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Tax Implications of Selling Electronic Books in the European Union

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Abstract

In recent years, the publishing industry has undergone significant change related to the emergence of information technology and communication, leading to the emergence of electronic books substitutes the traditional book. This new reality has an impact on the cultural industry and requires the adaptation of public regulations affecting the production and consumption of eBooks, avoiding situations of tax discrimination against these paper publications, which result in lower consumption thereof, as well as significant tax revenue losses. Since two substitute goods must have the same taxation not vary in response to the medium on which they are distributed.

Keywords: Electronic books, Value added tax (VAT), Tax system, Culture, Consumers

1 Introduction

The provision of cultural goods and services has experienced an important transformation since the last decade of the twentieth century as a consequence of the spread of information and communication technologies. The rapid dissemination and improvement of IT tools (computers, tablets, electronic books...) and of the Internet allow cultural goods and services to be produced in a way different to traditional means and have promoted a noticeable change in the public's consumption habits. Moreover, the growing presence of intangible goods, those that can do without a physical medium and can be distributed in full online, means significant changes in access to culture, which impact on the industry that supplies it and demand the adaptation of the public regulations that affect its production and consumption [27]. The importance of public action is made clear in the protection of copyright and the fight against illegal access, but its action through fiscal policy is no less important, and the analysis of this constitutes the object of this article.

Internet has become a window which allows creators to make their work available to citizens without turning to the traditional market, and consumers, for their part, no longer need to move to acquire and enjoy these goods and services. The possibility of this without the physical market implies substantial changes in the essential elements of exchange; from prices to the medium of dissemination, and the range of the latter, for example. In contrast, the growing accessibility of the Web has facilitated its fraudulent use, generating one of the most serious problems in the cultural sector today, which is no other than the illegal consumption of goods and services of a cultural nature. This problem is global, due to both the open character of the Internet and the economic, and cultural, integration of recent years. States have reacted, modifying and reinforcing legislation on copyright protection, penalizing access and illegal downloads. However, the consumer's opportunistic behavior not only affects the author or the cultural industry, but also has consequences for the public purse, in that it means an important loss in fiscal resources. It is clear that if producers reduce their profits the direct taxes suffer [23], but the real taxation worry is focused on indirect taxation, on consumption, and its collection is seen to be significantly affected.

With this in mind, we intend to analyze the fiscal repercussions of the increase in the consumption of electronic books in Spain. We take this reference, from among the range of cultural goods, because the data consulted [25] show the growing importance of the consumption of these books to the detriment of the traditional print format. Moreover, it offers us an unbeatable example of the impact of the appearance of digital goods and services on the tax system, given that we can differentiate the treatment they are given in comparison to those which have a physical medium. This question is no less important in the field of Public Treasury, since one of the basic principles of tax regulation demands ensuring the neutrality of tax treatment. In other words: tax intervention should not alter the economic decisions of private agents in the production and consumption of goods and services. When these decisions are oriented towards obtaining a tax advantage the efficiency of the system as a whole is compromised, and the affected sector in particular. The consequences are so serious that a mere tax collection motive cannot justify tax measures that are not neutral.

Consequently, our first objective will be to present the tax differences present in our tax regulations, for which we will focus on the most relevant tax for the consumption of books: Value Added Tax, VAT from now on. In order to do so, we address the tax treatment of tangible and intangible goods in the regulations, emphasizing the elements affecting books. This descriptive section is indispensable, both for the evidence it underscores (tax inequality in the consumption of print and electronic books) and for the generalization of the implications it supposes, VAT being a tax of a European nature.

Once the diversity of tax treatment between print and electronic books is confirmed, we will address its repercussion on tax collection obtained by the Spanish Public Treasury through VAT. The statistical instrument we will use is PLS Partial Least Squares which is the only one that allows us build a model for our objective, with the diverse nature and the scarcity of data available. The results we will obtain are not a tight assessment of the fiscal impact of the tax differences mentioned, but they do contribute a rational estimation of what the economic theory predicts. The coherency of the model and the contribution it may suppose has made us consider its inclusion convenient, despite the insufficiency of data available for its creation.

To finish, we will present the main conclusions extracted from the elaboration of this document, with the aim of satisfying the objective of discovering the fiscal repercussions of the increase in e-book consumption.

2 Culture and Types of VAT

As we have mentioned, the appearance of intangible cultural goods and the access to them online, with no need for a physical medium for their sale, is the most relevant peculiarity to bear in mind when carrying out an analysis of tax issues, and specifically of the impact of VAT on cultural goods and services. Currently, in the market, we find goods presented in different mediums, the acquisition of which will give rise to different tax treatment. The theoretical analysis of the taxation of e-books will focus solely on the territory of the European Union [20]. The choice of limiting the work to be done to members of the Union is that they apply the same law as to the value added tax is concerned.

This allows clearly reflect the disparity of tax treatment between paper books and electronic books. Therefore, it is observed a different tax treatment between paper books and electronic books.

In general, all of the final goods and services distributed in the European Union, and therefore in Spain, are subject to VAT. This tax is applied to all final goods and services bought and sold for consumption in the EU [16], regardless of whether we are dealing with basic goods or goods of a cultural nature. Although not all goods and services are subject to the same tax rate: according to VAT regulations [5] for the EU territory, we can find different tax rates in each Member State, as well as reduced rates or exemptions for certain purchase-sale operations, among which transactions of a cultural nature are included [1].

Looking at the tax rate applied to commercial operations subject to this tax, the normal VAT rate is fixed at a percentage of the tax base that can be no less than 15%, until the 31st of December 2015. Although, Member States can apply one or two reduced rates to those deliveries of goods and services gathered in the III Annex of the VAT Directive [16], among which we find goods and services of a cultural nature. The objective pursued, with the permission of reduced tax rates for goods and services of a cultural nature, is to facilitate simpler and cheaper access to these goods and services for citizens, at the same time as sales in the cultural sector are also facilitated.

Among the goods and services that can be subject to reduced VAT rates we find: the supply of books, as well as their lending by libraries (including brochures, pamphlets, similar printed materials, albums, children's coloring books, printed music or manuscripts, maps and plans, etc.), newspapers and magazines that are not wholly or predominantly advertising material; right of access to performances, theatres, circuses, fairs, theme parks, concerts, museums, zoological parks, cinemas, exhibitions, and other similar manifestations and venues of a cultural nature; provision of services by writers, composers, and performing artists, and the copyright of such services.

As you can see in Table 1, the differences between tax rates in the provision of goods and services of a cultural nature are very acute between the different Member States, where you can see the differences between jurisdictions. In Spain [20], for example, access to a museum is taxed at 10%, while in Malta it is at 5%, in the Netherlands and Sweden at 6%, and in Germany at 7%. In the distribution of newspapers we find, also, significant differences, since in certain states, such as the United Kingdom, they are taxed at a 0 rate, while in others they face rates above 20% [9]. It is confirmed, thus, that the use of reduced VAT rates and of exemptions allows European states to adapt tax responsibilities to their cultural policy. The Member States, therefore, have considerable room for acting in the determination of VAT rates for goods and services of a cultural nature. Consequently, the disparity of existing rates in this type of goods and services is feasible according to the level of protection of the sector to which it is applied or to preferences to facilitate citizens' access to their consumption.

Table 1: Cultural VAT in the European Union

	Acces to theatres, museums	Acces to theme parks	Writers Composer	CD/ CD-Rom	Newspapers
Austria	10	10	20/10	20	10
Belgium	6	6	6/21	21	0/6/21
Bulgaria	20	20	20	20	20
Cyprus	5	5	5	18	5
Czech Republic	15	15	15	21	15
Denmark	25	25	-	25	0/25
Estonia	20	20	20	20	9
Finland	10	10	10	24	10/24
France	5,5/19,6	7/19,6	5,5	19,6	2,1/19,6
Germany	7	19	7	19	7
Greece	13/6,6	13	13	23	6,5
Hungary	27	27	27	27	5
Ireland	9	9	23	23	9
Italy	10	21	21	21	4
Latvia	21	21	-	21	12
Lithuania	21	21	21	21	21
Luxembourg	3	3	3	15	3
Malta	5	18	18	18	5
Netherlands	6	6	6/21	21	6
Poland	8	8	8	23	8/23
Portugal	13	23	23	23	6
Romania	9	9	24	24	9
Slovenia	8,5	8,5	8,5	20	8,5
Slovakia	20	20	20	20	20
Spain	21*	21	10	21	4/21
Sweeden	6	25	6	25	6
United Kingdom	20	20	20	20	0

SOURCE: EUROPEAN COMMISSION (2013): VAT Rates Applied in the Member States of the European Union. Situation to 14 January, 2014.

* With 10% rates for some cases and complete exemption for those provided by public law.

However, apart from this ideological reason, there is another explanatory factor, the influence of which is not to be underestimated. In our opinion, the need to increase the fiscal resources of the states has justified the increase in tax rates for cultural goods and services, at least in recent years. The impact of the economic crisis which especially some states of the European Union are suffering has caused them to increase tax rates in the cultural sector. This is the case in Spain, which in 2012 [5] proceeded to increase the tax rate of certain cultural goods and services, which shifted from 4% to 10%, and even to 21%, as indicated in Figure 1.

The modification of the tax rates was justified by the need to comply with the public deficit objective, a motive for which indirect taxation was increased for certain goods and services, which shifted from paying a super-reduced or reduced rate, to a reduced or general rate. The affected sector has been very critical of this tax measure, considering that it affects them negatively. They expect a fall in the consumption of the affected cultural goods and services [10], [19], which will cause a reduction in the business profits of the sector and in the employment it facilitates.

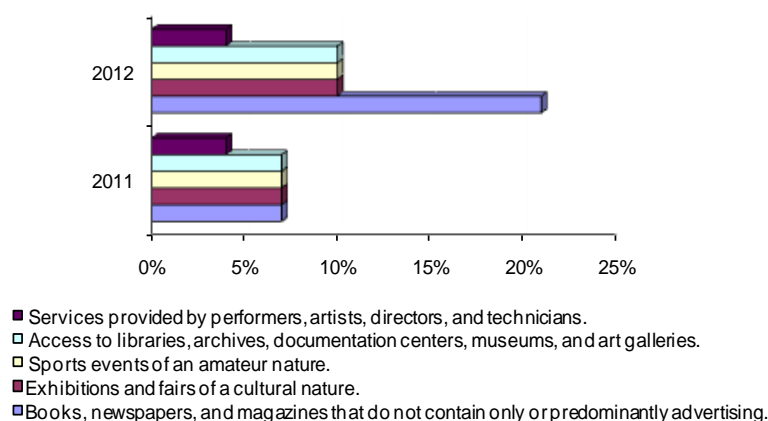


Figure 1: Variation Cultural Vat Spain

SOURCE: Own elaboration from EUROPEAN COMMISSION (2013): VAT Rates Applied in the Member States of the European Union. Situation to 14 January, 2014.

3 VAT and Electronic Books

Now that we have referred to the fiscal capacities of the State over these goods and services, we will focus the analysis on the tax differences existing between traditional books and electronic books.

As previously indicated, the Sixth VAT Directive allows the application of reduced rates to books to facilitate citizens' access to them. In the legislative text the supply of books is mentioned without distinguishing between books in print format and electronic books. Therefore, from a literal interpretation of this we could consider that in both cases it would be appropriate, on the part of the Member States, to apply a reduced VAT rate, given that regardless of the format, in both cases a book is being acquired. In the case of Spain, for example, the super-reduced rate of 4% would be applied. However, this is not the case, since the super-reduced rate is applied only to books in print format, and electronic books, on the contrary, have to pay the general rate (21% in the case of Spain) there being, thus, negative tax discrimination for electronic books. The regulations regarding VAT are applicable in all of the European Union territory, which means that the tax discrimination existing between traditional books and electronic books is found in all Member States.

From a general standpoint, it is considered in the European institutions that the treatment of cultural VAT should be uniform across the Member States [3]. This stance responds not only to the objective of tax harmonization desired by the Union, or to the undeniable advantages it would have in terms of interior market functioning, but underlies an important concern which is no other than to protect and favor the European cultural industry from the pressure of other global competitors, especially in the field of the production and dissemination of cultural materials online. Already in 2011, the European Parliament's Committee on Culture and Education made a request aiming to harmonize and favorably treat the VAT of cultural goods and services and, coinciding with this stance, the European Commission worked on a proposal for the harmonization of the tax that foresaw a general application of reduced rates in this sector.

In line with the above, it could be supposed that this foreseen favorable treatment would also include electronic books. However, their tax treatment presents an important specification which justifies the current situation and which implicates their future treatment. The European Commission has established that for the classification of commercial operations that are developed in the European Union territory, commercial transactions carried out through direct electronic commerce will be classified as services provision, while operations of indirect electronic commerce will be classified as delivery of goods. That is, the purchase of a book in print format is considered as

delivery of goods, while electronic books, direct substitutes of the former, will be considered as services provision [30].

The reason for this difference in classification is found in the important development of e-commerce in recent years, and the generalization and increase in sales of intangible goods (among which we find electronic books). This motivated the EU in 2002 to carry out an adaptation of the VAT regulations for the new commercial reality [6], in such a way that, as we have indicated, electronic books are not classified as delivery of goods (as is the case of traditional books), but as services provision, on the basis that they lack a material physical medium.

To the problem of double classification according to the good's format, we must add the difficulty of determining the place where the commercial operations are carried out. The general rule for establishing the place of development of a taxable transaction varies according to whether we are dealing with delivery of goods or provision of services. In the first case the rule to follow is taxation at destination, while for services provision the principle of taxation at source [5] is followed. This situation caused a loss in Europe's competitiveness in e-commerce seen as if the service or good was provided by a company established in the EU it was taxed, whereas if it was provided by an entity not established in this territory it was not affected by VAT. With the aim of resolving this problem, the tax legislation is modified and the final result is as shown in the Figure 2:

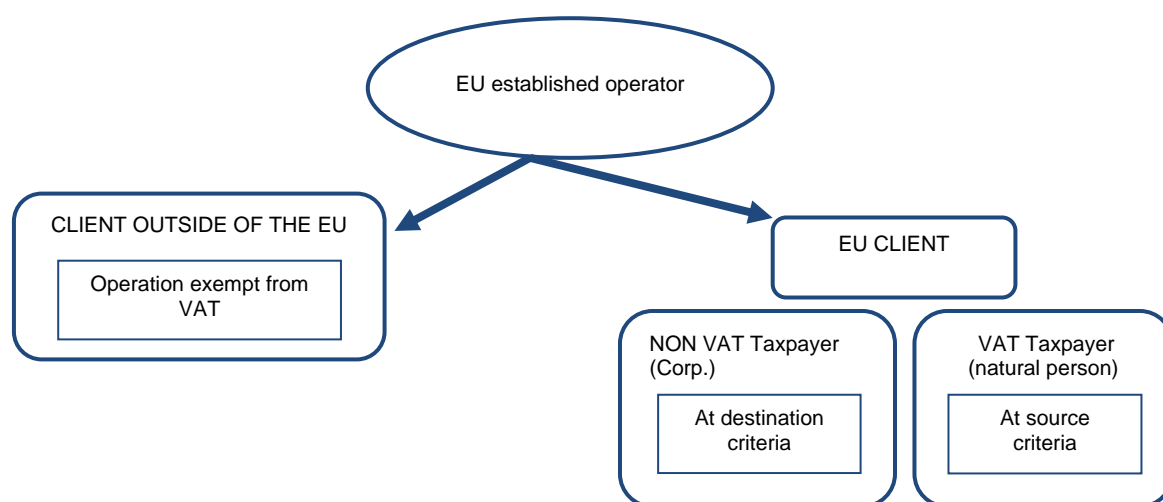


Figure 2: Taxation of books through VAT

E-books, therefore, firstly, are considered as services provision. Secondly, as they are intangible goods, they are taxed according to the special location rule, valid for direct e-commerce; that is, at destination or at source depending on the condition of the beneficiary [18].

We need to look closely at this difference of treatment, based on mere variety in the good's medium, and which is not easily arguable without considering the technical elements of the tax. Thus, it seems undeniable that whether it is a file or a printed book, the content and the function it serves will be the same, leaving without justification this discriminatory treatment. In our opinion, what underlies and explains this decision of the Council is the will to ensure that the countries producing these intangible goods receive payment of the operation's tax charge, especially if this is carried out with third countries. Without delving too deep into the configuration of the VAT, we should indeed remember that a transitional VAT system at destination is still in force, which should be substituted by the system of VAT payment at source. With the dichotomy of the tax classification between print and electronic books, the European decision has meant the application of VAT at source for all *deliveries* of digital books to final consumers, under the premise that we are dealing with services provision.

As can be observed in Table 2, the differences in tax rates between a traditional book and an electronic book are very important. The state in which we find the greatest difference is Ireland, where printed books have a zero tax rate, while e-books pay 23% tax. In the case of the United Kingdom, electronic books have a 20% rate, while traditional books do not pay taxes. It is also worth pointing out the case of Luxemburg, where both types of books pay 3%, and France, where electronic books pay only 7%, with the greater tax rate being applied to traditional books, at 19.6%. In general, in all of the Member States there is an important difference between the taxation of electronic books and traditional books [9].

In 2012 France and Luxemburg applied a reduced VAT rate to digital books. However, this application of the tax does not comply with the European Directive's decisions in relation to VAT and, therefore, the European Commission has requested that these states modify VAT for digital books [8]. In line with our previous interpretation, the Commission takes note of the discrimination that currently exists between digital books and print books, but considers that the measures adopted by the cited jurisdictions give rise to competitiveness problems in detriment to

the rest of the states in the Union, an argument which does not prevent the acquisition of digital books from happening in countries with lower taxation [29].

Table 2: Traditional books vs. electronic books

	TRADICIONAL	ELECTRÓNICO
Austria	10	20
Belgium	6	21
Bulgaria	20	20
Cyprus	5	18
Czech Republic	15	21
Denmark	25	25
Estonia	9	20
Finland	10	24
France	5,5/19,6	7
Germany	7	19
Greece	6,5	23
Hungary	5	27
Ireland	0	23
Italy	4	21
Latvia	12	21
Lithuania	9	21
Luxembourg	3	3
Malta	5	18
Netherlands	6	21
Poland	5	23
Portugal	6	23
Romania	9	24
Slovenia	8,5	20
Slovakia	10	20
Spain	4/21	21
Sweeden	6	25
United Kingdom	0	20

SOURCE: EUROPEAN COMMISSION (2013): VAT Rates Applied in the Member States of the European Union. Situation to 14 January 2014.

In short, the reason for the same book paying different taxes according to the channel of acquisition used for its purchase can be found in the intangibility of electronic books. That is, it is the medium in which the book is sold that determines the type of VAT to be applied.

4 The Importance of Electronic Books in the Economy

The book or publishing sector forms a significant part of the economy of the different Member States, given that spending in the publishing market is predicted to reach 115,700 million dollars in the year 2016. Within this sector, electronic books acquire a more important role each year, given that a fall in printed books is expected, while e-books continue along the opposite path [24], [28]. Moreover, it is estimated that in 2016, on a world-wide scale, electronic books will reach a figure of 20,800 million euros, which is 17.9% of the publishing market [22]. Furthermore, like other economic sectors that generate wealth for the economy, the publishing sector, firstly, generates employment in a direct and indirect way, and secondly, publishing companies face direct taxation, which is a source of revenue for states. In terms of the current economic crisis, this could mean an important source of resources for the public purse.

The analysis of the importance of the publishing sector for the public purse, and more specifically of electronic books, will be carried out for the Spanish case, seen as a greater number of statistical data is available, both in quantity and in time span. This situation facilitates, subsequently, the development of an analysis where the importance of public income from electronic books in indirect taxation is made clear. Nevertheless, and given the situation described, the results obtained can be extrapolated to the rest of the European Union states, given that the positive discrimination of traditional books in relation to electronic books is a common factor [31].

Looking at the guidelines marked out by the Organisation for Economic Co-operation and Development -OECD- [21], and followed by the European Union, the classification of the server as a permanent establishment can cause companies that are dedicated to the commercialization of goods and services that are distributed in full online, to search for a location on the basis of tax motives. The companies can be managed from any geographic point, which does not have to be the same as where the server is located. Therefore, it is feasible that they search for locations where the taxes they are subject to may be the lowest possible-tax havens- or even non-existent, with the aim of

increasing the company's profitability, and managing it from a different state. The location of companies in territories of low taxation is associated with a loss of tax revenue in the rest of the states, by direct taxation. But, in any case, we must not forget that the apparition of electronic books has given rise to the emergence of a new distribution process in which many intermediaries are involved, including technology companies working on the digitalization of the contents, companies in charge of the commercialization of e-books (websites), and the manufacturers of the necessary technological mediums for reading the digital contents acquired. All of the companies create added value for the final product, and consequently, for the economy as a whole, you can see Figure 3. Those same companies create employment and are subject to the corresponding taxes. In this case, the offshoring of the companies is more difficult, and this will positively affect the correct functioning of the public sector and of the economy as a whole [12], [15].

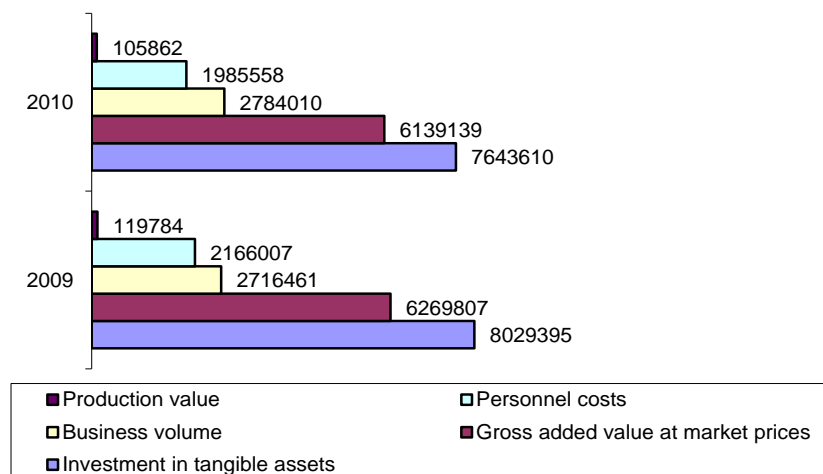


Figure 3: Main macro-economic factors of book and newspaper publishing companies and other publishing activities

SOURCE: INE. Encuesta Industrial de Empresas, Encuesta Anual de Servicios y Encuesta Anual de Comercio

We must also take into account the regulations applicable in each territory. In Spain, for example, we find the restriction of the Fixed Price Law [17], which does not allow the sale of electronic books at less than 5% discount in relation to the official selling price. Moreover, we must bear in mind the tax policies existing in each territory. Except for countries such as Japan and Korea, other states do not offer a tax reduction for electronic books, something which does occur in the case of printed books [13].

Consumers of books, in principle, will opt for those with a lower price, independent of the place where the distributing company is located and the indirect tax rate applied. Despite the tax discrimination indicated, a continued growth in the sale of books is observed during recent years, both in the states of the European Union and in Spain. Although the United States is the country where more sales of electronic books take place, 31% of electronic books are sold there, with, moreover, a very important increase in the sales of electronic books from 2011 to 2012, see Figure 4 [7], [13].

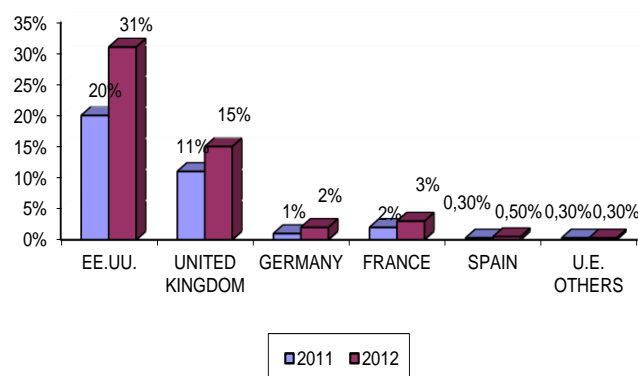


Figure 4: Sales of electronic books (%)

SOURCE: ENDERSANALYSIS (2012): Digital Europe: Diversity and Opportunity.

In the case of Spain, the most important growth in electronic books appears in 2007 and continues to grow consistently each year, despite the economic crisis, reaching an ever greater quota of the publishing market, see Figure 5 [14].

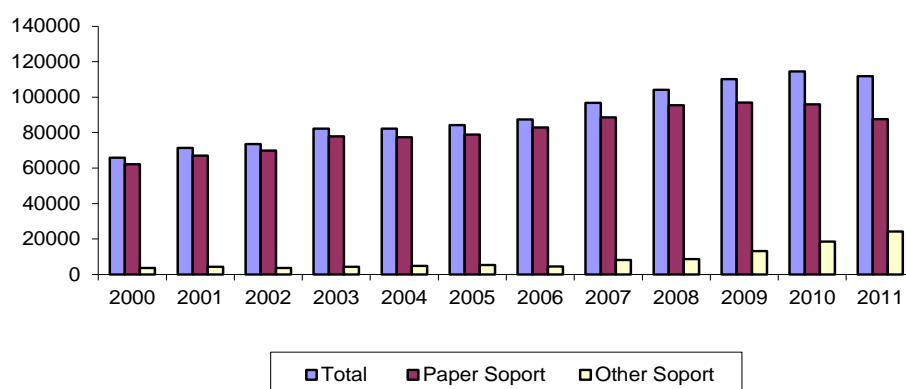


Figure 5: Books registered with International Standar Book Number –ISBN- in Spain
SOURCE: Own elaboration, data from the National Institute of Statistics of Spain –INE-.

According to the figures of e-book sales we can indicate that the publishing sector, as well as its auxiliary industry, is an important source of revenue for the state coffers. It seems reasonable to presume that the increase of the sales is associated with, for example, a growth in the electronic mediums that facilitate reading electronic books, elements which are not subject to a reduced VAT either. Additionally, making electronic books available to the public requires auxiliary companies, of elaboration, transformation, commercialization, etc., which could create employment and generate added value for the economy. That is, in the analysis of public revenue originating from electronic books we not only have to bear in mind the issues that affect these in a direct way, but also consider the other branches of the cultural sector that are indirectly involved, and which logically also mean an important source of public resources for the State.

If we analyze cultural employment, we can indicate that this has increased in 2012 in relation to 2011, and that it represents 2.6% of the economy's total employment, see Table 3.

Table 3: Employment by cultural economic activities

	Absolute Values (thousands)		Percentage Distribution	
	2011	2012	2011	2012
TOTAL	488,7	452,7	100	100
Libraries, archives, museums, and other cultural institution activities	36,9	30,5	7,6	6,7
Publishing of books and newspapers, and other publishing activities	55,0	55,6	11,3	12,3
Cinematographic, video, radio, and television activities	72,00	74,6	14,7	16,5
Other design, creation, artistic, and performance activities	90,4	92,6	18,5	20,5
Graphic arts, recording, reproduction of mediums, musical edition, manufacture of sound and image mediums and devices, musical instruments	95,7	83,3	19,6	18,4
Other economic activities	138,7	116,2	28,4	25,7
Cultural employment in percentage of total employment	2,7	2,6		

SOURCE: INE. Encuesta de población activa

For their part, the companies related with publishing activity also witness a constant increase from the year 2000, although this last year they have decreased, due to the economic crisis, see Figure 6. What is most significant is that those who published in a non-print format barely reached 27% of the total in 2009, but reached 42% in 2012 [26].

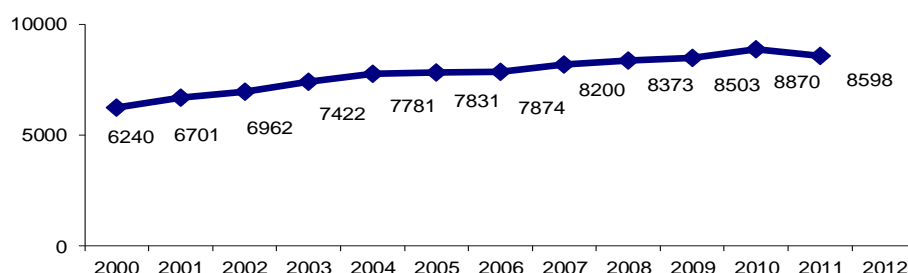


Figure 6: Book and newspaper publishing companies and other publishing activities
SOURCE: Own Elaboration, data from INE.

In short, the publishing sector is an important source of income for the economy as a whole and therefore, we should not undervalue its potential in relation to tax collection. From the point of view of indirect taxation, the citizens who acquire cultural products, among which we find electronic books, must face VAT charges, while companies dedicated to the cultural sector, like other companies, will have to pay Corporate Tax.

5 The Importance of Electronic Books in Taxation

In the consideration of the fiscal importance of the publishing sector, we must take into account an issue of great significance in Spain: digital piracy. The data available show that 12 of every 100 internet users download electronic books in an illegal way: 39% of which are new publications. Among the reasons found for the illegal downloading of digital contents, 50% of internet users consider the increase in VAT in Spain to be an important motive [11].

In Spain, 12.4% of the total volume of books published are pirated (without taking textbooks into account), which means a value of 585.6 million euros which is not received by publishing companies [9]. This situation has important repercussions for the public purse: firstly, it is a profit that the companies do not receive and, therefore, for which they do not pay taxes, and, secondly, looking at indirect taxation, the illegal downloading of electronic books implies that VAT is not paid either [4]. In both cases, a decrease takes place in the public revenue, the estimation of which is gathered in Table 4.

Table 4: Public purse stops receiving value added tax

	FÍSICO	ON-LINE	TOTAL
Music	7,8	113,9	121,7
Cinematographic	44,0	24,6	68,6
Videogames	46,7	9,9	56,6
Books (non-textbook)	1,6	1,1	2,7
TOTAL			249,6

SOURCE: GFK (2013): Observatorio de piratería y hábitos de consumo de contenidos digitales 2012.

NOTE: Rate applied 21% except physical books 4%.

The estimation of the relationship between tax collection through VAT and consumption of electronic books is not easy. Apart from the general considerations above, our objective has been to create a statistical model with PLS that would allow us to develop an approximation to its impact. In the literature on electronic commerce there are no similar models, given the noticeable limits in information available on the subject. It is even more complicated when we focus on a concrete good or service, which is the case here.

We must remember that we are dealing with a recent phenomenon which had not received sufficient attention on the part of the Government until very recently: now the effects of the economic crisis and the rapid growth in economic activity on the Web have caused a change in consideration [2].

The choice of the PLS model [32] allows us solve a large part of the problems we find when elaborating a quantitative model which relates tax collection through VAT and electronic books, seen as the methodology used is adequate for those cases in which the data set is small. The data available are scarce in relation to time span, explained by the recent introduction of electronic books to the publishing market. In the same way, most issues related to the taxation of e-commerce, and more specifically the taxation of electronic books, is novel in its theoretical and, above all, quantitative treatment. In short, it has not been confirmed if taxing electronic commercial operations through the adaptation of existing taxes allows for taxation in accordance with their real economic capacity or if losses are produced or not in tax collection.

The time period we have used for the model spans the years between 2005 and 2010, both included, as it was not possible to find a data series with a greater span for the variables chosen. It is important to indicate that the reference period taken coincides with the end of an expansive economic cycle. Although despite the world economic crisis a constant growth is shown in the consumption of digital books, and therefore, an increase in their sales should translate into an increase in tax collection. The realization of a new model with the most current data is not possible, since not all data used for the preparation thereof are updated and available. This statistic limitation does not allow us the projection of a current model, although it is possible that in the future can be performed new model, so that the data of the current model and the future can be compared and analyzed. In any case, we expect the trend of the data is similar, with an increase in sales of electronic books and a decline in traditional paper books. Similarly, the tax rules on culture, the object of study, have not changed. Therefore, a new model would not give us a different result.

For the elaboration of the model we have created two indicators: Book Consumption, using different variables from the field of publishing, and Tax collection by VAT. The first is formed by variables related directly to the consumption of books (in print and digital formats), specifically, by those that show consumption by homes and companies' invoicing. Through this indicator, we aim to reflect the importance acquired by books, particularly electronic books, in the publishing sector during recent years, where they have an ever greater importance for companies dedicated to this sector.

The variables chosen to create the indicator Book Consumption are the following:

- Books registered in ISBN: this allows us discover the total of books published in Spain in a year, whether dealing with traditional or electronic books.
- Proportion of digital books over the total: this variable allows us discover the number of books that are published in digital mediums; a variable which reflects the important growth of such books in the publishing sector.
- Spending on non-textbook books in homes: offers families' spending on books, which must thus be reflected in tax collection, given that we are dealing with book consumption. It includes both expenses on books offered by Spanish publishing companies and the importation of books, whether in print or digital format, since in both cases they are subject to VAT taxation at destination if the beneficiary is a Spanish company.
- Total invoicing: the figure of total invoicing of publishing companies is directly related with the sale of books and tax collection through VAT.
- Digital invoicing: this variable focuses exclusively on electronic books, in such a way that an increase in this should have a positive effect on the collection of VAT. In this case, Spanish electronic books that are exported would not pay VAT in Spain.

All of the variables included for the elaboration of the indicator Book consumption are significant. Moreover, the variables that have a greater relationship with electronic books, Digital Invoicing and Electronic Books, are those which provide a greater contribution to the index created. Both variables together with the total of books (print and electronic) and families' spending on non-textbook books are those which contribute greater significance to the indicator. Thus, we consider that the indicator created is appropriate for our objective: to analyze if the growth in electronic books impacts on tax collection through VAT.

Regarding the VAT indicator, this is formed exclusively by the collection of this tax. Seen as there is no specific system for these goods, the data provided by the State Tax Administration Agency do not unbundle the revenue coming from their consumption. Therefore, in statistical terms, the explanation contributed by the consumption indicator in relation to total tax collection is, and should be, very small. However, this does not invalidate the analysis when our intention is to discover if the growth in consumption is consistent with what it contributes to tax collection through VAT, see Figure 7.

Before presenting the conclusions obtained through the elaboration of the model, we must proceed to the validation of said model, which we carry out using three indicators: the Extracted Mean-Variance (EMV), Cronbach's Alpha, and R2. In each case they comply with the established parameters for considering the model as valid. Firstly, the mean-variance exceeds the 0.50 necessary for its validity, since it is estimated at 0.559155. The same occurs with Cronbach's Alpha, which exceeds 0.7, establishing itself at 0.7473 and the R2 is higher than 0.1, at 0.418.

The PLS model developed reflects, as we expected, that a relationship exists between the consumption of electronic books and VAT collection. Although the importance of the model is not to confirm the existing relationship, but its sign, and the relationship is of a negative nature. The interpretation of this result means admitting that collection through VAT does not correspond with the data on digital book consumption, or in other words: despite the growth in the consumption of electronic books, in the period analyzed, we do not find the growth in collection through VAT

which should have been experienced. Therefore, we estimate that a loss in collection is taking place in indirect taxation related to the consumption of books, particularly in digital formats.

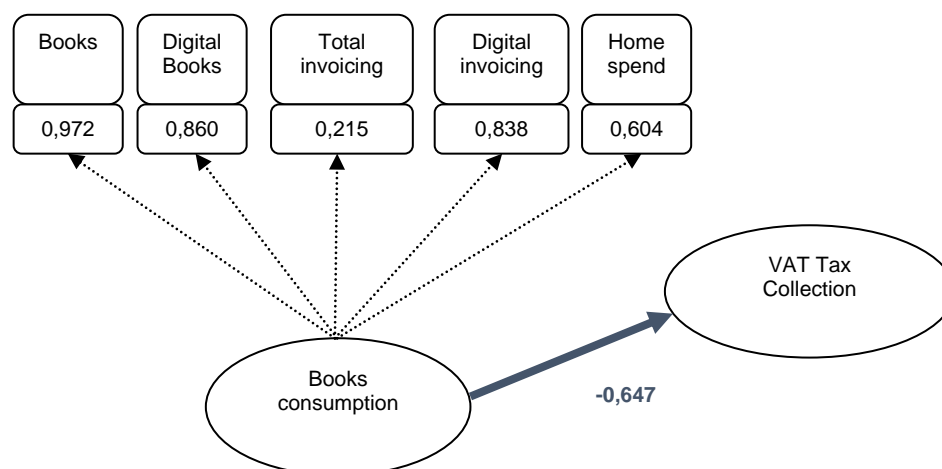


Figure 7: Electronic Books PLS Model

The emergence of e-books cannot be sent by the public authorities in various jurisdictions, as well as international organizations with great impact on the political decisions of States, such as the OECD and the EU. In a very short time period, citizen-taxpayers have turned into regular users of these goods, direct replacement of traditional paper books. Therefore, they cannot neglect the impact that this has on the economy, and therefore a direct impact on fiscal policy.

Inadequate tax that applies to electronic books, since the principle of neutrality does not apply, promotes the proliferation websites where you can make illegal downloads of texts, provided free of charge. This situation results in a loss of revenue of great importance, which has implications not negligible, on pretention level and quality of public goods and services provided by States. Despite the possibility of such illegal practices, the statistics reflect increased sales of digital reading devices and e-books.

6 Conclusions

The role of cultural activity in the economy of the different states is undeniable: it is another economic sector, capable of generating added value for the economy. This economic dimension is translated into a contributory capacity which the fiscal system must tax, but without this negatively affecting the source itself. Moreover, this sector is the medium and expression of a country's own culture, such that tax protection-as indicated by the European institutions- should be in line with its importance and the situation of weakness it may present facing external competitors, and in the case of digital platforms with an Anglo-Saxon position of predominance.

In this regard, the tax decision we have analyzed allows us claim that this favorable treatment of the cultural sector as a whole is not verified in our country. The decision to increase the VAT rate to 21% for a large part of cultural goods and services is not coherent with the special protection required by the sector or with views on harmonizing the tax. We are dealing with a measure justified by budgetary reasons which threatens with constricting the source of the taxed income and, what is worse, promoting fraud.

This negative impact is even more intense in the intangible goods provided through the Web. In this case, the ease of illegal access and the difficulty of control created by the medium itself, act as a stimulus for digital piracy. A high tax rate only serves to increase the cost of legal downloading making the illegal option more attractive. Facing this situation, not only are the sector and its creators directly harmed, but the public purse itself is damaged in terms of its fiscal resources, as we have been able to estimate in our model.

The rectification of this situation demands more than the lowering of the tax rate, with regard to digital books. There are no fiscal arguments that justify the different treatment of the consumption of books in print and electronic formats, beyond the problem of the configuration of the VAT itself, a tax the harmonization of which has not been completed and which still drags with it the problem of taxation at destination or at source. Therefore, this has led to the classification of the delivery of digital goods as services provision, without considering the real nature of the operation. In line with this argumentation, we must emphasize that the different tax treatment means altering the decision of the consumer on the basis of tax motives, which is contrary to the objective of fiscal neutrality on which our system is based.

Despite this penalizing factor, the data on the consumption of digital books grow. As a cause of this we can identify, firstly, the intense rhythm of penetration of information and communication technologies in our society: as the availability of instruments that allow access to electronic books grows, consumption habits reflect this tendency. Secondly, the lower production cost of this intangible good allows for reductions in its price that alleviate the greater tax burden. That is: as the consumer obtains a lower final price, they do not value the tax difference in relation to the printed book. VAT, like any tax on consumption, has the advantage of being a relatively invisible tax of which the political cost of introduction, or increase, is not high. On the other hand, it is a regressive tax that complicates access to taxed goods for those individuals with lower incomes, and which is, moreover, difficult to control if the taxable operations are not declared.

With these elements of analysis it is not surprising that it is a fertile ground for the proliferation of digital piracy, giving rise to economic problems and, ultimately, to a decrease in states' tax revenue.

7 References

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