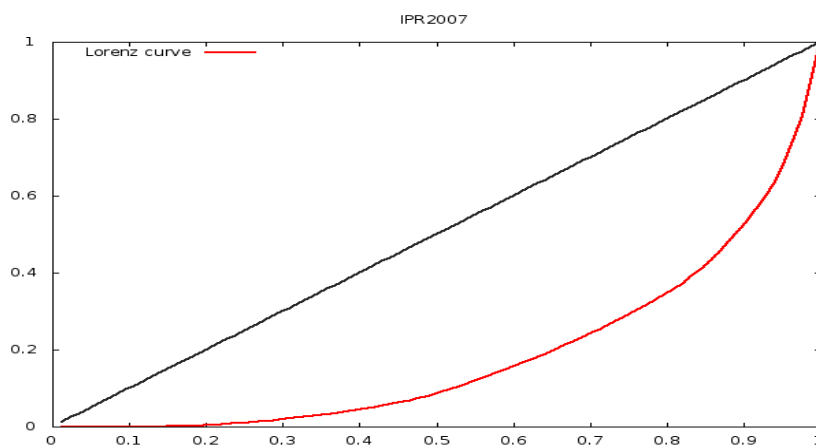
If the amount of income from other sources than composing is high it will most likely make it less possible or desirable even for a competent and successful composer to leave them in order to compose more. In the economist's lingo this is referred to as an "opportunity cost". Mostly they are in the private sphere. We leave it to the individual to decide between alternative life choices. But on the other hand: if society (i.e. those who are not composers) regard it as beneficial if composers actually compose because nice pieces of non-commercial music are merit goods high opportunity costs must be considered as problems.

Graph 2 shows the percentage shares of IPR revenues 2007 with the respondents divided into 10 equally big "decentiles". A common way to show the same is by calculating the "gini coefficient" which is the size of the area between the straight line and the "Lorenz curve" in graph 3. In this case the IPR2007 gini coefficient is 0,63. Which must be considered high. The gini coefficient for the total income distribution in the Scandinavian countries in 1992 was 0,37. That of Colombia in 1992 was 0,53⁶. No country, in the World Bank dataset, could show the same high gini coefficient as IPR 2007 for the FST respondents. As mentioned above, this is caused by music being a non-rivalrous good.

Graph 2 Distribution of IPR revenues 2007



Graph 3. Lorenz curve IPR2007



⁶ calculations using F. Bourguignon and C. Morrisson, data sources for "Inequality among world citizens: 1820- 1992", *American Economic Review*, Vol. 92, No. 4. (Sep., 2002), pp. 727-44 at <http://www.delta.ens.fr/XIX/>

4.8 Current incomes compared to past (2002 and 1997)

In the questionnaire the respondent was only asked to try to assess roughly if the income 2002 in relation to 2007 was much lower (-2), lower (-1), same (0), higher (1) or much higher (2). The same assessment was made regarding the 1997 income in relation to that of 2002. Thus individual opinions and not hard facts were collected. The actual numbers were simply not possible to obtain with identities undisclosed and within my time-limit.

An a priori *assumption 1* would be that most will experience a slightly better situation at each step in time. This means that a young, inexperienced person will earn less than a more experienced. But the normal case, *assumption 2*, is that income will start to drop slightly a decade or so before the formal retirement⁷. The individual finds new things in life that are more interesting than to struggle for more money. Or the demand for his or her labour is decreasing. In the composer case there might be a lesser decrease, *assumption 3*, caused by favourable copyright laws providing relatively longer revenue durations on earlier professional outputs than is the case for most other professions which do not benefit from IPRs.

The mean share in 2007 of IPRs for total income was 26%. The average response on the question regarding the change of total income between 2002 and 2007 was -0.46 meaning that the total income in 2002 was "somewhat lower". Whereas the mean value for the IPR revenue change was only -0.21. This is an indication that although total incomes have risen the share of IPR revenues has decreased. The change between 2002 and 1997 shows a contrary result! The mean change in total incomes was -0.68 whereas IPR revenues response on average was -0.74. This means that most FST members have observed a negative trend regarding the importance of IPR revenues during the last five years while during the prior five year period IPR revenues rose more or less at the same rate as total incomes.

In graphs 4 and 5 the assessments for 2002 for total incomes and IPR revenues have been changed to mean

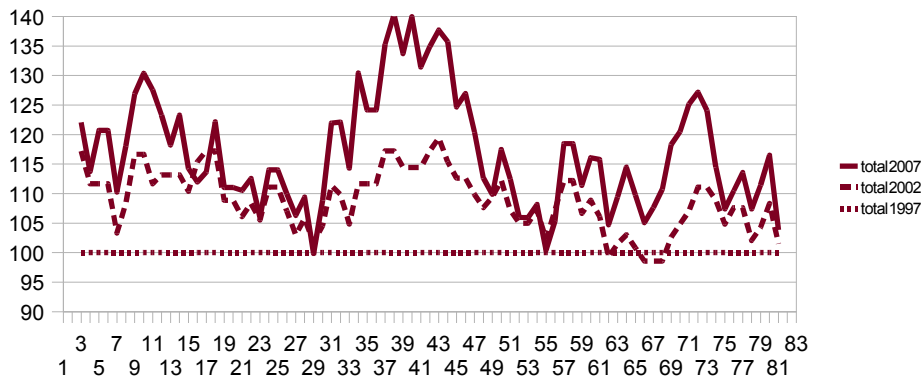
<i>much lower</i>	= -20%	<i>same</i>	= 0	<i>higher</i>	= +10%
<i>lower</i>	= -10%			<i>much higher</i>	= +20%

of the 2007 total income and IPR revenue respectively. The 1997 total income and IPR revenue were related to the thus calculated 2002 total income and IPR revenues.

This is, of course, extremely crude. We do not know how the respondents treated the concepts of "much lower, lower, etcetera". What for one was "much lower" for another might have been only "lower". On the other hand "much lower" might have been much lower than 20%. At least it will give a possibility to compare graphically.

⁷ This is normally shown in OLS regression analysis through the use of both the natural age variable and the squared age variable to capture possible non-linearity. If assumption 2 is valid the line in our case should not be linear but show some decline or at least diminishing growth at higher ages. There should be a positive coefficient for age and a slightly negative for squared age Which is the case in this study as well. Composers are "normal" people.

Graph 4 Development of total incomes 2007 and 2002 related to 1997
(five observations moving averages, sorted by total1997)



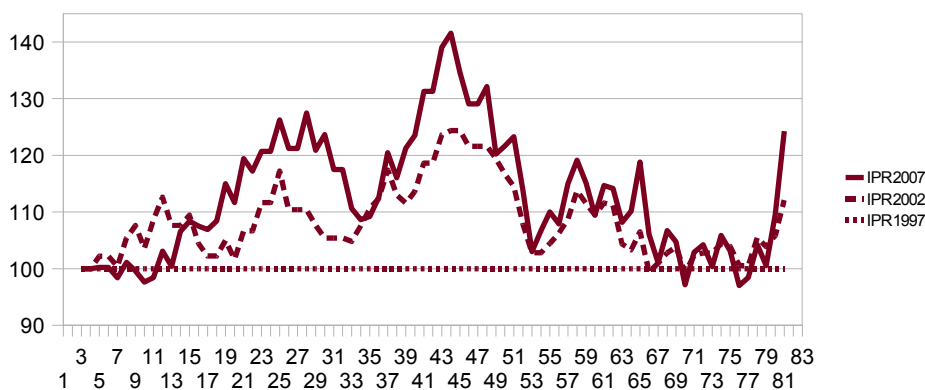
This graph shall be interpreted as follows:

- the X-scale is based on total income 1997 ranging from lowest income observation to the left to highest income observation to the right
- the median income is that of observation number 42
- total 2007 and total 2002 are related to total 1997 as percentages

Thus the graph shows that there is a markedly bigger raise in income for those who had a total income around the median in 1997.

The overall pattern seems to be in accordance with assumption 1. There are more respondents claiming higher total incomes 2007 than 2002. The same goes for 2002 in relation to 1997.

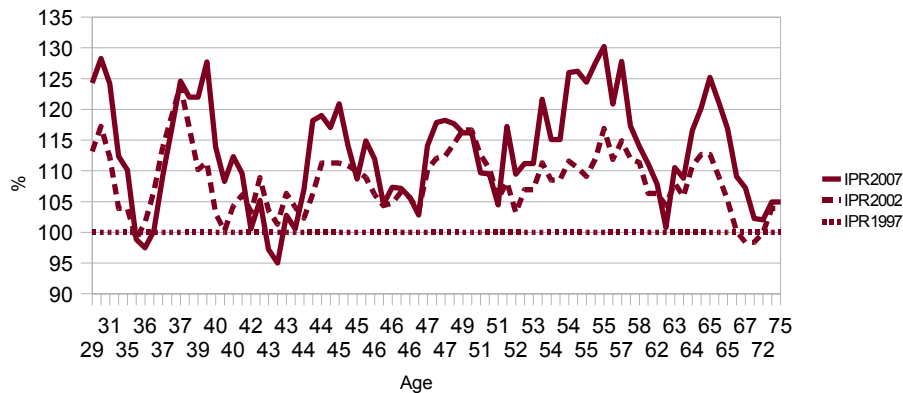
Graph 5 Development of total IPR revenues 2007 and 2002 related to 1997
(five observations moving averages, sorted by IPR1997)



Graph 5 is read in the same way as graph 4. It shows that there is a markedly bigger raise in IPR revenues for those who had an IPR revenue around the median in 1997.

If assumption 2 is relevant there should be more respondents of younger ages having -1 or -2 responses relative to respondents of more than age appr 55.

Graph 6 Development of total IPR revenues 2007 and 2002 related to 1997, age dependent
(five observations moving averages, sorted by age 2007)



Graph 6 is read:

- the X-scale is age ranging from lowest to the left and highest to the right
- the median age is 47
- IPR2007 and IPR2002 are related to IPR1997 as percentages

The ups and downs of the lines seem haphazard. Assumption 2, more positive differences at lower, presumably active ages, must in this case, based on the available data, be rejected! Which in turn might make it plausible to accept assumption 3 that, due to current lengths of IPR durations, the decline in income for elderly composers is less than for elderly in other professions. N.B. Graph 6 only shows IPR revenues and not supporting public security pensions which apply to composers in the same way as to all other Swedish citizens.

5. CONCLUSIONS

The questions formulated in the introduction were three:

1. *Which is the impact of IPR revenues for Swedish composers of art music today?*

This is a general question based on the current questioning of IPRs from “piracy” advocates and the trend from parliaments to reinforce IPRs even stronger. The underpinning questions in the introduction were: what is the use of the morale if what is discussed has only limited relevance financially? If the owned property renders no or only limited returns why do property rights have to be considered in the first place?

According to the responses in this study most FST members have observed a negative trend regarding the importance of IPR revenues during the last five years while during the prior five year period IPR revenues rose more or less at the same rate as total incomes.

The overall statistics show that the FST members get 26% of their incomes from IPRs. Hence this study shows that IPR revenues still are important contributions for the average composer. The mean IPR income 2007 was 65 000 SEK. The standard deviation is extremely big: 99 200 SEK which indicates that there is a substantial spread with many receiving very little and others getting a big share of the IPR revenues. This leads to the second question:

2. *Does the highly competitive music industry and the IPRs attributed to it benefit only a few?*

This is certainly shown in this study as 10% of the respondents collect 47% of the 2007 revenues from commissions and 10% of them receive 35% of the 2007 STIM revenues. Maybe this should not be “over-interpreted”. There are many other professions where some earn a lot while the majority has more modest incomes. Graph 2, though, supports the idea that only very few composers of art music actually gain substantially from the IPRs regulations while most are left with no or very small slices of the pie.

This seems inevitable as most kinds of music distribution are non-rivalrous. We can all eat from the pie. Which is simultaneously re-baked. True magic. Furthermore we all prefer a slice from the most delicious pie. The fact that the re-bake has a very low marginal production cost per slice will increase the spread of the most delicious pies. Luckily we do not all have identical tastes.

3. *Is there an IPR revenue critical mass that enables a composer to leave other sources of income?*

The study shows that the total incomes of respondents do not differ substantially between the three subdivisions: 1. full-time composers, 2. part-time composers with a declared wish to become full-time and 3. part-time composers without such a wish. There are individuals with high IPR revenues in all three groups. The choice of becoming a full-time composer or not is highly individual and involves issues of family situation, alternative job opportunities and living standard aspirations.

But the general pattern in the available data is, however, that full-time composers earn much more from IPR revenues than composers belonging to the other two categories. I suspect that the option to enter into full-time composing is, more typically than not, considered when the IPR revenue reaches an amount between the constant in the OLS estimate presented in Appendix 1, 45 000 SEK, and the median of 60 000 SEK. But this is based on a very weak determination degree in the regression model (12%).

It was shown, as well, that full-time composers actually compose a little less output than part-time composers. But this output pays off better. Pay-off is not a sufficient measure of quality. But it is at least a proxy for the value that broadcast producers, record buyers, concert audiences and those who fund commissions put on composers and their music.

There is some evidence that high age gives a smaller decrease in IPR revenues for composers than is normal in many other professions. This can be the result of 1. composers being more professionally active at high age than others and/or 2. IPRs regulations provide them with revenues from work produced during the younger, active years to a degree which is uncommon to most other professions. I suspect that this will eventually be a topic of debate as the household production unit and the family as financial security base is no longer the normal case in most Western societies. As it was when the post mortem auctoris IPR protection was first issued. In most European countries the state has taken over much of the financial needs for both the youngest and the oldest from the family. The question is if there should be a change as to when the innovations of composers should be regarded parts of the common Ω -knowledge base which should be free for all to utilise. The IPRs legislations are clear on this matter. But they are not written in stone.

In the current Swedish trade agreements between the composers of FST and the producers of Svensk Scenkonst/Swedish Performing Arts it is not possible for the latter to regard commission costs as investments as nothing can be gained financially from them. No part of the IPRs is transferred to the investor. This seems to be a unique institutional solution. My fear is that it is counter-productive for both parties.

If there should be a rather big mass of financially less successful composers in order for society to find and develop those who are most talented remains a question which I will not elaborate here. The evidence based theories within the economic growth discipline, however, suggest that there should be a lot of investments in Research and Development, R&D, for a society to prosper. Preferably in small firms (Cohen & Klepper). The composer's role is similar to that of the researcher. As not all R&D in other areas are successful society should not put such a demand on the composers.

Presently there are interesting things evolving in the music industry to adjust the production and legal aspects to the habits of the "for free generation". The new site Spotify offers free downloading including slots of commercials. Both giants Warner Musics, for media production, and Live Nation, for live music, now use what they call 360 degree contracts giving them shares of revenues from all activities performed by the artists. This will, however, most likely influence Swedish composers of art music only very marginally.

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APPENDIX 1

ENKÄT FST**GEOGRAFI**

Mantalskrivningsort:

- Stockholm
 Göteborg
 Malmö
 övriga landet
 utlandet

ÅRTAL

född: _____

Utbildning avslutad år: _____

Invald i FST år: _____

PRODUKTION

Verklista - uruppförda verk (ungefärliga antal)

operor o dyl:	kortare än 20 min.....	längre än 20 min	_____
orkesterverk antal:	kortare än 20 min.....	längre än 20 min	_____
kammarmusik antal:	kortare än 20 min.....	längre än 20 min	_____
EAM:	kortare än 20 min.....	längre än 20 min	_____

INKOMST

- Verkar som tonsättare på heltid
 Vill vara heltidsverksam som tonsättare men kan inte av ekonomiska skäl vara det
 arbetar gärna parallellt med annat också, som t ex:.....

2007

Ungefärlig inkomst: _____

varav beställningsverk _____

varav STIM-ersättningar o dyl _____

andra inkomstkällor, vilka: _____

2002

Var din inkomst 2002

mycket mindre, något mindre, ungefär densamma, något större, mycket större
än 2007?

var andelen från beställningsverk

mycket mindre, något mindre, ungefär densamma, något större, mycket större
än 2007?

var andelen från STIM-ersättningar o dyl

mycket mindre, något mindre, ungefär densamma, något större, mycket större
än 2007?

1997

Var din inkomst 1997

mycket mindre, något mindre, ungefär densamma, något större, mycket större
än 2002?

var andelen från beställningsverk

mycket mindre, något mindre, ungefär densamma, något större, mycket större än 2002?

var andelen från STIM-ersättningar o dyl

mycket mindre, något mindre, ungefär densamma, något större, mycket större än 2002?

Om du vill får gärna försöka minnas tillbaka på ännu tidigare förhållanden, formulera själv:

.....
.....
.....
.....
.....
.....

YRKESVALET

Berätta om varför du valde att bli tonsättare

.....
.....
.....
.....

Hur ser du på rollen som tonsättare i ett större samhällsperspektiv:

.....
.....
.....

är du nöjd med ditt yrkesval:

.....
.....
.....

Svara gärna fritt på den fråga jag inte ställt men borde ha gjort:

.....
.....
.....

Tack för hjälpen!

APPENDIX 2:1

Model: OLS estimates using 82 observations from 1-85
 Missing or incomplete observations dropped: 3
 Dependent variable: IPR2007

VARIABLE	COEFFICIENT	STDERROR	T STAT	P-VALUE
constant	45838,2	11863,2	3,864	0,00023 ***
full-time	84504,0	24645,3	3,429	0,00096 ***

Mean of dependent variable = 65418,4
 Standard deviation of dep. var. = 100219
 Sum of squared residuals = 7,09312e+11
 Standard error of residuals = 94161,6
 Unadjusted R-squared = 0,12813
 Adjusted R-squared = 0,117231
 Degrees of freedom = 80

RESET test for specification -

Null hypothesis: specification is adequate

Test statistic: $F(2, 78) = 0,855227$

with p-value = $P(F(2, 78) > 0,855227) = 0,429135$

Null hypothesis accepted!

White's test for heteroskedasticity -

Null hypothesis: heteroskedasticity not present

Test statistic: $TR^2 = 10,2155$

with p-value = $P(\text{Chi-Square}(1) > 10,2155) = 0,00139263$

Null hypothesis rejected!

Test for normality of residual -

Null hypothesis: error is normally distributed

Test statistic: $\text{Chi-square}(2) = 100,532$

with p-value = 0,0000

Null hypothesis rejected!

APPENDIX 2:2

The opus_list variable was calculated:

opus_list = (number of operas duration < 20 min) + 3*(number of operas duration >= 20 min) + (number of orchestral pieces duration < 20 min) + 3*(number of orchestral pieces duration >= 20 min) + (number of chamber music pieces duration < 20 min)/3 + (number of chamber music pieces duration >= 20 min) + (number of EAM pieces duration < 20 min)/3 + (number of EAM pieces duration >= 20 min)

Model 13: OLS estimates using 82 observations from 1-85

Missing or incomplete observations dropped: 3

Dependent variable: opus_list

VARIABLE	COEFFICIENT	STDERROR	T STAT	P-VALUE
heltid	30,5370	7,80121	3,914	0,00019 ***
deltid	35,2699	5,94453	5,933	<0,00001 ***

Mean of dependent variable = 28,976

Standard deviation of dep. var. = 30,2535

Sum of squared residuals = 87636,9

Standard error of residuals = 33,0977

Unadjusted R-squared = 0,38709

Adjusted R-squared = 0,379429

F-statistic (2, 80) = 25,2625 (p-value < 0,00001)

RESET test for specification -

Null hypothesis: specification is adequate

Test statistic: $F(2, 80) = 0$

with p-value = $P(F(2, 80) > 0) = 1$

Null hypothesis accepted!

White's test for heteroskedasticity -

Null hypothesis: heteroskedasticity not present

Test statistic: $TR^2 = 10,9516$

with p-value = $P(\text{Chi-Square}(1) > 10,9516) = 0,000935225$

Null hypothesis rejected!

Test for normality of residual -

Null hypothesis: error is normally distributed

Test statistic: $\text{Chi-square}(2) = 31,347$

with p-value = 0,0000

Null hypothesis rejected!

APPENDIX 2:3

Model: OLS estimates using 82 observations from 1-85

Missing or incomplete observations dropped: 3

Dependent variable: **opus_list**

VARIABLE	COEFFICIENT	STDERROR	T STAT	P-VALUE
full-time	30,5370	8,73683	3,495	0,00078 ***
part-time wish	22,2121	6,45257	3,442	0,00092 ***

Mean of dependent variable = 28,976

Standard deviation of dep. var. = 30,2535

Sum of squared residuals = 109918

Standard error of residuals = 37,0672

Unadjusted R-squared = 0,23126

Adjusted R-squared = 0,221651

F-statistic (2, 80) = 12,0332 (p-value = 2,7e-05)

RESET test for specification -

Null hypothesis: specification is adequate

Test statistic: $F(2, 80) = 0$

with p-value = $P(F(2, 80) > 0) = 1$

Null hypothesis accepted!

White's test for heteroskedasticity -

Null hypothesis: heteroskedasticity not present

Test statistic: $TR^2 = 0,330959$

with p-value = $P(\text{Chi-Square}(1) > 0,330959) = 0,565095$

Null hypothesis accepted!

Test for normality of residual -

Null hypothesis: error is normally distributed

Test statistic: $\text{Chi-square}(2) = 100,648$

with p-value = 0,0000

Null hypothesis rejected!

APPENDIX 3

Model: OLS estimates using 82 observations from 1-85
 Missing or incomplete observations dropped: 3
 Dependent variable: **total2007**

VARIABLE	COEFFICIENT	STDERROR	T STAT	P-VALUE
Operor_20	24046,3	5497,60	4,374	0,00004 ***
Kamm_20	-1292,67	364,851	-3,543	0,00067 ***
part-time	53413,5	27659,4	1,931	0,05710 *
age	4629,17	361,898	12,791	<0,00001 ***

Mean of dependent variable = 251076
 Standard deviation of dep. Var. = 139088
 Sum of squared residuals = 1,09863e+12
 Standard error of residuals = 118680
 Unadjusted R-squared = 0,836907
 Adjusted R-squared = 0,830634
 F-statistic (4, 78) = 100,064 (p-value < 0,00001)

RESET test for specification -
Null hypothesis: specification is adequate
 Test statistic: $F(2, 76) = 0,403965$
 with p-value = $P(F(2, 76) > 0,403965) = 0,669092$

Null hypothesis accepted!

White's test for heteroskedasticity -
Null hypothesis: heteroskedasticity not present
 Test statistic: $TR^2 = 35,1722$
 with p-value = $P(\text{Chi-Square}(12) > 35,1722) = 0,00044$

Null hypothesis rejected!

Test for normality of residual -
Null hypothesis: error is normally distributed
 Test statistic: $\text{Chi-square}(2) = 0,235071$
 with p-value = 0,889109

Null hypothesis accepted!

APPENDIX 4

Model : OLS estimates using 82 observations from 1-85
 Missing or incomplete observations dropped: 3
 Dependent variable: **IPR2007**

VARIABLE	COEFFICIENT	STDERROR	T STAT	P-VALUE
age	2329,74	796,927	2,923	0,00454 ***
sq_age	-29,57	14,1307	-2,093	0,03968 **
Operor_20	24215,2	3573,76	6,776	<0,00001 ***
Kamm__20	-760,160	234,705	-3,239	0,00177 ***
heltid	53045,8	20261,2	2,618	0,01064 **

Mean of dependent variable = 65418,4
 Standard deviation of dep. var. = 100219
 Sum of squared residuals = 4,3673e+11
 Standard error of residuals = 75311,5
 Unadjusted R-squared = 0,624956
 Adjusted R-squared = 0,605473
 F-statistic (5, 77) = 25,6619 (p-value < 0,00001)

RESET test for specification -

Null hypothesis: specification is adequate

Test statistic: $F(2, 75) = 8,43799$

with p-value = $P(F(2, 75) > 8,43799) = 0,000495136$

Null hypothesis rejected!

White's test for heteroskedasticity -

Null hypothesis: heteroskedasticity not present

Test statistic: $TR^2 = 21,7814$

with p-value = $P(\text{Chi-Square}(17) > 21,7814) = 0,193273$

Null hypothesis accepted!

Test for normality of residual -

Null hypothesis: error is normally distributed

Test statistic: $\text{Chi-square}(2) = 38,3413$

with p-value = 0,0000

Null hypothesis rejected!