1 Introduction

creative quality of a title and use this together with the number of existing editions as a determinant

Gutenberg website and in the Bowker Books-in-Print directory. I also observe information on the

each title's website. The monthly download count will allow me to obtain a distribution of title

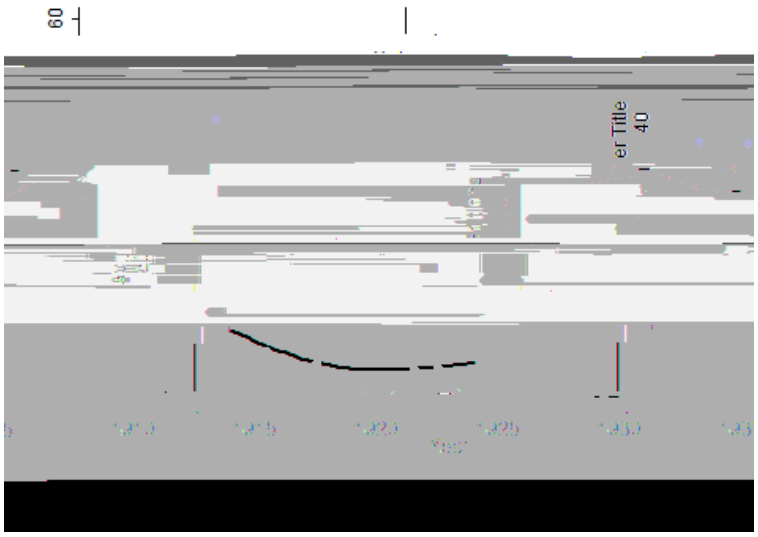

Figure 1: Number of ISBNs per Title: Copyright E ect = -28.053 versions

between formats play an important role in determining the exact e ect on each of the formats. This - and the e ect of a title's creative quality - will be taken into account and analyzed in the full model. Table 3 shows results of a regression of each format on quality and availability through di erent channels.

Treating the quantity demanded through British Libraries (PLR) as an indicator of quality,

Table 4: Regression Discontinuity - Price per Edition

	(1) Hardcover	(2) Paperback	(3) E-Book	(4) All
Copyright	4.433	-0.401	3.724***	1.436
	(7.839)	(1.682)	(0.170)	(2.134)
PLR Demand	0.018***	-0.0020***	-0.00010**	0.0036***
	(.0031)	(.00065)	(.00005)	(.0008)
Pulitzer Prize	-2.882	-3.462**	-0.291***	0.508

to estimate xed costs by title, format and copyright regime.

(edition) j and the outside good can be expressed as

$$\ln s_j \quad \ln s_0 = \quad _j + \quad _j + \quad _1 \ln s_{j|jwk} + \quad _2 \ln s_{kjw} + \quad _{ij};$$

where

$$_j = \quad _0 + \quad _{age} age_j + \quad _{new} new_j \qquad p_j + \quad _w + \quad _j:$$

In this model, p_j

the quality of its competitors[11]:

$$s_j = \frac{\exp\{ _j=(1 \quad _1)g}{D_k^{(\ _1 \quad _2)=(1 \quad _2)} D_w^{\ 2} (1 + \sum_{w' 2 W} D_{w'}^{1 \quad \ _2})} \tag{1}$$

where $D_k = \sum_{j 2 J_{wk}} \exp\{ _j=(1 \quad _1)g$ and $D_w = \sum_{k 2 J_w} D_k^{(1 \quad _1)=(1 \quad _2)}$. An additional edition with mean quality $_{wk}$ will a ect each existing edition's market share. Since, generally (and in each of my speci cations), the $_2$ term (the coe cient on the share of the broader nest) will bee -33der re feedition(witian).312(the).312narron market sharsr

the supply estimation focuses on the entry margin.

In stage 1 of the game, rms enter based on their expected pro ts. From the demand side model, I obtain market shares as a function of the number and qualities of the available editions

and similarly for P and E. At the same time, it cannot be pro table for edition managers to switch from one format to another, so that we get an additional set of restrictions:

$$\begin{aligned} &\overset{O}{}_{w;H}(n_H; n_P; n_E) \quad F^O_{w;H} \qquad \overset{O}{}_{w;P}(n_H \quad 1; n_P + 1; n_E) \quad F^O_{w;P} \\ &\overset{O}{}_{w;H}(n_H; n_P; n_E) \quad F^O_{w;H} \qquad \overset{O}{}_{w;E}(n_H \quad 1; n_P; n_E + 1) \quad F^O_{w;E}: \end{aligned} \tag{4}$$

Similar restrictions apply to paperback and e-book editions. These inequalities as well as the de nition of pro ts as given in equation (2) identify upper and lower bounds of xed costs for publishing an edition of title w in format k

from the demand estimation. The additional restriction that $_k(n_H; n_P; n_E) > 0$ for each $k \in \{H; P; E\}$ will be satisfied as long as the demand model is well-specified.

Table 5: Demand Estimation

	(1) OLS	(2) IV Logit	(3) Title - Format
New	1.069***	1.379***	0.276***
	(0.0339)	(0.0306)	(0.0248)
Price	-0.0503***	-0.124***	-0.0246***
	(0.00107)	(0.00158)	(0.00152)
Major	-0.171***	-0.131***	0.0576***

particularly close to 1 at 0.952, but there is a high correlation of tastes within titles as well, with a

Table 6: Quality Rankings - Top 10

	Title	Pulitzer Prize
1	The Age of Innocence (1921)	X
2	Babbitt (1922)	
3	All Quiet on the Western Front (1929)	
4	The GTd [(pBd33(on)Earth)28(t)-333(e[illegible]	

Figure 4: Editions per title as a function of quality

The empirical distribution of the product-speci c unobservables $_j$ follows a normal density closely. To obtain estimates of the bounds of xed costs of publishing a title-format combination, I draw the terms from format-speci c normal distributions to obtain the quality $_j$ of a hypothetical

xed cost bounds, I then use

$$F^{O}_{wk} \quad \frac{1}{-} \quad (p_j \quad c^{O}_{k}) \quad q_j ($$

for protected titles as average prices are slightly higher as well (although this di erence is not signi cant[19]

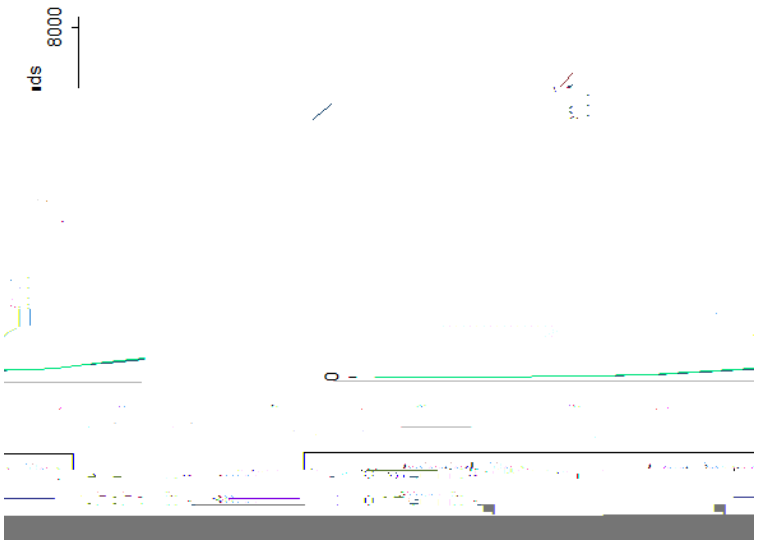

Figure 6: Fixed Cost Bounds by Creative Quality

even in the public domain. Table 9 summarizes pro ts for editions under their current coypright

through a change in the number of competitors per title. A combination of these effects is analyzed in the following section.

5 Policy Analysis

The above results provide a framework for testing the effects of a copyright on consumer and producer surplus. In each copyright regime, a title-format combination is assigned a fixed and variable cost based on the demand and supply results above. An equilibrium in the number of

In my application, the di erence in consumer surplus from title w is then

$$4E[CS] = \frac{1}{-}4^{2}$$

could be available by the end of the decade[23]. A calculation that takes into account the distribution of creative qualities by year can quantify the welfare e ect of a copyright extension[24]. Using the set of works in this paper, and a rst estimation of the distribution of creative qualities as obtained

The lowest-quality titles are often di cult to come by and are only available in a few

that consumers bene t from the existence of Project Gutenberg. On the producer side, pro ts will be dissipated whether there is a free option or not. The magnitude of the e ect of the copyright extension thus is primarily a ected by the e ect on consumers. The average contribution of free

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[21]

A Appendix

A.1 Obtaining Demand Data

There is little literature on the book publishing industry, mostly because it is di cult to obtain

demand.

A.2 Discontinuity in Availability

In section 2.2 I illustrate the e ect of the copyright extension in a regression discontinuity design (RDD) setup. While a copyright does not have a signi cant e ect on the prices of physical editions,

A.3 Market Shares and Elasticities

While formulas for market shares and elasticities of logit and one-level nested logit models are widely known in demand estimation (see, for example, Berry (1994)), the extension to two levels of nests is tedious. My demand model includes one level of nests for titles, and another level of nests

A.4 A Move into the Public Domain - Selected Titles

In this section I present how a move of a few representative titles of di erent quality levels a ects total surplus. Table 13 shows welfare e ects for selected low-quality, medium quality and high-