

# **An evaluation of the impact upon productivity of ending resale price maintenance on books**

February 2008

Report prepared for the OFT by the Centre for Competition  
Policy at University of East Anglia

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## **FOREWORD**

This report was commissioned by the Office of Fair Trading (OFT) from the Centre for Competition Policy at the University of East Anglia. The team from University of East Anglia was asked to examine how the ending of resale price maintenance on Books in 1997 affected productivity in book publishing and retailing.

Any views expressed in this report are those of the authors and do not necessarily reflect the views of the OFT nor the legal position under existing competition law which the OFT applies in exercise of its competition law enforcement functions.

This report is part of the OFT's Economic Discussion Paper series, and is intended to inform current discussion within the competition policy community in the UK about cooperation between purchasers. If you would like to comment on the paper, please write to me, Amelia Fletcher, at the address below. The OFT welcomes suggestions for future research topics on all aspects of UK competition and consumer policy.

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## EXECUTIVE SUMMARY

Resale Price Maintenance (RPM) is the practice whereby upstream manufacturer(s) control the prices of their products when sold by downstream distributors. An example is the Net Book Agreement (NBA): from approximately 1900, publishers used the NBA to restrict the retail price of books in the UK, thus preventing retailers from selling a book under the publisher's chosen (net) price. Any retailer that deviated from the agreement would be refused the supply of future books by all publishers. This collective nature of the enforcement of the NBA constituted a particularly strong example of RPM.

By the mid-1990s this practice had started to break down in part due to significant changes occurring in the industry and in 1997 it was formally ended by the Restrictive Practises Court. Thus by the mid 1990s a new era in which booksellers were free to choose their prices had begun.

Our research has had two objectives:

- using the abolition of the Net Book Agreement as a case study, to assess the impact of a competition policy intervention on productivity
- to develop and assess a methodology which is appropriate not only for this particular case study but also more generally when assessing the impact of competition policy interventions.

This summary focuses on the key results of the report (as contained in chapters 6-10), and our chosen methodology (as derived and discussed in chapters 4 and 5). Chapters 1-3 provide a descriptive background on the history of RPM in Britain and other countries, and draw out some theoretical expectations concerning the likely positive impact of abolition of RPM on productivity. These are not summarised here, except to highlight that this study makes a novel empirical contribution to the existing literature. Very little has been documented, in general, about the relationship between RPM (or its abolition) and the entry of new firms. In this case, however, we shall see that the abolition of RPM was accompanied by the entry, and rapid growth, of some significant new players –

general supermarkets and internet sellers. This entry has had a major impact on the subsequent evolution of the industry.

## **The effects on productivity of the abolition of NBA**

We consider the impact of removing RPM on book retailing and publishing in turn. The more striking results are for retailing.

### **Book retailing**

Without doubt, the most significant development in the structure of UK book retailing in the last decade, and a significant driver of change, has been the rapid growth in market shares of internet sellers (notably Amazon) and the one-stop grocery supermarket chains (especially Tesco, Asda and Sainsbury). A helpful way of prefacing our main findings on productivity is to start with some simple prior theoretical expectations. The **expected** story might run as follows. In general, the abolition of RPM should facilitate the entry of any low cost firms. Insofar as they employ new, low cost (and therefore high productivity) business models, their success requires, in large part, that these entrants are able to gain market share by passing on their lower costs in lower prices to the consumer. Their ability to do so is obviously severely constrained in any market where prices are regulated, as is the case with RPM, and the abolition of RPM should be a powerful catalyst in speeding up such entry. A beneficial effect on industry productivity then follows almost automatically – as high productivity entrants gain market share at the expense of low productivity incumbents, the aggregate average industry productivity must rise. This would then be a classic example of the 'between-firm effect'. In addition, a second beneficial effect is also anticipated. With the growth of these high productivity entrants, competitive pressure should increase on the traditional bricks and mortar (B&M) incumbents. One might then expect these incumbents to respond by striving to lower their own costs and raise their own productivity. This would then be a positive within-firm productivity effect. This effect would be reinforced if both types of firm were driven to further ongoing improvements as the competitive process unfolds.

## Headline results

As expected, the entry of the supermarkets and internet sellers entrants (now with a combined market share of more than 20 per cent) has made a positive contribution to industry productivity via the between firm effect. The exact magnitude of this effect is difficult to quantify in practice due to the absence of any hard and disaggregated estimates of their productivity in books alone (as opposed to for all products). However, on not unreasonable assumptions, this effect alone may have increased industry productivity by as much as a third in just five years (2001-05), but a more conservative estimate would be about 20 per cent.<sup>1</sup>

- We have found no hard evidence on whether supermarkets and internet sellers have further increased their productivity over this period, but, given the scope for learning, as they finesse their business models as applied to book selling, we would also expect there to have been positive subsequent within-firm productivity gains for these firms.
- Contrary to the expectations in the previous paragraph, there has been no long-run improvement in the within-firm productivity of the B&M incumbent retailers. On the contrary, they have suffered serious **negative within-firm** productivity changes. This has had the effect of depressing aggregate productivity growth by between 10 and 16 per cent.
- Combining the two effects, it is difficult to estimate the net outcome in aggregate industry productivity – precisely because of the uncertainties about the true productivity of the new entrants. The most likely outcome is that the two effects have very broadly offset each other.

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<sup>1</sup> These estimates are drawn from Table 8.9 below.

## Discussion

These results prompt two key questions. First, why have the B&M retailers failed to respond more positively, in terms of productivity, to competitive new entry and, secondly, to what extent did the ending of RPM create the entry that has been observed?

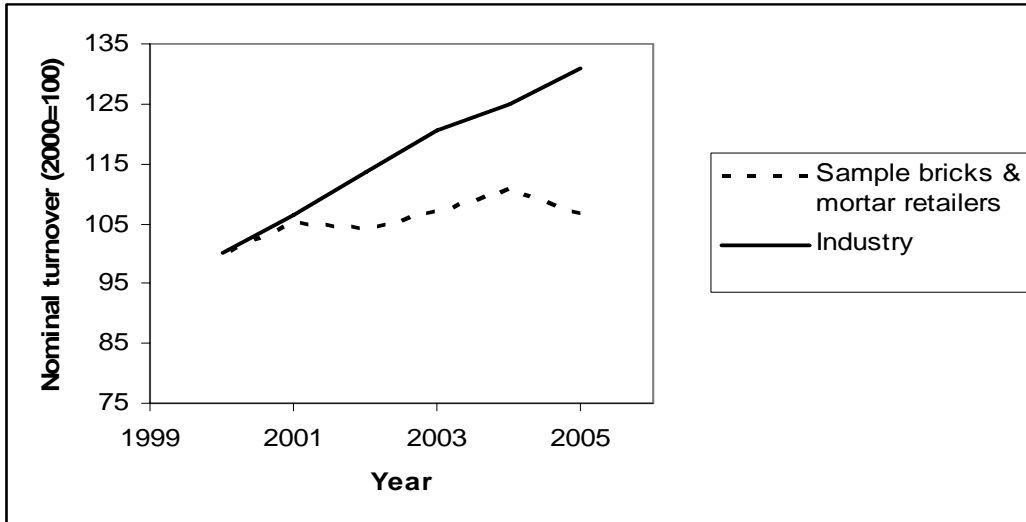
At face value, the limited response of B&M retailers would appear to vindicate the supporters of retaining NBA, when they argued that abolition of NBA would seriously jeopardise the smaller independent retailers, who would be unable to survive in the face of discounting competitors. In fact, it is not just the independents, but also the much larger chains, such as Waterstone's who have been apparently unable to counter the challenge of new entrants. However, close examination of the full picture post-1997 reveals more complexity. In the years immediately after and before formal abolition, when the NBA was already beginning to collapse, the larger B&M retailers in fact posted quite impressive improvements in their within-firm productivity.<sup>2</sup> The problems only really started to emerge as their turnover subsequently began to fall as a consequence of the growth of the entrants. Figure A illustrates the impact of entry into the market on the turnover of incumbents.

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<sup>2</sup> The fact that these gains started to emerge even before formal abolition confirms what informed opinion has told us, namely that the change should not be identified too literally with the exact date of the formal abolition of the institution.



**Figure A: Total nominal turnover for a sample of selected UK B&M retailers and the book industry overall 2000–2005**



This implies that it was a short-term inability to downsize and consolidate, in line with declining output that was the cause of their falling productivity. Certainly, the role of efficiency in the stated motives for the recent Waterstone's-Ottakar's merger point in this direction.<sup>3</sup> It was argued that the merger would help their competitive response to the 'pincer movement' caused by intense supermarket and internet competition. This, somewhat belated, response suggests that short- to medium-term factor rigidities and adjustment costs may mean that, in some cases, it may be many years before relatively low productivity incumbents are able to increase their productivity in response to new competitive pressures.

What is clear is the impact that a wave of entry had on the market. The second question referred to is whether this entry of supermarkets and internet sellers only became possible once NBA was abolished. It is impossible to assert

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<sup>3</sup> The efficiency defence, offered by the parties, suggested that there would be important efficiency gains from integrating Waterstone's superior stock management system into Ottakar's operations (Competition Commission, 2006, p.13).

causality with absolute confidence, and it is probably overstatement to suggest that their entry would literally not have occurred without abolition. Rather, the real issue is whether their entry would have been so successful, and had such striking consequences for industry productivity), had RPM been retained. It is clear that both supermarkets and internet sellers offer consumers important non-price benefits of convenience (for both supermarkets and internet sellers) and deep range (internet sellers), and these would still apply even in the absence of price competition. Nonetheless, there remains circumstantial evidence that price, and the ability to discount, played a non-negligible part in the success of entry.

- Borders chose to enter the UK but not Germany, and most commentators argue that discounting was a key part of their business model.
- The supermarkets, who discount heavily, were among those calling for an end to NBA in the UK, and have not entered book retailing to anywhere near the same extent in Germany.
- Low prices are a significant driver of internet retail growth in general,<sup>4</sup> and Amazon has not achieved as great a market penetration in Germany as in the UK (except in the sale of English language books where it is allowed to discount).<sup>5</sup>

Further insight on both these points can be gained by turning to our counterfactuals. Throughout the report, we have argued that the counterfactual (what would have happened had NBA not been abolished) might be revealed by either (i) the industry's performance prior to abolition, or alternatively, and/or (ii) what happened over the post abolition period in Germany – a roughly comparable country which retained RPM. We have seen that, compared to the pre-abolition UK years, B&M productivity surged ahead impressively immediately after 1997, only to fall back below the trend of productivity in the years before

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<sup>4</sup> See [http://www.offt.gov.uk/shared\\_offt/reports/consumer\\_protection/oft921h.pdf](http://www.offt.gov.uk/shared_offt/reports/consumer_protection/oft921h.pdf), p.39.

<sup>5</sup> Moreover, in France, where Amazon is allowed to discount only up to 5 per cent, it appears to take up this option across the board.

abolition. Moreover, in Germany, there was no discernible downturn in productivity growth post-1997. In that sense, the story appears to have been disappointing. However, the comparison with Germany also sheds considerable light on our two questions. In Germany, as just discussed, while there was also entry by internet sellers (less so supermarkets), their market penetration was much less pronounced, and this suggests that it is the low-price aspect of the internet sellers which has made them so effective in the UK.<sup>6</sup> This would not have been possible with RPM retained. Similarly, it seems likely that productivity in German B&M has held up better than in the UK precisely because German retailers have not faced such a serious downturn in turnover. To the extent that this reasoning is correct, one might argue that the sluggish performance of UK productivity in the last 10 years is misleading – the full long-term pay-off in terms of productivity is yet to emerge. If so, we might expect to observe future increases in productivity, partly because of continuing between-firm effects, as the supermarkets and internet sellers advance further, and partly because remaining B&M retailers eventually achieve the increases in within-firm productivity that the Waterstones/Ottakers merger hoped for.

### **Book publishing**

The picture is considerably simpler for the publishing sector, if only because it was not faced by the same scale of new entry, although, of course, the emergence of these firms downstream, with their increasing buyer power, may well have increased pressures on all publishers: increased within-firm efficiency became more essential given greater pressure on their margins.

### **Headline results**

Productivity gains were confined to largely within-firm, perhaps inevitably, given the absence of any major entry into the industry. Within-firm effects were observed, both pre- and post-NBA, although the comparisons on this against the counterfactuals are mixed. On the one hand, post-NBA abolition productivity growth was somewhat slower than pre-abolition. On the other hand, the UK

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<sup>6</sup> This fits with additional general evidence on the role low prices play in online retailing (see para's 9.1-9.3).

post-1997 compares favourably with Germany over the same period. The implication of the latter is that, had the NBA been maintained, productivity may even have been stagnant, as opposed to the moderate gains which actually occurred.

## **Discussion**

We are also able to shed some light on two issues which were commonly discussed in the original debate about the pros and cons of NBA. The first was that publishers might suffer from abolition because retail price cutting would lead to reduced numbers of titles and more demand uncertainty and reluctance by retailers to hold large inventories. If so, one might expect a negative impact on within-firm productivity amongst publishers. In fact, our results do not suggest that this happened. Second, it was argued that, to the extent that publishers were using NBA to facilitate collusion, its abolition would increase the intensity of competition between publishers.<sup>7</sup> In this case, one might expect significant within-firm productivity gains post-abolition. On this, as we have already noted, there is scope for some disagreement on the facts, depending which counterfactual one uses. On the basis of a comparison of the UK, pre- and post-abolition, the evidence suggests no such effect. But, using Germany as a counterfactual, there is some evidence in favour of this possibility.

## **Assessing the methodology**

Although part of the motivation for this project derives from the intrinsic interest of the case per se (RPM continues to be a controversial topic in competition economics, and new empirical evidence should be an important input into the discussion), a major reason for the project was to suggest a methodology which could be applied, in principle, much more generally to any case in which there has been a competition intervention.

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<sup>7</sup> The theoretical literature (chapter 3) also suggests that abolition should lead to greater upstream competition if (i) there is downstream bargaining power of retailers, who nevertheless compete fiercely with each other, or (ii) if RPM helps ease manufacturers 'commitment' problem (not to discount to retailers).

Having proposed such a possible methodology and 'put it through its paces' in a particular case, what have we learned about its viability, or otherwise?

First, recall the main features of the methodology:

1. To estimate the aggregate productivity of the industry concerned, one should build from data on the individual leading firms therein. So this is essentially a **micro-based approach**, in which the industry is derived very much as an aggregation of individual firms.
2. In principle, productivity might be measured by **either labour productivity or total factor productivity**. The former is the less general, but the latter is more dependent on questionable assumptions.
3. We have used **AMADEUS as the data source**, and while this is not necessarily unique it is well-known to be comprehensive and internally consistent – both within and across companies.
4. However, AMADEUS is based on company account data which requires deflating, in order that it be converted into real terms. It is essential for the methodology that an **appropriate price deflator** is available.
5. Conceptually, our approach depends crucially on identifying two constituent parts to the growth in aggregate industry productivity: **between- and within-firm effects**. We have proposed a simple algebraic decomposition which can be applied to the firm-level data for this purpose. This is in the spirit of the OFT's previous recent work (2007) on competition and productivity, and is, in our opinion, sensible and grounded in a very sound previous academic literature. To enact this decomposition, it is essential that we have data on individual firms, as described in 1.
6. Although both within- and between firm effects will reflect, indirectly, the consequences of **innovation and diffusion**, elements of product innovation may be neglected. At the least, this suggests a need for

complementary qualitative information on the introduction of new products and other aspects of consumer choice.

7. Having estimated the productivity growth of the industry post-intervention, it is crucial that this should be compared with a **counterfactual** – to compare against what would have happened, had the intervention not occurred. Methodologically, the decision of how to handle the counterfactual is, or should be, key in any respectable empirical economic research. It is the applied equivalent to the *ceteris paribus* clause, much loved (and rightly so!) by economists

So how do these seven elements of our methodology shape up in practice, and what problems have been encountered?

1. Disaggregated firm-level approach

This case study clearly establishes that this is practicable, at least in two industries where there are relatively small numbers of major firms involved which focus on the product market concerned. This allows the research to avoid the problems of using industry-level data which is often only available for too-aggregated classifications: for many purposes, the four digit NACE classification is too aggregate.

2. Which measure of productivity?

In this case, we had little option but to choose labour productivity since AMADEUS does not report capital stock figures for Germany. In fact, we have experimented with deriving TFP by estimating production functions for the UK, using panel techniques. However, these suggest sharply decreasing returns to scale in the retail sector, which calls into question one of the standard assumptions (constant returns) embodied in estimating TFP. While these estimates are themselves open to interpretational worries, even the possibility of diminishing returns to scale would suggest caution in proceeding with TFP.

### 3. AMADEUS

The AMADEUS database proved to be an invaluable source, especially when combined with some additional, more specialised, authoritative list of leading firms and their market shares (in this case, the recent Competition Commission's recent merger enquiry was ideal for our purposes). However, inevitably, it is less conclusive, for this type of purpose, for those firms that are highly diversified across a wide range of products, (in this case the supermarkets), and for multinational firms, especially foreign-owned, (in our case Amazon). In both cases, the data inevitably offer insufficient product disaggregation.<sup>8</sup>

### 4. Price deflators

Accurate price deflators are essential, of course, for any time series estimation involving turnover as a proxy for real output. This is especially true for an exercise such as this, in which increased competition may result in lower prices which, if not corrected for, may give a false impression of falling output. In this case, various price deflators are available, and we are reasonably convinced that they are based on actual (that is, potentially discounted) prices, rather than RRP. However, we do have lingering doubts as to whether they accurately reflect the growing retail practice of offering 'three for the price of two'.

### 5. The between-firm within-firm decomposition

The algebraic decomposition was successful in isolating the very different between- and within-firm effects in retail. This forms an important aid to unravelling the aggregate picture. However, it suffered from the absence of hard data on the key supermarket and internet players (see 3 above.)

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<sup>8</sup> It should be stressed that these are not criticisms of AMADEUS per se, but rather the reported company accounts data on which it draws.

## 6. Innovation

While we are satisfied that the between- and within-firm effects indirectly capture many of the consequences of innovation and diffusion, a major omission is product innovation. In the light of the knowledge acquired in carrying out the present case study, we see no 'easy fix' for resolving this. In order to acquire a reasonable understanding of the importance of product innovation and (even more so) to measure its importance will often require detailed survey work (or an already existing survey).

## 7. The counterfactual

We have employed two alternative counterfactuals. The 'before and after' alternative was limited by the relative paucity of firm-specific data pre-1997, and the obvious fact that so much had changed over a relatively long period, not all of which could be attributed to NBA. In our opinion, the use of Germany as comparator was more fruitful, not least for the insights it provides on the different impacts of supermarket and internet sellers in the two countries.



# 1 INTRODUCTION

- 1.1 The HM Treasury report, Productivity in the UK 7: Securing long term productivity,<sup>9</sup> states that 'Productivity growth is the key determinant of long-run growth, and together with employment growth leads to higher prosperity.' At the macro level productivity increases allow higher output for a given level of inputs and thus facilitates inflation free economic growth and higher standards of living (OFT (2007)). Along with innovation, investment, skills and enterprise, competition is regarded as one of the five drivers of productivity in the UK economy (Treasury (2000)).
- 1.2 The focus of this report is the link between competition and productivity. At a micro level, there is considerable empirical evidence of this strong link between competition and productivity. Studies demonstrate that greater competition enhances productivity and examine the different mechanisms through which this effect arises (see paragraph's 4.2-4.4 and OFT (2007)). However, as the OFT (2007) survey demonstrates there is far less evidence on the effect competition policy can have on increasing productivity. This report aims to provide additional evidence of the effects of government intervention on productivity by studying the impact of the abolition of the Net Book Agreement (NBA) in the UK in the mid 1990s.
- 1.3 From approximately 1900, publishers used the NBA to restrict the retail price of books in the UK. By the mid 1990s this practise had started to break down in part due to significant changes occurring in the industry and in 1997 it was formally ended by the Restrictive Practises Court. Thus by the mid-1990s a new era in which booksellers were free to choose their prices had begun.
- 1.4 The abolition of the Net Book Agreement (NBA) provides an ideal case to study the impact increased competition can have on productivity. Firstly, the intervention occurred around 10 years ago and thus a significant

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<sup>9</sup> [http://www.hm-treasury.gov.uk/media/C/C/productivity\\_uk7.pdf](http://www.hm-treasury.gov.uk/media/C/C/productivity_uk7.pdf)

period of time has passed for long-run changes to the industry to occur. Secondly, as paragraph's 2.4-2.6 discusses, several other European countries continue to maintain fixed book price systems. These two factors are important because as the OFT (2007) report explains it is generally a difficult task to analyse the impact on productivity of a competition policy intervention. Because of the long-term nature of productivity changes it can be difficult to isolate the separate influences of a policy intervention. It is particularly difficult to take account of the counter-factual that is, what would have happened absent intervention. In this case international comparisons will be useful in establishing the counter-factual. Finally, the book industry is an industry for which a reasonable amount of information and data is publicly available.

- 1.5 Therefore, the evidence unearthed provides a rich medium-run picture on the effects of a particular vertical restraint and its abolition. As discussed earlier the academic empirical literature is strangely lacking on such examples and moreover, recent revisions in thinking on the 'pros' and 'cons' of RPM, especially in the US, make this study particularly timely.<sup>10</sup>
- 1.6 The focus of the report will be on a market definition broadly defined as books<sup>11</sup> (both fiction and non-fiction) sold in national markets. Some distinction will also be made later between best-sellers and deep-range titles. We will analyse both the publishers and the retailers' side of the market.
- 1.7 The second important motivation for this report is to design and critically evaluate a general methodology which might be used for analysing productivity in any market following an intervention. This is to contribute to the development of the OFT's approach to evaluation. The OFT currently evaluates the effects of its interventions on consumers taking into account how the intervention may have reduced prices or deterred

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<sup>10</sup> See for example <http://www.ftc.gov/os/2007/01/070122Leegin06-480amicusPDC.pdf>.

<sup>11</sup> In theory the fact that school book titles were exempt from the NBA should be taken into account, however data is typically not available at this disaggregated level.

anti-competitive behaviour in other markets. This report evaluates the effects of an intervention on productivity which can create gains to consumers when efficiency savings are passed on, and also to the economy as a whole. Paragraph's 5.2-5.9 therefore provides a simple methodology which can be used in this manner.

- 1.8 The remainder of the report is structured as follows: chapter 2 provides a brief history of the NBA and the UK book market, and gives an overview of the book markets in other countries. The economic literature on the effects of agreements such as the NBA, and more general forms of retail price maintenance, is surveyed in chapter 3. Chapter 4 very briefly summarizes the academic literature on the relationship between productivity and competition, and then discusses potential productivity gains from abolishing the NBA. Chapter 5 describes the methodology to be used. Chapter 6 gives a brief description of the recent trends in the UK book industry. Chapter 7 describes the data, and the productivity analysis is conducted in chapter 8. Chapter 9 describes the international comparators before making the productivity comparisons with the UK. Chapter 10 briefly discusses innovation, product quality and choice and the extent to which our methodology captures these factors.

## 2 RPM ON BOOKS

### History of UK net book agreement

- 2.1 From its beginnings in approximately 1900 until its ending in 1995–1997, the Net Book Agreement (NBA) had a profound effect on the publishing and retailing of books.<sup>12</sup> The NBA artificially constrained the retail prices of books by preventing retailers from selling a book under the publisher's chosen (net) price. Any retailer that deviated from the agreement would be refused the supply of future books by all publishers. This collective nature of the enforcement of the NBA constituted an unusual example of 'collective resale price maintenance'.
- 2.2 In 1956 the government began a new pro-active era on vertical restraints between firms with the introduction of the 1956 Restrictive Practices Act. This prohibited any collective enforcement of restrictive practices and the later 1964 Resale Prices Act went even further by forbidding any individually enforced resale price maintenance. The NBA would seem to be in breach of both Acts. In an attempt to seek an exemption, the NBA was rewritten and formalised in 1957. An exemption was granted in Restrictive Practices Court in 1962, where Mr Justice Buckley famously emphasised that 'books are different', viewing the NBA to be in the interests of society.
- 2.3 The NBA remained until the mid-nineties, when its enforcement was becoming difficult due to the rapidly changing nature of the retail sector. First, the growth of book retailing by supermarkets introduced new retailers with huge bargaining powers that threatened to break the agreement. Second, the emergence of discount retailing by book club retailers made enforcement significantly harder. Further pressure came from the European Commission in 1988, when it judged the NBA to be in breach of Article 85 because of the cross border considerations between the UK and EIRE. This resulted in the NBA's collapse in EIRE in

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<sup>12</sup> See for example Dobson (1996) and Davies et al (2004) Ch 4 for more detailed discussion of the NBA and its abolition.

1992. In September 1995, the Publishers' Association finally disbanded the agreement, making it effectively inoperable for publishers. In March 1997 the Restrictive Practices Court formally outlawed the NBA, under the 1976 Restrictive Practices Act. Book retailers were now free to set prices below the levels recommended by publishers, without the threat of future punishment.

## **Book pricing systems in other countries**

2.4 Stockmann's recent survey (2004) of patterns of book pricing in Europe distinguishes two alternative forms of fixed price system: those enforced by trade agreements and those enforced by law.<sup>13</sup> While Denmark remains one of the few countries to retain a trade agreement,<sup>14</sup> the major trend appears to be a movement towards either to free pricing or legal fixed pricing agreements. For example, Sweden adopted free prices as early as 1970, and the US has never had any price maintenance due to the Sherman Act and is still considered to have a healthy book market (Allan and Curwen 1991, p.63).<sup>15</sup> Alternatively, France established its 'Loi Lang' legal price fixing agreement in 1981<sup>16</sup> and German RPM dates

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<sup>13</sup> Trade agreements often cover more than just fixed prices (Stockmann (2004) pg 50) and can provide the publishers with the right to fix prices rather than the obligation to do so (see footnote 14). In contrast, legally enforced fixed price agreements typically require a fixed price to be imposed (see footnote 25).

<sup>14</sup> Before 2001 retailers other than bookshops were not allowed to sell most types of books (Stockmann (2004) pg 55) and publishers have had the right to fix prices rather than being obliged to do so. In 2006 further rules were put in place restricting the fixed prices to 10 per cent of new publications and also restricting the length of time duration for which prices can be fixed see:<http://www.ks.dk/english/competition/national-decisions/national-decisions-2006/publishers-right-to-fix-book-prices-considerably-reduced/>

<sup>15</sup> Allan W and Curwen P (1991),

<sup>16</sup> In France retailers are allowed to price up to a maximum of 5 per cent below the price set by publishers Beck (2003).

back to 1878, where it is claimed to provide an efficient supply and healthy stock of literary and academic books.<sup>17</sup>

- 2.5 Even between the countries which have adopted price fixing agreements there is considerable heterogeneity. Differences include: the range of books covered, how long the fixed price must be maintained, the trade terms negotiated with suppliers (previously these were often negotiated by trade associations), whether authors royalties are based on the fixed price and other literature, and cultural policies including VAT.<sup>18</sup> Likewise, for free price systems there are differences (and often some fixed elements), for example in Sweden Recommended Retail Prices (RRPs) printed on books are prohibited whilst they are common in the UK.
- 2.6 In the late 1990s the European Commission became concerned that fixed book price systems were contravening competition laws.<sup>19</sup> An investigation into the Dutch fixed price system ended only when the fixed prices were removed from imported books. A similar more lengthy set of proceedings continued into the year 2000 against the German, Austrian (and Swiss): 'Sammelrevers' fixed price system, a cross-border fixed price system covering publishers and retailers in both countries. Eventually an agreement was reached to restrict the systems to national markets.<sup>20</sup> However, in 2001 proceedings were reopened as evidence

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<sup>17</sup> Publishers Association (2006), pg 22.

<sup>18</sup> See also Canoy et al (2005) for a summary of the various public policies which can be used in book markets.

<sup>19</sup> See also Beck (2003), pg's 8-9 for a discussion of two earlier cases from the 1980s concerning book markets in the Flemish regions and France.

<sup>20</sup> See: European Commission Press Release (IP/00/183), Reaction by Commissioner Mario Monti to the Agreement on the Fixed Book Price (Germany and Austria), February (2000) 183 and (IP/00/651), New German System of Fixed Book Prices Does Not Violate EU Competition Rules as Long as Certain Conditions are Respected, June 2000. In addition recently Switzerland has moved to remove fixed prices on Germany books leading to fears about the impact this will have on the German market, see:

<http://www.nytimes.com/2007/10/24/arts/24book.html?pagewanted=all>

suggests the 'new Sammelrevers' continued to affect trade between member states. This renewed concern was initiated by complaints received by the Commission, from two internet book sellers: an Austrian firm attempting to sell German books exported to Austria back to German consumers and a firm wanting to sell German books worldwide from Belgium. Both internet retailers were attempting to set prices substantially below the fixed prices in Germany and were therefore refused supply by German wholesalers and publishers. The Commission not only found this to affect trade but also deemed the refusal to supply to be collusive behaviour.<sup>21</sup> In 2002 undertakings<sup>22</sup> were accepted guaranteeing the freedom of cross border trade in books (especially via the Internet) and outlawing collective refusal to supply as an enforcement mechanism. A set of conditions also outlined what could be regarded as a circumvention of a book pricing system.<sup>23</sup> Throughout the European Commission involvement, it is clear that the principle of subsidiarity has been very much upheld that is, member states can decide the form of pricing system they wish to adopt. This is at least in part driven by the cultural aspects of the product.<sup>24</sup> However, in line with Article 81(1) of the EU treaty (Article 85 in the earlier pressure on the NBA in the UK and EIRE) the Commission has sought to protect trade between member states. Interestingly, in 2002 the German fixed

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<sup>21</sup> See: European Commission Press Release (IP/01/1035), Commission Re-opens Proceedings Concerning the German System of Fixed Book Prices Because of its Effects on Cross-border Internet Bookselling, July 2001.

<sup>22</sup> See European Commission Press Release (IP/02/461), Commission Accepts Undertaking in Competition Proceedings Regarding German Book Price Fixing, March 2002.

<sup>23</sup> As a consequence of this case the 'Rothley report' was drawn up by the European Parliament and Council setting up a directive on fixed book prices and outlining the conditions for circumvention of a fixed price agreement see Stockmann (2004).

<sup>24</sup> In addition the Rothley report suggest fixed price systems can aid independent publishers, literary production, research and teaching, freedom of opinion and the European idea, and a network of bookshops (see Stockmann (2004) pg's 54-55).

price system became enforced in law<sup>25</sup> and evidence suggests the system is strongly enforced, for example in 2004, in a case brought by a bookstore owner, a German court ruling prevented a journalist from selling new review copies of books on the e-bay auction site at a price below the fixed price.<sup>26</sup>

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<sup>25</sup> Previously publishers could impose fixed prices but were not obliged to, Beck (2003) pg 43 shows that for a sample of books from 2000-2001 8 per cent of titles did not have a fixed price imposed.

<sup>26</sup> <http://yaleglobal.yale.edu/display.article?id=4105>



### **3 THE EFFECTS OF RPM ON COMPETITION AND WELFARE**

- 3.1 One can define Resale Price Maintenance (RPM) as any attempt by an upstream producer(s) to control the prices set by downstream retailers. In principle, RPM can allow manufacturers to dictate the exact retail price or to impose a maximum retail price, as well as enabling the manufacturers to set a minimum retail price, as was the case in the Net Book Agreement. In what follows, we show that theoretically RPM can have either anti-competitive or beneficial effects and give a brief review of the empirical evidence. For some more general reviews of RPM refer to Matthewson and Winter (1998), Church and Ware (2000), Motta (2004) or Weisspfennig (2007).

#### **The anti-competitive effects of RPM**

##### **RPM can increase prices by facilitating collusion**

- 3.2 One key issue in the Net Book Agreement was the possibility of collusion among the publishers (manufacturers). Under normal circumstances, the inability of manufacturers to monitor rival wholesale prices, may make collusion difficult because any manufacturer could deviate from the collusive prices without detection or punishment. However, several papers have demonstrated that RPM can help to facilitate collusion and dampen competition between manufacturers.
- 3.3 Telser (1960) first suggested that RPM can help manufacturers collude, arguing that the introduction of fixed retail prices would remove the incentive for manufacturers to cut their wholesale prices. Any wholesale price reduction would not increase product demand and would only serve to increase retailer profits. Jullien and Rey (2000) provide a more rigorous analysis in this setting. Without RPM, retailers can use their private information about local demand shocks to set optimal, but noisy, retail prices. With RPM, the manufacturer is forced to set stable retail prices that are insensitive to demand conditions. This generates a static loss in profits, but may also aid manufacturer collusion because any deviation in wholesale prices can now be detected more easily from observing the subsequent change in the otherwise stable retail prices.

- 3.4 A related argument suggests that RPM may result from retailer, rather than manufacturer, collusion. Yamey (1954) suggested that retailers might benefit from forcing a manufacturer to set RPM in order to assist the coordination and enforcement of retailer collusion and to deter low-priced entrants. However it is unclear what the incentives are for the manufacturer to commit to, and enforce, such a practice.

### **RPM can increase prices by dampening competition**

- 3.5 Dobson and Waterson (2007) argue that RPM can reduce the incentives for manufacturers to compete even within a static framework. They analyse the competition effects of industry-wide RPM in a model where two manufacturers each sell a differentiated product through two differentiated retailers and unilaterally negotiate over (linear) wholesale prices. RPM is capable of two opposing effects on prices. In some scenarios RPM can reduce prices. When retailers have weak bargaining power but strong market power, free trade would allow retailers to set high mark-ups on already high wholesale prices. RPM therefore helps reduce inefficiently high prices. In other scenarios RPM is likely to increase prices. When retailer bargaining power is high and when there is tough competition between retailers, free competition would allow retailers to fight hard for reductions in wholesale prices that would then be forced into lower retail prices through competition. RPM prevents this and so creates higher retail prices. Rey and Verge (2004) show that these anti-competitive effects of RPM can be even more extreme and capable of eliminating all competition if manufacturers use two-part tariffs, rather than linear wholesale prices.

### **RPM can increase prices by resolving the commitment problem**

- 3.6 RPM may also allow a manufacturer to make the best use of its market power when negotiating with its retailers downstream, or in more technical terms, RPM can help the manufacturer ease its commitment problem, (Hart and Tirole 1990, and O'Brien and Shaffer 1992). Consider a manufacturer who has just offered two retailers the same contract. The manufacturer may now face a profitable incentive to

renegotiate with one of the retailers - offering that retailer a lower wholesale cost, in order to provide it with an advantage over its rival. Anticipating this possibility, both retailers will be unwilling to agree to expensive contracts and the market power of the manufacturer will be restricted by its incentives to renegotiate. The introduction of credible, industry-wide RPM will remove this commitment problem however, as retailer's profits will be made immune to the incentive of rivals to cut price following a renegotiation. RPM can act to sustain manufacturer profits and retail prices, reducing consumer surplus.

## **The efficiency effects of RPM**

### **RPM can increase the provision of retail services**

- 3.7 RPM may offer potential benefits to society. A long line of literature has emphasised the possibility that the restriction of retailer price competition through RPM may encourage the provision of services that consumers find valuable, such as advice from salespeople, or browsing through the retailer's wide range of stock. RPM may help both producers and consumers by increasing the ability and willingness of retailers to provide demand-enhancing, but non-contractible services.
- 3.8 Telser's (1960) original argument suggested that retailers may be unwilling to provide such services under free competition due to a potential free riding problem. For example, if a consumer could browse the stock of one book retailer before then buying the book more cheaply elsewhere, the incentive to provide the stock would be clearly reduced or eliminated. RPM can restore the incentive to provide such services.
- 3.9 While this 'special services' story may appear limited, much research has since extended its applicability. Marvel and McCafferty (1984) interpret the service as simply the act of a retailer choosing to stock the product. If consumers identify some retailers as having the costly skill of in ascertaining product quality, then the mere stocking of a product by these retailers may constitute a demand-enhancing service. RPM can maintain higher retail prices in a way that induces such higher cost retailers to stock the product, enhancing demand and potentially,

welfare. Note however, that not everyone may favour the use of RPM. Discount stores may be prevented from competing in the way they would like, and informed consumers, who have no need for such signals, may also prefer free competition.

- 3.10 Winter (1993) generalises the service argument further by showing that it can exist even when services have no free-rider or spillover effects. Consider a differentiated retail duopoly where each retailer can provide some service that makes the purchase of the product less costly, such as increasing the number of sales assistants, providing large stockholdings or a larger car park. Consumers differ in their location between the two retailers and in their cost of time. Under free competition, the retailers will focus on competing for the 'marginal' consumers that are indifferent between which store to visit. Such consumers will not be located in the close proximity of either store, and will be over-represented by consumers with costs of time low enough to make a visit to either firm optimal. Consequently, firms' prices and service levels will be determined by consumers with lower than average costs of time, implying that equilibrium prices and service levels will be lower than the social optimal. RPM can restore this balance and offer the incentive to provide higher service levels. However, RPM may actually make consumers worse off by generating prices and services that are too high, as manufacturers with large levels of market power may prefer levels of service that are actually above the social optimum.
- 3.11 A key issue in the NBA debate was its effect on the provision of stock holdings by retailers, and more generally, its effect on the existence of independent, specialist sellers. In a related, but separate line of the theoretical service argument, RPM has been shown to offer potential welfare improvements by restricting the ability for price-cutters to damage the incentives for retailers to hold more stock. Deneckere et al's (1996) simple example provides one illustration of this logic. A single manufacturer sells to a competitive retail sector in a market with uncertain demand. Retailers who choose high stockholdings will be able to sell out when demand is high but face the possibility of unsold stock when demand is low. Any unsold stock is assumed to be of low value to firms, and so this story may not be consistent with the prevalent use of

'sale or return' policies that allow retailers to return unsold stock.<sup>27</sup> Under free competition, a retailer can cut its price to increase the probability that it sells its stock, while reducing the probability that rival retailers sell theirs. This possibility makes retailers less willing to carry high levels of stock and so RPM may induce retailers to hold higher inventories in a way that generates higher manufacturer profits. In a more general setting, Deneckere et al show that RPM guarantees an increase in profits, but creates an ambiguous effect on consumer surplus and total welfare as the increase in availability must be traded off against increased prices. These results are robust to the introduction of competition at the manufacturer level (Wang 2004) and when prices are determined by market clearing, after the realisation of demand (Deneckere et al 1997).

### **RPM can limit retail prices**

- 3.12 When both manufacturers and retailers have significant market power, free competition can result in inefficiently high prices as both manufacturer and retailer want to increase their price above cost. As discussed above in reference to Dobson and Waterson (2007), RPM can limit this by providing a price ceiling to retailers. However, as we are interested in the effects of the NBA providing a price floor, we do not focus on this effect here. For more on these 'double marginalisation' effects, see the general references listed above.

### **The empirical evidence of the effects of RPM**

- 3.13 There is little empirical evidence capable of discriminating between these various explanations of RPM.

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<sup>27</sup> Interestingly Beck (2003) pg. 6 provides evidence that books returned by retailers are reasonably uncommon under RPM and much more common when free pricing systems are used. The 1997 NBA hearing stressed the importance of 'sale or return' practices in the UK market.

- 3.14 Ippolito (1991) analyses the details of a set of RPM legal cases from 1976-1982 and finds that most uses of RPM appeared consistent with the special service argument. Thirty per cent contained maximum, rather than minimum prices and less than 15 per cent were consistent with an explanation of collusion.
- 3.15 Two papers use an events study methodology to consider how factors affecting the use of RPM affect the perceived profits of the firms involved, by analysing changes in the firms' share prices. While such studies can be criticised for assuming that share prices are able to correctly reflect any changes in underlying factors, their results can still be illuminating. Gilligan (1986) analyses the change in manufacturers' share prices following the announcement of an antitrust challenge to their use of RPM. He notes that manufacturers' shares often fall, but it is not clear if the changes in share prices reflect changes in projected profits, or the associated antitrust fines. It is also unclear whether results are biased because the sample only includes industries that encountered legal action. Hersch (1994) avoids some of these problems by analysing the stock returns of manufacturers and retailers following the Schwegmann decision in 1951 that weakened the legal enforceability of RPM in the US. Hersch found that many manufacturer profits remained unchanged but some, including those for consumer electronics, increased, as consistent with an explanation of retailer collusion. Retailer profits were also largely unchanged but increased for department stores. By relating the changes to industry characteristics some, perhaps tenuous, conclusions support the explanations of retailer collusion and special services.
- 3.16 Beck (2006) considers the German book market's propensity to set retail prices that are clustered together at several 'focal' prices. Beck rejects the possibility that such prices are a result of collusion with the aid of RPM, as such books tend to be priced at levels below those predicted from the books' observable characteristics. Instead, he suggests both

focal pricing and RPM may be used in response to demand uncertainty, especially on titles of new authors.<sup>28</sup>

- 3.17 Biscourp et al (2007) analyse some of the potential effects of RPM by studying the consequences of the 1997 Galland Act on French food prices. The Galland Act prohibits retailers from pricing products below their invoice costs but still allows manufacturers to provide their retailers with 'off-invoice' discounts or rebates at the end of year. Manufacturers are then able to eliminate price competition between retailers by creating a retail price floor through increased invoice costs, while offsetting the effects on retailers with rebates. The authors provide evidence in line with this possibility by showing that since 1997, overall food prices have increased faster than inflation, price increases have been largest in areas where prices were lower to begin with and, in contrast to pre-1997, prices have become unrelated to levels of local competition.

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<sup>28</sup> See also for example Canoy et al (2005) and Hjorth-Andersen (2000) on book pricing issues including demand uncertainty and cross-subsidisation.

## 4 PRODUCTIVITY

4.1 In this section, we briefly summarise the OFT's recent (2007) report on productivity and competition, and then we discuss some specific predictions of how the abolition of the NBA may have affected productivity through changes in the level of competition.

### Productivity and competition

4.2 The OFT (2007) report argues that competition is likely to enhance productivity because of positive effects on efficiency and innovation. It outlines the two main types of productivity measures:

- **Labour productivity** – the value of output per worker (per hour)
- **Total factor productivity** – the difference between changes in the value of output and the weighted changes in labour and capital inputs

4.3 There is strong general evidence to show that competition enhances productivity for example, Nickell (1996) and for deregulation, for example, Nicoletti & Scarpetta (2005). In addition, more micro analysis involves focusing on the specific mechanisms through which competition can impact on productivity. The OFT (2007) study identifies three key mechanisms:

- **Within firm effects** – competition, or the threat of entry, puts pressure on firms to use their resources more efficiently and thereby reduce x-inefficiency and/or introduce product innovation.
- **Between firm effects / market sorting** – competition can reallocate market share, with higher productivity firms gaining market share at the expense of less productive firms, and/or new entrants replacing existing low productivity firms.
- **Innovation** – competition can potentially increase the incentives for product and process innovation. Dynamic efficiency gains can be gained through new and better production methods. Social value can



be created through the development of new products or retail formats.

- 4.4 Empirical studies provide considerable evidence of both within firm effects (for example, Bloom & Van Reenen (2006)) and between firm effects (for example, Geroski (1995)). In contrast the relationship between competition and innovation depends upon: the definition of competition (for or in the market), the model of competition (see OFT (2007)) and the conflict between pre and post innovation rents (low post innovation rents discourage innovation (Schumpeter (1942), whilst low pre innovation rents encourage innovation (Arrow (1962)). The OFT study therefore concludes that 'there is no universally acceptable rule for maximizing the innovation in a market. Markets will tend to develop their own modes of competition/innovation.'<sup>29</sup>

### **Abolition of NBA: expectations on competition and productivity**

- 4.5 The abolition of the NBA might be expected to have impacted on productivity through its effects on competition in a variety of ways. Referring back to chapter 3, and the views of the Court in both the 1962 and 1997 hearings, we now discuss how the removal of the NBA was predicted to affect competition, and how such changes would be predicted to effect productivity.

#### **Retail price competition**

- 4.6 The removal of the NBA was expected to reduce book prices by increasing price competition and facilitating the entry of low-price entrants such as supermarkets and internet sellers. Originally in 1962, the Court disagreed by predicting that the increased demand uncertainty from free pricing would reduce retailers' orders and increase publishers' costs through a loss in economies of scale. However, this was quickly dismissed in the 1997 hearing as book production now involved better technology and the introduction of 'sale or return' policies and quicker

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<sup>29</sup> OFT (2007), p.36.

delivery times would lessen the impact on stock orders. Consequently, price competition was expected to increase and prices were expected to fall. This may also be expected to prompt the exit of small independent, and potentially less efficient retailers, while transferring market share to the potentially more productive and lower cost large retailers. One would expect the increase in price competition to therefore increase within-retailer productivity, increase between-retailer productivity. The likely effects on retailer innovation are perhaps ambiguous. On the one hand it may be enhanced by easier entry for potentially innovative new firms. On the other hand, it may curtail service levels and perhaps innovation by smaller independents.

### **Retail non-price competition**

- 4.7 The increase in price competition was expected to influence non-price competition. In line with the research summarised in chapter 3, the removal of RPM may reduce service provision in a way that could be beneficial or damaging to society. As explained above, however, the possible reduction in the provision of stockholdings was thought to be minimal due to changes in industry practices. Further, in response to tougher price competition, some retailers (especially smaller retailers) may specialise in offering specialist services such as back-list orders. It was therefore unclear how the removal of the NBA would have affected service provisions.

### **Publisher competition**

- 4.8 As explained in chapter 3, the NBA may have acted to dampen competition between publishers and help facilitate collusion. If so its abolition would be predicted to increase competition between publishers. Further, in line with the arguments of Dobson and Waterson (2007), the increased competition between larger retailers with high bargaining power may be thought to induce tougher competition between publishers. These changes would be expected to **increase within-publisher productivity, increase between-publisher productivity**. Again the effects on **innovation** (in this case publishers) are ambiguous. With the removal of the protection of collusion innovation might be an

essential part of the ensuring new competition; but reduced publisher profits might impair publishers' ability to fund innovation.

### **Author competition**

- 4.9 Another possible effect of the NBA abolition was on the production of books by authors. In 1997 the Court viewed this effect to be minor. The returns from book writing may fall from increased retail competition, but this may or may not reduce the number of titles written and produced.
- 4.10 In summary, the abolition of the NBA can be predicted to increase (both within-firm and between-firm) productivity for retailers and publishers, while creating ambiguous effects on publisher and retailer innovation.

## 5 A SIMPLE METHODOLOGY

5.1 This section introduces a simple methodology. It is intended to have general applicability, and so is not peculiar to the circumstances of this particular case. In essence, there are two aims to the methodology:

- to devise a simple method for distinguishing and **quantifying within-firm and between-firm changes in productivity** over a time period by separating productivity growth **within firms** from the additional benefit of higher productivity firms increasing their market share (**between firm gains**), and
- to apply it to the performance of an industry following a policy intervention in order to **compare against a counterfactual** - what would have happened, absent the intervention.

### **A method for distinguishing within and between-firm effects on productivity (see Appendix 1 for a simple illustrative example)**

5.2 The following methodology has been designed to be:

- not too demanding in its data requirements
- not over sensitive to questionable economic assumptions
- open to easy interpretation
- replicable for other markets (i.e. not books-sensitive or even dependent on having a product which is relatively easily measurable).

5.3 First, let  $P_t$  be some (unspecified) measure of aggregate industry productivity at time  $t$ . This can be written, quite generally, as the weighted average of the productivities of all  $N$  firms in the industry:

$$P_t \equiv \sum_{i=1}^N w_t^i P_t^i \quad (1)$$

where  $P_t^i$  is the productivity and  $w_t^i$  is the share-related weight of firm  $i$  at time  $t$ . In the case of labour productivity, the weight comes out naturally from the decomposition as the firm's share of industry employment.

5.4 It follows that the change in productivity between times  $t$  and  $t+1$  can be written as:

$$(P_{t+1} - P_t) \equiv \underbrace{\left\{ \sum_{i=1}^N w_{t+1}^i (P_{t+1}^i - P_t^i) \right\}}_{\text{(A)}} + \underbrace{\left\{ \sum_{i=1}^N P_t^i (w_{t+1}^i - w_t^i) \right\}}_{\text{(B)}} \quad (2)$$

5.5 Thus the change in industry productivity can be decomposed into two parts:

- **A:** the (weighted) average increase in individual firm productivity
- **B:** a composition effect, the sign and magnitude of which will depend on whether there is a tendency for higher productivity firms to increase their share of the industry.

5.6 To see this, consider two extreme cases. In **case 1**, assume all firms increase their productivity between  $t$  and  $t+1$  by an amount  $\lambda$ , without any changes in their industry shares. In that case, there is only a within-firm effect, as

$$(P_{t+1}^i - P_t^i) = \lambda \text{ and } (w_{t+1}^i - w_t^i) = 0 \text{ for all } i, \text{ and thus } A = \lambda \text{ and } B = 0 \quad (3)$$

5.7 In **case 2**, suppose productivity is constant in all firms between  $t$  and  $t+1$ , but that higher productivity firms grow more rapidly than low productivity firms. In that case, there is no within-firm effect, as

$$(P_{t+1} - P_t) = 0 \text{ for all } i \text{ and } A = 0, \quad (4)$$

but, given a (presumably) positive correlation between growth in share  $(w_{t+1}^i - w_t^i)$  and productivity level  $P_t^i$ , then it is easy to show that  $B > 0$ . As an illustration, suppose that there is a positive linear relationship between growth of share and productivity:

$$(w_{t+1}^i - w_t^i) = \alpha + \beta P_t^i \quad (5)$$

5.8 It is then easily shown that:<sup>30</sup>

$$B = N\beta \text{var}(P) \quad (6)$$

where  $\text{var}(P)$  is the variance of productivity across firms at time  $t$ . The net impact on industry productivity will be greater (i) the larger is  $\beta$  (the more that high productivity benefits the firm's growth) and (ii) the larger the dispersion of productivity within the industry (the more scope there is for high productivity firms to grow at the expense of low productivity firms).

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<sup>30</sup> (6) follows by inserting (5) into the expression for  $B$  in (2) and noting that  $\alpha = -\beta\bar{P}$  (which follows from summing (5) across all firms, noting that the sum of changing weights is zero), and re-expressing using  $\text{var}(P) = \left( \sum_i^n P^i{}^2 / N \right) - \bar{P}^2$ .

## Allowing for entry and exit

5.9 The algebra above assumes a constant population of firms over time, but more generally, we would want to allow for exit of (hopefully unproductive) and entry of (hopefully more productive) firms. This is easily captured by adding a third term, (C), to capture the net effect of entry:

$$(P_{t+1} - P_t) \equiv \underbrace{\left\{ \sum_{i=1}^n w_{t+1}^i (P_{t+1}^i - P_t^i) \right\}}_{(A)} + \underbrace{\left\{ \sum_{i=1}^n P_t^i (w_{t+1}^i - w_t^i) \right\}}_{(B)} + \underbrace{\left\{ \sum_{j=1}^E w_{t+1}^j P_{t+1}^j - \sum_{k=1}^X w_t^k P_t^k \right\}}_{(C)} \quad (7)$$

where  $N$  is now the number of firms that are active in both periods,  $E$  is the number of entrants in period  $t+1$ ,  $X$  is the number of firms that exit in period  $t+1$  and  $w_t^i$  is now the share-related weight of firm  $i$  across all firms that are active in period  $t$ . Thus entry/exit will enhance industry productivity if entrants have higher productivity than exitors, especially if they are larger in size in aggregate.<sup>31</sup>

## Practicalities

### Identifying a counterfactual

5.10 In this case, there are two fairly obvious ways of approximating the counterfactual:

- how the industry performed before the intervention
- how the same industry performed in other countries in which RPM prevailed, but which were otherwise comparable (as section 9.1 explains Germany was chosen as a useful comparator country).

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<sup>31</sup> For strict comparability with survivors, we could decompose (C), in turn, into one component representing the difference in productivity of entrants and exitors and another term representing the difference in their shares between  $t$  and  $t+1$ .

- 5.11 Comparing between countries is particularly useful as this should also control for exogenous factors, such as technological advances that can be expected to have a similar effect across different countries.

### **Which measure of productivity?**

- 5.12 As mentioned, in principle, this methodology might be applied for any measure of productivity. In practice, the two most likely candidates are labour or total factor productivity. To anticipate, data constraints in this case will largely rule out TFP. Most importantly, our main data source (AMADEUS) does not report the necessary information on capital inputs for many German firms. Equally important, some exploratory econometric estimation of production functions for book retailing and publishing in the UK are strongly suggestive of decreasing returns to scale (see Appendix 7).
- 5.13 While these experiments are only exploratory, even the possibility of decreasing returns makes us hesitant to employ normal practice of using the labour share in value added as an indicator of exponent on labour in computing TFP.<sup>3233</sup>

### **How far to go with sampling**

- 5.14 In principle, this methodology assumes data are available for both productivity and market share for all firms in the industry. In practice, this is unlikely, and incomplete sampling is inevitable, especially for smaller firms. In many cases (and certainly in this) it may only be possible to assemble data for a sample of smaller firms. In that case, it will be important to have definitive information on the population size

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<sup>32</sup> These doubts are compounded by the possibility that neither the factor nor the product markets are perfectly competitive in this sector. While decreasing returns and imperfect competition can be accommodated in computing TFP, under certain circumstances, this would involve having access to a far richer database than we have for the current project.

<sup>33</sup> See Annexe B to OFT (2007) for a discussion of the issues involved in computing TFP.



distribution, in order to gross up from the sample small firms to the population small firms.

## **Innovation**

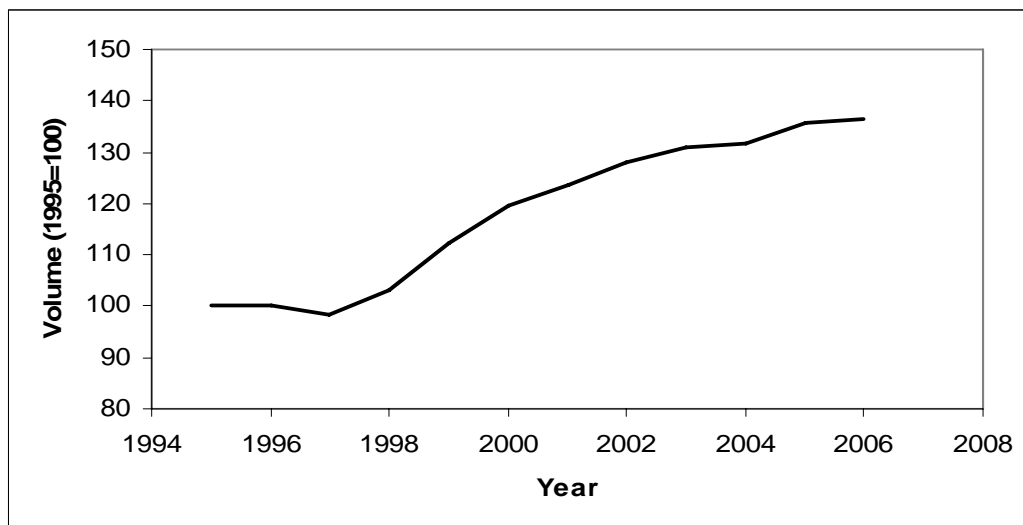
- 5.15 This methodology does not explicitly incorporate an innovation dimension. However, especially for process innovation, this will be captured by the within-firm growth in productivity. Moreover, innovation is often in the form of new business models. Insofar as entrants enter with a new business model (involving higher productivity), then this will also be captured by the above. Nevertheless, there will be some dimensions of innovation, notably product innovation, not captured by the methodology. On this there are limits to what we can achieve in a relatively small scale project such as this, although we will draw on any qualitative information that becomes available (see chapter 10).

## 6 THE UK BOOK INDUSTRY

6.1 This section gives a brief overview of trends in the UK book market.

6.2 In 2005 over 300 million books were sold in the UK. Consumer expenditure on books grew from £2.3b in 1996 to £3.2b in 2006 (in 2003 prices), which represents an increase in share of total retail spending from 1 to 1.3 per cent.<sup>34</sup> Figure 6.1 shows the growth in the volume of books<sup>35</sup> sold in the UK from 1995-2006. This remained fairly constant around the time the NBA was abolished in the mid 1990s, but since then there has been a significant increase although the rate of increase has slowed in very recent years.

**Figure 6.1: The volume of books sold in the UK from 1995–2006<sup>36</sup>**



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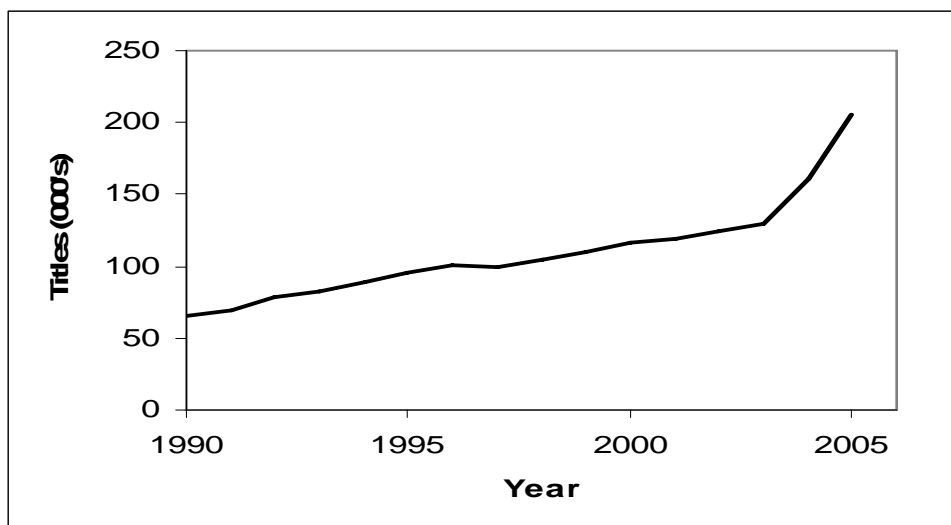
<sup>34</sup> Verdict (2007), pg 4 Table 1.

<sup>35</sup> This includes all consumer expenditure on books including atlases, dictionaries, encyclopedias, textbooks, guidebooks, musical scores and maps.

<sup>36</sup> Derived from Verdict (2007) Table 1, pg 4.

6.3 The number of new book titles published in the UK has also increased especially in recent years (Figure 6.2).<sup>37</sup>

**Figure 6.2: Book titles (new and revised) published in the UK 1990–2005<sup>38</sup>**



## Retail sector

6.4 As Table 6.1 shows in the years after abolition of the NBA, the main structural changes were a significant decline in the independent retailers' share, but growth in the shares of large and multiple stores, book clubs and supermarkets. The internet also emerged as an important alternative outlet for the purchase of books.

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<sup>37</sup> This includes all titles published including school textbooks which were exempt from the NBA. However, between 1998 and 2002 the number of new and revised fiction titles grew by 28 per cent compared to 8 per cent for school textbooks, figures derived from: <http://www.publishers.org.uk/en/document/index.cfm/docid/2C27200B-41DA-4133-8242D34D96B8346E>

<sup>38</sup> [http://www.booksellers.org.uk/industry/display\\_report.asp?id=419](http://www.booksellers.org.uk/industry/display_report.asp?id=419)

**Table 6.1: Book retail market shares by firm type 1995–2005<sup>39</sup>**

Firm type	1995	2005
Large/Multiple Stores	31	42
Independent Stores	28	11
Grocery multiple	1	8
Mail order/Book clubs	9	16
Internet	/	11
Other	31	12

6.5 Table 6.2 provides, from an alternative source<sup>40</sup> and for different categories, more detail on the individual market shares of the main players in more recent years.

**Table 6.2: 2001–2005 UK book retail market shares (%)<sup>41</sup>**

	2001	2002	2003	2004	2005
Waterstone's	16	16	16	16	14
Ottakar's	6	5	6	7	8
WH Smith, Borders & Blackwell	18	20	20	20	19
Other specialists	14	10	10	11	11
Supermarkets	4	4	5	6	8
Internet	5	7	8	9	12
Other distance sellers	21	21	19	18	15
Other	16	17	16	13	13

<sup>39</sup> Davies, S.W., et al (2004), Ch 4. pg 42 and

[http://www.booksellers.org.uk/industry/display\\_report.asp?id=490](http://www.booksellers.org.uk/industry/display_report.asp?id=490)

<sup>40</sup> There are therefore some small inconsistencies between Table 6.1 and 6.2.

<sup>41</sup> Competition Commission (2006), Appendix C, p.C4 Table 3.

This table is taken from Competition Commission (CC) (2006) and is treated as the authoritative source of market shares in our own calculations below.

6.6 It confirms the increased importance of supermarkets and the internet in the market, with the number one Internet book retailer, Amazon, estimated to account for over 80 per cent of internet sales<sup>42</sup> and offering a much wider range of titles than traditional retail outlets (see chapter 10). In 2005 books was the second most popular category of product traded online, after music and videos and it has been estimated that the online book retailing will continue to expand and achieve a market share of 20 per cent by 2011.<sup>43</sup> The impact of these new forms of retailers on the traditional bricks and mortar (B&M) retailers<sup>44</sup> cannot be over emphasised. In 2006 HMV (Waterstone's) described themselves as:

'caught in a 'pincer movement' between, on the one hand, the supermarkets offering a limited range but substantial discounts, both on best sellers and on an increasing number of deep-range titles, and, on the other hand, the Internet retailers offering a very extensive range.'<sup>45</sup>

6.7 Returning to Table 6.2, individual market shares were not reported by CC for WHSmith, Borders and Blackwell for each of these years. However, estimates from another source for 2005 put their individual market shares at: WH Smith 12.8 per cent, Borders 5.5 per cent and

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<sup>42</sup> Verdict (2007) p.23.

<sup>43</sup> Verdict (2007) pp.22 and 25.

<sup>44</sup> Here we use the term B&M retailer to refer to the traditional high street book retailers (chains and independents) thus excluding supermarket, internet, book clubs and other alternative forms of retailer.

<sup>45</sup> Competition Commission (2006), p.13.

Blackwell 2.4 per cent.<sup>46</sup> Therefore, in 2005 there were four main chain-store book retailers: Waterstone's, Ottakar's, WHSmith and Borders and this was reduced to three by the Waterstone's-Ottakar's merger in 2006. Consequently, prior to the merger CR4 was already over 40 (the combined market share of the four largest firms).

6.8 Within the main B&M retailers two very different business models have been adopted. Both WHSmith and Borders, in addition to books, also sell CDs, DVDs, computer games, newspapers magazines and stationary. Borders, a US based chain, only entered the UK market in 1997, initially by acquiring the small chain, Books etc, after the abolition of the NBA.<sup>47</sup> In contrast, Waterstone's, Ottakar's and WHSmith were all present in the market in the years preceding the abolition<sup>48</sup> (see Appendix 2 for more detail on when each firm entered the market). Waterstone's (and Ottakar's pre merger) in contrast focus solely on book retailing, WH Smith and Borders in contrast are more diversified. The typical Waterstone's store stocks 30-40,000 titles compared to only 10-20,000 in the larger WHSmiths stores<sup>49</sup> and Borders 20-30,000 in the Books etc stores and 50-80,000 in the Borders' superstores.<sup>50</sup> The new entrant Borders therefore typically offers a wider range of titles and can therefore potentially benefit from economies of scope. In contrast the typical supermarket sells only about 250 titles,<sup>51</sup> focusing on the

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<sup>46</sup> Verdict (2007) p.5. NB the sum of these market shares slightly exceeds the combined share given in Table 6.2.

<sup>47</sup> Borders was very recently sold by its US owners, see:

<http://books.guardian.co.uk/news/articles/0,,2174668,00.html>.

<sup>48</sup> Between 1989 and 1998 Waterstone's was part of the WHSmith group.

<sup>49</sup> Verdict (2007), pp.9 and 16.

<sup>50</sup> Competition Commission (2006), p.17.

<sup>51</sup> Verdict (2007), p.27.

bestseller titles.<sup>52</sup> Blackwell as a retailer specialises more in academic books and until recently was also present in the publishing market (see paragraph's 6.9-6.10). In addition to the evidence provided in Table 6.2, there is some additional evidence to suggest that Waterstone's sales have continued to fall since 2005,<sup>53</sup> despite total industry sales continuing to increase.<sup>54</sup> This may be indicative of further gains made by the Internet and supermarket retailers.

## **Publishing sector**

6.9 Although there are over 10,000 book publishers in the UK,<sup>55</sup> as Table 6.3 shows the market is fairly highly concentrated with CR4 = 41 and thus fairly similar to the retail sector.

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<sup>52</sup> Whilst the supermarkets sell a much smaller range of books they are an important competitor in the best-seller segment of the market because the top titles represent such a significant proportion of industry sales. In 2005 the top selling title had sales of £34m, the ninth best selling title £3m, the average sales for the titles ranked 10<sup>th</sup> -999<sup>th</sup> was £400,000 and titles ranked 1,000<sup>th</sup> – 4,999<sup>th</sup> £75,000, (Competition Commission (2006), p.8). In addition the Competition Commission (2006) merger enquiry found evidence of intense competition between B&M, supermarket and internet retailers for best sellers thus arguing that all retailer types should be included in the market definition.

<sup>53</sup> HMV Group plc Annual Reports and Accounts 2006.

[http://www.hmvgroup.com/files/1074/HMV\\_R\\_A\\_2006.pdf](http://www.hmvgroup.com/files/1074/HMV_R_A_2006.pdf)

<sup>54</sup> [http://www.booksellers.org.uk/industry/display\\_report.asp?id=490](http://www.booksellers.org.uk/industry/display_report.asp?id=490).

<sup>55</sup> Competition Commission (2006). HMV Group plc and Ottakar's plc. Proposed acquisition of Ottakar's plc by HMV Group plc through Waterstone's Booksellers Ltd. Appendix B.

**Table 6.3: UK market shares (%) of major publishing groups in 2004 and 2006<sup>56</sup>**

	2004	2006
Pearson Group	12	12
<i>Penguin</i>	9	9
<i>Pearson Education</i>	3	3
Hachette Livre	9	12
Random House	11	11
HarperCollins	6	6
OUP	4	4
Macmillan	3	4
Others	54	50

6.10 In 2005 the top 10 publishers accounted for almost 95 per cent of all sales of fiction books.<sup>57</sup> The sector has experienced increased consolidation in recent years in particular the expansion of Hachette Livre acquiring Hodder Headline in 2004 and then Time Warner Books and Philip Allan Updates in 2006, plus Random House acquiring BBC books in 2007 and Wiley completing the purchase of Blackwell Publishing in 2007 (Keynote 2007) and (Mintel 2007). However, at the same time there is evidence that the number of new publishers entering the industry has increased yearly from 2001 to 2006, with 2,801 new publishers entering in 2006.<sup>58</sup>

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<sup>56</sup> Mintel (2007), p.39.

<sup>57</sup> Competition Commission (2007) p.9.

<sup>58</sup> [http://www.booksellers.org.uk/industry/display\\_report.asp?id=419](http://www.booksellers.org.uk/industry/display_report.asp?id=419)



## 7 DATA

7.1 The two primary sources of data are the AMADEUS database, which we use to generate estimates of nominal turnover per head, and a price deflator with which to deflate the AMADEUS data. We describe each in turn in this section.

### Turnover, employment and productivity: AMADEUS

7.2 The principal data used to compute productivity was obtained from the database: AMADEUS. This provides financial information for approximately nine million public and private companies across Europe.<sup>59</sup> It can be searched simultaneously by both country and 4-digit NACE code thus allowing us to focus on a set of firms of potential interest. However, for our purposes, the 4-digit NACE classification provides a too broad market definition and the next task was therefore to select the appropriate firms from within this sample. Our aim was to identify genuine book retailers and publishers with data available, and we restricted our attention to firms with five or more employees (although data was often not available for firms this small). This was done with the aid of supplementary industry sources.<sup>60</sup> This enabled us to isolate and focus on 'genuine' book publishers and retailers within the chosen countries.

7.3 Having established the relevant firms of interest, individual firm level data could then be obtained from the company reports available on AMADEUS Turnover (in thousand Euros) and the number of employees were available yearly for, in theory, the 10 years 1997–2006. As firms

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59 The AMADEUS is provided by Bureau van Dijk Electronic Publishing.

60 For the UK information on the main players from market research reports such as Verdict (2007) and Mintel (2007) combined with AMADEUS descriptions of firms' activities and company websites was sufficient. For Germany in addition to searching entries by NACE code lists of the top 100 publishers and the top 50 retailers were available from <http://www.buchreport.de/>

differed according to their reporting period, all figures were attributed to the calendar year in which the majority of the time period reported covered, with figures reported from July-June attributed to the later year. In addition, in a few cases figures were reported for time periods other than 12 months, in these cases the reported turnover figure was adjusted to the average for a twelve month period. In addition, for the UK firms in both publishing and retailing, data were extracted from AMADEUS on cost of sales, tangible and fixed assets and cost of employees.<sup>61</sup> These were to be used in the Econometric analysis to estimate total factor productivity.

- 7.4 In fact, we were also able to obtain an earlier version of AMADEUS (for 2001), from which we were able to extend the data collection back to 1989. Appendix 3 records, for publishing and retailing in each of the countries (the UK and Germany), the number of firms per year for which we were able to calculate labour productivity.<sup>62</sup> One major problem, discussed later, is that there was often missing data for firms in some years. This was particularly a problem for smaller firms and meant that care needed to be taken in the analysis.

## **Book prices**

- 7.5 All AMADEUS data are in nominal terms, and we require appropriate price deflators. As it happens, obtaining reliable and accurate price information on the book industry is notoriously difficult. As Allan and Curwen for example explain, the available price indices often do not take into account the volume of books sold (that is, a title selling 1 million copies carries the same weight in the index as a title selling 10,000 copies) at any particular price or the quality of the product.<sup>63</sup> In addition the common use of multi-buy offers in the book industry, such as three

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<sup>61</sup> This data was typically not available for the German firms.

<sup>62</sup> This required turnover, number of employees and book price series data to be available.

<sup>63</sup> Allan and Curwen (1991), pp.59-60.

for the price of two offers, exacerbates the problem. Davies et al (2004) show that the different indices available can lead to substantially different conclusions on the price trend.<sup>64</sup>

7.6 While much of this evidence is inconclusive, what is clear is that, since the abolition of the NBA, retailers have started to offer considerable discounts on the Recommended Retail Prices (RRPs) which have replaced the previous net-prices enforced by the publishers. Table 7.4 provides evidence of the average discounts offered both for best-sellers and the deep-range titles (in 2005 the top 5,000 titles accounted for 57 per cent of the total volume of UK book sales,<sup>65</sup> titles outside the top 5,000 are referred to as deep-range titles.

**Table 7.4: Weighted average retail prices relative to RRP (excluding book clubs)<sup>66</sup>**

Year	Best sellers	Deep-range titles
2001	0.88	0.93
2002	0.84	0.93
2003	0.82	0.92
2004	0.80	0.90
2005	0.75	0.90

7.7 Not only is it clear that, on average, prices are significantly below the RRP, especially for best-sellers, these discounts are increasing over time. In addition for the top nine best-sellers in 2005 the average price was just over 0.60 of the RRP.<sup>67</sup> Figure 6.1 suggests that diversity in titles published has also not been compromised despite this relative reduction

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<sup>64</sup> Overall they find some evidence to support falling prices post abolition of the NBA.

<sup>65</sup> Competition Commission (2006) p.8.

<sup>66</sup> Competition Commission (2006), Appendix C, pp.8-9.

<sup>67</sup> Competition Commission (2006), Appendix C, p.10.

in the prices of best-sellers. Additional evidence suggests that RRP's have moved in different directions for different types of books. Thus 2003–2007 RRP's on adult fiction books decreased by around four per cent whilst adult non-fiction prices increased by around 18 per cent.<sup>68</sup>

### **UK book price indices used in productivity analysis**

- 7.8 The above information on RRP's and retailers' discounts is useful for establishing a picture of competition in the industry post-2000. However, since we will be calculating labour productivity over a much longer period, we need to have price data which is comparable both over this longer period and between countries. The remainder of this section will briefly consider the main price indices available for the UK (see paragraph's 9.11-9.14 for international comparisons of price indices).

#### **Publishers**

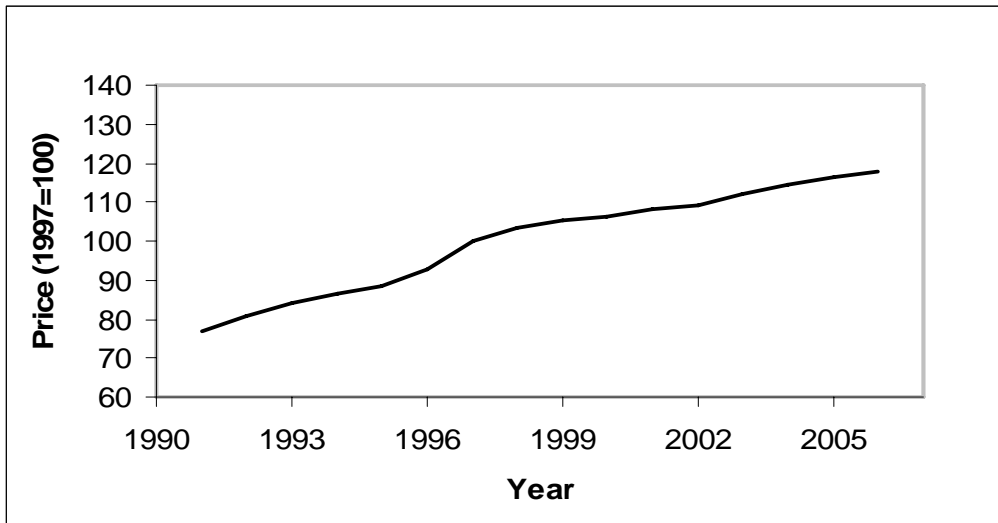
- 7.9 First, Figure 7.3 shows for 1991–2006 a producer price index for books. Clearly the prices charged by producers' over time have increased, with a slightly more rapid increase in the mid 1990s – around the time the NBA was abolished.<sup>69</sup>

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68 Mintel (2007) pg 32, based on evidence on RRP's from Holt Jackson, a firm specialising in supplying libraries rather than retail trade.

69 This general increase in producer prices is not aligned with changes in the costs of the paper input which accounts for a reasonable proportion of the cost of producing a book (figures available only for 1993–1994 suggest just under 1/3 of the direct printing costs (Economics Branch (1995), p.38).

**Figure 7.3: Producer price index (PPI) for books** <sup>70</sup>



However, it is not clear the extent to which this takes into account the discounts publishers and wholesalers offer to retailers. Estimates of the typical discounts currently offered include: independent retailers 35-45 per cent, major chains 45-55 per cent, internet retailers 50-60 per cent, and supermarkets 55-65 per cent.<sup>71</sup>

## Retailers

- 7.10 Next, Figure 7.4 contrasts the RPI index for books and newspapers with a general RPI index for the period 1987–2006: prices of books and newspapers have increased over time and more rapidly than the general RPI index.

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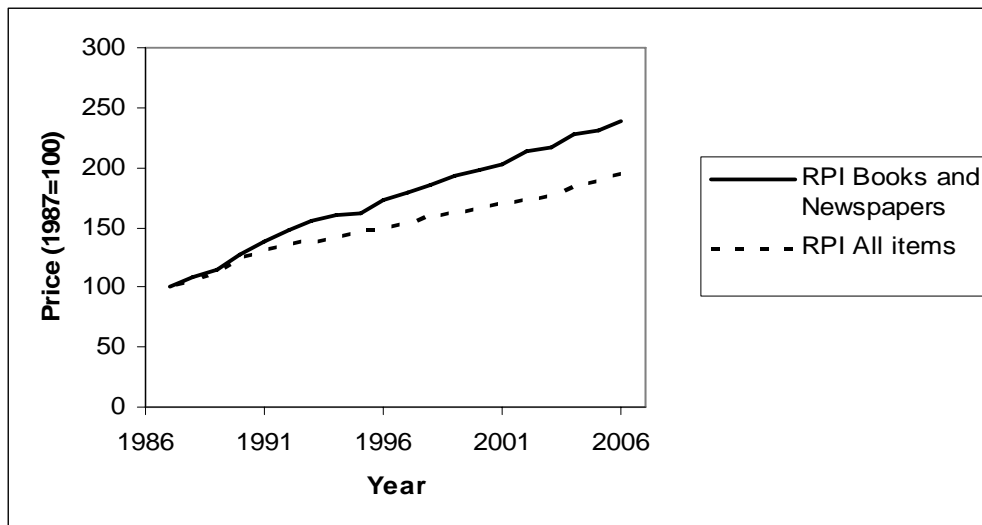
<sup>70</sup> <http://www.statistics.gov.uk/>

PPKA PPI: 2211000000: Books MM22 - Price indices of products manufactured and

RABL PPI: 6112210000: GSI 21 Pulp, Paper & Paper Products MM22 - Price indices of fuels and materials purchased.

<sup>71</sup> Competition Commission (2006), p.23.

**Figure 7.4: Retail price index (RPI) books and newspapers and all items<sup>72</sup>**



7.11 However, it is unclear whether the same would be true if we were able to distinguish books from newspapers. Moreover, we have lingering doubts as to whether this index accurately reflects the growing retail practice of offering 'three for the price of two'. The UK HICP index solely for books, shown in paragraph's 9.11-9.14, is similar to the RPI index for books and newspapers shown in Figure 7.4 and claims to measure prices faced by consumers including VAT and end of season sales prices. However this still remains unclear on multi-buy offers etc. In addition the RPI price index is very similar to an implicit price index for books from 1996–2006, which can be derived from Verdict (2007).<sup>73</sup>

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<sup>72</sup> Books price index provided by the ONS, All items price index from:

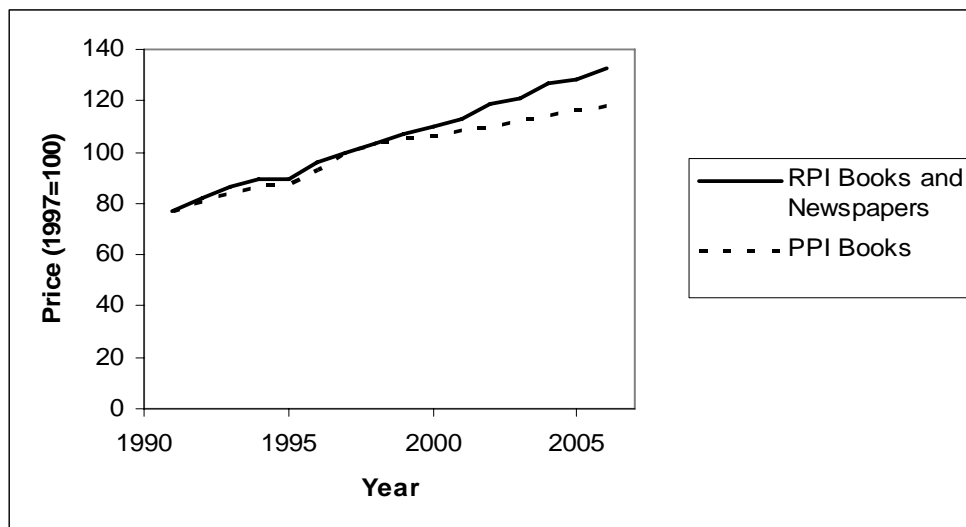
<http://www.statistics.gov.uk/StatBase/tsdataset.asp?vlnk=7172&More=N&All=Y>

<sup>73</sup> Verdict (2007), pg 4, Table 1.

7.12 Finally Figure 7.5 compares the producer and retailer indices from Figures 7.3 and 7.4 respectively. It is clear that until the late 1990s the two indices increased at very similar rates. Only significantly after the abolition of the NBA do retail prices appear to have increased more rapidly.

7.13 While we are not 100 per cent confident that either of these indices fully captures the complexities of pricing behaviour in the industry, and while the retail index is also at a more aggregated level than just books, they will necessarily be used in subsequent analysis to calculate real productivity changes.

**Figure 7.5: Producer price index (PPI) books and retail price index (RPI) books and newspapers**



## 8 ANALYSIS OF UK BOOK PRODUCTIVITY

8.1 This section now applies the decomposition analysis to UK retailers and publishers in turn. Here the analysis is restricted to labour productivity (see Appendix 7 for the analysis of total factor productivity). We measure labour productivity as the ratio of turnover to employment: gross output per head. This is preferred to net output (value added) per head because we are not confident that the measures of net output which can be derived from AMADEUS are necessarily comparable across firms, over time or (most of all) across countries. In fact, for a product such as books, index numbers of net and gross output will move closely together over time in the absence of significant substitution between material inputs and the other factors of production, notably labour and capital.

### UK B&M retailers

8.2 As a starting point, Figure 8.6 reports the results of calculating nominal labour productivity, from 1990–2005, aggregating over all firms identified in AMADEUS as 'genuine'<sup>74</sup> B&M book retailers.<sup>75</sup> There are 14

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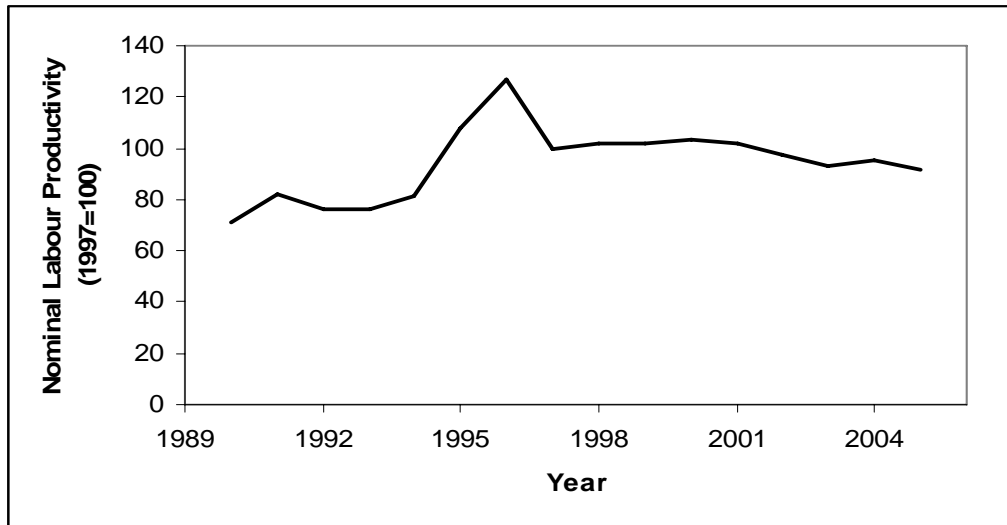
<sup>74</sup> Simply searching AMADEUS by industry code is not sufficient. Book retailers are included in AMADEUS in the NACE group 5247: Retail sales of books, newspapers and stationary. Clearly therefore only some of the firms listed in this category were of interest for this study. A close cross-checking against independent, and authoritative, listings of book retailers reveals that AMADEUS reports as book retailers firms who do not retail books. These are excluded from our sample.

<sup>75</sup> Here and in all subsequent industry productivity analysis individual firm's contributions are weighted by their share of total employment (see paragraphs 5.2-5.8 equation (1)).



such firms (see Appendix 2 for details and Appendix 4 for the size distribution by turnover and number of employees). For the diversified retailers that is, WHSmith and Borders their turnover and employment figures were weighted accordingly.<sup>76</sup>

**Figure 8.6: Nominal labour productivity, UK B&M retailers, 1990–2005**



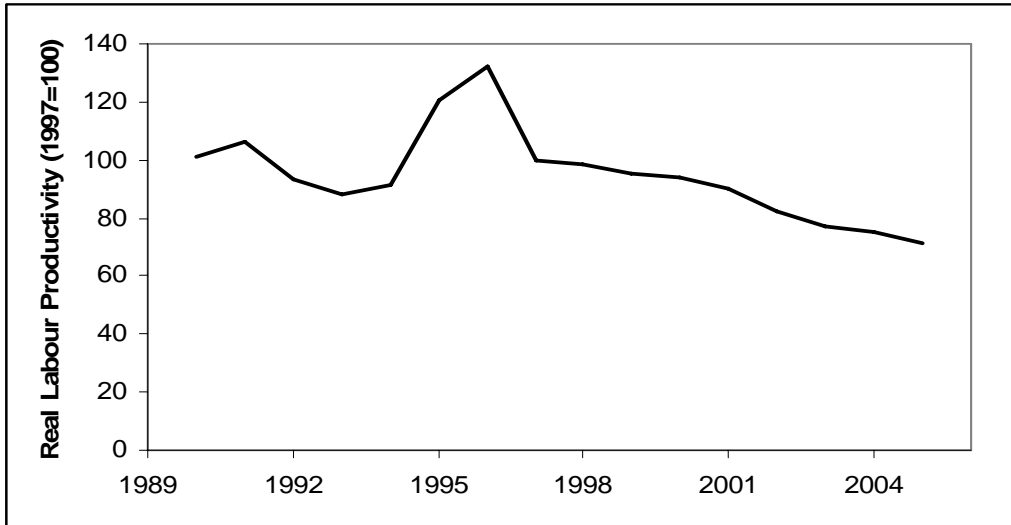
8.3 The results somewhat surprisingly show that, after a surge in productivity in the mid 1990s, nominal productivity growth has been stagnant since then, even declining within recent years. Figure 8.7 reports the same data, deflated by the books RPI index described in the previous section. Now that increasing book prices have been taken into account, the decline in labour productivity since the late 1990s is

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<sup>76</sup>The Competition Commission (2006) p.17, states that approximately 66 per cent of Borders superstore sales are accounted for by books. For WHSmith, based on Waterstone's market share and turnover, 22 per cent of its total turnover accounted for by books would give the correct market share of 12.8 per cent in 2005 (see Section 6.1). Therefore yearly figures for turnover and number of employees were reduced for Borders and Waterstone's by 66 per cent and 22 per cent respectively. Checking these figures with an industry source suggests that these figures are reasonable estimates.

substantially more severe (thus demonstrating the necessity of accurate price data).

**Figure 8.7: Real labour productivity, UK B&M retailers, 1990–2005**



8.4 However, there are two important qualifications to be made:

- this sample of 14 firms is unbalanced, in the sense that there are missing observations for some firms in some years (as discussed in paragraph's 7.2-7.4) This is not a matter of entry or exit since most of these firms survived the entire period (see Appendix 2)
- the firms are all B&M, that is, the sample excludes both internet and supermarket retailers.

We now address each problem in turn.

### **Balancing the sample: a robustness check**

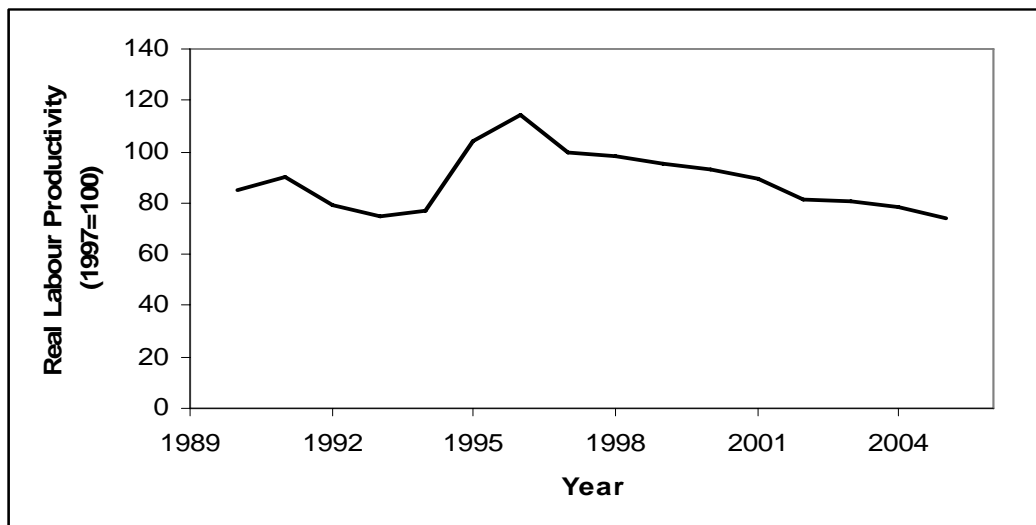
8.5 Because the sample is unbalanced, there is a chance that the trends identified in Figures 8.6 and 8.7 are distorted by the changing make-up of the sample from year to year. In order to control for this, we have broken the full period down into two sub-periods, 1990–1996 and

1997–2005, and re-calculated the productivity time paths in each case based on a balanced sample for that sub-period (see Appendix 5).

8.6 Fortunately, this confirms the productivity pattern shown in Figure 8.7. Figure 8.8 chain links the two sub-period series, rebased at 1997, and this confirms that real labour productivity exhibited three distinct phases:

- **1990–1993:** Constant/declining productivity
- **1994–1996:** Upward surge in productivity – as a result of the breakdown of the NBA?
- **1997–2005:** Significant decline in productivity

**Figure 8.8: Real labour productivity UK B&M retailers, 1990–2005 (combining two balanced samples)<sup>77</sup>**



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<sup>77</sup> Sample b/c used for 1997–2005 (see Appendix 5)).

## 1990–1996

- 8.7 The evidence suggests, then, that in 1994–1996 there were substantial gains in labour productivity. This coincides with the abolition of the NBA and perhaps implies (as discussed earlier) that the break-up of the NBA occurred before its official abolition by the Restrictive Practises Court in 1997.
- 8.8 Table 8.5 reports the growth in real labour productivity, up to and after 1993, for the four firms making up the balanced sample for the sub-period 1990–1996.

**Table 8.5 – Firm real labour productivity % change, 1990–1996**

	1990-93	1993-96
<b>WHSmith</b>	-12	62
<b>Ottakar's</b>	-6.0	13.3
<b>Blackwell</b>	-19.0	5.8
<b>British Bookshops</b>	-9.0	39.3

As can be seen, the productivity decline in the early 1990s was experienced by all four firms, and likewise for the subsequent gains, although particular gains were made by WHSmith and British Bookshops.

### The post-1997 decline

- 8.9 Figure 8.8 also clearly confirms the decline in productivity from 1997 onwards, suggested in Figure 8.7. In addition Appendix 5 shows that the inclusion of Waterstone's and Borders reduces the extent of the decline in productivity. Borders' entry to the market in 1997 arguably would not have occurred had the fixed price regime continued. The following quote from The Bookseller industry publication in 1997 highlights this:

'(some booksellers) expressed fears that expansion of the US chains on the UK high street would be as 'reckless' as it had been in the US, and that a price war would break out.'<sup>78</sup>

This would seem to provide a clear indication that discounting is key to their business model.

8.10 Given the striking decline in productivity since 1999, this merits a closer, disaggregated examination. Table 8.6 reports the change in real labour productivity from 1999–2005 for each of the nine firms in sample (c).

**Table 8.6: Firm real labour productivity % change, 1999–2005**

	<b>% change (1999-2005)</b>
<b>Borders</b>	5.0
<b>Blackwell</b>	3.1
<b>Same Day Books</b>	1.8
<b>David Flatman</b>	-17.3
<b>British Bookshops</b>	-17.9
<b>Waterstone's</b>	-25.3
<b>WH Smith</b>	-29.7
<b>Ottakar's</b>	-34.8
<b>Galloway &amp; Porter</b>	-46.4

8.11 Amongst the four main B&M retailers, it is apparent that only Borders made productivity gains (although small) through this period, in contrast all of the other main players made substantial productivity losses. The firm making the largest productivity losses - Galloway & Porter - is the smallest firm in this sample, with a single store. However other

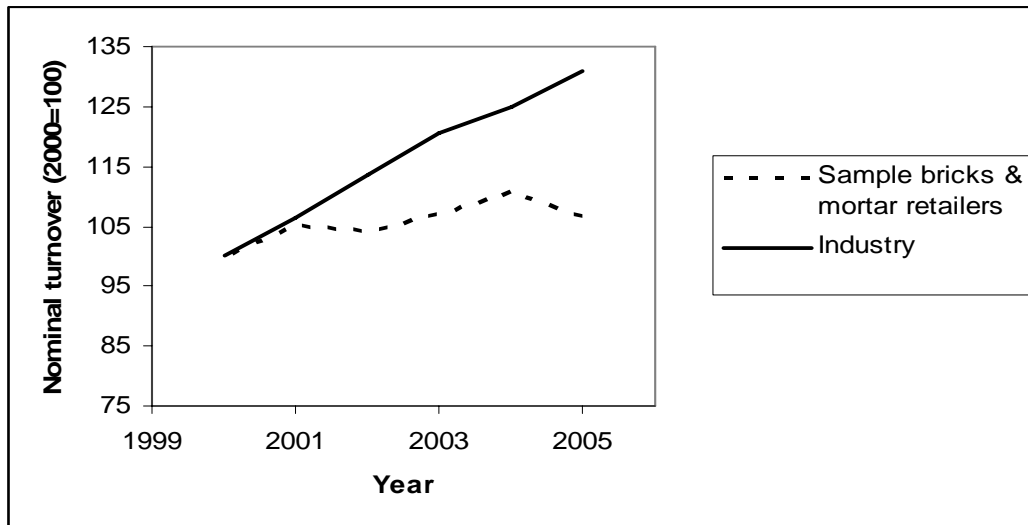
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<sup>78</sup> <http://www.thebookseller.com/documents/BordersbuysBooksEtc-3rdOctober1997.pdf>

substantial sized retail chains also made significant losses. Also, worth noting is the fact that the worst performing retailer over this period was Galloway & Porter a small, single store independent retailer.

8.12 Further insight into the declining productivity can be gained from Figure 8.9, which compares the total **nominal turnover** of the nine firms in Table 8.6 with the exception of Borders with a series for total industry turnover<sup>79</sup> with both indexed to 100 in 2000.

**Figure 8.9: Total nominal turnover for a sample of selected UK B&M retailers and the book industry overall, 2000–2005**



8.13 Since 2000 the B&M retailers' turnover has remained constant in nominal terms (therefore fallen in real terms). When viewed alongside the increasing turnover for the retail book industry as a whole this underlines just how significant the increases in market share of the newly entered supermarket retailers, Amazon and Borders must have been. Borders' turnover increased rapidly especially initially following

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<sup>79</sup> This is the total value of industry sales, as reported in Verdict (2007) p.4 Table 1, i.e. the nominal value equivalent of the physical volumes shown earlier in Figure 6.1.

entry – evidence of a between firm effect driven by within firm productivity gains (see Table 8.6).<sup>80</sup>

## **Introducing the supermarkets and Amazon**

- 8.14 The above analysis has considered the productivity of B&M book retailers and therefore importantly omits the supermarket and internet retailers. Including these alternative retailers is problematic, and it is to this that we now turn.

### **The supermarkets**

- 8.15 Unsurprisingly, AMADEUS does not report disaggregated data for either the turnover or employment in selling books of the supermarkets: supermarkets do not typically report such information on a product-specific basis in their company accounts. For turnover, this is not a problem, since we have the CC's estimates for supermarkets in aggregate, 2001–2005, but, for employment, we face a problem which is both practical and conceptual. Given the way that supermarkets are organised, it is probably a meaningless question to ask what proportion of a supermarket's staff are engaged specifically on selling books: there is no real demarcation of staff on product lines.
- 8.16 As such, any estimate of the productivity of supermarkets in bookselling is bound to be notional and to a large extent arbitrary. In these circumstances, we prefer not to generate any particular point estimate of their productivity, but rather confine ourselves to establishing what might be a plausible range of estimates which can then be used in a sensitivity analysis (see below). To do this, we use two pieces of indirect evidence.

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<sup>80</sup> Evidence suggests Borders market share has continued to rise, see: <http://books.guardian.co.uk/news/articles/0,,2174668,00.html>.

- 8.17 First, we estimate the difference in space-productivity, (that is, sales per sq ft of store space devoted to books) between supermarkets and Waterstone's and Ottakar's. For the supermarkets this was estimated to be currently £900 p.a.<sup>81</sup> (Interestingly, the estimate for aggregate supermarket superstore sales generally is £1,100 per sqft.<sup>8283</sup>) According to the same source, this is approximately three times as high as the typical space productivity in Waterstone's and Ottakar's 2001–2007. This could imply a similar multiple in labour productivity - on the (un-testable) assumption that the ratio of space to employment was identical in supermarkets and Waterstone's and Ottakar's.
- 8.18 Second, we can compare the aggregate labour productivity of supermarkets, (on sales of all products), with Waterstone's and Ottakar's. Using AMADEUS's figures for aggregate turnover and employment in Tesco, Asda and Sainsbury combined, labour productivity in 2005 was about 1.5 times the level it was in Waterstone's and Ottakar's. This would imply a similar multiple in labour productivity – on the (un-testable) assumption that supermarket labour productivity when selling books is identical to that for all products.

## **Amazon**

- 8.19 For the internet sellers, we face similar problems. Although we have corroborated and consistent estimates of their aggregate market share (from both the CC and industry reports, for example, Verdict), data on employment are unavailable. For example, in a current report by Keynote

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<sup>81</sup> Verdict (2007), p.27.

<sup>82</sup> Verdict (2007), p.27.

<sup>83</sup> It has been suggested that, because supermarkets achieve lower space productivity on books than for other products, this may persuade them not to continue their rapid expansion into book retailing. However, Tesco, the largest UK supermarket chain, currently offers the widest book selection among supermarkets and increased its book sales by 50 per cent in 2005 with rapid growth continuing since then. Evidence suggests it will expand its book sales further as it opens additional large stores (Mintel, 2007) p.54.



(2007, p.26), Amazon's employment is recorded simply as 'not known'. Moreover, even if the total employment of these firms were known, it must be remembered that, as for the supermarkets, it is somewhat meaningless to ask what proportion of their employees are dedicated to selling books, as opposed to the many other products they sell. A third complication derives from the business model employed by internet sellers (certainly Amazon): while the majority of their sales are sourced directly from their own fulfilment centres/warehouses, a significant proportion is sourced from independent booksellers around the world. For these latter sales, Amazon plays a role which is more akin to agent than retailer. While these sales will be included in the above estimates of Amazon's market share, they will involve only minimal factor (including labour) inputs from Amazon itself. This will therefore tend to exaggerate Amazon's labour productivity

8.20 Again, therefore, any estimate of the productivity of book selling will be notional. As for supermarkets, we try to marshal whatever information is available. We concentrate on Amazon, the main online seller.

8.21 First, Table 8.7, imputes the value of Amazon's book sales from Verdict data on internet book selling.<sup>84</sup> These are consistent with the CC's estimates of the online market share.

**Table 8.7 – Amazon's book sales**

Year	Online Spend £m	Amazon Online Share (%)	Estimated Amazon Sales (Nominal) £m
2004	317	86.7	275
2005	367	80.9	297
2006	438	86.1	377

<sup>84</sup> Derived from Verdict (2007) Table 8 p.20 and Figure 6 p.23.

8.22 Second, using press releases and business news websites, we estimate the approximate aggregate level of employment in Amazon's UK sites<sup>85</sup> in 2005, this was approximately 1000. If all these employees were dedicated to selling only books, labour productivity would be £377,000, as opposed to approximately £100,000 in Waterstones and Ottakars: a multiple of 3.77.<sup>86</sup> However, adjustments need to be made for: (i) non-book sales, and (ii) sales under the Amazon name which are in fact sourced by independent book sellers (agency sales.) We have no information on either, but it is instructive to estimate how the multiple might change if we assume that no more than 60 per cent of sales are books<sup>87</sup> and that no more than 10 per cent of sales are agency sales<sup>88</sup>. On those assumptions, the Amazon/Waterstones-Ottakars multiple would rise from 3.77 to 5.66.

### Estimating the decomposition into between- and within-firm effects, under different scenarios

8.23 We are now in a position to illustrate how the methodology can be expanded to include **all** main players in the industry, and not just the B&M retailers in our sample. To do this, we employ the CC market share estimates, reported in our earlier Table 6.2, to weight the productivity

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<sup>85</sup> The Corporate centre at Slough and Fulfillment Centres in Milton Keynes, Glenrothes and Gourrock.

<sup>86</sup> A multiple of just over 3.6 is obtained if Waterstone's productivity figure is compared with Amazon's 2006 worldwide labour productivity across all products, calculated from Amazon's 2006 Annual Report: <http://phx.corporate-ir.net/phoenix.zhtml?c=97664&p=irol-reportsAnnual>

<sup>87</sup> Amazon's 2006 Annual Report, cites 'Media' as accounting for 72 per cent of Amazon International's worldwide sales. However, this will include CDs, DVDs etc as well as books.

<http://phx.corporate-ir.net/phoenix.zhtml?c=97664&p=irol-reportsAnnual>

<sup>88</sup> An industry expert confirmed that this figure might be in the right ballpark. Unfortunately, enquiries to Amazon itself on these questions proved unproductive.

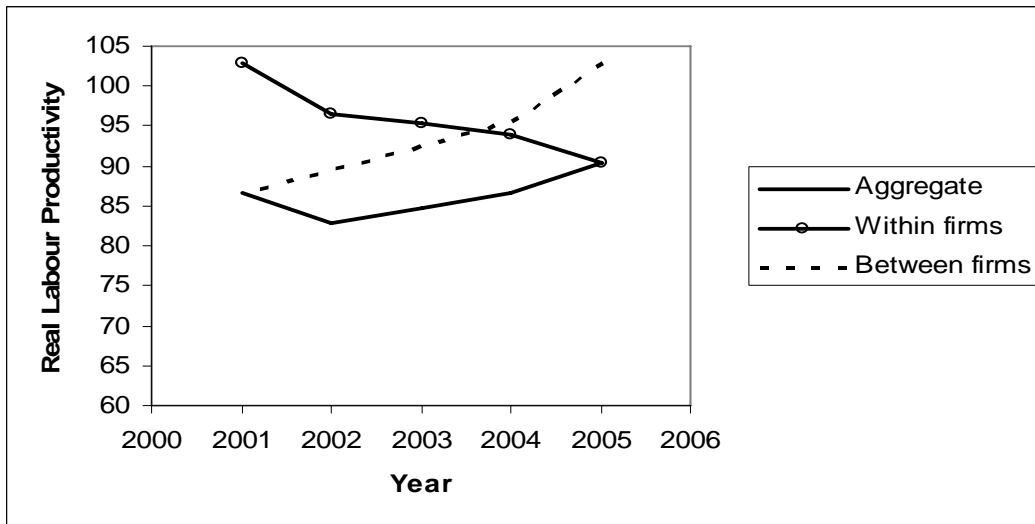
figures calculated from AMADEUS for each firm, or category of retailer, and to include a range of alternative productivity estimates for the supermarkets and internet sellers (weighted by their accurate CC market shares). At this stage also we effectively correct for the under representation of smaller retailers in our sample by assuming that our productivity estimates for the sample of small firms are representative of all small firms.

- 8.24 As a baseline, used merely for illustrative purposes, Figure 8.10 and Table 8.8 present the results on the assumption that the internet and supermarket retailers maintained a productivity level fixed at three times Waterstone's level in 2005 (see Appendix 6 for the detailed break-down of the analysis involved in this base case). Under this assumption, aggregate industry productivity would have increased by just over eight per cent from 2001–2005 – even assuming no within-firm productivity growth by the supermarket and internet sellers.<sup>89</sup>
- 8.25 Thus, as shown in Figure 8.10, while the traditional retailers experienced falling within-firm productivity during this period, if the above supermarkets/internet retailers multiple is correct, the negative within-firm effect for B&M would have been more than outweighed by a larger between-firm effect in favour of the significantly more efficient supermarket and internet retailer entrants.

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<sup>89</sup> Using AMADEUS, we estimate that the supermarkets were increasing their aggregate (that is, on all products) nominal labour productivity by about three per cent p.a. over this period

**Figure 8.10: Aggregate, within and between firm productivity changes, 2001–2005: assuming supermarkets/internet productivity is three times that of Waterstone's**



**Table 8.8: Aggregate, within and between firm productivity absolute and % changes, 2001–2005**

	Absolute change	% change
<b>Aggregate</b>	3.8	4.3
<b>Within</b>	-12.5	-12.1
<b>Between</b>	16.2	18.8

8.26 Table 8.8 quantifies the decomposition in terms of both percentage and absolute changes in productivity (calculated in Appendix 6).<sup>90</sup>

<sup>90</sup> Given the nature of this particular decomposition, it 'adds up' exactly in absolute terms, but not quite in percentage terms.

## Alternative assumptions

8.27 This assumed threefold productivity multiple in favour of the supermarkets and internet sellers is not out of line with the indirect estimates we presented above (being perhaps near the top end for supermarkets, but by no means for the internet). But we stress again that it is presented mainly for illustrative purposes. To provide more context, and as a sensitivity test, Table 8.9 next presents some alternative results in which we vary the assumed multiple. Thus, the first row shows that, in the unlikely event that supermarket and internet retailers had identical productivity to Waterstone's in 2005, the industry's aggregate productivity would have fallen by over 16 per cent, with now virtually no positive between-firm effect.

**Table 8.9: % changes in productivity from 2001–2005 – under alternative assumptions for productivity multiple between Amazon/supermarkets and Waterstone's**

Productivity multiple	Aggregate	Within	Between
1	-16.3	-16.8	0.6
1.5	-10.5	-15.4	5.7
2	-5.2	-14.1	10.4
2.5	0	-13.0	14.9
3	4.3	-12.1	18.8
4	12.5	-10.7	26
5	19.7	-9.5	32.2

8.28 The subsequent rows show the effect of increasing the multiple: clearly, the higher is the multiple, the more important is the between-firm effect, and the faster industry productivity grows. As can be seen, a multiple of 2.5, would be just sufficient for the two effects to balance, leaving aggregate productivity unchanged. More optimistically, at a multiple of 4, the industry would have achieved a 12.5 per cent growth in productivity – nearly 2.5 per cent p.a. The figure would be higher than

this to the extent that the supermarkets and internet sellers achieved positive within-firm increases in productivity.

## **Summary of UK retail**

- 8.29 As this section has covered a lot of ground, a brief summary is in order before we turn to the publishing sector.
- 8.30 At the time of abolition of the NBA, there was a surge in the productivity of the B&M retailers. However, their nominal turnover soon dropped sharply and then declined steadily thereafter - despite the fact that the aggregate volumes of books sold and prices were both increasing.
- 8.31 It is likely that declining volumes sold by B&M were the result of entry from internet/supermarkets, and these reduced volumes were the primary cause of their falling productivity – at least in the short/medium run. In that sense, increased competition had a short-run deflationary effect on industry productivity.
- 8.32 However, on the not unreasonable assumption that the new entrants were more efficient, this will have led to a positive between-firm effect on aggregate industry productivity. Our estimates suggests that a productivity multiple in the region of 2.5 would have been sufficient for the two effects to roughly balance.
- 8.33 From the incomplete and inconclusive evidence at our disposal, we can not be sure whether or not the actual multiple exceeded this level, but, in our opinion, it is likely that it did.
- 8.34 At this preliminary stage, we raise two questions. The first is factual – can the entry of the supermarkets and internet sellers on such a scale be attributed to the abolition of NBA? Certainly, it is true that the supermarkets were amongst those calling for the abolition of NBA at the time, and informed opinion suggests that there is a degree of causality, but we can not be sure. One way to test this is to use a counter-factual. Germany is an obvious candidate for this, in that it has retained RPM. We therefore return to this question in paragraph's 9.4-9.9 and paragraph's 9.15-9.18. The second question is a query concerning the

response of B&M retailers. Faced with falling demand as a consequence of new low price entrants, it is not surprising that their productivity initially fell. Downsizing and consolidation can rarely be achieved instantaneously. What is perhaps surprising is that their steady decline has continued for so long after the new entry began to bite. Perhaps the recent Waterstone's/Ottakar's merger is a belated response? In particular given the efficiency defence put forward by the merging parties (see chapter 10).

## **UK publishers**

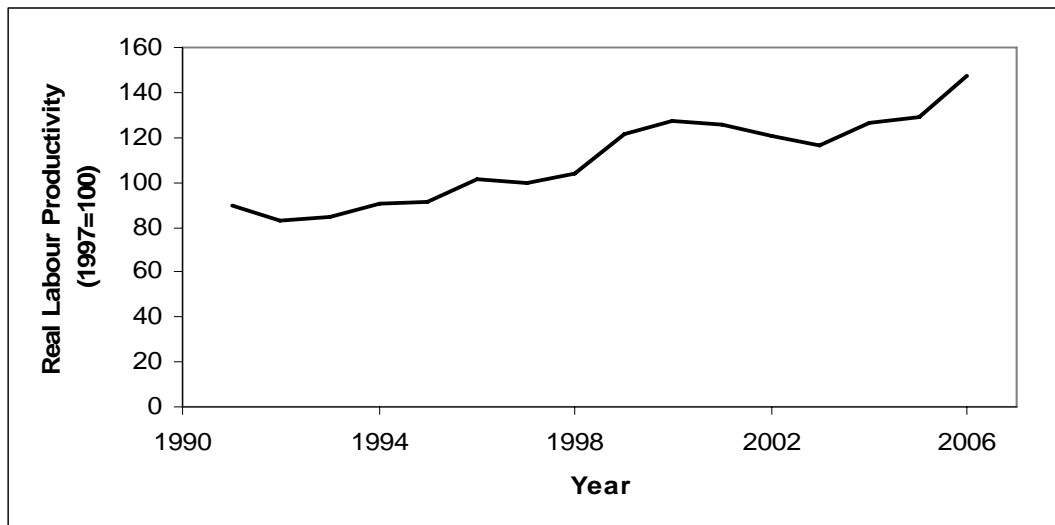
8.35 This section now conducts a similar productivity analysis for the UK publishing sector over the same time period. Firstly, Figure 8.11 uses the data on each of the 49 'genuine'<sup>91</sup> book publishers reported in Amadeus to calculate the aggregate industry labour productivity (see Appendix 4 for size distributions by turnover and number of employees for these 49 firms). This has been deflated by the PPI described in the previous section. Clearly, productivity increases in general through the period with a particular surge in the late 1990s.<sup>92</sup>

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<sup>91</sup> As for book retailing, we checked against independent industry sources to confirm that all firms labelled as book publishers in AMADEUS are indeed book publishers. Those that were not were excluded.

<sup>92</sup> Further inspection of the data suggests that this overall trend of productivity gains was driven by turnover increasing more rapidly than the number of workers employed.

**Figure 8.11: UK publishers' real labour productivity, 1991–2006**



8.36 As for retailing above, this sample is not balanced, and so we undertook two robustness checks. First, the exercise was repeated for a balanced sample (of 20 firms) for which data are available throughout the period. Second, it was repeated for the subset of six large publishing groups within the latter.<sup>93</sup> This subset is as described earlier in Table 6.3, and it makes up the large publishing groups present in the industry.<sup>94</sup>

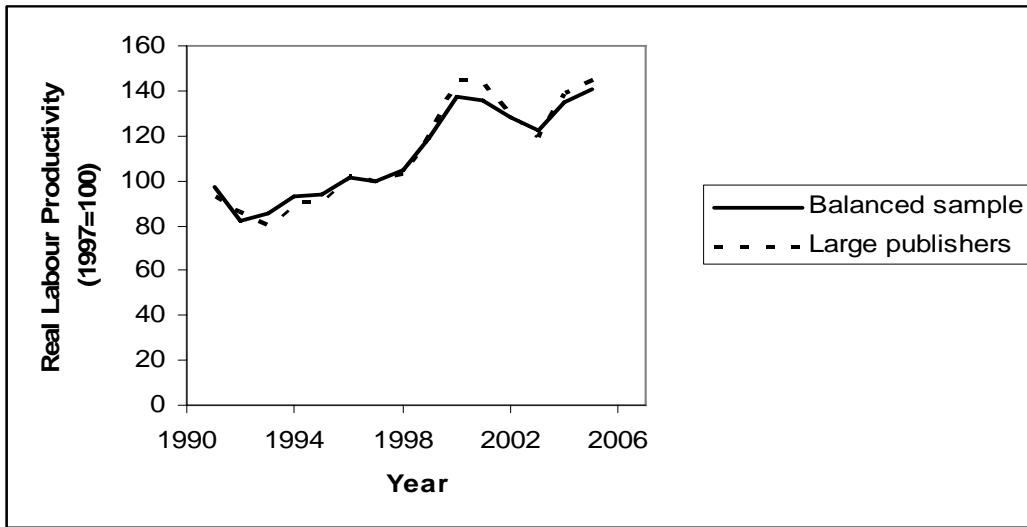
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<sup>93</sup> All firms in Table 6.3 except for OUP, treating Penguin and Pearson Education (Pearson Group) separately.

<sup>94</sup> Of the firms described in Table 6.3 only OUP cannot be included due to lack of data.



**Figure 8.12: UK publishers' real labour productivity, 1991–2006 (alternative samples)**



- 8.37 Figure 8.12 confirms that the general trend shown in Figure 8.11 continues to hold for these two subsets of firms, albeit with some indication that the largest publishers performed slightly worse than other publishers in the early 1990s but slightly better from the later 1990s onwards.
- 8.38 Table 8.10 next compares productivity growth for the pre NBA period and for the years after the NBA (or at least when the evidence suggests the NBA had effectively ended). To control for a possible size bias in our sample (which contains all the main large publishers firms, but it only includes data on a selection of the smaller publishers (the 16 in the balanced sample)), our calculation of industry productivity is a weighted average of the small and large publishers' productivity growths. The weights relate to the large and smaller firms share in the industry rather than just this sample. In other words, the small firm contribution is grossed up to counteract this under-representation of small firms in our

sample. The weights used for the start and end of each period are given in the last row of the table.<sup>95</sup>

**Table 8.10: UK publishers real labour productivity growth % change, 1992–2005**

	<b>1992-95</b>	<b>1995-05</b>
<b>Total</b>	26.3 <b>(8.7 p.a.)</b>	55.1 <b>(5.5 p.a.)</b>
<b>Large</b>	-2.5	82.9
<b>Small</b>	49.9	42.1
<b>Weight small (%)</b>	57-64	64-61

8.39 In terms of average annual productivity growth, this suggests that productivity increased more rapidly prior to the abolition of the NBA. The table also disaggregates productivity gains between the small publishers and the large publishing groups. This confirms the earlier suggestion that the significant productivity gains made by the large publishers only occurred post-abolition.

8.40 Finally, Table 8.11 reports the results from using the methodology described earlier (see paragraph's 5.2-5.8) to decompose the productivity growth in the two periods into within and between firm effects.

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<sup>95</sup> These weights were calculated using a figure for the total market size in 2004 available from Mintel (2007), p.39. Keeping the ratio between the turnover of small firms in our balanced sample and the turnover of all small firms constant over time (around 50 per cent) provided an estimate of the total market share of the small firms. This was then used to weight the productivity of the small firms based on the productivity figures calculated for the small firms with available data.

**Table 8.11: UK publishers' real labour productivity % changes, 1992–2005 (aggregate, within and between firms)**

	<b>1992–1995</b>	<b>1995–2005</b>
<b>Aggregate</b>	26.3	55.1
<b>Within firm</b>	20.5	59.5
<b>Between firm</b>	4.8	-2.8

8.41 It is clear that the majority of the productivity gains have been due to within firm gains that is, a reduction in x-inefficiency. In the latter period the between firm effects is actually negative, although insignificant over a 10 year period.

## 9 INTERNATIONAL COMPARATORS

### Rationale

- 9.1 As well as using the UK book industry pre-abolition as a comparator to UK performance post-abolition, it was an initial objective of the project to employ international comparisons – with countries which have retained RPM - as an alternative source of counterfactual (see paragraph's 5.10-5.15).
- 9.2 Germany and the UK had the two largest book industries in Europe in 2000, together accounting for 56 per cent (Germany 35 per cent and the UK 21 per cent) of the total book sales value of the EU-15 countries.<sup>96</sup> This, coupled with the fact that Germany, unlike the UK, has a fixed book price system (which, as discussed in paragraph's 2.4-2.6, appears to be heavily enforced) makes it a natural comparator country.<sup>97</sup> In addition as Table 9.12 shows, both countries have an above average range of book titles available per capita. One other interesting difference

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<sup>96</sup> European Commission (2004a) p.15.

<sup>97</sup> It was also envisaged that a bilateral comparison between Sweden (free prices) and Denmark (fixed prices) might offer useful perspectives for a different reason. While in many other respects the two countries are similar. Interestingly, the sale of re-imported Danish titles from Sweden, at unrestricted prices and a publisher's use of its book club subsidiary to undercut fixed prices have been issues of considerable competition authority interest (see <http://www.ks.dk/english/competition/national-decisions/national-decisions-before-2004/2003-09-24-fixed-book-prices-by-reimport-of-danish-books-to-denmark/>

and <http://www.ks.dk/english/competition/national-decisions/national-decisions-2004/2004-05-26-publishers-must-allow-equal-terms-of-competition-to-book-retailers/>)

However, this comparison was unsuccessful mainly due to the poor availability of data. The problem of missing observations was substantially more severe than in the UK and Germany, thus making it impossible to obtain a balanced sample. In addition, less information on these markets and typically smaller firms exacerbated the problems. For these reasons the productivity comparison between Denmark and Sweden has been omitted from the final report.

is that VAT is not imposed on books in the UK whilst in Germany it is seven per cent (however lower than their standard VAT rate).<sup>98</sup> It is also interesting to note from Table 9.12 the UK book industry's rapid turnover growth between 1995-2000 which was significantly greater than the equivalent figure for Germany and the overall EU average.

**Table 9.12: Book publishing in selected EU countries circa 2002<sup>99</sup>**

	<b>Titles produced in 2002 per million population</b>	<b>Titles in print per million population</b>	<b>Turnover % of GDP</b>	<b>Turnover growth rate 1995-2000</b>
Denmark	499	9348	0.36	30.9
France	496	7560	0.34	3.3
Germany	242	11680	0.33	14.2
Italy	597	7528	0.4	40.5
Spain	758	6208	0.42	1.4
Sweden	406	N/A	0.365	-2.3
UK	1404	18827	0.43	57.1
EU Average	808	9993	0.41	17.60

9.3 Paragraph's 9.15-9.18 will therefore make productivity comparisons between UK and German book publishers and retailers. First however, paragraph's 9.4-9.14 describes the German book industry and the book price indices available for use in the productivity analysis.

### **German Book Industry**

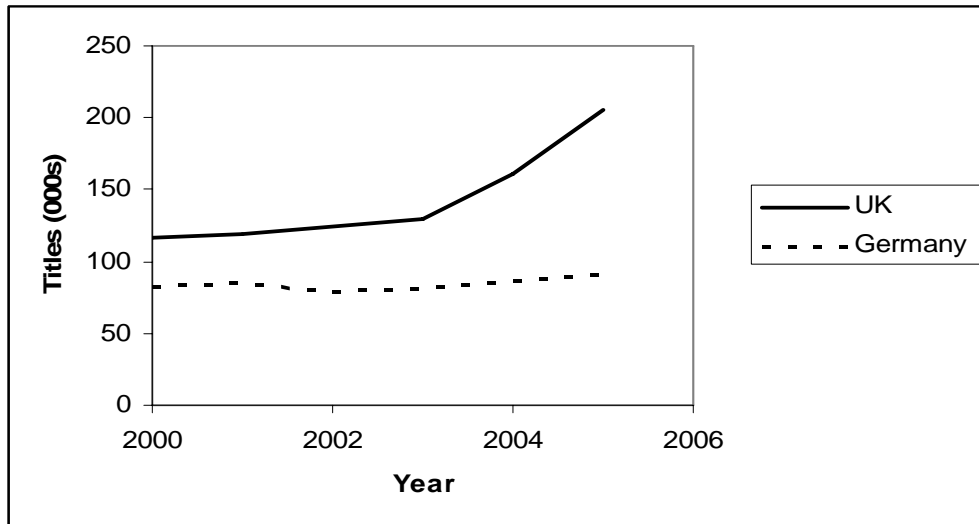
9.4 Figure 9.13 compares the number of new titles produced in Germany from 2000 to 2006 with the UK figures from the earlier Figure 6.2. Throughout the period the number of new titles is lower in Germany and

<sup>98</sup> European Commission (2004a) p.83.

<sup>99</sup> European Commission, (2003), p.79.

it is clear that Germany did not also experience the recent growth in the number of titles in the UK.

**Figure 9.13: The number of new book titles produced in Germany and the UK, 2000–2006<sup>100</sup>**



### German retailers

9.5 Table 9.13 shows the corresponding market shares for the main German book retailers (excluding the main internet retailer Amazon due to data availability).

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<sup>100</sup>German data for first and new editions from <http://www.boersenverein.de/de/64586>, UK data as Figure 6.2.

**Table 9.13: Market shares of the top 10 German book retailers in 2005 (excluding Amazon)<sup>101</sup>**

<b>Firm</b>	<b>Market share within top 50 (%)</b>
DBH Buch Handels	27
Thalia	26
Schweitzer Sortiment	5
Mayersche Buchhandlung	5
Karstadt Warenhaus	4
Kaufhof	3
Lehmanns Fachbuchhandlung	3
Buch & Kunst	3
Osiander	1
Pustet	1

9.6 In 2005, Weldbildplus and Heinrich Hugendubel, the second and third largest retailers, announced their intention to merger thus forming DBH Buch Handels the number one in Germany.<sup>102</sup> The CR4 level of 63 shows that the market has become highly concentrated and is substantially more concentrated than both the UK publishing and retail sectors (see paragraph's 6.4-6.8 and 6.9-6.10) and the German publishing sector described in the previous section.

9.7 Table 9.14 then goes on to describe the evolution over recent years of the market shares of the different categories of retailer operating in the

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<sup>101</sup> Market shares as a proportion of the Top 50 German retailers ranked by 2005 turnover. Data from <http://www.buchreport.de/>. All 10 of these firms are included in the subsequent productivity analysis except for Karstadt Warenhaus and Kaufhof (both department stores) and Lehmanns Fachbuchhandlung (mainly a publisher).

<sup>102</sup> [www.buchreport.de](http://www.buchreport.de/)

sector, using reliable data from the German Bookseller Association. It is apparent that the traditional high-street retailers have had some erosion of their share of the market, although this is far less severe than in the UK market (as seen earlier in Tables 6.1 and 6.2). Additional information suggests the decline in the number of small/independent outlets in the UK has not occurred to the same extent in Germany.<sup>103</sup> Whilst it is difficult to make accurate comparisons, due to the different categories used,<sup>104</sup> assuming supermarkets (in particular discount stores) make up only part of the others category, this suggests supermarket retailers have a much less substantial market share than the eight per cent observed in the UK market in 2005 (see Table 6.2).

**Table 9.14: The German book retail market by retailer type, 2003–2005**<sup>105</sup>

	2003	2004	2005
<b>High-street</b>	56.5	55.8	54.8
<b>Publishers direct sales</b>	17.3	17.7	17.6
<b>Offline, mail order and door to door sales</b>	5	4.3	4.3
<b>Online</b>	4.4	5.6	6.9
<b>Dept stores</b>	4.5	4.4	4.3
<b>Book Clubs</b>	3.4	3.3	3.2
<b>Others (incl. discount stores e.g. Aldi and kiosks)</b>	8.8	9	8.9

9.8 In addition, it is clear from Table 9.14 that the online book retailers have, like in the UK, experienced considerable growth in recent years. This

<sup>103</sup> For example in 2004 the top 100 booksellers accounted for only around 35 per cent of industry turnover (Publishers Association (2006)).

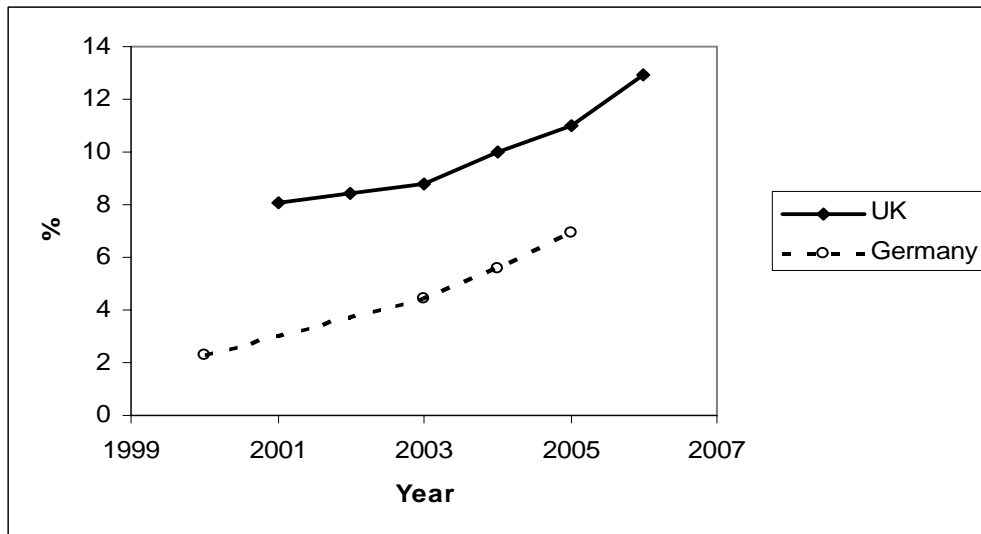
<sup>104</sup> The sample of German retailers for which productivity analysis is possible are included in the high-street category of Table 9.14 and this category broadly corresponds to our definition of B&M retailers in the UK.

<sup>105</sup> Data from <http://www.boersenverein.de/de/65916>.



was achieved from a market share of less than 0.5 per cent in 1998.<sup>106</sup> Amazon entered the German and UK markets simultaneously in 1998 and are also the dominant internet book retailer in Germany. Figure 9.14 compares the growth of the UK and German online market shares from 2001-2006 (where available). It can be seen that, whilst both online markets have grown at relatively similar rates, the online market share is more substantial in the UK (therefore suggesting more rapid expansion pre 2001) and grew more rapidly in the last available year for which comparator data is available.

**Figure 9.14: The online market share in German and the UK book retailing<sup>107</sup>**



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<sup>106</sup> <http://www.readingeurope.org/observatory.nsf?open>

<sup>107</sup> UK data as Table 6.2. German data from: <http://www.boersenverein.de/de/65916> except 2000 from: <http://www.channelpartner.de/sonstiges/622073/index.html>. (data not available for Germany in 2001 and 2002).

9.9 Although by no means conclusive, this evidence seems to suggest that whilst the entry of non-traditional retailers in the UK since the late 1990s has also occurred in Germany, it has been to a lesser extent. One explanation for this is the inability of these retailers to price freely in Germany (at least for German language books). In contrast Amazon appears to be particularly strong in sales of English books in Germany. Although detailed sales figures are not available it has been estimated that in 2005 they accounted for around 30 per cent of English language book sales in Germany,<sup>108</sup> this would seem to indicate the key role the ability to price freely plays in their business model. Survey results from the UK regarding online purchases in general that is, not just books, provides additional evidence that price is one of the key factors driving demand for products sold online.<sup>109</sup> In addition it is also worth noting that Borders has not entered the German retail book market.

### **German publishers**

9.10 Table 9.15 provides the market shares for the main publishing firms in the German market:

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<sup>108</sup> Publishers Association (2006), p.19.

<sup>109</sup> See [http://www.offt.gov.uk/shared\\_offt/reports/consumer\\_protection/oft921h.pdf](http://www.offt.gov.uk/shared_offt/reports/consumer_protection/oft921h.pdf), p.39.

**Table 9.15: Market shares of the top 10 German publishers in 2006<sup>110</sup>**

<b>Firm</b>	<b>Market share within top 50 (%)</b>
Springer Science + Business Media	12
Klett-Gruppe	8
Cornelsen Verlagsgruppe	7
Westermann Verlagsgruppe	4
Random House	4
Weltbild	4
Weka Firmengruppe	4
Wolters Kluwer Deutschland	4
Mair Du Mont	3
Haufe Gruppe	3

The CR4 level of 31 is significantly lower than the corresponding level for the UK (see paragraph's 6.9-6.10).<sup>111</sup>

## EU, German and UK book price indices

9.11 In the next section, the labour productivity results for the UK book publishers and retailers will be contrasted with the equivalent for the German book industry. Again, it is first necessary to deflate turnover into real terms. To the best of our knowledge the only book price series

<sup>110</sup> Market share as a proportion of the top 50 German publishers ranked by 2006 turnover. Data from <http://www.buchreport.de/>. All 10 of these firms were included in the subsequent productivity analysis with the exception of Random House, Wolters Kluwer Deutschland, Mair du Mont and Haufe Gruppe where data was not available.

<sup>111</sup> Additional information suggests sub groups within the German publishing industry are substantially more concentrated, for example in 2002 the CR4 level for publishers in the mass market paperback sector was around 74, see European Commission (2004a), p.48.

available for this purpose are the European Harmonised Indices of Consumer Prices (HICP) books component which is available from 1996-2006.<sup>112</sup>

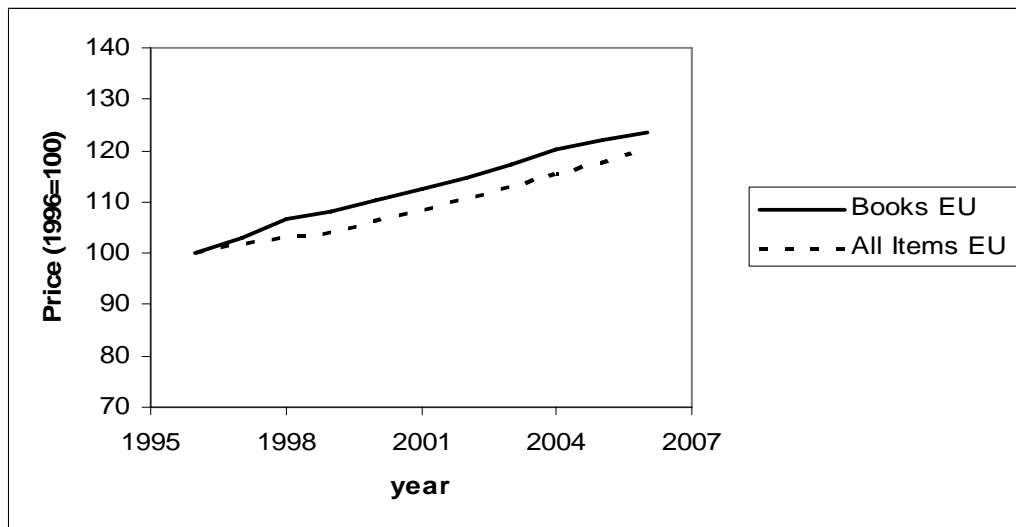
- 9.12 These price series allow us to compare and control changes in the prices of books across this period.<sup>113</sup> First of all Figure 9.15 compares the EU average for the books component with the EU average for all items. It is apparent that generally across Europe book prices have increased at a similar rate to other retail items.

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<sup>112</sup> The same questions over the accuracy of the RPI index discussed in paragraph's 7.5-7.13 also apply to these HICP indices. For common years comparing the HICP book index for the UK with the RPI index for UK books (shown in Figure 7.4) shows no substantial differences.

<sup>113</sup> As Stockmann (2004) p.55, explains, there is very little empirical work comparing actual book price levels between countries. One exception discussed is Fjeldstad (2001) which finds significantly lower prices in Sweden (free prices) than Norway (fixed prices) despite higher VAT on books in Sweden. However, population levels and dual language school books in Norway arguably contribute to this result.

**Figure 9.15: HICP indices for books and all items in the EU, 1996–2005<sup>114</sup>**



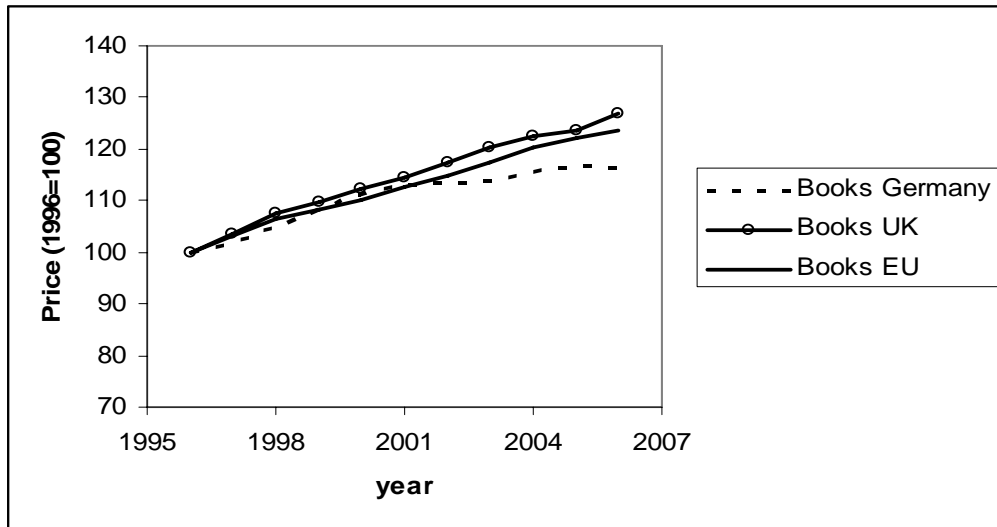
9.13 Figure 9.16 then compares the increase in books prices in the UK and Germany from 1996–2006 and also includes the average change in book prices across the EU. Prices in the UK have increased at a similar rate to those across the EU, whilst in Germany from around 2001 onwards prices increased less rapidly.

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<sup>114</sup>Eurostat:[http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=1090,30070682,1090\\_33076576&dad=portal&schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,30070682,1090_33076576&dad=portal&schema=PORTAL)

Harmonized indices of consumer prices (2005 = 100) – Annual Data (average index and rate of change) infotype avx Annual average index coicop cp0951 Books.

**Figure 9.16: HICP indices for books in Germany, the UK and the EU, 1996–2005<sup>115</sup>**



9.14 Whilst Figure 9.16 only compares changes in the price levels between countries there is however, also some limited recent evidence to suggest that the level of average book prices in Germany were not significantly different from the UK.<sup>116</sup>

### International productivity comparisons

9.15 Paragraph's 8.2-8.13 showed that for the UK traditional retailers in recent years productivity has fallen. However, once the impact of the internet and supermarket retailers is taken into account under plausible assumptions it is possible industry productivity in fact increased overall. Paragraph's 9.5-9.9 suggested that the entry of internet and

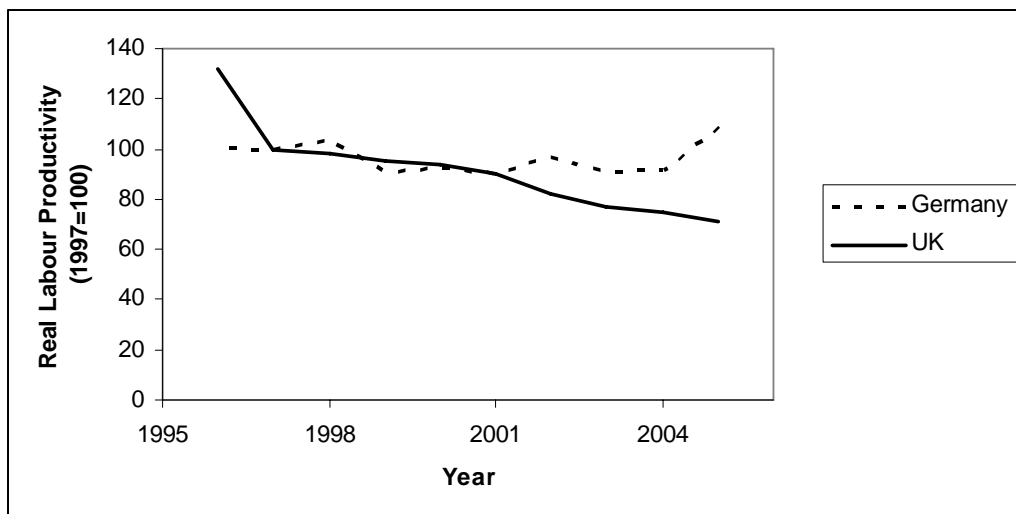
<sup>115</sup>Eurostat:[http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=1090,30070682,1090\\_33076576&dad=portal&schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,30070682,1090_33076576&dad=portal&schema=PORTAL)

Harmonized indices of consumer prices (2005 = 100) - Annual Data (average index and rate of change) infotype avx Annual average index coicop cp0951 Books and coicop cp00 All-items.

<sup>116</sup> Publishers Association (2006) p.22.

supermarket retailers has been less significant in Germany. In addition, because even less information is available on the German market it will not be possible to analyse the impact of these new book retailers on productivity in Germany even using somewhat speculative approach adopted in paragraph's 8.14-8.28. Instead this section provides some insights by comparing the productivity of the traditional B&M retailers in Germany and the UK over time. Therefore, Figure 9.17 contrasts the productivity change in UK book retailing (shown earlier in Figure 8.7) with the equivalent for the German book retailing sector (in total 53 firms)<sup>117</sup> from 1996–2005.

**Figure 9.17: Bricks and mortar book retailers in Germany and the UK, real labour productivity,<sup>118</sup> 1996–2005**



9.16 This suggests that the substantial decline in productivity experienced by the UK retail sector has not occurred in Germany, where real labour productivity has remained fairly constant until increasing latterly. This

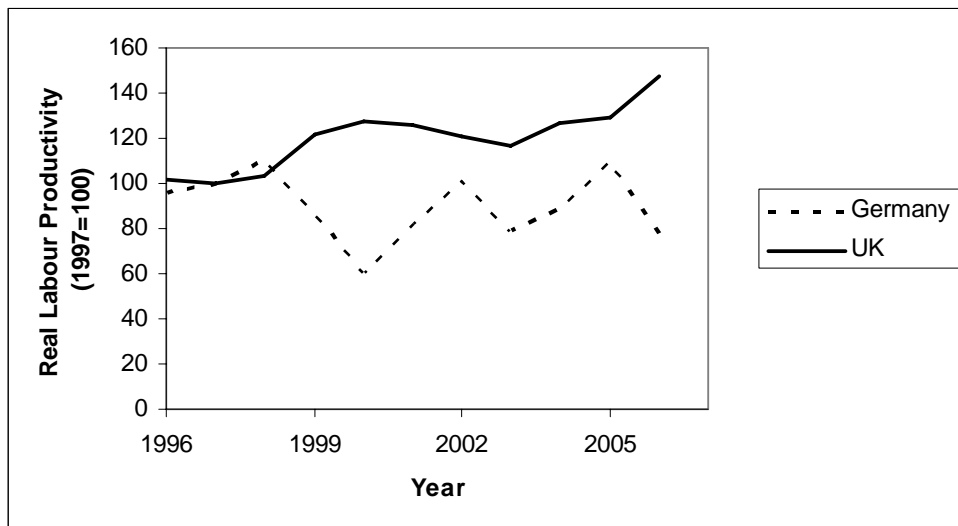
<sup>117</sup> Although an unbalanced sample. See Appendix 4 for the size distribution by turnover and number of employees.

<sup>118</sup> German turnover figures deflated using HICP price index for books in Germany as shown in Figure 9.16.

suggests that the impact on traditional retailers of entry by Internet and supermarkets was, as argued earlier, at least in part facilitated by the move to a free price system.

9.17 Figure 9.18 provides similar comparison for the publishing sector, combining the earlier information from Figure 8.11 with the equivalent for Germany (in total 41 firms)<sup>119</sup> for the period 1996–2005.

**Figure 9.18: Book publishers in Germany and the UK, real labour productivity<sup>120</sup> 1996–2005**



9.18 Whilst the figures for Germany are volatile due to data problems (in particular the unbalanced sample), this still provides a useful counterfactual and puts the post NBA productivity performance of the UK in a better light. It is clear that whilst there have been no overall productivity gains in the German publishing the overall trend in the UK has been for productivity growth. The contrasting book publishing turnover growth rates between Germany and the UK shown in Table

<sup>119</sup> See Appendix 4 for the size distribution by turnover and number of employees.

<sup>120</sup> German turnover figures deflated using HICP price index for books in Germany as shown in Figure 9.16.



9.12 would also support this finding. A tentative conclusion is that productivity growth would have been lower in the UK during this period if the NBA had not been abolished. Unfortunately comparisons pre 1996 are not possible.

## 10 INNOVATION, PRODUCT QUALITY AND CHOICE

10.1 Although the statistical methodology described in paragraph's 5.2-5.9 does not explicitly incorporate an innovation dimension, it will nevertheless capture some of the effects of innovation, albeit indirectly.

10.2 It is useful to separate innovation into three categories:

- process innovation. In the present case, this would refer to the invention or, probably more important, diffusion of new technologies for publishing and selling books
- product innovation. Here, this would refer to improvements in the quality and range of (i) book manuscripts from authors, (ii) published books (for example, better quality reproduction of pictures and text, improvements in binding etc), and in (iii) the 'retail experience' (for example, enhancements to accessibility in retail stores)
- improved (and increased diversity in) business models.

10.3 The **effects on productivity of process innovation** should be captured in our methodology by the within-firm component of growth in productivity. The effects of **new business models**, will be captured by the between-firm effect, insofar as firms entering on the back of (productivity-enhancing) new business models, such as internet or supermarket selling, will grow in relative terms.

10.4 Indeed, as explained earlier (paragraph's 4.2-4.4), at the time of the decision to abolish the NBA in 1997, it was technological developments and the introduction of new business practices that had helped to alleviate earlier fears of possible adverse effects of abolition. More recently, it is worth noting the importance of the efficiency defence, attached by the parties in the Waterstone's/Ottakar's merger, suggesting efficiency gains that would follow from integrating Waterstone's superior stock management system into Ottakar's operations.<sup>121</sup> It was argued

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<sup>121</sup> Competition Commission (2006), p.13.

that these efficiency gains would help Waterstone's/Ottakar's to compete against their B&M rivals and to respond to the 'pincer movement', described in paragraph's 6.4-6.8, caused by intense supermarket and internet competition. Interpreting this merger as a direct response to the growing presence of entrants, it can be argued persuasively that this is an indirect consequence of abolition.

- 10.5 On the other hand, the main **effects of product innovation** are probably not so well captured by the methodology.<sup>122</sup> Indeed, it is difficult to envisage how a project such as this could undertake an exhaustive evaluation of the impact of the intervention on product innovation. This would perhaps entail identifying some key product innovations, and then assessing how, if at all, abolition had influenced their introduction. In principle, one might compare with a counterfactual such as Germany, but the problems in comparing the quality of the product across countries are obvious: realistically, direct objective comparisons of the quality of books or bookshops between the UK and Germany are largely impossible.
- 10.6 A recent report for the European Commission (European Commission (2004b)) provides examples of both product innovations, for example e-books, and process innovations, for example digital printing. It suggests that, generally, publishing innovations have been largely incremental in recent years. The more radical innovations, notably deriving from the internet, were from outside the book industry, narrowly defined, and were global. Clearly, those innovations were unrelated to abolition of NBA.
- 10.7 In the same report, the Commission discusses some of the difficulties in measuring innovation in the publishing sector in the light of a lack of

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<sup>122</sup> In principle, product enhancement would be included if the price index used to deflate turnover represented quality-adjusted price (QAP). In that case, product enhancement would mean a reduction in QAP, and, for a given turnover in nominal terms, an increase in the quality adjusted volume (and thus productivity.) However, we have no reason for thinking that any of the price indices available are based on quality adjusted prices.

available data. It concludes by proposing a potential methodology which would require the collection of new survey evidence, which is clearly beyond the scope of the present report.

- 10.8 Nevertheless, there is some piecemeal evidence on quality and innovation post 1997. In a recent consumer survey of UK book buyers, store location and range of titles available were cited as the consumers' primary concerns.<sup>123</sup> It is therefore pertinent to recall our Figure 6.2, which demonstrates that the number of titles in the UK has continued to increase rapidly over time. This appears to be in contrast to the evidence from Germany where the number of new titles produced has remained constant in recent years (see Figure 9.13). See also Table 9.12, which provides additional evidence of the relative strength of UK publishing compared to Germany.
- 10.9 Moreover, the above survey found a high level of consumer satisfaction in the UK. Whilst direct information on the range of books available over time is not available, there is evidence of substantial increases, 1993–2001, in the aggregate retail floor space provided by the major B&M retailers.<sup>124</sup> This presumably reflects increases, in those years, in both the number of stores and typical store size – both of which should be consumer welfare enhancing. Choice and variety have also undoubtedly been enhanced by the emergence of internet selling for the US figures show Amazon stocks over 3.4m books and around 25 per cent of its book sales come from titles not available in traditional offline stores.<sup>125</sup>
- 10.10 In summary, notwithstanding any limitations due to data unavailability, it is incontestable that the major innovations in the book sector in recent years have been as a (direct or indirect) consequence of the emergence

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<sup>123</sup> GfK NOP (2006).

<sup>124</sup> Davies et al (2004), p.44 Table 4.7.

<sup>125</sup> Anderson (2007), p.23.

of the internet and supermarkets. The methodology we have pursued in this report captures some, but not all, of the impact.

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## APPENDIX 1

The two cases described in paragraph's 5.2-5.9 can be illustrated with a simple duopoly example of productivity growth between periods 1 and 2.

### Case 1:

	Period 1		Period 2	
	Productivity	Market share	Productivity	Market share
Firm 1	100	½	110	½
Firm 2	110	½	120	½

In case one each firm grows by 10 points and maintains market shares of ½.

**Within firm effect:** calculates the change in productivity from period 1 to 2 using period 2 market share weights i.e.:

$$\text{period 1: } ((1/2) * (100)) + ((1/2) * (110)) = 105$$

$$\text{period 2: } ((1/2) * (110)) + ((1/2) * (120)) = 115$$

Change: 10

**Between firm effect:** calculates the change in productivity from period 1 to 2 using period 1 productivity levels and varying the market share weights:

$$\text{period 1: } ((1/2) * (100)) + ((1/2) * (100)) = 100$$

$$\text{period 2: } ((1/2) * (100)) + ((1/2) * (100)) = 100$$

Change: 0

There is therefore no between firm productivity effect and the aggregate change is 15.

## Case 2:

	Period 1		Period 2	
	Productivity	Market share	Productivity	Market share
Firm 1	100	$\frac{1}{2}$	100	$\frac{1}{4}$
Firm 2	110	$\frac{1}{2}$	110	$\frac{3}{4}$

In case 2 each firm's productivity level remains constant, however firm 2 (because of its higher level of productivity) increases its market shares to  $\frac{3}{4}$  in period 2.

**Within firm effect:** calculates the change in productivity from period 1 to 2 using period 2 market share weights i.e.:

$$\text{period 1: } ((1/4) * (100)) + ((3/4) * (110)) = 107.5$$

$$\text{period 2: } ((1/4) * (100)) + ((3/4) * (110)) = 107.5$$

Change: 0

**Between firm effect:** calculates the change in productivity from period 1 to 2 using period 1 productivity levels and varying the market share weights:

$$\text{period 1: } ((1/2) * (100)) + ((1/2) * (110)) = 105$$

$$\text{period 2: } ((1/4) * (100)) + ((3/4) * (110)) = 107.5$$

Change: 2.5

There is therefore no within firm productivity effect and the aggregate change is 2.5.

- In case 1 there was only a within firm effect as market shares remain constant across periods (whilst productivity levels change).
- In case 2 there was only a between firm effect as productivity levels remain constant across periods (whilst productivity levels change).

Combining cases 1 and 2:

**Case 3:**

	Period 1		Period 2	
	Productivity	Market share	Productivity	Market share
Firm 1	100	$\frac{1}{2}$	110	$\frac{1}{4}$
Firm 2	110	$\frac{1}{2}$	120	$\frac{3}{4}$

In case 3 both productivity levels vary between periods:

**Aggregate effect:** calculates the change in productivity from period 1 to 2 using varying market share weights i.e.:

$$\text{period 1: } ((1/2) * (100)) + ((1/2) * (110)) = 105$$

$$\text{period 2: } ((1/4) * (110)) + ((3/4) * (120)) = 117.5$$

Change: 12.5

**Within firm effect:** calculates the change in productivity from period 1 to 2 using period 2 market share weights i.e.:

$$\text{period 1: } ((1/4) * (100)) + ((3/4) * (110)) = 107.5$$

$$\text{period 2: } ((1/4) * (110)) + ((3/4) * (120)) = 117.5$$

Change: 10

**Between firm effect:** calculates the change in productivity from period 1 to 2 using period 1 productivity levels and varying the market share weights:

$$\text{period 1: } ((1/2) * (100)) + ((1/2) * (110)) = 105$$

$$\text{period 2: } ((1/4) * (100)) + ((3/4) * (110)) = 107.5$$

Change: 2.5

There is therefore both a within and between firm productivity effect and the aggregate change is given by the sum of these two effects.

## APPENDIX 2

Company	Type	Number of Store (For last year available)	Established	Exit/ acquired by
Waterstone's	Specialist bookseller	186 (excl Ottakars)	1982	WHSmith 1989-1998
Ottakars	Specialist bookseller	142	1987	Waterstone's 2006
Borders	Diversified chain	72	1997	Recently sold by Borders US.
WHSmith	Diversified chain	753	1792	/
Blackwells	Book chain & publishers (until 2007)	56	1879	/
British Bookshops	Specialist bookseller	53	1976	Eason & Son (Eire)
David Flatman	Specialist bookseller	50	1982	27 stores by The Works 2007
John Smiths	Specialist bookseller	29	1751	/
W Heffer	Specialist bookseller	2	1909	Blackwells 1999
Magma	Independent specialist niche bookseller	1	2000	/
The Works	Diversified chain (mainly books)	250	1981	/
Sameday Books	Specialist bookseller	5	1993	/
Galloway & Porter	Independent specialist bookseller	1	1902	/
W & G Foyle	Specialist bookseller	4	1903	/

Information from Verdict (2007), Mintel (2007) and company websites etc.

### APPENDIX 3

Year	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06
<b>UK Rets</b>	7	7	6	6	6	7	7	11	12	11	9	10	11	12	12	12	
<b>UK Pubs</b>	0	24	25	27	28	28	36	39	43	45	44	46	46	48	48	47	21
<b>German Pubs</b>							19	22	21	23	15	30	31	25	30	29	22
<b>German Rets</b>							12	13	15	19	25	41	43	34	41	43	30

NB Data not collected for Germany pre 1996 due to unavailability of price data

## APPENDIX 4

<b>Turnover (th €) (latest year data available)</b>	<b>UK Retailers</b>	<b>German Retailers</b>	<b>UK Publishers</b>	<b>German Publishers</b>
1,000,000 +				1
250,000 -999,999	3		3	2
100,000 – 249,999	3	4	6	4
50,000 – 99,999	1	4	9	3
25,000 – 49,999	2	7	9	11
0 – 24,999	5	38	22	20
<b>TOTAL</b>	<b>14</b>	<b>53</b>	<b>49</b>	<b>41</b>

<b>Number of Employees (latest year data available)</b>	<b>UK Retailers</b>	<b>German Retailers</b>	<b>UK Publishers</b>	<b>German Publishers</b>
10,000 +				1
5,000 – 9,999				
2,500 – 5,000	2			
1,000 – 2,499	3	3	3	2
500 – 999	1	4	6	3
100 – 500	4	16	18	15
50 -99	2	15	10	10
25 – 49	1	11	22	1
10 – 24	1	4		9
1 – 9				
<b>TOTAL</b>	<b>14</b>	<b>53</b>	<b>49</b>	<b>41</b>

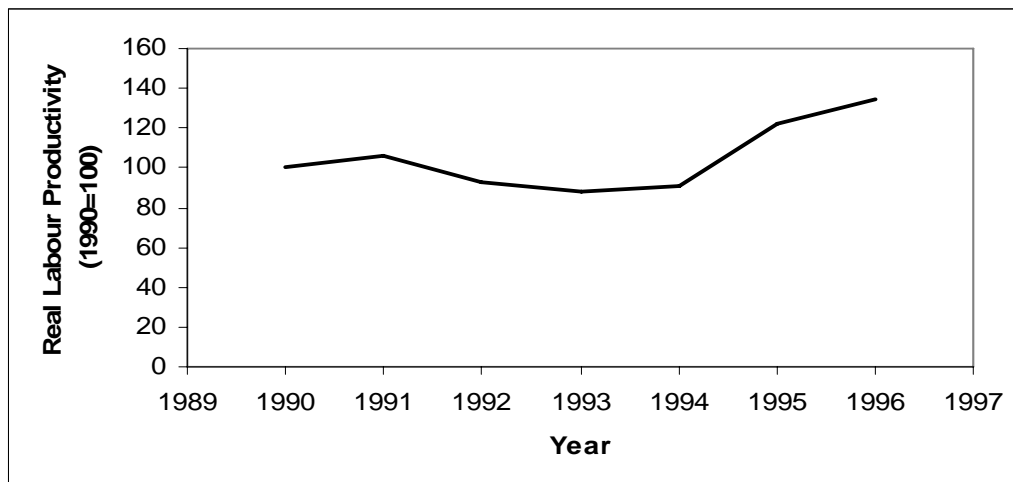
## APPENDIX 5

This Appendix provides detail of the robustness check reported in paragraph's 8.2-8.13:

### Sub-period 1: 1990–96

Unfortunately, AMADEUS reports data for every year in the period up to 1996, for only 4 of these 14 firms (although they are each major players, see Table 8.5). Figure A5.1 shows the aggregate productivity of just these four firms, and fortunately it shows that the earlier picture for 1990–1996 as shown in Figure 8.8 is confirmed, and is not just an artefact of an unbalanced sample.

**Figure A5.1: Real labour productivity, 1990–96 (reduced sample)**





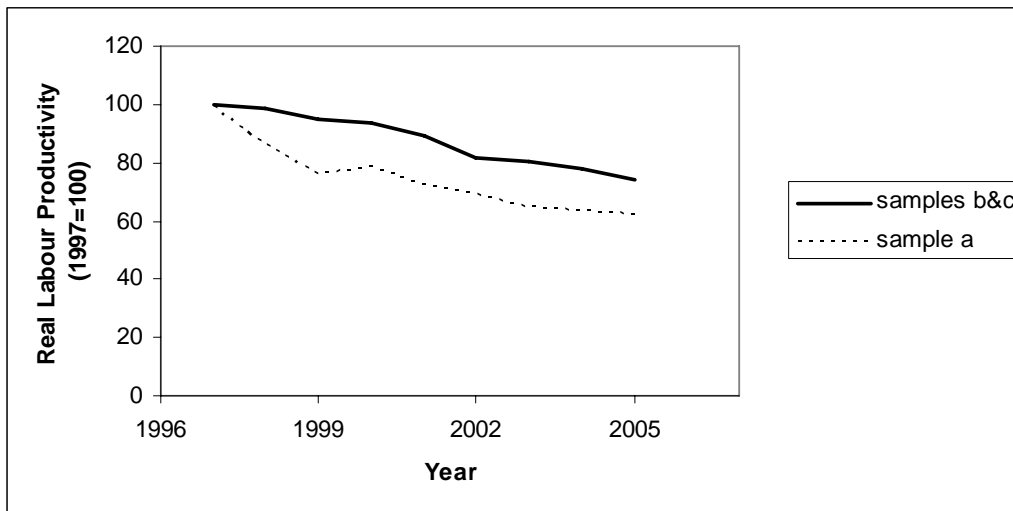
## Sub-period 2: 1997–2005

In the second sub-period, we have a choice of three alternative samples of firms, each of which is internally balanced:<sup>126</sup>

- a. the four firms listed above
- b. these four firms plus two new entrants, Borders and Waterstone's (now divested from WHSmith)
- c. the six firms in (b) plus another three firms for which complete data are available for 1997–2005, but not before.

Figure A5.2 plots aggregate productivity for each (combining samples b) and c) as the results were indistinguishable).

**Figure A5.2: Real labour productivity, 1997–2005 (various samples)**



As can be seen, the addition of Waterstone's and Borders reduces the extent of the decline in productivity, while the three additional (significantly smaller

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<sup>126</sup> In order to get these balanced samples turnover and employee data were interpolated using the average of the previous and next years values in order to estimate four missing values (not included in Appendix 3).

firms)<sup>127</sup> added from sample b to c make virtually no difference. Borders' entry to the market in 1997 arguably would not have occurred had the fixed price regime continued.

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<sup>127</sup> As they have a small share of total employment (see paragraph's 5.2-5.9 equation (1)).

## APPENDIX 6

VARIABLE WEIGHTS										
Year	2005		2004		2003		2002		2001	
	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity
Waterstone's	14	0.72	16	0.79	16	0.81	16	0.72	16	0.82
Ottakar's	8	0.57	7	0.62	6	0.67	5	0.70	6	0.90
WH Smith, Borders & Blackwell	19	0.64	20	0.65	20	0.67	20	0.71	18	0.73
Other Specialists	11	0.52	11	0.57	10	0.59	10	0.62	14	0.70
Supermarkets	8	2.15	6	2.15	5	2.15	4	2.15	4	2.15
Internet	12	2.15	9	2.15	8	2.15	7	2.15	5	2.15
Others	28	0.52	31	0.57	35	0.59	38	0.62	37	0.70
<b>PRODUCTIVITY</b>	<b>90.34</b>		<b>86.55</b>		<b>84.80</b>		<b>82.77</b>		<b>86.58</b>	

END PERIOD (2005) WEIGHTS										
Year	2005		2004		2003		2002		2001	
	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity
Waterstone's	14	0.72	14	0.79	14	0.81	14	0.72	14	0.82
Ottakar's	8	0.57	8	0.62	8	0.67	8	0.70	8	0.90
WHSmith, Borders & Blackwell	19	0.64	19	0.65	19	0.67	19	0.71	19	0.73

Other Specialists	11	0.52	11	0.57	11	0.59	11	0.62	11	0.70
Supermarkets	8	2.15	8	2.15	8	2.15	8	2.15	8	2.15
Internet	12	2.15	12	2.15	12	2.15	12	2.15	12	2.15
Others	28	0.52	28	0.57	28	0.59	28	0.62	28	0.70
PRODUCTIVITY		90.34		93.98		95.40		96.50		102.82

#### START PERIOD (2001) PRODUCTIVITY

Year	2005		2004		2003		2002		2001	
	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity	MS (%)	Productivity
Waterstone's	14	0.82	16	0.82	16	0.82	16	0.82	16	0.82
Ottakar's	8	0.90	7	0.90	6	0.90	5	0.90	6	0.90
WH Smith, Borders & Blackwell	19	0.73	20	0.73	20	0.73	20	0.73	18	0.73
Other Specialists	11	0.70	11	0.70	10	0.70	10	0.70	14	0.70
Supermarkets	8	2.15	6	2.15	5	2.15	4	2.15	4	2.15
Internet	12	2.15	9	2.15	8	2.15	7	2.15	5	2.15
Others	28	0.70	31	0.70	35	0.70	38	0.70	37	0.70
PRODUCTIVITY		102.82		95.61		92.48		89.36		86.58

NB firm productivity levels deflated using RPI books index (1989 = 100)

## APPENDIX 7

### Estimating production functions and TFP

The analysis in the main text is confined to just labour productivity, but as mentioned, in principle, this methodology can be applied for any measure of productivity, including TFP (total factor productivity). As part of our research effort, we have indeed explored using TFP, but for a variety of reasons, this has proved impracticable.

This Appendix enumerates some of these problems and presents a few results. However, we do not believe that these results merit inclusion in the main text, given some of the approximations involved.

TFP can be viewed as a measure of the productivity growth of all factors of production (and not just labour), where the contributions of the various factors are weighted. At its simplest, it is confined to just labour and capital, where the weights attached to the two are derived from the elasticities of production with respect to the factors. In practice, these are approximated by the factor shares in value added,<sup>128</sup> making assumptions about the nature of the production function and competition in the factor and product markets. More generally, we would also wish to include other factors – in this case, probably floor space if this is not appropriately accounted for in capital stock data.

Unfortunately, in the present case, this proves to be impossible for Germany because our main data source, AMADEUS, includes capital stock information typically only for the UK. Even for the UK, AMADEUS reports (from company accounts) information on only labour and capital, sometimes, but not usually distinguishing intangible and tangible assets. It also includes some information from which we might estimate labour's share in value added, although just how

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128 See OFT (2007) Annex A, for a fuller discussion of TFP and some of the issues involved in estimation thereof.

much consistency there is across firms in definitions of variables is not altogether clear.

To summarise then, it would be possible to calculate the growth of TFP for individual UK firms only which would mirror the estimates on labour productivity described in the main text. But these would be based only on labour and capital, and with some uneasiness about the quality of the data for capital.

Putting aside practical data availability issues, however, there is a second set of reasons for caution. As mentioned, estimating the weights to be attached to capital and labour, in the absence of any other information (as here) requires certain assumptions. Most importantly: Constant returns to scale in a Cobb-Douglas production function Marginal productivity factor pricing, which, in turn, requires all three markets (labour, capital and the product) to be perfectly competitive.

Since neither of these assumptions should be made without justification, our preferred solution would be to use the data available to estimate the production function for both publishing and retailing separately, and to recover estimates of the elasticities of production from the result. This is certainly feasible in the present context, at least for the publishers and B&M retailers, of which we have a panel across firms and over years. However, at this point, we encounter a third problem. As is well known from the vast literature on estimating production and cost functions, care is required to ensure that one identifies the production function (as opposed to the factor demand equations) and to avoid simultaneous bias (not only does labour affect output, but the reverse is also true in the labour demand equation. As is also well known, the Cobb-Douglas production function, although relatively undemanding in its data requirements, is highly restrictive in the assumptions made about factor substitutability. Ideally, these should be tested by first estimating more general function forms such as the translog, VES or CES production functions. Moreover, estimation using frontier techniques, rather than OLS, is preferable under most circumstances. An adequate treatment of all of these various problems requires data on more variables – crucially, including appropriate instruments – which are unfortunately not available from AMADEUS.

In a larger scale project, with more time, this might be pursued with more rigour, but in the present context, we confine ourselves to a limited bout of experimentation on the UK data, in unbalanced panel form for up to 14 years and 14 firms for retail and  $\gamma$  firms for publishing. Unavoidably, we assume the Cobb-Douglas form, but without the restriction of constant returns to scale. We include a time trend to capture industry wide improvements in technology, this reflects TFP at the aggregate level, and, for individual firms at each point in time, the recovered residuals provide estimates of firm-specific TFP.

$$\ln Y = \beta_0 + \beta_1 T + \beta_2 \ln L + \beta_3 \ln K \quad (\text{A1})$$

Where  $Y$  is real value added,  $T$  is a time trend (1989-2005 for retail and 1991-2006 for publishing) representing disembodied technical progress,  $L$  is number of employees and  $K$  is real capital assets. All variables are measured in logs.

Table A1 reports the result of estimating (A1) for both publishing and retailing on unbalanced samples of 14 and 49 firms respectively. However, given the above qualifications, particularly regarding identification and possible simultaneous bias, they are best treated as exploratory descriptive regressions.

**Table A1: Estimated production functions for publishing and retailing**

Estimator: random effects	Retail	Publishing
Constant	-46.44 ** (2.89)	-96.25 ** (6.69)
T	0.0236 ** (2.93)	0.0505 ** (7.03)
lnL	0.585 ** (10.49)	0.767 ** (9.69)
lnK	0.147 ** (4.16)	0.173 ** (4.81)
Corrected R <sup>2</sup>	0.877	0.681
N	125	320

t values in brackets, \*\* indicates significant at the five per cent level

## Interpretation

Taking the results at face value, for retail, they suggest decreasing returns to scale<sup>129</sup> and a rate of technical change of 2.36 per cent p.a. For publishing, there also appears to be decreasing returns to scale<sup>130</sup> and a rate of technical change of 5.05 per cent p.a.

While it should be stressed again that these equations should be viewed only as exploratory and descriptive, the possibility of decreasing returns deters us from computing TFP as the weighted sums of the growth in labour and capital, with weights the labour and capital shares in value added – the weights will not add up to unity. If one accepts the estimates at face value, they suggest that, for retail, there was significant technical change, but this fails to show up in our estimates of within-firm productivity growth in the text because firms suffered from decreasing returns to scale. For publishing, within-firm productivity growth is more substantial, and any marginal tendency for decreasing returns will only have slightly dampened this.

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<sup>129</sup> Returns to scale is given by the sum of the exponents on  $\ln L$  and  $\ln K$ . For retail, this is 0.732, and a chi-squared test confirms that this is less than unity – at the 99 per cent level we can be confident that there are decreasing returns to scale.

<sup>130</sup> For publishing, the sum of the exponents on  $\ln L$  and  $\ln K$  is 0.940 – less than unity but a chi-squared test does not allow us to reject the null of unity, so we can not be 95 per cent confident that there are not constant returns to scale.