Stronger copyrights are expected to increase the profitability of creative work at the cost of limiting access. There is, however, little empirical evidence to suggest that copyrights increase price, as a key mechanism by which stronger copyrights may determine profitability and diffusion. This paper exploits a differential increase in the length of copyright under the 1814 U.K. Copyright Act - in favor of books by dead authors – to examine whether stronger copyrights increase the price of books. Difference-in-differences analyses, which compare the price of books by dead and living authors before and after 1814, indicate a large and robust increase in price in response to stronger copyrights. These results are robust to controlling for the age of books, differences across authors, and a broad range of alternative specifications. Historical evidence points to inter-temporal price discrimination as the mechanism by which copyright increases the price of book.
Copyright plays an increasingly important role as a mechanism to provide intellectual property in creative works. For example, U.S. employment in copyright-intensive industries, such as computer systems design, advertising, books, and video, increased by 46 percent between 1990 and 2011. By 2012 copyright-intensive industries accounted for a larger share of U.S. employment than patent-intensive industries, such as machinery and electronic components (U.S. Department of Commerce 2012, pp. 39-40). The optimal strength of copyright protection is the subject of intense debate. In the United States and Europe, copyright creates exclusive rights for 70 years after the author’s death. In China, India and other emerging economies copyright terms are substantially shorter, and international pressure is mounting to switch to stronger and more effective protection.1 Stronger copyrights are expected to increase the profitability of creative work (Liebowitz and Margolis 2005) at the cost of limiting its diffusion (Akerlof et al. 2002).

There is, however, little empirical support for the hypothesis that stronger copyrights increase the price of creative works, even though price is the fundamental mechanism by which stronger copyrights may encourage creativity and limit access to creative works. An important empirical challenge is that modern changes in copyright typically occur in response to lobbying by the owners of particularly valuable and long-lived works. For example, the 1998 (Sonny Bono) U.S. Copyright Act also became known as the Mickey Mouse Protection Act because copyright for Mickey Mouse would have expired in 2003, and the Disney Company had “lobbied hard” for the extension (e.g., Lessig 2001).2 Similarly, Britain’s 2011 extension in the length of copyright for recorded music became known as Cliff (Richard)’s Law (Halliday 2011), and

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1 In China and India, copyright laws offer nominal protection for 50 and 60 years, respectively, but enforcement is weak. For example, a 2011 letter signed by more than 50 Chinese authors accused China’s top search engine, Baidu, of infringing on copyright by allowing users to post works online without the authors’ permission (Lee, 2011).
2 The Act extended the length of copyright from life of author plus 50 years for individual and 75 years for corporate owners to life of author plus 70 and 95 years (U.S. Copyright Office, 2012).
Germany’s Internet Copyright Act of 2013 was passed after intense lobbying by large publishing firms (e.g., Bierman 2013).³

Existing empirical analyses have documented counter-intuitive correlations between stronger copyrights and price. For example, Liebowitz (1985) shows that academic journals increased subscription prices for libraries after 1959, when libraries began to install copy machines, which allowed library patrons to copy journal articles in violation of copyright. Khan (2005, pp. 268-269) finds that pirated books by European authors sold for a higher price in the United States than copyrighted books by U.S. authors, possibly because U.S. readers preferred pirated books by European authors.⁴ Heald (2008) establishes that books first published between 1919 and 1923 - and therefore off copyright in 2006 - sold for nearly the same price in 2006 as bestsellers published between 1923 and 1932 - and therefore still on copyright.

Analyses of contemporary prices, however, may be affected by selection bias because books that remain in print for 70 years after their author’s death may be exceptionally durable. Thus, Heald (2008, p. 1038) observes that, in a data set of 20 “somewhat more subjectively” chosen durable bestsellers between 1919 and 1932, bestsellers on copyright sold for nearly double compared with those off copyright.

³ The most direct evidence on the causal effects of copyright comes from analyses of piracy in the U.S. music industry, which have documented limited effects of file sharing on record sales (Oberholzer-Gee and Strumpf 2007; Waldfogel 2011b) and on the production of new songs (Waldfogel 2011a). Empirical evidence on the effects of the 1995 U.S. Copyright Act is inconclusive: the number of movie releases per year in the United States did not increase in 1999 and 2000 compared with in nine years between 1990 and 1998 (Hui and Png 2002). Data on 74 popular songs that were copyrighted between 1909 and 1932 and used in at least 4 movies indicate that 19 songs that had fallen into the public domain and 55 songs still on copyright were equally likely to be used in movies, suggesting that the absence of copyright encourages neither the under- nor over-exploitation of works (Heald 2009).

⁴ For books that the U.S. publisher Ticknor and Fields distributed in the United States between 1832 and 1858. Although U.K. copyrights were not enforceable abroad, copyrights appears to have been enforced effectively in England with stiff penalties and strict searches for illicit imports (e.g., St. Clair 2004, p. 200 and 299).

⁶ For example, the price data that we have collected for this paper indicates that the average book between 1790 and 1840 sold for 17 shillings, compared with working-class male wages “between 9 and, very exceptionally, 40 shillings a week” (Bautz 2007, p. 12). Instead, St. Clair (2004, p. 198) argues that harsh winters and food shortages in the 1820s increased demand by increasing the real income of wealthy landowners. Middle-class readers "rented" books through circulating libraries in a system similar to video rental stores (Roehl and Varian 2000).
To help address these issues and identify the causal effects of a shift towards stronger copyrights on price, this paper exploits an unintended and unanticipated differential increase in the length of copyright in favor of books by dead. Intended to clarify a requirement to deposit copies of copyrighted books with research libraries, the U.K. Copyright Act of 1814 also extended the length of copyright. Until 1814, the length of copyright was 14 years for dead and 28 years for living authors. After 1814, the length of copyright changed to 28 years for dead authors and to the length of the author’s life for living authors. In a debate that focused heavily on the deposit requirements, this change passed Parliament without significant discussion (Deazley 2007, p. 840). Given historical life expectancies, however, it created a substantial differential increase in the length of copyright in favor of dead authors.

Difference-in-differences analyses exploit this differential increase in copyright to identify the effects of stronger copyrights on the price of books, controlling for unobservable factors, which may have influenced the price of all books after 1814. For example, books may have become more expensive as demand for pleasure reading increased with the end of the Napoleonic wars. Advances in literacy may also have raised demand, even though books remained an unattainable luxury for most (St. Clair 2004, p. 196). Alternatively, books may have become cheaper with the diffusion of technical improvements, such as continuous papermaking and steam-powered printing.

To perform this analysis, we have collected a rich new data set on 1,072 book editions published between 1790 and 1840, including 902 editions of titles within 14 years of their initial

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7 By 1862, most books were produced on steam-powered printing press, although printers with as many as 10 employees continued to print books without mechanical power. Although paper continued to be produced from linen rags until the mid 19th-century (Plant 1974, pp. 326-328), the switch from producing individual sheets of paper to the continuous roll process (patented in 1799) reduced the share of paper in the total cost of producing books from 2/3 to less than 1/10 in the course of the 19th century (Plant 1974, pp. 269-279 and 329-340).
publication. Price data were constructed from a literary history of the Romantic Period (1790-1840, St. Clair 2004) and from historical book catalogues, such as the *London Catalogue of Books* (Brown et al. 1799; Hodgson 1851) and the *English Catalogue of Books* (Peddie and Waddington 1914). To control for variation across the life cycle of an intellectual asset, we collected data on years of first editions from *Google Books* to calculate the age of each book in the publication year of a new edition. These data allow us to control for variation in price across the lifecycle of books, irrespective of copyright. We also control for variation in production costs and willingness to pay across four genres: novels, poetry, other fiction and non-fiction. To control for variation in price that may be due to differences in the literary quality of books (e.g., Khan 2005, pp. 268-269), we create an indicator variable for books in Harold Bloom’s (1994) *Western Canon*. To control for physical characteristics, which may influence production costs and consumers’ willingness to pay, we also collect data from *Google Books* on the number of pages in a book and on its physical size.

In contrast with previous analyses, difference-in-differences analyses of these data reveal a large and robust increase in price in response to stronger copyright. Controlling for variation in price across book ages and authors, books by dead authors became 20.02 shillings more expensive after 1814, compared with books by living authors. Relative to an average price of 17.79 shillings after 1814, this implies an 8 percent increase for each additional year of copyright. These results are robust to controlling for canonical works and genres, with an estimated price increase of 20.22 and 17.76, respectively. Regressions, which separately estimate the “effect” of copyright for five-year intervals *before* and after 1814, indicate that

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9 Non-fiction includes travel reports and Adam Smith’s *Wealth of Nations*.
10 This implies an elasticity of price with respect to the length of copyright of 0.9 (estimated percentage change in price over percentage increase in the length of copyright). See section III for more detail.
effects became statistically significant after the Act, with no significant pre-trends. Results are also robust to excluding books by popular authors, such as Sir Walter Scott, who died after 1814, and to excluding books by recently deceased authors, which may have sold for a higher price. Regressions with controls for page numbers and for the physical size of books imply even larger effects on price, although estimates are based on a more limited data set with information on page numbers and page size.

The main threat to the identification strategy is that books by dead authors may have become more expensive after 1814 as a result of changes in tastes or other unobservable factors that differentially affected the price of books by dead authors. To address this issue, we examine whether books by dead authors that did not benefit from longer copyright terms also became more expensive after 1814. Specifically, we exploit the fact that Copyright Act only increased the length of copyright for books by dead authors that had been in print for 14 years or less but did not increase copyright terms for books by dead authors that had been in print for more than 14 years. Placebo regressions yield no evidence of a statistically significant increase in price for these after 1814, indicating that unobservable factors that differentially affected books by dead authors are unlikely to have driven the observed increase in price.

We also examine whether the observed increase in price may have been due to inter-temporal price discrimination, which is a standard assumption in empirical models of firm behavior (e.g., Nair, 2007 and Ching, 2010).\footnote{In the theoretical industrial organization literature, the dynamic strategic interaction between firm and consumers are widely explored in many papers, including the seminal work of Coase (1972). In the literature on the dynamics of firm behavior arising from Ericson and Pakes (1995), however, allowing for both forward-looking firms and consumers, “is likely to increase the burden of computing equilibria significantly” (Doraszelski and Pakes, 2007). Nair (2007) analyzes strategies of price discrimination that rely on copyright protection in the video industry. He assumes firms pursuing dynamic pricing strategies with forward-looking consumers, and the model incorporates both firm dynamics and consumer dynamics. The price path simulated from his model is consistent with our findings that prices decrease as time goes by. Ching (2010) estimates a dynamic oligopoly structural model for the} Analyses of mechanisms that weaken copyrights
have shown that owners *increase* the price of copyrighted works in response to mechanisms that weaken the effectiveness of copyright, and allow more people to use a copyrighted good. Liebowitz (1985) explains that academic journals may have increased subscription prices for libraries after the introduction of copy machines, which increased the value of a library’s journal subscription for its patrons. Varian (2005) derives theoretical predictions to explain how the price of information goods, such as materials in books and journal articles, may respond to technologies, such as copy-machines, which weaken the effectiveness of copyright. Mortimer (2007) derives predictions about firms’ optimal pricing strategies under the “First Sale Doctrine” of U.S. copyright, which allows video stores to lease movies and finds that indirect price discrimination, by which studios charge higher prices to video stores upon the release of a new film and charge lower prices to consumers later, maximizes consumer welfare.

Our approach builds on this literature by examining the effects of a change in copyright policy, and specifically, and extension in the length of copyright protection. An extension in the length of copyright from $T$ to $T+c$ may increase price by preventing competitors from entering with cheaper copies for an additional number of years $c$. If a large enough share of consumers who are willing to delay their purchase until copyrights expire in period $T$ are unwilling to delay until $T+c$, the extension allows copyright owners to charge a higher price.\textsuperscript{12}

Historical evidence indicates that even extremely wealthy customers were willing to delay book purchases to wait for cheaper edition. These customers, however, are unlikely to have waited for the additional 14 years of the extension granted to books by dead authors. Our

\textsuperscript{12} Chevalier and Goolsbee (2009) documented forward-looking consumers in buying college textbooks. Because of the existence of secondary market, prices do not go down as books became old.
analysis suggests that publishers exploited such variation in consumers’ willingness to pay to practice inter-temporal price discrimination.

Price data also indicate that books became cheaper as they approached the end of their copyright terms. These tests exploit variation in the remaining years of life across authors, along with data on the year of the first publication and on the age of the books, to estimate the remaining years of copyright for 970 editions that were on copyright between 1790 and 1840. Analyses which estimate variation in price separately for three-year intervals of remaining copyright length publishers began to sell new editions at lower prices as books approached the end of copyright, controlling for book age and time fixed effects. These findings further strengthen evidence in favor of inter-temporal price discrimination as a mechanism by which copyright increases the price of books. 13

I. THE COPYRIGHT ACT OF 1814

Copyright was first formalized through the 1710 Statute of (Queen) Anne, which granted printers exclusive rights to sell books for 14 years, and 28 years if the author was alive at the end of the initial 14-year term.14 The length of copyright was modeled after the length of utility patents under the Statute of Monopolies of 1624 (Deazley 2008b), which in turn was “based on

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13 Pashigian (1991) documented a decreasing in price for fashion goods since their new launch, and his story is firm’s learning of demand. This explanation may not fit in our content of book prices in Romantic period, because we find a differential increase in price for editions by dead authors controlling for years since first edition, which cannot be explained by learning effect.

14 Writers typically assigned the rights to both 14-year terms to a publisher (Bently and Ginsburg 2010, p. 1508; Van Houweling 2009, p. 584; Deazley 2007, p. 844). “A common type of contract, as it had been for centuries, was for the author to sell the copyright to a publisher outright for a lump sum. Under this type of contract, the publisher met all the costs of manufacture and publication, and the author had no further financial claim” (St. Clair 2004, p. 161).
the idea that 2 sets of apprentices should, in 7 years each, be trained in the new techniques”
(Machlup 1958, p. 9).15

A. Clarifying the Deposit Requirement

Under the Statute of Anne, publishers were required to register all copyrighted works with the Stationers’ Company and provide copies to the British Library and ten university libraries. A 1798 decision in Beckford v. Hood to allow infringement damages, even if publishers had not registered their books, created uncertainty about the deposit requirement (Deazley 2008b).

Between 1798 and 1803, deposits of books declined from 620 to 370. In that year,

“Basil Montagu (1770-1851), a barrister and author, sent to Cambridge University library for the seventh volume of the Term Reports (which volume, ironically, contained the report of the decision in Beckford)….The library responded that they did not have a copy of the book he had requested and Montagu decided to investigate the matter further. Of all the works published in 1803 (which he underestimated at 391), he could only find twenty-two in the university’s library” (Deazley 2008b, p. 817).

In 1805, Montagu published an essay arguing that “the intention of the legislature, to assist in the regular augmentation of the library, was likely to be defeated.” Montagu’s essay triggered a debate that reached the House of Commons in 1808 (Deazley 2008a).

Booksellers opposed the deposit requirement because it “will subject the petitioners to great expence (sic), and operate very seriously to discourage literature” (London Booksellers’ Petition Respecting Copy-rights, &c. 1812, p. 310). For example, the printer Richard Taylor argued that for some books “the eleven copies would…prevent their being printed at all.”16

15 A system of steep fines ensured enforcement. In 1801, for example, a printer who had violated copyright lost all infringing copies of his book and paid a fine of 3d per sheet, “half to the crown, and half to whoever sued for it” (Seville 1999, p. 239). Printers who imported infringing books were fined £10 (Seville 1999, p. 239), roughly 20 times the average weekly wage of working-class men in the early 1800s (Bautz 2007, p. 12).

16 Select Committee on Acts for the Encouragement of Learning: Minutes of Evidence (1812-13, p. 29-30).
Booksellers were particularly concerned about the requirement to provide copies on “best paper” because the quality of paper had increased significantly since 1710.

“best paper copies, at the passing of the said act, were not similar to the expensive fine paper copies now printed” (London Booksellers’ Petition Respecting Copy-rights, &c., London 1812, p. 310).

These issues became more severe during the Napoleonic Wars (1803-1815), when disruptions in trade, for example as a result of the blockade of Britain in 1806, led to “material restrictions, especially paper-shortages” (Bautz 2007, p. 12). By 1813, Thomas Longman reported that the costs of paper accounted for two-thirds of the costs of publishing an edition of 500 copies.17

Proponents of the deposit requirement countered that

“...continuing the delivery of all new works, and in certain cases of subsequent editions, to the libraries now entitled to receive them, will tend to the advancement of learning, and to the diffusion of knowledge. (Report of the Acts Respecting Copyright 1813, p. 709)

They did, however, also concede that books could be submitted on lower quality paper, to reduce the costs of depositing books

But it will be expedient to modify some of the existing provisions, - As to the quality of the paper, which may fairly be reduced from the finest sort and largest size, to that used in the greater part of an edition…” (Report of the Acts Respecting Copyright 1813, p. 709)

Passed on July 29, 1814, the Copyright Act affirmed the requirement to deposit copies with the British Museum and 10 university libraries within 12 months of publication (§ 2).18 The Act, however, also relaxed the requirement to deposit 11 copies on “best paper” and instead required printers to provide 1 such copy for the British Museum (Copyright Act 1814 § 3).19

18 The deposit requirement covered all first editions, as well as later editions if their content was substantively different (1814 Copyright Act, § 3). The law required publishers to deposit only books that libraries requested but “libraries rarely exercised any discretion in the demands that they made” (Deazley 2007, p. 837).
19 An Act to amend the several Acts for the Encouragement of Learning, by securing the Copies and Copyright of Printed Books, to the Authors of such Books or their Assigns, 1814, 54 Geo.III, c.156, available at http://copy.law.cam.ac.uk/record/uk_1814.
B. Extension to 28 Years or Life of Author

In addition to clarifying the deposit requirement, the 1814 Act also extended the length of copyright to “the Residue of (the author’s) natural Life” (§ 4). Historical accounts suggest that this change resulted from an “opportunistic and timely intervention” on July 18 by Samuel Egerton Brydges, a Member of Parliament who was also writer, rather than a “principled or considered position adopted on the part of the legislature” (Deazley 2007, p. 839).20 Draft bills between May 18 and July 15 maintained existing terms of “twenty-eight years…and no longer” (Deazley 2007 p. 839). A July 19 draft was first to specify an extension of copyright to “the residue of (the author’s) natural life.”

The Act also simplified the existing law to create a uniform 28-year term for books by dead authors (§ 8), regardless of whether the author had survived the first 14-year term. This provision was added to the draft bill on July 26, 1814 “without any significant discussion” (Deazley 2007, p. 840).21

C. Booksellers and Authors Oppose the Copyright Act

For several years after the Act had passed, booksellers, and authors continued to express their opposition to the Act, and in particular to the burden of the deposit requirement, making clear “that the extended term was of little interest or value to them…and that the Bill] did little other than service the needs and interests of the university libraries” (Deazley 2007, p. 837).

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20 Sir Samuel Egerton Brydges (1762-1837) “occupied himself with literary work, issuing reprints of rare English pieces from the private press established at Lee Priory,” and was an MP from 1812 to 1818 (Alumni Cantabrigienses, available at http://venn.lib.cam.ac.uk, accessed on April 6, 2013).

21 The first mention of the uniform term was in the Petition of the Printers of London and Westminster, London (1813, p. 11-12) to reduce “hardships to the families of authors;” uniform terms are again mentioned in the last paragraph of the June 1813 Report from the Committee on the Copyright of Printed Books (1818, Appendix, p. 7). “Copyright…extends at present to fourteen years certain, and then to a second period of equal duration, provided the Author happens to survive the first….no adequate reason can be given for this contingent reversion, and that a fixed term should be assigned beyond the existing period of fourteen years.”
On March 12, 1818, John Nichols writes in a letter to Rogers Ruding “Booksellers, Authors, and all persons interested, are making a strong push at present to endeavour to get redress from the onus of the Copyright Act.”

For example, publisher Thomas Longman responded to questioning by Member of Parliament Davies:

Davies: “As a principal bookseller, and a great purchaser of copy right, did you not consider an extension in the term of copy right, quite equivalent for the loss which they would sustain by the delivery of the eleven copies?”

Longman: “I did not consider that.”

Referring to the 14-year extension for books by dead authors, bookseller Owen Rees testified in 1818:

“Rather than pay the 11 copies, would you surrender the 14 years copyright given by the Act? Yes, we would…The copyright of 14 years then, has been of no great avail to you? –No.”

D. A Differential Increase in the Length of Copyright for Dead Authors

A potential explanation for publishers’ lack of enthusiasm is that, given historical life expectancies, the extension to “life of author” implied only a nominal increase in copyright. Data on publication years (which we describe in more detail below) show that the average author was 42 years old when the first edition of a book was published, which determines the start date for copyright.

To estimate the remaining length of the author’s life at age 42, we collect demographic data for all 947 British writers in the Dictionary of Literary Biography who were born between

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22 John Nichols was a publisher who had published Ruding’s Annals of the Coinage of Great Britain and its Dependencies, BL 515.1.20(4) cited in Deazley 2008.
23 Parliamentary Select Committee on Acts for the Encouragement of Learning in 1813, pp. 11-12.
24 Minutes of the Select Committee on Copyright Acts (1818, p. 9). Despite these debates, the 1814 Act remained in place until 1842. In 1818, a unanimous decision in Brooke v. Clarke (1818) confirmed that copyrights that had already expired should not be revived by the Act (Deazley 2006, p. 35-36).
25 With a standard deviation of 13 and a median of 40 for 105 authors of 436 first editions between 1790 and 1840; data on first editions were collected from Google Books, http://books.google.com/, accessed September 4-20, 2012.
1700 and 1840, and create life tables for British writers across age brackets and over time.\textsuperscript{26} This approach allows us to estimate remaining years of life conditional on the author’s survival to age 42 and conditional on changes in life expectancy over time. Life tables predict the expected remaining years of life \( R([a, a+4], [t, t+4]) \) for a British writer at age bracket \([a, a+4]\) in five-(calendar) year intervals \([t, t+4]\) between 1790 and 1840. For the median author in an age bracket, expected remaining years of life are calculated as the average across all authors in the same age bracket at the same time. A 42-year old author is the median author for the \([40,42]\) age bracket; in the time interval 1815-1819 the expected remaining years of life for a 42 year-old author are \( R(42, [1815,1819]) = R([40,44],[1815,1819]) = 28.42 \) years.\textsuperscript{27}

By comparison, the switch to a uniform 28-year term for dead authors increased copyright by 14 years for books by dead authors (Table 1). Taken together, these two changes imply a differential increase in the length of copyright of nearly 13 years. We exploit this differential increase in favor of books by dead authors to investigate the causal effects of stronger copyright terms on price.

II. THE DATA

To investigate the potential effects of copyright on the price of books, we have collected a rich new data set, which includes the price of 1,072 newly published editions between 1790 and 1840, along the age of a book title at the time of the new edition, the author and genre of the book, and measures for variation in literary quality and physical characteristics.

\textsuperscript{27} These estimates exceed estimates based authors’ average age at death because they are conditional on survival until age 42 and because many writers were female, and have higher life expectancies. For example, Scherer (2004, p. 8) finds that 646 predominantly male European composers between 1650 and 1849 lived 64.5 years on average, with a median of 66 years. Life tables also make it possible to estimate remaining years of life for authors at other ages. For example, the expected remaining year of life for a 40 year old author at the time of the Copyright Act can be calculated as \( R(40,[1815,1819]) = 0.6 * R([40,44],[1815,1819]) + 0.4 * R([35,39],[1815,1819]) = 29.22 \) years.
II.A. Prices for New Editions, 1790-1840

Price data are drawn from historical book catalogues and St. Clair’s historical account of *The Reading Nation in the Romantic Period* (2004). St. Clair collected price data for of 534 newly published editions between 1790 and 1840 from book catalogues, such as the *London Catalogue*, the *English Catalogue* and the *Modern Catalogue of Books*, as well as from the correspondence of authors and publishers and other types of archival records. We extend St. Clair’s data with additional data for 429 newly published editions between 1801 and 1840 from the *English Catalogue of Books* (Peddie and Waddington 1914) and for 109 newly published editions between 1790 and 1840 from the *London Catalogue of Books* (Brown et al. 1799; Hodgson 1851).

These data provide information on the price of books for 1,072 editions between 1790 and 1840, including 902 editions that had been in print for 14 years or less. The average edition in the data sold for 17.71 shillings, more than the weekly wage of a typical working-class male (Bautz 2007, p. 12). Consistent with the idea that technical improvements reduced the price of books, comparisons for the full data set of all 1,072 editions indicate that 365 editions published until 1814 sold for an average price of 18.05s, while 707 editions published after 1814 sold for an average price of 17.54s.

28 Anecdotal evidence indicates that most consumers paid list prices for books. When some retailers attempted to sell book prices below list prices in 1829, the London Booksellers’ Committee decreed that they would no longer be supplied with books (Barnes 1964, p. 1).

29 For a data set of 902 new editions between 1790 and 1840 of titles that had been in print for 14 years or less, including 307 editions until 1814. For books that were published in multiple volumes, prices are for the set of volumes if the volumes were sold together. If volumes were sold separately, such as Sir Walter Scott’s *Tales of a Grandfather* (1828, 1830 and 1831), each volume is treated as a separate observation.

30 The median price for books fell from 12s in 1810-1814 to 10.5s in 1815-1819, at which level it remained until 1834, before falling to 8.5s for 1834-1839. The data also indicate that prices became more dispersed over time: For
more expensive after 1814; 307 new editions between 1790 and 1814 sold for an average of 17.59s, and 595 new editions between 1815 and 1840 sold for an average of 17.79s.

II.B. Book Age and Variation across Authors

To control for variation in price across the life cycle of a book, we collect data on first editions from the online catalogues of the British Library, and calculate the age of each edition as the difference between the publication year and the year of the first edition. Among 1,072 editions in the data, 902 are editions of books that have been in print for 14 years or less; these data include 18 editions by dead authors until 1814 and 24 editions by dead authors after 1814.

To control for idiosyncratic differences in popularity across authors and for variation in consumers’ willingness to pay across genres, we also create identifiers for individual authors by matching author names for all 1,072 editions with author names in the Dictionary of Literary Biography. Errors as a result of optical character recognition (OCR), such as recording Jane Austen as Jane Auslen, may prevent true matches in a fully automated search that captures exact matches only. To address this issue, we create a fuzzy matching algorithm that uses Levenshtein distances to identify probable matches, and check all probable matches individually to eliminate false positives. This process creates unique identifiers for 137 authors of 1,072 editions, including 116 authors of 902 editions of books that had been in print for 14 years or less.

II.C. Literary Quality and Genre

example, the interquartile range of prices (measured as the difference between the upper and lower quartiles of the price distribution) increased from 14.0s in 1810-1814 to 25.5 in 1834-1839.

31 Available at http://explore.bl.uk, accessed September 4-20, 2012.

32 Levenshtein distances measure the minimum number of insertions, deletions, or substitutions that make two strings of characters identical. For example, a misspelling of “Jane Austen” as “Jane Auslen” has a Levenshtein distance of 1. We check all matches that have a Levenshtein distance of 0 or 1 to eliminate false positives.
To control for variation in literary quality and across genres, we match editions with 138 book titles in Harold Bloom’s (1994) *Western Canon of English Literature*.³³ Twenty-seven of 609 titles (4.3 percent) entered the *Canon*; these titles account for 102 editions in the data (9.5 percent). We consult the *Dictionary of Literary Biography* and other reference works to distinguish novels, poetry, other fiction, and non-fiction (following Suarez’s 2010 classification of genres).

Two thirds (703 of 1,072) of all editions printed between 1790 and 1840 are fiction; works of fiction include 392 volumes of poetry (such as Lord Byron’s *Childe Harold’s Pilgrimage*), 260 novels (such as Jane Austen’s *Pride and Prejudice*, and Mary Wollstonecraft Shelley’s *Frankenstein*), as well as 51 works of children’s literature, plays, hymns, and songs. One third (369 of 1,072) of all editions are non-fiction, including Adam Smith’s (1776) *Wealth of Nations*, and travel reports, such as William Hazlitt’s (1826) *Notes of a Journey through France and Italy*. Fifteen of 27 titles in the *Canon* (48 editions) are novels, such as Jane Austen’s (1813) *Pride and Prejudice*; 8 titles (18 editions) are poetry, including Lord Byron’s 1807 *Poems on Various Occasions* and 4 titles (36 editions) are non-fiction, such as Edward Gibbon’s (1776), *The Decline and Fall of the Roman Empire*.³⁴

**II.D. Page Numbers and Size**

To control for variation in the physical characteristics of books, we collect data on page numbers from the online catalogues of the British library and from Google Books. This search

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³³ The first entry in the *Canon* is William Wycherley’s *Country Wife* (1675); the most recent entry is Christopher Smart’s *Jubilate Agno* (1939). Bloom’s (1994) *Canon* does not include the *Wealth of Nations*.  
³⁴ Overall, the *Canon* includes 77 novels, 15 volumes of poetry, and 32 works of non-fiction.
yields page numbers for 795 of 1,072 editions between 1790 and 1840, including 692 editions of 902 editions that had been in print for 14 years or less.35

Among all 795 editions with data on page numbers, the average book was 404 pages long (with a median of 331 and a standard deviation of 365); among 692 editions in print for 14 years or less, the average book was 397 pages long (with a median of 325 and a standard deviation of 360). Novels were 613 pages on average, with a standard deviation of 433, and a median of 455. Volumes of poetry included 281 pages on average, with a standard deviation of 259 and a median of 237. Other works of fiction, such as children’s books and hymns were shorter than novels and volumes of poetry (with 169 pages, a standard deviation of 135, and a median of 114). Works of non-fiction were only slightly shorter than novels, with an average of 459 pages, a standard deviation of 378 and a median of 331.36 In the baseline empirical analysis, genre fixed effects control for such variation; a robustness check controls for the number of pages.

Information on the size of books, relative to the size of a standard sheet of paper, is available for 777 of 1,072 editions. For example, folding a standard sheet of paper twice to reduce a page to one quarter of its size produces a quarto edition (4to); quartos account for 45 of 777 editions (5.8 percent).37 Folding once more to create one eight of a sheet produces an octavo (8vo); 529 editions are octavos, accounting for 68.1 percent of 1,072 editions. Duodecimo editions (12mo) accounts for 197 editions (25.4 percent); sextodecimo (16mo) account for 3

35 A search of these records for each of the 1,072 editions in the data yields page numbers for 17 editions in the online catalogues of the British library (available at http://explore.bl.uk, accessed September 4-20, 2012), and for 675 editions in Google Books. Google Books includes digital copies of holdings from 21 libraries (including the University of Michigan, Harvard, Stanford, and the Committee on Institutional Cooperation; http://books.google.com/, accessed September 4-20, 2012). For 249 editions with missing data on page numbers, page numbers are available for at least one edition of the same book title within ten years before or after; for these editions, we use page numbers for the edition that is closest in time. Within titles, there is little variation in page numbers, (for example as a result of differences in layout or font size, is relatively low, with a standard deviation of 16.88 pages for the 143 titles.
36 A 1791 edition of Adam Smith’s Wealth of Nations was 987 pages long.
editions (0.4 percent), and the decimo-octavo (18mo), vingesimo-quarto (24mo), and trigesimo-
secundo (32mo) each account for 1 edition. We use this information to perform robustness
checks for price effects controlling for the physical characteristics of books.

III. RESULTS

Summary statistics indicate a substantial increase in price after 1814 for books by dead
authors compared with books by living authors. For books that had been in print for 14 years or
less, the price of new editions of books by dead authors nearly doubled after 1814, increasing
from 17.69s between 1790 and 1814 to 33.39s between 1815 and 1840 (Figure 1 and Table 2).
By comparison, the price of books by living authors declined from 17.64s to 17.13s.

III.A. Changes in Prices after 1814 for Books by Dead and Living Authors

Baseline difference-in-differences OLS regressions estimate

\[ price_{it} = \alpha_0 + \alpha_1 dead_{st} + \alpha_2 dead_{st} \times post1814_t + \varphi_a + \delta_t + f_s + \epsilon_{it} \]

where the outcome variable \( price_{it} \) measures the price of a new edition \( i \) in year \( t \). The variable
\( dead_{st} \) equals one for books if author \( s \) had died before year \( t \); \( post1814_t \) equals 1 for years
between 1815 and 1840. Under the assumption that changes in price after 1814 would have been
comparable for editions by living and dead authors if there had been no change in copyright, the
coefficient for \( dead_{st} \times post1814_t \) estimates the causal effect of an increase in the length of
copyright on price. Book age fixed effects \( \varphi_a \) control for variation in the price of new editions

38 With an average price of 38.90 the largest (quarto) books were twice as expensive as the second most expensive
(duodecimo) books (with an average price of 18.33 and a standard deviation of 19.11). With an average price of
15.0s (and a standard deviation of 17.64), octavo books, which accounted for the majority of editions, were nearly as
expensive as the smaller duodecimo books. Over time, the median price for an octavo edition increased from an
average of 5s in 1790-1794 to 10.5s in 1810-1814, and 21s in 1835-1839, while the median price of a quarto
decreased from 36s in 1790-1794 to 15s in 1830-1834.
across the life-cycle of a book title. Five-year fixed effects $\delta_t$ control for unobservable variation in price over time that is common across all types of books, e.g., as a result of technical progress or changes in the demand for pleasure reading. Author fixed effects $f_i$ control for unobservable variation in price across authors that is constant over time, e.g., as a result of variation in consumers’ willingness to pay across genre or authors. Standard errors are clustered at the level of authors to allow for correlation across editions of the same title and across titles by the same author.

Difference-in-differences analyses confirm the differential price increase for books by dead authors. Baseline estimates indicate that books by dead authors became 20.02s more expensive after 1814 compared with books by living authors (with a p-value of 0.01, Table 3, column 1). Relative to an average price of 17.79s for editions printed after 1814, this implies a 112 percent increase, and an 8 percent increase for each additional year of copyright. Estimates for dead are not statistically significant (with a p-value of 0.43, Table 3, column 1).

This differential price increase is robust to controlling for canonical books and for genres. Estimates with a control for books in the Western Canon indicate that books by dead authors became 20.22s more expensive after 1814 compared with books by living authors (with a p-value of 0.01, Table 3, column 2). Estimates for books in the Western Canon are small and not

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39 Implying an elasticity of 0.88, calculated as the percent increase in price (20.02 relative to the pre-1814 average price of 17.69s for books by dead authors) relative to the percent increase in the length of copyright for dead authors (an extension of 13 years relative to the pre-1814 average length of copyright for dead authors, which equals 13-2.89, the average pre-1814 age of books by dead authors). This elasticity is proportional to IV estimates with death as an instrument for changes in the length of copyright. IV estimates for the baseline imply a price increase of 8.85s for each additional year of copyright (with a p-value of 0.08). The IV exclusion restriction, however, requires that an author’s death does not influence price given the length of copyright; it is violated if consumers’ willingness to pay increases after the author’s death (see section III.D on evidence on changes in the price of books for recently deceased authors). By comparison the identification assumption of the difference-in-difference estimates is much weaker; it requires only that preference bias towards editions by dead authors does not change after 1814.

40 The result is robust to including linear and quadratic time trend instead of five-year fixed effects. Baseline estimates with linear and quadratic time trend imply that books by dead authors became 19.08s more expensive after 1814 (with a p-value of 0.03), which is 108% change compared to all editions printed after 1814.
statistically significant (2.48s, with a p-value of 0.34 Table 3, column 2). Estimates with genre fixed effects indicate a price increase of 17.76s (with a p-value of 0.07, Table 3, column 3).

Specifications with author fixed effects (Table 3, columns 1-3) exploit variation in price for 341 editions by 17 authors whose books were published before and after the author’s death. Intuitively, the difference-in-difference estimate of these specifications reflects a differential increase after 1814 in the price of new editions by the same author after the author’s death. For 3 of these 17 authors, all of their total 15 editions were published before the Copyright Act. For all 3 authors, the average book sold for a higher price while the author was alive (44.25s, 17.25s and 12.00s, respectively), and for a lower price after the author’s death (30s, 7.5s and 7.7s respectively). For the remaining 14 authors, all editions after the author’s death were published after the differential change in copyright. For 12 of these 14 authors, who account for 293 of 326 editions, the average book sold for a higher price after the author’s death. For example, new editions by Robert Bloomfield (1776-1823, 10 editions) sold for an average of 9.25s after the author’s death compared with 7.13s before. Between 1800 and 1822, Bloomfield’s poem *The Farmer's Boy, A Rural Poem* (London 1800) sold for 4s (St. Clair, 2004, p. 582). After the author’s death on May 28, 1824, a posthumous 1827 edition of *The Farmer's Boy* “with plates by Westall” sold for 6.5s (Peddie and Waddington 1914, St. Clair 2004, p.62). Editions of *The Remains of Robert Bloomfield*, which included previously unpublished writings for children along with a selection of Bloomfield’s correspondence, sold for 12s in 1824.

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41 Estimates for interactions between *Canon* and *deadit* *post1814* are not statistically significant, and leave the estimate for *deadit* *post1814* substantially unchanged with 21.68 (and a p-value of 0.01, not reported).

42 For Erasmus Darwin (1731-1802), Joseph Priestley (1733-1804), and Rev. William Paley (1743-1805).

43 In addition to Bloomfield, 14 authors whose books were published before and after the author’s death after 1814 include John O’Keeffe (1747-1833), William Hazlitt (1778-1830), Jane Austen (1775-1817), Matthew Gregory Lewis (1775-1818), Felicia Hemans (1793-1835), Percy Bysshe Shelley (1792-1822), Samuel Taylor Coleridge (1772-1834), Letitia Landon (1802-1838), George Crabbe (1754-1832), Ann Radcliffe (1764-1823), Lord Byron (1778-1824), Walter Scott (1771-1832), and William Hayley (1745-1820). Publishers may also have exploited the
Robustness checks, which exclude author fixed effects to increase statistical power, confirm the main estimates. Specifications without author fixed effects indicate a price increase of 17.15s (with a p-value of 0.08, Table 3, column 4), compared with the standard difference-in-differences comparison of means without author and fixed effects (Table 2). Results are also robust to winsorising observations above the 99th percentile of price, with an estimate of 23.55 for $\text{dead}_{it} \times \text{post}_{1814it}$ (with a p-value of 0.08, Table 3, column 5).  

### III.B. Time-varying Estimates of Differential Effects before and after 1814

To examine the timing of changes, and in particular to investigate whether prices for books by dead authors may have begun to increase before the Copyright Act, we estimate time-varying coefficients, allowing the price of books by dead authors to be different from the price of books by living authors before the Act, beginning in 1805.  

$$price_{it} = \beta_0 + \beta_r \text{dead}_{it} + \phi_a + \delta_t + f_s + \epsilon_{it}$$

where coefficients $\beta_r$ estimate differences in price for books by dead compared with living authors for 5-year intervals $r$ beginning in 1805, with 1810-14 as the excluded interval.

Most importantly, time-varying coefficients yield no evidence of a differential increase in price before 1814. Coefficients are close to zero and precisely estimated for 1810 to 1820 extension in copyright for dead authors to publish a larger share of posthumous editions. The share of posthumous editions, however, is small, with 5.86 percent until 1814 and 4.03 afterwards.

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44 Most observations above the 99th percentile are books by Sir Walter Scott. Two editions of Scott’s Collected Verse Writings (1806 and 1813) sold for 126s and 249s, respectively in 1806 and 1813. Three editions of his Novels and Tales by the Author of Waverley sold for 144s, 120s, and 144s, respectively in 1819, 1821, 1822, and three editions of his Poetical Works sold for 120s each in 1821 and 1830. Robustness checks, which we present below, exclude all editions by Sir Walter Scott. Observations above the 99th percentile of price also include Robert Southey’s History of Brazil (1819, 155s) and Anna Laetitia Barbauld’s The British Novelist (1812, 252s). See Hasing, Mosteller, Tukey, and Winsor (1947) for a description of this method of limiting extreme values.

45 The 1805-09 interval includes the first edition by a dead author, Reverend William Paley’s Sermon (1808).
Consistent with historical accounts of publishers’ slow recognition of the benefits of longer copyright terms and their continued opposition to the Act until the early 1820s (Deazley 2007, p. 437), estimated effects become statistically significant only after 1825, and remain significant until 1840.

III.C. Excluding Books by Popular Authors Who Died after 1814

The most important potential threat to our empirical strategy is that the price of books by dead authors who died after 1814 may have increased for idiosyncratic reasons - independently of the increase in copyright. Author fixed effects mitigate this problem, but may not be sufficient to control for the influence of exceptionally popular authors who died after 1814. Most importantly, Sir Walter Scott (1771 – 1832) “sold more novels than all the other novelists of the time put together” (St. Clair 2004, p. 221), and readers, such as Lord Dudley complained about exorbitant prices for Scott’s books (Romilly 1905, p. 104). Scott’s Tales and Romances by the Author of Waverley fetched a record 108s in 1833, 1 year after the authors’ death. The data include 36 editions by Scott until 1814, 92 editions between 1815 and Scott’s death in 1832, and 4 editions after his death, with an average price of 30.92s, 36.94, and 78.38s, respectively.

Even when we exclude Scott, estimates remain large and statistically significant across all specifications. Baseline estimates with controls for book age and author fixed effects indicate that books by dead authors became 19.94 additional shillings more expensive after 1814, compared with books by living authors (with a p-value of 0.001, Table 4, column 1). Compared with an average price of 13.73s after 1814 excluding Scott, this implies a 145 percent increase. Estimates are also robust to including controls for canonical books (Table 4, column 2) and genres fixed effects (Table 4, column 3).
Lord George Byron (1788-1824) was the second literary super-star of the Romantic Period. Byron relatively died early and unexpectedly at age 36 from a fever that he had contracted while travelling in Missolonghi, Greece; his posthumously published *Works and Life* (first published in 1832) is the second most expensive book in the data, with 85s in 1840. Estimates are robust to excluding books by Scott and Byron. Baseline estimates indicate that books by dead authors became an additional 20.42 shillings more expensive after 1814 (with a p-value of 0.01, Table 4, column 4), implying a 115 percent increase.

Books by Jane Austen (1775-1817), another prominent author who died after 1814, languished in “relative obscurity” throughout the Romantic Period (Bautz, 2007, p. 2), and became cheaper after the author’s death. Until 1814, a total of seven editions of *Sense and Sensibility, Pride and Prejudice, and Mansfield Park* sold for an average of 15.29s. Between 1814 and Austen’s death in 1817, three editions of *Emma, Mansfield Park, and Pride and Prejudice* sold for an average of 17.00s. After the author’s death on July 18, 1817, five new editions of *Emma, Mansfield Park, Northanger Abbey, Pride and Prejudice, and Sense and Sensibility,* sold for low average price of 8.07s between 1817 and 1832, the last year with a new edition by Austen.46

**III.D. Excluding Books by Recently Deceased Authors**

Another alternative mechanism for the observed price increase is that books by recently deceased authors may have sold for higher prices – independent of copyright - because news of an author’s death increased demand for his work. For example, paintings become more

46 Mary Shelley (1797-1851) survived the sample period, and her novel *Frankenstein, or the Modern Prometheus* was published after 1814. First published in 1818, *Frankenstein* sold for an average of 9.16s between 1818 and 1840, compared with a price of 17.79s for all 595 editions between 1818 and 1840.
expensive shortly after the artist’s death (Ekelund, Ressler, and Watson 2000). If books by recently deceased authors are more expensive, and if observations on prices by recently deceased authors are more influential after 1814, then the differential increase after 1814 may be driven by a temporary increase in price for books by recently deceased authors.

Price data confirm that books by recently deceased authors sell for a slightly higher price compared with books by living authors and books by authors who had died some time ago. For books that had been in print for 14 years or less, the average price of 14 editions by authors who had died within a year from the date of publication was 36.18s, compared with 17.13s for living authors, and 28.36s for authors that had been deceased for longer than a year. Fourteen (or one third) of 42 editions by dead authors were published within one year of the author’s death; 3 editions until 1814 (21.4 percent) and the remaining 11 editions after 1814 (88.6 percent), suggesting that books by recently deceased authors form a larger share of the sample after 1814 - possibly because publishing books by dead authors became more profitable after 1814 (see section IV.C for an analysis of a limited data set on changes in print runs).

Excluding books by recently deceased authors, however, increases the size of the estimates because the proportional price increase after 1814 is smaller for books by recently deceased authors. Baseline estimates imply that the price of new editions of books by dead authors (excluding the recently deceased) increased by an additional 24.47s after 1814 (with a p-value of 0.003, Table 5, Column 1). Compared with an average price of 17.38s for editions after 1814, this implies an increase of 140 percent. Estimates are robust to including controls for books in the Western Canon as well as for genres, and to excluding author fixed effects (Table 5, columns 2-4).
III.E. Controlling for Page Numbers and Page Size

We also investigate whether the differential increase in book prices for dead authors is robust to controlling for physical characteristics like the number and the size of pages. Books with more pages may be more valuable to readers and cost more to produce. If the number of pages increased more for books by dead authors after 1814, books by dead authors may become more expensive after 1814 independently of changes in copyright.

Regressions with controls for page numbers indicate that the price of books by dead authors increased by 20.27s after 1814 compared with books by living authors (with a p-value of 0.03, Table 6, column 1). Results are robust to controlling for canonical books and genre fixed effects, with estimates of 20.34 (with a p-value of 0.03, Table 6 column 2) and 13.19 (with a p-value of 0.14, Table 6, column 3), respectively. Regressions with page size fixed effects imply a larger price increase, albeit for a smaller sample of 665 editions. Baseline estimates indicate that the price of books by dead authors increased by 32.47s more than books by living authors after 1814 (with a p-value of 0.01, Table 7, column 1). Results are robust to controlling for canonical status and genre fixed effects, with estimates of 31.91 (with a p-value of 0.01, Table 7, column 2), and 27.20 (with a p-value of 0.02, Table 7, column 3).

III.F. Placebo for Dead Authors without Longer Copyrights

47 Compared with an average price of 15.96s after 1814 in the restricted sample of 888 editions with information on page numbers, this implies a 127 percent increase, exceeding the baseline estimate of 112 percent.
48 Variation in bindings, as another characteristic of books, is unlikely to have influenced price because books were bound in plain paper boards, as a temporary covering, leaving it to customers to add a more permanent cover, if they wished. A medium-sized octavo volume could be bound in boards for as little as 4d (Plant 1974, p. 342), 2.26 percent of the average purchase price of 17.72s in the data set. Data on illustrations, as another measure of physical quality, are too scarce to be used in our regressions. We only know that a total of 117 in 1072 books included at least one illustration – often the image of the author. Until 1814, none of the 58 editions of books by dead authors include illustrations; after 1814, 6 of 98 editions (6.1 percent include illustrations). By comparison, 44 of 307 editions of books by living authors (14.3 percent) include illustrations until 1814, compared with 57 of 609 editions (9.4 percent) by living authors.
The most important potential threat to the empirical strategy, however, is that books by dead authors may have become more expensive after 1814 without changes in copyright. For example, books by dead authors may have become more expensive after 1814 as a result of unobservable changes in consumers’ tastes, which favored dead authors. To address this issue, placebo regressions test for changes in price after 1814 for books by dead authors that did not benefit from longer copyrights.

Specifically, we exploit the fact that, under the 1710 *Statute of Anne*, books whose authors had survived the first 14-year term, remained under copyright for another 14 years, so that the total length of copyright was 28 years even before 1814. Placebo regressions test whether these editions, which did not benefit from the extension, but would have been affected by changes in tastes and other unobservable factors, experienced a differential increase after 1814 for books by dead authors.

Placebo regressions yield no evidence of a significant differential price increase in favor of books by dead authors that did not benefit from longer copyright terms. In a data set of 63 editions on copyright that had been in print for more than 14 years, the estimate for $dead_{it} \times post1814_{t}$ is small and not statistically significant (3.30s, with a p-value of 0.84, Table 8, column 1). Placebo regressions that include controls for genre and exclude author fixed effects similarly fail to produce significant estimates (with 9.05s and -7.60s, and p-values of 0.61 and 0.43, respectively, Table 8, columns 2-3). In a larger sample of 87 editions that includes books off copyright, the estimated increase is 0.86 (not statistically significant, not reported).

IV. COPYRIGHT AS A MECHANISM TO INCREASE PRICE
How did the extension in the length of copyright increase the price of books by dead authors? Intuitively, an extension in the length of copyright may increase price of books by allowing publishers to prevent entry with cheaper editions for an extended term. This restriction raises the average price of books, if some consumers who would be willing to wait for entrants with cheaper editions under the original terms, are unwilling to wait for the duration of the extended terms. This section presents archival evidence and exploits variation across editions in the remaining length of copyright to investigate this mechanism.

**IV.A. Variation in Consumers’ Willingness to Pay or Wait**

Statements that 19th century readers made in personal letters imply that consumers, who were willing for cheaper editions, would have been unwilling to wait for the full term. For example, John William Ward, the first Earl of Dudley wrote in 1810, when Sir Walter Scott’s book *Lady of the Lake* was first published: “I have not read the *Lady of the Lake*, two guineas is too much for six cantos, and I shall therefore wait patiently for the [lower-priced] 8vo” (Romilly 1905, p. 104). Wealthy readers were, however, unlikely to have waited for the extended term of 28 years and placed conditional orders to purchase books as soon as price had dropped below a specified price. For example, the English writer and philanthropist Hannah More (1745-1833) wrote in 1813 “I had ordered my bookseller to send me [Scott’s poem] *Rokeby* as soon as it might be had for twelve shillings” (St. Clair 2004, p. 201).\(^{49}\)

**IV.B. Changes in Price as Books Approach the End of Copyright**

Publishers appear to have exploited such variation in consumers’ willingness to pay or wait to pursue a strategy of inter-temporal price discrimination. For example, Thomas Moore’s

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\(^{49}\) Moore wrote religious plays and set up 12 schools in which children were taught to read the Bible.
poem *Lalla Rookh*, sold for 42s in 1817 as a quarto format first edition and for 14s as an octavo
between until 1827 (Figure 3). After 1829, *Lalla Rookh* sold for 5s in duodecimo format. In
1855, four years before it came off copyright, *Lalla Rookh* sold for 2.5 s as a 32mo format.\footnote{Price data from St. Clair (2004, pp. 198 and 620) Lalla Rookh's copyright expired 30 years later in 1859; two competing publishers, Gall & Inglis and Routledge, entered with editions for 1.5s in 1859 (St. Clair 2004, p. 620).}

Variation across editions in the remaining length of copyright makes it possible to
investigate such changes. Specifically, we use data on authors’ year of death to calculate their
remaining years of life in year $t$ – which helps determine the length of copyright - and estimate
variation in price as a function of remaining years of copyright:

$$price_{it} = \beta_0 + \beta_r L_{it} + \phi_a + \delta_t + f_s + \epsilon_{it}$$

where $price_{it}$ measures price and $L_{it}$ measures the remaining years of copyright for edition $i$ in
year $t$, which equals the difference between the final year of copyright $T$ and calendar year $t$.\footnote{Until 1814, $T$ equals the year of the first edition plus 14 years for authors that died within 14 years of the first
dition and, and $T$ equals the year of the first edition plus 28 years for books whose author survived the first 14
years. After 1814, $T$ equals the maximum of the author’s remaining life or the year of first edition plus 28 years. Publishers’ decision on price may be influenced by their private information on the authors’ life expectancy, which
is unobservable to the empirical researcher, but correlated with the actual remaining years of life.}

Coefficients $\beta_r$ are estimated separately for three-year periods $r$, observations in years $T-28$ and
above are the excluded category. The variable $\phi_a$ controls for book-age fixed effects, $\delta_t$ are five-
year fixed effects, and $f_s$ control for unobservable variation across authors. Standard errors are
clustered at the level of authors to allow for correlation across editions of the same title and
across titles by the same author.\footnote{Estimates also remain significant with robust but unclustered standard errors.}

Estimates of $\beta_r$ confirm that new editions become cheaper as books approach the end of
copyright. In year $T-1$ new editions of a book title sold for 16.24s less than in $T-28$ to $T-26$ and
above (Figure 4, with a p-value 0.067), and new editions in $T-4$ to $T-2$ sold for 19.23s less
(Figure 4, with a p-value of 0.016). Results are robust to including controls for canonical books, dropping genre fixed effects, and to including author fixed effects (not reported). Selection bias may lead this test to under-estimate the true decline in price, because books that continue to be in print as they approach the end of copyright are likely to be especially durable and sell for a higher price (e.g., Heald 2008).

Summary statistics on changes in price confirm the role of copyright in determining the price of books. For the full data set of all 1,072 editions, summary statistics indicate a 15 percent decline in price as books enter the public domain, with a median price of 10.5s for editions on copyright, compared with 9.0s off copyright. For example, the Reverend William Paley (1743-1805)’s book *A View of Evidences of Christianity* (first edition in 1794, under copyright until 1808) sold for 12s in 1794, when it was on copyright to 9s and 4.5s in 1820 and 1824, when it was off copyright.54

V. CONCLUSIONS

This paper has exploited a differential change in the length of copyright under the U.K. Copyright Act of 1814 – in favor of books by dead authors - to identify the causal effects of stronger copyright terms. In contrast to existing analyses, this analysis indicates a substantial increase in the price of an intellectual asset in response to a policy shift towards stronger copyright terms. Controlling for variation across the life cycle of books and across consumers’ willingness to pay across authors, books by dead authors became 20s more expensive after 1814, compared with books by living authors, which implies an 8 percent increase for each additional

54 The average price of new editions off copyright is 20.15s compared with 17.46s on copyright, because new editions of books off copyright include a larger share of extremely expensive elaborate reprints of older texts. 15 of 87 editions off copyright (14.7 percent) sold for more than 50s, compared with 47 of 970 (4.9 percent).
year of copyright. This differential increase in price is robust to a broad range of alternative specifications, including controls for genres, literary quality, page numbers and page size. Regressions that exclude books by popular authors who had died after 1814, as well as regressions that exclude books by recently deceased authors, confirm the baseline estimates. Estimates of time-varying effects yield no evidence of differential pre-trends and suggest that price increased with some delay. This delay is consistent with historical evidence, which suggests that the extension was unanticipated and at first not understood, or welcomed by publishers. Placebo regressions for older books by dead authors that did not benefit from the extension in 1814 yield no evidence of a significant differential price increase after 1814. This suggests that changes in tastes, or other unobservable factors that may have favored books by dead authors, cannot explain the substantial increase in price. By contrast, regressions that estimate changes in price separately for three-year intervals as books approach the end of copyright show that books became cheaper as they approached the end of copyright.

The findings of this paper also suggest that inter-temporal price discrimination, which is a standard assumption in empirical models of firm behavior, is the main mechanism by which extensions in copyright increase the price of books. Extensions in copyright terms allow publishers to prevent entry with cheaper copies for an additional number of years. Historical evidence suggest that wealthy consumers, who were willing to delay their purchase to wait for a cheaper edition, would have been less likely to wait for the extended term. Publishers exploited such variation in the willingness to wait across consumers to increase the price of books with longer expected terms of copyright protection. Consistent with this idea, analysis of price data for editions on copyright indicate that books became cheaper as they approached the end of their copyright terms.
Critics of stronger copyright terms are also concerned that shifts towards stronger copyright laws may create “winner-take-all” markets and reduce the diversity of creative work. For example, on the occasion of Madonna’s *Confessions* Tour, the BBC (April 20, 2006) expressed concerns about “a small number of performers taking an ever larger share of the spoils.” Estimates of a structural model for the U.S. book trade imply that the 1998 extension in copyright reduced the diversity of books that were available to consumers (Reimers, 2013). Consistent with these estimates, comparisons of the distribution of physical copies (print runs) for a subset of 514 editions in our data indicate an increase in the dispersion of print runs, consistent with a shift in publication strategies.

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### Table 1 – The Length of Copyright for Books by Dead and Living Authors for Books in Print for 14 Years or Less

<table>
<thead>
<tr>
<th>Author</th>
<th>Alive</th>
<th>Pre-1814</th>
<th>Post-1814</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>14 years + 14 years if author survives first 14 year term</td>
<td>Maximum of 28 years or life of author</td>
<td>&gt;0</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>28</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>Dead</td>
<td></td>
<td>14</td>
<td>28</td>
<td>14</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>14</td>
<td>28</td>
<td>14</td>
</tr>
<tr>
<td>Difference</td>
<td>&lt;0</td>
<td>&lt;0</td>
<td>&gt;0</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>-14</td>
<td>-1</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

*Note: To estimate the factual extension that “life of author” provided for books by living authors, we first construct summary statistics for authors’ age when a book title was first published. A total of 484 first editions between 1790 and 1840 were written by 142 authors, with an average age of 42 years, a median of 40 and a standard deviation of 13. To estimate the value of extending the length of copyright to life of author, we collect demographic data for 947 British writers with birth years between 1700 and 1800 from the Dictionary of Literary Biography (available at http://www.gale.cengage.com/pdf/facts/DBLvolbygenre.pdf, accessed on September 4-20, 2012). These data indicate that, in the year of first edition, the average author could expect to live another 27 years, which implies that the maximum of “life of author” or 28 years was 28 years for the average author. See Appendix A for a detailed description of data on the life expectancies of British authors.*
Table 2 – Differences in the Mean Price of Books for Dead and Living Authors before and after 1814 for Books in Print for 14 Years or Less

<table>
<thead>
<tr>
<th>Author</th>
<th>Pre-1814</th>
<th>Post-1814</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alive</td>
<td>17.64</td>
<td>17.13</td>
<td>-0.50</td>
</tr>
<tr>
<td></td>
<td>(26.16)</td>
<td>(19.16)</td>
<td>(1.59)a</td>
</tr>
<tr>
<td>Dead</td>
<td>17.69</td>
<td>33.39</td>
<td>15.69</td>
</tr>
<tr>
<td></td>
<td>(15.74)</td>
<td>(30.83)</td>
<td>(6.84)b</td>
</tr>
<tr>
<td>Difference</td>
<td>0.06</td>
<td>16.25</td>
<td>16.19</td>
</tr>
<tr>
<td></td>
<td>(5.33)a</td>
<td>(4.57)b</td>
<td>(7.02)a</td>
</tr>
</tbody>
</table>

Note: Price data for 902 newly printed editions of 548 book titles that had been in print for 14 years or less by 116 authors between 1790 and 1840, from St. Clair’s (2004), the London Catalogue of Books (Brown et al. 1799; Hodgson 1851) and the English Catalogue of Books (Peddie and Waddington 1914). Book ages are calculated using data on first editions, which we collected from the online catalogues of the British Library and Google Books (available at http://explore.bl.uk and http://books.google.com/, accessed September 4-20, 2012). Demographic data on authors from the Dictionary of Literary Biography (various volumes).

a Standard errors, clustered at the level of authors, are for coefficients $\alpha_0$, $\alpha_1$, $\alpha_2$ in the OLS regression $Price_{it} = \alpha_0 + \alpha_1Dead_{it} + \alpha_2Post1814_{it} + \alpha_3Dead_{it} * Post1814_{it} + \epsilon_{it}$

b Standard errors, clustered at the level of authors, are for coefficients $\beta_1$, $\beta_2$ of $Price_{it} = \beta_0 + \beta_1Alive_{it} + \beta_2Post1814_{it} + \beta_3Alive_{it} * Post1814_{it} + \epsilon_{it}$
TABLE 3 – OLS, DEPENDENT VARIABLE IS PRICE OF EDITIONS BETWEEN 1790 AND 1840 FOR BOOKS IN PRINT FOR 14 YEARS OR LESS

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dead</td>
<td>-6.03</td>
<td>-6.16</td>
<td>-4.09</td>
<td>-1.03</td>
<td>-9.38***</td>
</tr>
<tr>
<td></td>
<td>(7.69)</td>
<td>(7.64)</td>
<td>(9.30)</td>
<td>(5.87)</td>
<td>(2.76)</td>
</tr>
<tr>
<td>Post-1814 * dead</td>
<td>20.02**</td>
<td>20.22**</td>
<td>17.76*</td>
<td>17.15*</td>
<td>23.55***</td>
</tr>
<tr>
<td></td>
<td>(7.75)</td>
<td>(7.73)</td>
<td>(9.81)</td>
<td>(9.68)</td>
<td>(5.74)</td>
</tr>
<tr>
<td>Western Canon</td>
<td>-2.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>9.37***</td>
<td>11.27***</td>
<td>10.03***</td>
<td>7.67**</td>
<td>9.38***</td>
</tr>
<tr>
<td></td>
<td>(2.71)</td>
<td>(3.65)</td>
<td>(2.87)</td>
<td>(3.00)</td>
<td>(2.45)</td>
</tr>
<tr>
<td>Book age fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Genre fixed effects</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Author fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Five year fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>902</td>
<td>902</td>
<td>902</td>
<td>902</td>
<td>902</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.24</td>
<td>0.24</td>
<td>0.25</td>
<td>0.05</td>
<td>0.31</td>
</tr>
</tbody>
</table>

*** denotes significance at the 1 percent, ** 5 percent, and * 10 percent, level.
Standard errors clustered at the level of authors.

Note: Book age fixed effects control for the number of years that have passed since the first edition of a book was published. Genre fixed effects control for variation in the price of books across novels, works of poetry, other fiction, and non-fiction. Price data for 902 newly printed editions of 548 book titles that had been in print for 14 years or less by 116 authors between 1790 and 1840, from St. Clair’s (2004), the London Catalogue of Books (Brown et al. 1799, Hodgson 1851) and the English Catalogue of Books (Peddie and Waddington 1914). Book ages are calculated using data on first editions, which we collected from the online catalogues of the British Library and Google Books (available at http://explore.bl.uk and http://books.google.com/, accessed September 4-20, 2012). Demographic data on authors from the Dictionary of Literary Biography (various volumes). Column (5) winsorizes the price of editions at 99% level.
Table 4 - OLS Excluding Books by Sir Walter Scott and Lord Byron

Dependent Variable is the Price of New Editions, Printed between 1790 and 1840
For Books in Print for 14 Years or Less

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dead</td>
<td>-11.18***</td>
<td>-11.11***</td>
<td>-7.85**</td>
<td>-13.40***</td>
<td>-13.41***</td>
<td>-10.02***</td>
</tr>
<tr>
<td></td>
<td>(4.11)</td>
<td>(4.15)</td>
<td>(3.42)</td>
<td>(3.51)</td>
<td>(3.51)</td>
<td>(3.08)</td>
</tr>
<tr>
<td>Post-1814 * dead</td>
<td>19.94***</td>
<td>19.81***</td>
<td>16.05***</td>
<td>20.42***</td>
<td>20.44***</td>
<td>16.14***</td>
</tr>
<tr>
<td></td>
<td>(6.05)</td>
<td>(6.09)</td>
<td>(5.45)</td>
<td>(5.40)</td>
<td>(5.40)</td>
<td>(4.87)</td>
</tr>
<tr>
<td>Western Canon</td>
<td>1.12</td>
<td></td>
<td>-0.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.02)</td>
<td></td>
<td>(5.22)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>8.79***</td>
<td>7.91**</td>
<td>9.62***</td>
<td>8.06***</td>
<td>8.29</td>
<td>8.91***</td>
</tr>
<tr>
<td></td>
<td>(2.61)</td>
<td>(3.34)</td>
<td>(2.68)</td>
<td>(2.67)</td>
<td>(5.25)</td>
<td>(2.68)</td>
</tr>
<tr>
<td>Book age fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Genre fixed effects</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Author fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Five year fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>775</td>
<td>775</td>
<td>775</td>
<td>732</td>
<td>732</td>
<td>732</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.39</td>
<td>0.39</td>
<td>0.41</td>
<td>0.39</td>
<td>0.39</td>
<td>0.41</td>
</tr>
</tbody>
</table>

Standard errors clustered at the level of authors. *** denotes significance at the 1 percent, ** 5 percent, and * 10 percent, level.

**Note:** Column (1) – (3) exclude 127 editions of popular (and expensive) books, such as *Waverley*, by Sir Walter Scott. Columns (4) – (6) exclude 127 editions by Sir Walter Scott and 43 editions of book titles by Lord Byron. Book age fixed effects control for the number of years that have passed since the first edition of a book was published. Genre fixed effects control for variation in the price of books across novels, works of poetry, other fiction, and non-fiction. Price data for 902 newly printed editions of 548 book titles that had been in print for 14 years or less by 116 authors between 1790 and 1840, from St. Clair’s (2004), the *London Catalogue of Books* (Brown et al. 1799; Hodgson 1851) and the *English Catalogue of Books* (Peddie and Waddington 1914). Book ages are calculated using data on first editions, which we collected from the online catalogues of the British Library and Google Books (available at http://explore.bl.uk and http://books.google.com/, accessed September 4-20, 2012). Demographic data for authors from the *Dictionary of Literary Biography* (various volumes).
**TABLE 5- OLS EXCLUDING BOOKS BY RECENTLY DECEASED AUTHORS**  
DEPENDENT VARIABLE IS THE PRICE OF NEW EDITIONS, PRINTED BETWEEN 1790 AND 1840  
FOR BOOKS IN PRINT FOR 14 YEARS OR LESS

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(5.94)</td>
<td>(5.96)</td>
<td>(6.37)</td>
<td>(6.03)</td>
</tr>
<tr>
<td>Post-1814 * dead</td>
<td>24.47***</td>
<td>24.65***</td>
<td>25.29***</td>
<td>14.47*</td>
</tr>
<tr>
<td></td>
<td>(8.14)</td>
<td>(8.19)</td>
<td>(8.63)</td>
<td>(8.49)</td>
</tr>
<tr>
<td>Western Canon</td>
<td></td>
<td></td>
<td></td>
<td>-1.90</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.95)</td>
</tr>
<tr>
<td>Constant</td>
<td>7.81***</td>
<td>9.23***</td>
<td>7.81***</td>
<td>7.83***</td>
</tr>
<tr>
<td></td>
<td>(2.74)</td>
<td>(3.16)</td>
<td>(2.68)</td>
<td>(2.90)</td>
</tr>
<tr>
<td>Book age fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Genre fixed effects</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Author fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Five year fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>888</td>
<td>888</td>
<td>888</td>
<td>888</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.34</td>
<td>0.34</td>
<td>0.35</td>
<td>0.07</td>
</tr>
</tbody>
</table>

*** denotes significance at the 1 percent, ** 5 percent, and * 10 percent, level.

Standard errors clustered at the level of authors.

*Note:* Data exclude 14 editions of books by authors that had died within one year of the publication year of the edition. Book age fixed effects control for the number of years that have passed since the first edition of a book was published. Genre fixed effects control for variation in the price of books across novels, works of poetry, other fiction, and non-fiction. Price data for 902 newly printed editions of 548 book titles that had been in print for 14 years or less by 116 authors between 1790 and 1840, from St. Clair’s (2004), the *London Catalogue of Books* (Brown et al. 1799, Hodgson 1851) and the *English Catalogue of Books* (Peddie and Waddington 1914). Book ages are calculated using data on first editions, which we collected from the online catalogues of the British Library and Google Books (available at http://explore.bl.uk and http://books.google.com/, accessed September 4-20, 2012). Demographic data on authors from the *Dictionary of Literary Biography* (various volumes).
Table 6 – OLS Controlling for Variation in the Number of Pages across Books
Dependent Variable is the Price of New Editions, Printed between 1790 and 1840
For Books in Print for 14 Years or Less

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dead</strong></td>
<td>-6.61***</td>
<td>-6.58**</td>
<td>-1.58</td>
<td>-3.27</td>
</tr>
<tr>
<td></td>
<td>(2.51)</td>
<td>(2.53)</td>
<td>(3.95)</td>
<td>(4.85)</td>
</tr>
<tr>
<td><strong>Post-1814 * dead</strong></td>
<td>20.27**</td>
<td>20.34**</td>
<td>13.19</td>
<td>15.60*</td>
</tr>
<tr>
<td></td>
<td>(9.08)</td>
<td>(9.25)</td>
<td>(8.89)</td>
<td>(9.34)</td>
</tr>
<tr>
<td><strong>Number of pages</strong></td>
<td>0.02***</td>
<td>0.02***</td>
<td>0.02***</td>
<td>0.02***</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td><strong>Western Canon</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-13.56**</td>
<td>-15.79*</td>
<td>-5.66</td>
<td>-3.05***</td>
</tr>
<tr>
<td></td>
<td>(5.69)</td>
<td>(8.33)</td>
<td>(5.10)</td>
<td>(1.05)</td>
</tr>
<tr>
<td>Book age fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Genre fixed effects</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Author fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Five year fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>692</td>
<td>692</td>
<td>692</td>
<td>692</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.55</td>
<td>0.55</td>
<td>0.56</td>
<td>0.30</td>
</tr>
</tbody>
</table>

*** denotes significance at the 1 percent, ** 5 percent, and * 10 percent, level.
Standard errors clustered at the level of authors.

Table 7 - OLS Controlling for the Physical Size of Books

Dependent Variable is the Price of New Editions, Printed between 1790 and 1840 for Books that are Within 14 Years of the First Publication

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dead</td>
<td>-15.65</td>
<td>-15.24</td>
<td>-10.80</td>
<td>3.52</td>
</tr>
<tr>
<td></td>
<td>(9.93)</td>
<td>(10.06)</td>
<td>(7.03)</td>
<td>(5.65)</td>
</tr>
<tr>
<td>Post-1814 * dead</td>
<td>32.47**</td>
<td>31.91**</td>
<td>27.20**</td>
<td>12.97</td>
</tr>
<tr>
<td></td>
<td>(12.40)</td>
<td>(12.64)</td>
<td>(11.66)</td>
<td>(8.86)</td>
</tr>
<tr>
<td>Western Canon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>21.56***</td>
<td>19.88***</td>
<td>27.32***</td>
<td>28.01***</td>
</tr>
<tr>
<td></td>
<td>(4.91)</td>
<td>(4.84)</td>
<td>(3.98)</td>
<td>(6.93)</td>
</tr>
<tr>
<td>Page size fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Book age fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Genre fixed effects</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Author fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Five year fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>665</td>
<td>665</td>
<td>665</td>
<td>665</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.54</td>
<td>0.54</td>
<td>0.57</td>
<td>0.18</td>
</tr>
</tbody>
</table>

*** denotes significance at the 1 percent, ** 5 percent, and * 10 percent, level.
Standard errors clustered at the level of authors.

Table 8 – OLS – Dependent Variable is Price of Editions between 1790 and 1840 for Books in Print for more than 14 years (Placebo)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dead</td>
<td>-11.25</td>
<td>-18.20</td>
<td>4.85</td>
</tr>
<tr>
<td></td>
<td>(21.91)</td>
<td>(28.52)</td>
<td>(7.97)</td>
</tr>
<tr>
<td>Post-1814 * dead</td>
<td>3.30</td>
<td>9.05</td>
<td>-7.60</td>
</tr>
<tr>
<td></td>
<td>(16.28)</td>
<td>(17.39)</td>
<td>(9.44)</td>
</tr>
<tr>
<td>Constant</td>
<td>22.26</td>
<td>0.28</td>
<td>22.26</td>
</tr>
<tr>
<td></td>
<td>(41.33)</td>
<td>(50.16)</td>
<td>(41.33)</td>
</tr>
<tr>
<td>Age fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Genre fixed effects</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Author fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Five year fixed effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>63</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.84</td>
<td>0.85</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Standard errors clustered at the level of authors.

*** denotes significance at the 1 percent, ** 5 percent, and * 10 percent, level.

Note: Price data for 902 newly printed editions of 548 book titles that had been in print for 14 years or less by 116 authors between 1790 and 1840. From St. Clair’s (2004), the London Catalogue of Books (Brown et al. 1799; Hodgson 1851) and the English Catalogue of Books (Peddie and Waddington 1914). Book ages are calculated using data on first editions, which we collected from British Library and Google Books (available at http://explore.bl.uk and http://books.google.com/, accessed September 4-20, 2012). Demographic data on survival status of authors from the Dictionary of Literary Biography (various volumes).
Figure 2 - Time-Varying Estimates of the Effect of Price on Copyright

Note: 95% confidence interval for $\beta_t$ in the OLS regression $Price_{it} = \beta_0 + \beta_s Dead_{it} * Years_{it} + X_{it} + \epsilon_{it}$, where the variable $Year_{it}$ indicates 5-year intervals for 1805-09, 1815-19, 1820-24, 1825-29, 1830-1834, and 1835-1839 and 1810-1814 is the excluded interval. Price data for 902 editions of 548 book titles that had been in print for 14 years or less by 116 authors between 1790 and 1840. From St. Clair’s (2004), the London Catalogue of Books (Brown et al. 1799; Hodgson 1851), and the English Catalogue of Books (Peddie and Waddington 1914). Book ages are measured as the number of years since the first editions; we collected years of first editions from the online records of the British Library and Google Books (available at http://explore.bl.uk and http://books.google.com/, accessed September 4-20, 2012). Demographic data on survival status of authors from the Dictionary of Literary Biography (various volumes).
Note: 95% confidence interval for $\beta_s$ in the OLS $Price_{it} = \beta_0 + \beta_s \text{remaining copyright length}_{it} + X_{it} + \epsilon_{it}$ where $Price_{it}$ measures the price of title $i$ in the year $t$. The variable $\text{remaining copyright length}_{it}$ measures the remaining years of copyright for title $i$ in year $t$. Remaining years of copyright in calendar year $t$ equals year in which copyright is expected to expire $T$ - calendar year $t$. $T$ denotes the final year of copyright, and $T-28$ and above are the excluded period. The variable $X_{it}$ includes genre, book age, and five-year fixed effects, as well as controls for books by dead authors. The $\text{remaining copyright length}_{ist}$ in calendar year $t$ equals year in which copyright is expected to expire $T$ - calendar year $t$. For book titles with first editions before 1814, $T$ equals the year of the first edition + 14 if the author died within 14 years of the first edition, and + 28 if the author died within 14 and 28 years after the first edition. For book titles with first editions after 1814, $T$ equals the maximum of year of first edition + 28 and or the authors remaining life. Price data for 970 editions of 563 book titles on copyright from St. Clair’s (2004), the London Catalogue of Books (Brown et al. 1799; Hodgson 1851), and the English Catalogue of Books (Peddie and Waddington 1914). Book ages are calculated using data on first editions, which we collected from the records of the British Library and Google Books. Demographic data on survival status of authors from the Dictionary of Literary Biography (various volumes).