

ATHENS UNIVERSITY OF ECONOMIC AND BUSINESS
DEPARTMENT OF ECONOMICS

Resale Price Maintenance:
The case of the Fixed Book Price Law in Greece



Goumenou Kalliopi

Dissertation submitted for the partial fulfillment
of the requirements for the Master of Science in
Economics

Athens

February, 2017

Εγκρίνουμε τη διατριβή της Γούμενου Καλλιόπης

Γκενάκος Χρήστος

[ΥΠΟΓΡΑΦΗ]

[ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ]

Κατσουλάκος Ιωάννης

[ΥΠΟΓΡΑΦΗ]

[ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ]

Ζαχαριάς Ελευθέριος

[ΥΠΟΓΡΑΦΗ]

[ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ]

[ΗΜΕΡΟΜΗΝΙΑ]

Contents

Chapter.....	Page
Abstract.....	6
1. Introduction.....	7
2. Resale Price Maintenance.....	10
2.1 Procompetitive effects of RPM.....	10
2.1.1 Adequate inventories under uncertain demand.....	10
2.1.2 Eliminating Double Marginalization Problems.....	11
2.1.3 Providing higher retail service level.....	13
2.1.4 Eliminating opportunistic behavior.....	15
2.2 Anticompetitive effects of RPM.....	17
2.2.1 Upstream Collusion.....	17
2.2.2 Downstream Collusion.....	21
2.2.3 Exclusion of Rivals.....	23
3. Fixed prices in the European book market.....	28
4. The Greek book market.....	31
5. Data Description.....	33
6. Empirical Analysis.....	33
7. Main Findings.....	38
8. Discussion & Conclusions.....	50
References.....	52

Abstract

Because of its special characteristics, book markets in many countries are often regulated in order to restrict price competition and achieve some cultural objectives through a resale price maintenance mechanism. In 2014 the law that regulated the Greek book market was modified and non-literature books were excluded. Thereafter, publishers no longer fix the retail price of books and booksellers are free to offer discounts at their own discretion.

This analysis uses yearly data on the prices of a sample of non-literature books in an attempt to evaluate the impact that the deregulation of the book market had on retail prices. In order to circumvent the problem of the simultaneous effect on prices of deregulation, recession and depreciation we apply an algebraic decomposition to the total decrease and get the clear effect of deregulation.

Our results indicate that deregulation led to a modest decrease in average prices due to the fact that not every retailer has responded to the liberalization of the non-literature book market with price cuts. However, by examining the average discounts of each retailer separately, it comes with no surprise that the limited response to price competition was from retailers who have differentiated themselves by offering quality services or the advantage of convenience. The rest of the retailers seem to have responded to the ability to offer discounts, rendering the clear effect of deregulation rather substantial.

Chapter 1 is an introduction to the book market and why regulation might be considered necessary.

Chapter 2 introduces the practice of resale price maintenance and its extensions to the book market.

Chapter 3 offers an overview on the fixed book price system in Europe and an extended presentation of the effects of its abolition in the UK.

Chapter 4 offers an overview of the Greek book market.

Chapter 5 describes the data used in our analysis.

Chapter 6 describes the analysis we undertake in order to calculate the net effect of deregulation.

Chapter 7 describes the main results of the analysis.

Chapter 8 offers the conclusion and some general remarks.

Chapter 1

Introduction

Resale Price Maintenance (RPM) refers to a pricing agreement in which an upstream firm seeks to influence the pricing of its products sold by downstream firms. It is a contract in which a manufacturer and a downstream distributor (retailer) agree to a minimum or maximum price the retailer will charge its customers (consumers). Although Resale Price Maintenance is a practice widely considered illegal – in fact, the European Commission considers it a hardcore constraint- book markets in many countries have been exempted from this general prohibition. Fixed Book Prices, whether they are enforced by law or by trade agreements, allow publishers to determine the price at which all booksellers sell their book titles to consumers and therefore it removes the possibility for booksellers to compete on prices. Since publishers set both the price that they sell the book to booksellers and its retail price then resale price maintenance gives them also the ability to restrict retailers' profit margin.

But what is so special about the book market that government intervention is so vigorously demanded? As Barker and Davies (1966) state in order to defend the fixed book price system in the United Kingdom “Books are different”. It is believed that the richness and diversity of culture is embodied in books and that makes them differ from any other tradeable commodity. They are highly valued cultural goods that need to be protected from the destructive forces of competition and their quality, diversity and accessibility should be guaranteed. This can be achieved through the book price regulation that allows to both publishers and retailers to cross-subsidise less popular books but highly valuable from a literary point of view, with the profits from popular books. With vertical price-fixing the profit margin of the publisher is protected which works as a security for him and it gives him the ability to defy the risk of publishing an unprofitable book with potentially small readership. Also, since the publisher determines the profit margin of retailers, he can use it as an instrument to encourage retailers to hold his variety of published books on their shelves. Then wider availability of books is achieved through the opportunity given to retailers to cross-subsidise their losses on unprofitable titles with the protected profit margin on the sales of best- selling titles¹. Moreover, restricted competition and uniform prices in the retail level are meant to enable small, independent bookshops to offer books even in remote locations, where transport costs are high and the reader density rather low.

By ensuring the persistence of the network of independent bookshops throughout the country, fixed book prices make books easily accessible to everyone. This brings us one step closer to achieving the cultural goal of promoting reading in society. Reading

¹ For the cross-subsidisation argument for both retailers and publishers see Appelman and Van den Broek (2002)

books may be viewed more as an investment in cultural capital rather than merely consumption. Therefore, private spending on books contributes to the social stock of cultural capital essential to avoid an uncivilized society.²

In the absence of any pricing constraint in the retail sector the market is expected to display substantial bestseller concentration. The potential failures of the market to secure the diversity are partly due to the nature of books. Books are experience goods and readers have a difficulty in assessing their quality at the moment of purchase. This implies that the customer will rely on others' recommendations, meaning that popular books will become even more popular. Accordingly, publishers and retailers can increase their sales more easily by marketing already popular books. This imperfect information problem leads to a "lemon" problem in which bad-quality books may drive out good -quality books, leading eventually to the collapse of the high- quality market.

The severe pressure of price competition would render publishers and retailers unable to publish or store highly risky, but culturally valuable books. Then smaller independent bookshops, unable to cope with the competition from larger booksellers or supermarkets which concentrate on best-selling and easily sellable titles, would be forced to go out of business. In that sense, a fixed book price is said to benefit consumers by protecting the diversity in publishing and maintaining a high number of well-assorted bookstores.

The duality of the book's nature, as expression of culture and as a product of a profit-making business, has kept an ongoing debate about the fixed prices for books. What FBP has to offer might be a blessing for people who want specialised or less popular titles or live in less populated areas with no easy access to well-stocked bookstores. However, as the opponents of this measure claim, a fixed book price agreement results in prices higher than the competitive equilibrium and this hurts the interests of consumers and especially the ones of lower incomes. While it ensures that publishers and retailers enjoy higher profit margins, it provides no guarantee that those extra profits will be used to subsidise less popular titles but more valuable from a cultural aspect. Publishers and retailers are in no case forced by the price maintenance system to produce culturally important books and in fact, there are quite a few who concentrate on popular and easy- selling titles and do not maintain a big range of books. Nevertheless, those publishers and retailers still enjoy the advantages of retail price maintenance which is of course a guaranteed margin that they do not have to pass on to the consumer by offering lower prices. In addition, since resale price maintenance protects the profit margins of both retailers and publishers, it decreases their incentives to innovate and to be more efficient as they are deprived of the ability to pass on their lower costs to consumers through lower prices and increase their market share.

² The view of the "culture pessimists" described by Van der Ploeg (2004)

Regulating book prices is a widely used practice in the EU although it is often a topic for debate and it lacks the seal of approval of the European Commission. In Greece it was firstly introduced in 1997 and it has been in effect ever since. Until 2014 it referred to the price restriction of every book title published for the first two years of its release. Retailers were deprived of the possibility to compete on prices but price competition was still possible between different publishers and between different book titles. Although it suggests otherwise, with the fixed book price agreement a publisher did not set the exact retail price of the book but the minimum and maximum price that it could be sold. Specifically, retailers could sell a book at a maximum 10% discount on the price set by the publisher. If those retailers were operating in remote areas then they could charge up to 5% more on the given publisher's price. In 2014 the law was modified to include only literature books while all the other book categories were excluded and their prices have been facing no restrictions ever since.

Although it is too soon to tell what was the overall effect of this policy change on the Greek book industry and the issues commonly discussed in the debate about the fixed book price system, we can however shed some light on the most immediate effect of deregulation which is the impact it had on retail prices and this is the main focus of this paper. We proceed with some prior theoretical presentation of the negative and positive effects of resale price maintenance and their extension to the book market.

Chapter 2

Resale Price Maintenance

There are several economic theories suggesting that it might be optimal to deploy a practice like RPM. Some of these theories predict that resale price maintenance can increase consumer welfare, for example when it is used to solve problems of co-ordination between upstream and downstream firms and enhance distributional efficiency³. However, the opposing side claims that those benefits are uncertain and do not suffice to offset the disadvantages. It is believed that the anticompetitive conduct can be detrimental to consumers' welfare as it can increase prices by facilitating collusion or the exclusion of rivals and help firms gain market power. This chapter tries to explain the potential beneficial and harmful effects of establishing and maintaining a minimum or maximum retail price.

2.1 Procompetitive effects of Resale Price Maintenance

2.1.1. Adequate Inventories under Uncertain Demand

When a manufacturer that sells to independent retailers commits to a minimum resale price, then by default he prevents price fluctuations. This is perceived by retailers as a guarantee for a stable market and it may induce them to order larger inventories than had retail markets been permitted to clear. Under flexible pricing the retailer must take into account the negative impact upon revenues in lower demand states where he will be forced to cut his price to increase the probability that he sells his stock. That possibility makes retailers less willing to carry high levels of inventories. As Deneckere, Marvel and Peck predict, the manufacturer may prefer to prevent unfettered competition as it is destructive to inventory holdings and to expected sales.⁴

In the state of high demand, under RPM, inventory holdings are higher and prices are lower due to the fact that shortages of the manufacturer's product are unlikely to occur. This makes RPM desirable to all parties, even consumers. On the contrary, under flexible pricing, there is limited product availability and higher prices which is a result of the retailers' effort to be compensated for their propensity to compete the price down when demand is low.

In the state of low demand, the price floor set with minimum RPM results in higher prices than under flexible pricing where retailers have an incentive to drop prices.

³ Co-ordination problems may exist, for example, over pricing and the provision of retail services.

⁴ See Deneckere, Marvel & Peck (1997) for more details on this theory.

Manufacturers are still better off⁵, but now consumers are denied the chance to buy at very low prices as a result of “fire sales”. Therefore RPM guarantees an increase in manufacturer’s profits, but creates an ambiguous effect on consumer surplus and total welfare as the increase in availability must be traded off against increased prices.

This justification of RPM applies best when demand fluctuations are high, the products in question have little scrap value or are expensive to hold for future demand periods and their demand is learnt after inventory decisions have been made. These characteristics could be found in the book market since demand for books in general is of rather high price and income elasticity⁶, and due to restrictions in “shelf space” every retailer faces a high cost from unsold titles. Therefore a retailer not only has a small share of all titles published, but also for each title he chooses to sell, he has a strong incentive to stock smaller quantities. For this reason, there seems to be a trade-off between efficiency, as it is achieved through economies of scale, and cultural goals, as they are achieved through diversity⁷. In a related, but separate line of the theoretical argument on adequate inventories by Deneckere et al.(1997), RPM in the book market is believed to promote diversity by restricting competition in the retail level and thus operating as an instrument for publishers to promote the sales of larger amounts of book titles to booksellers in the case of uncertain consumer demand.

2.1.2. Eliminating Double Marginalization Problems

The problem arises when both the upstream and downstream firms independently set their prices ignoring the vertical externality created by their decisions. The upstream firm chooses the wholesale price and the downstream firm chooses the retail price. Each firm chooses a price higher than marginal cost in order to maximize its own profit. This means that the upstream firm chooses its wholesale price w , given its cost c , and the downstream firm chooses p , given its cost, in this case, the wholesale price w , which is higher than c because of the manufacturer’s markup. The result is the pricing inefficiency of the overall “double markup” where consumers end up paying too high of a price. This negative externality of too high pricing by the retailer can be avoided by imposing a maximum retail price on the retailer. Therefore this problem and its solution applies only in fixed book price agreements where a maximum price is set by the publisher, such as the case of FBP in Greece.

The analysis behind the double marginalization⁸ :

⁵ In their model they assume that retailers order and take title to inventories prior to the demand period and unsold inventories are a sunk cost to them since the manufacturer does not accept returns of unsold merchandise.

⁶ See Ringstad and Loyland (2006)

⁷ See Canoy et al. (2006)

⁸ The double-marginalization problem was first addressed by Sprengler (1950). Here, we use the version of *Motta (2003)*.

Suppose that market demand is linear, $q = a - p$. The manufacturer has all the bargaining power and a unit production cost $c < a$. For simplicity, we assume that we have a monopoly in both upstream and downstream market. The manufacturer, who does not sell directly but only through the retailer, sets the wholesale price w at stage 1. At stage 2, the retailer observes the wholesale price w , which is assumed to be his only cost, and sets the retail price p . Using the method of backward induction, we start from the profit-maximization problem of the retailer, $\max_p \Pi_D(p - w)(a - bp)$. Hence, for a given wholesale price w the retailer sets

$$p = \frac{a+w}{2}$$

The market demand is

$$q = a - \frac{a+w}{2} = \frac{a-w}{2}$$

And the retailer's profit is

$$\Pi_D = \frac{(a-w)^2}{4}$$

The manufacturer takes the profit-maximizing behaviour of the retailer into account. He thus takes the market demand depending on w , which comes from the retailer's profit maximization. His maximization problem is

$$\max_w \Pi_U = (w - c)\left(\frac{a-w}{2}\right)$$

From the first-order condition we have $a + c - 2w = 0$, which is equivalent to

$$w = \frac{a + c}{2}$$

The corresponding retail price is $p^* = \frac{3a+c}{4}$.

The profits obtained by the upstream and downstream firm, as well as the sum of the profits made by the vertical chain are

$$\Pi_U^* = \frac{(a-c)^2}{8}, \quad \Pi_D^* = \frac{(a-c)^2}{16}, \quad PS^* = \frac{3(a-c)^2}{16}$$

Now let's assume that a vertical integration is taking place, and the two firms operate as a monopoly. As follows,

$$\max_p \Pi^m = (p - c)(a - p)$$

From the first-order condition we obtain the following:

$$p^m = \frac{a+c}{2}, \quad q^m = \frac{a-c}{2}, \quad PS^m = \Pi^m = \frac{(a-c)^2}{4}$$

From our results, it is obvious that this uncoordinated exercise of market power at both the wholesale and retail levels reduces both the profits of the firms and economic efficiency.

It is possible for both the upstream and downstream firm to remove the double marginalization externality and increase aggregate profits, not only by integrating vertically but also by applying a vertical restraint as RPM. The manufacturer could mandate a retail price to the retailer equal to the monopolistic price, $p=p^m = \frac{a+c}{2}$, and maximise the surplus of the vertical structure. The way in which the upstream and downstream firms share the surplus will then be determined by the wholesale price w and the power the firm that sets it has. If the manufacturer has all the bargaining power, then he will impose $w=p^m = \frac{a+c}{2}$ and will get the entire producer surplus. Thus the greater the power, the higher the wholesale price (with $w \in (c, p^m)$) and the greater the share of the surplus going to the upstream firm.

Since correcting the externality leads to lower retail prices ($p=p^m < p^*$) and higher producer surplus ($PS^m > PS^*$), we could say that total welfare unambiguously rises from imposing RPM.

2.1.3. Providing higher retail service level

In markets where products are not sold directly by manufactures but through retailers, there are often observed horizontal externalities among the latter that determine an inefficient outcome for both manufacturer and retailers. Those externalities may arise when each retailer is required to undertake substantial investments in, for example, hiring skilled personnel or training sales staff, in order to raise sales. Such investments are necessary in the market for books due to their nature. Books are experience goods and a pre-purchase evaluation is difficult. Readers are going to buy a book based on their expectations about the reading experience but they will be able to evaluate it only after reading it. Thus the provision of knowledgeable advice by the retailer might affect those reading expectations and subsequently potential sales.

The retailers providing those extra services, because of their extra cost, charge higher prices in comparison to those who don't supply the services and so can sell at lower prices. Then a consumer could browse the stock of one book retailer, absorb the knowledge and time of the sales staff and then purchase from a low-service discount seller. This way the "cheap" retailer "free-rides" on the services provided by the "expensive" retailer.⁹ Therefore, a retailer that cannot reap the full benefits of his sales effort has an incentive to reduce those efforts, as well as his investments, and this can only result in less of the manufacturer's product being sold. This free-riding problem can be eliminated by enforcing a resale price maintenance agreement. The

⁹ See Valentine Korah & Denis O'Sullivan (2002)

manufacturer sets a minimum price that retailers may charge, so that retailers may compete for customers in other ways apart from price cutting, such as providing better customer service.

To formally investigate the role of RPM in this context, we will cite the following model.¹⁰ Consider a market with one manufacturer and two competing retailers $i=1, 2$. These retailers are horizontally differentiated on the Hotelling line and compete in price¹¹ and service. Consumers are heterogeneous and they face an opportunity cost of time, which means that their decisions on purchasing goods are being made with respect to their horizontal location and the service dimension. This implies that, with a finite reservation price, those consumers who are located far away from the product and have a high opportunity cost of time do not purchase any product. We denote by p_i the retail price and by s_i the service level. The demand that the retailer i faces for the manufacturer's good is given by the function $Q_i(p_1, p_2, s_1, s_2)$.

Each retailer's profit is

$$\pi_i(p_1, p_2, s_1, s_2) = (p_i - w) Q_i(p_1, p_2, s_1, s_2) - K(s_i)$$

where w is the wholesale price and $K(s_i)$ the cost of providing service level s_i .

Manufacturer's profit is $(w - c)(q_1 + q_2)$ and the total profit of the industry is

$$\begin{aligned} PS(p_1, p_2, s_1, s_2) = & (p_1 - c)Q_1(p_1, p_2, s_1, s_2) + (p_2 - c)Q_2(p_1, p_2, s_1, s_2) \\ & - K(s_1) - K(s_2) \end{aligned} \quad (1)$$

Using (1) retailer i 's profit can be written as

$$\begin{aligned} \pi_i(p_1, p_2, s_1, s_2) = & PS(p_1, p_2, s_1, s_2) - (w - c) Q_i(p_1, p_2, s_1, s_2) \\ & - (p_j - c) Q_j(p_1, p_2, s_1, s_2) - K(s_j) \end{aligned}$$

where p_j , Q_j and $K(s_j)$ is the price, quantity and cost of service of the other retailer.

Using backward induction, we consider the wholesale price given and thus at stage 2 each retailer maximizes its profits with respect to p_i and s_i . First-order conditions are

$$\begin{aligned} \frac{\partial \pi_i}{\partial p_i} &= \frac{\partial PS}{\partial p_i} - (w - c) \frac{\partial Q_i}{\partial p_i} - (p_j - c) \frac{\partial Q_j}{\partial p_i} = 0 \\ \frac{\partial \pi_i}{\partial s_i} &= \frac{\partial PS}{\partial s_i} - (w - c) \frac{\partial Q_i}{\partial s_i} - (p_j - c) \frac{\partial Q_j}{\partial s_i} = 0 \end{aligned}$$

¹⁰ The analysis is based on Belleflame & Peitz (2010)

¹¹ When RPM is not in place

Since total industry profits are maximized when $\frac{\partial PS}{\partial p_i} = 0$ and $\frac{\partial PS}{\partial s_i} = 0$, note that retailers implement the solution that maximizes the total profits of the industry when the last two terms in both first-order conditions cancel out to zero. The second term captures the vertical externality with respect to price and service level and the third term captures a horizontal externality, which is due to the imperfect competition between retailers: each retailer ignores the effect of a price and service change on the demand of its competitor. Suppose the manufacturer can set a wholesale price such that the two externalities exactly offset each other, then if we rearrange, we must have

$$\frac{\frac{\partial Q_i}{\partial p_i}}{\frac{\partial Q_i}{\partial p_i} + \frac{\partial Q_j}{\partial p_i}} = \frac{\frac{\partial Q_i}{\partial s_i}}{\frac{\partial Q_i}{\partial s_i} + \frac{\partial Q_j}{\partial s_i}} \quad (2)$$

This equality does not hold when retailers are either more sensitive to price competition or to retail competition and it can be shown that it cannot hold for the specified model above, since the left-hand side of (2) is larger than the right-hand side. This is because of the assumption made above that the consumers placed up to the point where the marginal consumer is do not buy, and the marginal consumer cares less for services the larger the distance to the retailer. This implies that an increase in services by the retailer is less effective in stealing business from the competitor than a reduction in price. This gives them fewer incentives to invest in improvements in their retail services hence, in this particular model retailers are biased towards price competition. The manufacturer can improve the efficiency of the industry and correct the externality by setting a price floor that is binding in equilibrium. Consumers have no reason to be “disloyal” by obtaining the unobserved information about the product quality from the retailer that has made the necessary investments and buying from the retailer with the lowest price. For that, we could say that RPM is the mechanism that eliminates the opportunity of retailers that provide no special services to free-ride at the expense of retailers that have made the necessary investments for those higher level services. RPM protects the profit margin of the retailer, which is set by the manufacturer at a level which is just sufficient to encourage him to provide the desired level of services. Too low a margin, results in too few services and the manufacturer will sell less of his product than it is optimal from his perspective while on the other hand, too high a margin will produce redundant services, allowing the retailers to profit at the manufacturer’s expense¹².

2.1.4. Eliminating opportunistic behavior

Both suppliers and retailers have the incentive to behave opportunistically. In this case RPM can be enforced to harmonize the potentially divergent interests of upstream and downstream firms. Consider, for example, a retailer who can, with his

¹² See Thomas R. Overstreet (1983)

retail services build a demand for the manufacturer's product and in the long-run cultivate consumers' goodwill for this product. As the free-rider problem indicates, the retailer has always the incentive not to make the necessary investments to meet the manufacturer's demands on the retail services he must provide. This gives the retailer the ability to sell at discount prices and while the manufacturer might be harmed (by, for example, disrupting his relations with other promoting retailers), the retailer is rather profited as this short-run promotional tactic gives him the opportunity to draw consumer traffic and build a goodwill not for the manufacturer but for himself.

The enforcement of RPM has two aspects in this case. First of all, it prevents retailers to exploit the circumstances on their own benefit and relieves other retailers' fears that the manufacturer will allow discounters to free-ride upon their investments in building the brand's goodwill¹³. Secondly, it can be seen as a "contract enforcement mechanism" to ensure that retailers provide the desirable services that enhance manufacturer's demand¹⁴. RPM is used as a substitute of an incomplete performance contract that fails to specify exhaustively what services the retailer must provide. Incomplete information and monitoring costs make unpractical writing and enforcing contracts based on the retailer's performance of these services, as opposed to RPM which spares the manufacturer the task of specifying and monitoring the retailer's performance. On the opposite, downstream firms are given the incentive to promote the manufacturer's product, increase its demand and meet a quantity threshold which is easier for the manufacturer to monitor than the actual service. This is due to the role that RPM plays in restraining downstream price competition in order to foster service competition.

There are also cases where opportunistic behavior has been observed from a manufacturer towards his promoting retailers. In order to fully understand this market failure we will examine the following example¹⁵. Consider two retailers selling the same product, in the same region, paying the same wholesale price w and earning the same profits $\pi/2$ from selling quantity Q at price p . Suppose that the manufacturer offers both a contract which allows them to buy at price w if they make a fixed payment $\pi/2$. If the retailers do not anticipate opportunistic behavior by the manufacturer, they accept this contract even though they make zero profits. Once the contracts have been signed, the manufacturer has an incentive to reconsider his commitment and offer the product to one of the two retailers at a slightly lower unit price than w . This way, the favorable retailer gets a competitive advantage which allows him to increase his market share or even get the whole market. Under the new contract, he now makes $\pi' > \pi/2$ and he is willing to pay up to π' for the new terms. After the renegotiation, the manufacturer gets $\pi/2$ from each retailer and an additional profit $\pi' - \pi/2$ from the retailer with the new contract. However, this commitment problem of the manufacturer and his incentive to renegotiate is anticipated by the

¹³ See Thomas R. Overstreet (1983)

¹⁴ See Benjamin Klein & Kevin M. Murphy (1988)

¹⁵ See Motta (2003)

retailers who are now unwilling to enter a contract unless a very low payment is set. This problem deprives the manufacturer the benefits of exploiting his market power and obtain the profit π that his product could fetch. One way the manufacturer could overcome his temptation to change the terms and his inability to commit to a certain action is by enforcing RPM. As O'Brien and Shaffer (1992) state, RPM plays the role of a guarantee that there will be no renegotiation which will lead to higher output or lower prices and the commitment problem is solved. The manufacturer has no longer the incentive to secretly cut wholesale prices since this would not increase final sales, it would only worsen the distribution of the profits between the manufacturer and the retailer that now gets a discount.

2.2 Anticompetitive Effects of Resale Price Maintenance

2.2.1. Upstream Collusion

Collusion is a situation where firms instead of competing with each other, they choose to coordinate their actions in order to set prices which are closer to monopoly prices. Whether it is an explicit collusion (where firms act through an organized cartel) or a tacit collusion (where firms act in a purely non-cooperative way), it is possible for RPM to assist in promoting or maintaining it.

Once manufacturers form a cartel and agree on raising prices, each of them has a strong incentive to deviate from that agreement, sell at a lower wholesale price to the retailers and enjoy greater sales. A crucial ingredient for collusion is the ability to detect the deviations from those negotiated prices. In reality, though, it is easier for manufacturers to observe the retail prices of their competitors' products than the wholesale prices those manufacturers charge retailers. However, fluctuations in retail prices might be the result of variations over time in the costs of retailing, or variations in the markups the independent retailers charge as local market conditions dictate and not necessarily the result of discounts in wholesale prices by a manufacturer who cheats. If manufacturers agree to implement RPM, then retail price variation would be eliminated and cartel stability would be enhanced¹⁶. The manufacturer has no incentive to cut his prices below the agreed-upon level as the profitability of such discounts is taken away by the fact that retailers are not able to pass those discounts on to consumers in the form of lower retail prices. What the cheating manufacturer gets to do this way, is selling the same quantity at a lower price and therefore defection is not profitable. The only way the manufacturer could gain from upstream price discounts is if the retailer deviated from the RPM prices. However, this could arouse the suspicion of the collusive manufacturers that cheating is occurring and it could reveal them the source of the destabilization of the cartel. As Jullien and Rey (2001) state, RPM would be less efficient when a local shock on the demand of a

¹⁶See Mathewson and Winter (1998)

product or on its distribution cost is observed because retailers are not allowed to adjust the prices so that they would reflect that shock. However, as prices would be uniformly set by the manufacturers, this would allow them to better identify deviations from a collusive action. They also show that whenever manufacturers find it optimal to adopt RPM, collusion can be sustained, since cheating is then rendered unprofitable or more easily detectable, and the result will be detrimental for welfare.

In order to understand how RPM helps collusion, we will present a simplified version of the analysis of Rey and Verge (2004) who suggest that when manufacturers and retailers have interlocking relationships, RPM can prevent both interbrand and intrabrand competition and yield the monopoly outcome.

Assume we have two manufacturers, A and B , who produce two competing products and market them through two competing retailers, 1 and 2 . Consumers have to make the following decision when buying: “Which product and from whom?”, which means that they have to choose among four imperfectly substitute products, each manufacturer producing two of them ($\{A1, A2\}$ and $\{B1, B2\}$, respectively) and each retailer distributing two of them as well ($\{A1, B1\}$ and $\{A2, B2\}$, respectively). Demand functions are symmetric and continuously differentiable: for any $p = (p_{A1}, p_{B1}, p_{A2}, p_{B2})$, any $i \neq h \in \{A, B\}$ and any $j \neq k \in \{1, 2\}$,

$$D_{ij}(p) \equiv D(p_{ij}, p_{hj}, p_{ik}, p_{hk})$$

and it is decreasing when all prices increase: $\sum_{i=1}^4 \partial_i D < 0$

Since the products are imperfect substitutes, the demand for one product decreases with the price of that product and increases with the other prices:

$$\partial_1 D < 0 \text{ and } \partial_l D > 0 \text{ for } l = 2, 3, 4$$

Both production and distribution marginal costs are assumed symmetric and constant, and denoted by c and γ ¹⁷.

The industry-wide monopoly profit is equal to

$$\Pi^M(p) \equiv \sum_{\substack{i=A,B \\ j=1,2}} (p_{ij} - c - \gamma) D_{ij}(p)$$

and it is assumed concave in p and maximal for symmetric prices, $p^M = (p^M, p^M, p^M, p^M)$.

They also assume that manufacturers have all the bargaining power, so that retailers cannot get any rent, and that the market structure is necessarily that of a double common agency, which means that both products have to be sold, otherwise there is a

¹⁷ This assumption is only made for simplicity and the analysis does not rely on a specific formulation of upstream and downstream costs.

market failure and zero profits are made by all firms. This assumption is to ensure that manufacturers offer contracts that are acceptable by both retailers, and that retailers never obtain more than their reservation utility, which they normalize to zero.

Consider the following simplified game G . First, each manufacturer $i=A, B$ simultaneously makes public offers to each retailer $j=1, 2$ in the form of a contract which consists of a wholesale two-part tariff (w_{ij}, F_{ij}) ¹⁸ and a retail price (p_{ij}) . Second, retailers simultaneously accept or reject the offers. Third, if all offers have been accepted, retailers simultaneously set their retail prices as imposed by the manufacturer under RPM, demands are satisfied, payments are made according to the contracts and profits are realised. If one or both offers are rejected, no sale occurs and all firms get zero pay-offs.

Two-Part Tariffs If contracts only consist of two-part tariffs, then in the last stage, if all offers have been accepted each retailer $j=1, 2$ sets its prices p_{Aj} and p_{Bj} so as to maximize his profit, given by:

$$\sum_{i=A,B} (p_{ij} - w_{ij} - \gamma) D_{ij} - F_{ij}$$

For any vector of wholesale prices $w = (w_{A1}, w_{B1}, w_{A2}, w_{B2})$, there is a unique retail price equilibrium:

$$p^r(w) = (p_{A1}^r(w), p_{B1}^r(w), p_{A2}^r(w), p_{B2}^r(w))$$

and a demand for each product equal to $D_{ij}^r(w) = D_{ij}(p^r(w))$

In the first stage each manufacturer i chooses wholesale prices w_{i1} and w_{i2} , and franchise fees F_{i1} and F_{i2} so as to maximize its profit subject to retailers' participation constraints. Since retailers can only accept both offers or earn zero profit, manufacturer I solves:

$$\begin{aligned} & \max_{w_{i1}, w_{i2}, F_{i1}, F_{i2}} (w_{i1} - c) D_{i1}^r(w) + F_{i1} + (w_{i2} - c) D_{i2}^r(w) + F_{i2} \\ \text{s.t.} \quad & (p_{i1}^r(w) - w_{i1} - \gamma) D_{i1}^r(w) - F_{i1} + (p_{j1}^r(w) - w_{j1} - \gamma) D_{j1}^r(w) - F_{j1} \geq 0 \\ & (p_{i2}^r(w) - w_{i2} - \gamma) D_{i2}^r(w) - F_{i2} + (p_{j2}^r(w) - w_{j2} - \gamma) D_{j2}^r(w) - F_{j2} \geq 0 \end{aligned}$$

If we consider the participation constraints binding, then this problem is equivalent to:

¹⁸ In order to focus solely on the effect of RPM on intrabrand and interbrand competition, they use in their analysis (two-part) wholesale tariffs, in order to eliminate double marginalization problems.

$$\max_{w_{i1}, w_{i2}} \Pi_i^r(w) \equiv \sum_{j=1,2} (p_{ij}^r(w) - c - \gamma) D_{ij}^r(w) + p_{hj}^r(w) - w_{hj} - \gamma) D_{hj}^r(w)$$

In other words, through the franchise fees each manufacturer i internalizes the impact of its pricing decisions on (i) the entire margins $(p_{ij} - c - \gamma)$ on its own product (for $i = 1, 2$) and (ii) the retail margins $(p_{hj} - w_{hj} - \gamma)$ on the rival's product and he ignores the rival's upstream margins $(w_{hj} - c)$. Because of this, each manufacturer has an incentive to “free-ride” on the rival's upstream margin which leads to prices below the monopoly level.

Specifically they propose that under the following assumptions, any symmetric equilibrium of the form $w_{ij} = w^e$ and $p_{ij} = p^e$ is such that retailers earn zero profit and $c < w^e < p^e < p^M$.

This is possible when: (i) for symmetric wholesale prices $w_{i1} = w_{i2} = w_i$ (with $i = A, B$), equilibrium retail prices are symmetric $p_{i1}^r = p_{i2}^r \equiv \tilde{p}(w_i, w_h)$ for $i \neq h = A, B$, thus leading to symmetric quantities $D_{i1}^r = D_{i2}^r \equiv \tilde{D}(w_i, w_h)$ (ii) an increase in all wholesale prices increases retail prices: $\partial_1 \tilde{p} + \partial_2 \tilde{p} > 0$ (iii) an increase in the wholesale prices of one manufacturer decreases the demand for that manufacturer and increases the demand for its rival : $\partial_1 \tilde{D} < 0 < \partial_2 \tilde{D}$.

If there was a monopoly at either the upstream or the downstream market, then two-part tariffs would instead lead to monopolistic retail prices. If for example a single manufacturer sells through competing retailers, he would induce monopolistic retail prices by setting high enough wholesale prices and a franchise fee to recover retail margins. Likewise, if a single retailer sells the products of several manufacturers¹⁹, manufacturers would sell at marginal cost, thereby inducing the retailer to adopt monopoly prices, and could recover again profits through franchise fees.

RPM As Rey and Verge suggest, when manufacturers can impose retail prices, then this is their dominant strategy. The profit maximization problem of manufacturer i , when manufacturer h imposes retail prices (p_{h1}, p_{h2}) , given the retailers' participation constraints, is given by:

$$\begin{aligned} \max_{w_{i1}, w_{i2}, p_{i1}, p_{i2}, F_{i1}, F_{i2}} & (w_{i1} - c) D_{i1}(p) + F_{i1} + (w_{i2} - c) D_{i2}(p) + F_{i2} \\ \text{s.t} & (p_{i1} - w_{i1} - \gamma) D_{i1}(p) - F_{i1} + (p_{h1} - w_{h1} - \gamma) D_{h1}(p) - F_{h1} \geq 0 \\ & (p_{i2} - w_{i2} - \gamma) D_{i2}(p) - F_{i2} + (p_{h2} - w_{h2} - \gamma) D_{h2}(p) - F_{h2} \geq 0 \end{aligned}$$

At equilibrium, the retailers' constraint is binding:

$$\begin{aligned} \max_{p_{i1}, p_{i2}} \Pi(p, w_{h1}, w_{h2}) & \equiv (p_{i1} - c - \gamma) D_{i1}(p) + (p_{i2} - c - \gamma) D_{i2}(p) \\ & + (p_{h1} - w_{h1} - \gamma) D_{h1}(p) + (p_{h2} - w_{h2} - \gamma) D_{h2}(p) \end{aligned}$$

¹⁹ See Berheim-Whinston (1985)

As in the previous case, each manufacturer does not internalize the total mark-up on the rival's products but only the retail margin. The difference is that, since the manufacturer is now in control of the retail prices, there is no need to charge wholesale prices above marginal costs to prevent the competition between retailers to drive prices down. As we can see above, wholesale prices have no effect on his profits, but only on the rival's profits and thus the equilibrium behavior of the competitor. This gives us a continuum of equilibriums — one equilibrium for every profile of wholesale prices $w = (w_{A1}, w_{B1}, w_{A2}, w_{B2})$.

As Rey and Verge propose, under RPM, there exists a symmetric subgame perfect equilibrium in which wholesale prices are equal to cost ($w^* = c$), retail prices are at the monopoly level ($p^* = p^M$), retailers earn zero profit and manufacturers share equally the monopoly profit. If we assume that retail price responses are well defined and preserve symmetry, and in addition, for any symmetric profile of wholesale prices, there exists a unique, stable, “retail equilibrium”, then there is a decreasing function of $p^*(.)$ that for any w^* it gives us a symmetric subgame perfect equilibrium in which wholesale prices are equal to w^* , retailers earn zero profit and retail prices are equal to $p^*(w^*)$. Thus, any competition is eliminated and monopolistic equilibrium is achieved despite the low wholesale prices.

If for example manufacturer h sells at cost ($w_{h1} = w_{h2} = c$), then we have:

$$\begin{aligned} \max_{p_{i1}, p_{i2}} & (p_{i1} - c - \gamma) D_{i1}(p) + (p_{h1} - c - \gamma) D_{h1}(p) \\ & + (p_{i2} - c - \gamma) D_{i2}(p) + (p_{h2} - c - \gamma) D_{h2}(p) \end{aligned}$$

Now, manufacturer fully internalizes the impact of its retail prices on aggregate profits and sets its prices at the monopoly if the rival manufacturer does so. Since profits can be shared through franchise fees, the rival manufacturer is indeed willing to sell at cost and recover profits through the franchise fee. Therefore RPM allows firms to sustain monopoly prices, even though there is both upstream and downstream competition.

This outcome is based on the absence of a coordination problem as it assumes that when a manufacturer sets its retail prices at the monopoly level and wholesale prices equal to c , then the rival manufacturer should follow the same strategy in order to share the monopoly profits. Otherwise, they might engage in aggressive retail pricing and end up in a more competitive equilibrium.

2.2.2. Downstream Collusion

RPM can be viewed as a stabilizing or a cheating-detecting mechanism also in the case of a cartel among retailers. Downstream firms in order to set retail prices at monopoly levels and increase their markups, conspire to force manufacturers to

establish an RPM policy. Once this policy is enacted, opportunistic discounting by other retailers is prevented, retailers get the profit margin they seek and their cartel is stable and solid through the coercion of the manufacturer. Manufacturer is assigned by the colluding retailers with both the enforcement and the implementation of the cartel. If a retailer deviates from the maintained price he is detected and subjected to some form of discipline from the manufacturer who could, for example, refuse to supply the cheating retailer with his product.

A substantial requirement to ensure compliance from the manufacturer is that the cartel of retailers has monopsony power, either unilaterally or by means of a common agency such as a trade association, in order to impose their will upon the manufacturer. The manufacturer then is forced to quit his attempt to maximize his profits and accept a distribution margin that is not optimal from his perspective. Then both manufacturers and retailers are made worse off, since the raise in retail prices is not accompanied by an enhancement in retail services and this results in reduced sales and hence profits. Retailers take advantage of their buying power to threaten the manufacturer of a boycott on his products. Manufacturer yields to those threats only when he believes that a more profitable alternative does not exist other than to concede to the demands of the collusive retailers. Otherwise, if it were more profitable or less costly for the manufacturer to trade with non-collusive retailers on non-price terms then he would reject the colluding retailers' demands for RPM and entirely forego sales through their outlets²⁰.

In order to support the retailer collusion hypothesis, we also need to consider the characteristics of the price maintained product. In the book market one can see both easily substituted titles and highly valued masterpieces of literature, enough so that books would be considered imperfect substitutes by Van Der Ploeg (2004). If book titles are not significantly differentiated, as in the case where a consumer chooses between best-sellers, then a price increase induced by a fixed book price agreement would lead this consumer to substitute his book with a lower-priced one from a competing publisher. If, however a consumer is looking to buy a scientific book for studying purposes then retailers would be able to affect manufacturer's profit through his concession to apply FBP. Retailers' collusion in the book market may also seek to have the resale price fixed by the publisher and eliminate the possibility of price competition at the retail level to prevent discounters or new more efficient distribution channels from entering the market. It is feared that this would make "full-line" retailers less profitable until they would finally disappear. From this point of view, although a fixed book price can contribute to a wider accessibility of literature through the preservation of particular merchants, it could impede the development of new and more efficient distribution systems as those are viewed by the already established retailers as a new form of competition threatening their profits.

²⁰ See Thomas R. Overstreet (1983)

2.2.3. Exclusion of Rivals

A manufacturer with sufficient market power may use resale price maintenance to reduce the incentives of the retailers of his product to carry competing brands, particularly from smaller rivals or new entrants. RPM allows a manufacturer to control the distribution of the industry profits and therefore it can facilitate an implicit contract between the manufacturer and his retailers where retailers provide the manufacturer with the service of the exclusion of a potential entrant, in exchange for manufacturer's reassurance of an attractive profit margin on sales of his product.

If these retailers were to accommodate entry, then this would lead to upstream competition, a decrease in manufacturer's profits and therefore a decrease in the profits transferred to retailers through RPM. This gives the retailers the incentive to decline the introduction of competing products, in fear of jeopardizing their protected by RPM profit margins on sales of the incumbent manufacturer's product. When a relevantly large share of the market consists of retailers that involve in RPM agreements with the incumbent manufacturer, then competing manufacturers may find distribution more costly and new entrants may be discouraged when downstream accommodation is required.

A baseline model for the exclusionary impact of vertical restraints

In order to understand this argument against RPM we will introduce Asker and Bar-Isaac's (2012) analysis on how vertical practices like RPM can facilitate the exclusion of rivals. In their paper they prove that when an upstream incumbent uses a vertical practice to share industry profits with retailers, then in equilibrium, because retailers have an incentive to protect this quasi-rent, they do not accommodate the entrant. A new upstream firm would increase the competition and reduce industry profits to the point where the upstream incumbent would have no incentive to offer such payments to downstream firms. Therefore, since retailers do not want to lose this rent stream, the implementation of a vertical practice results in exclusion.

In their model they include two manufacturers who produce competing goods and sell to consumers through $n \geq 2$ retailers. Retailers are perfect substitutes for each other, and their only marginal costs are the wholesale prices that they pay to the manufacturers. One manufacturer is already active in the market (the incumbent), and another is a potential entrant (the entrant) and once he enters they compete infinitely. This infinitely repeated game has two states: state M where only the incumbent is active as a monopolist and state C where the entrant is accommodated and they compete with each other. The game begins in state M at $t = 1$ and it progresses as it follows:

1. the incumbent sets a wholesale price, and gives a lump sum transfer $T_i \in [0, \infty)$ to each retailer
2. retailers compete in prices and all profits are realized

3. the entrant offers a transfer, $T_e^r \in [0, \infty)$, to each retailer r , payable if entry is accommodated
4. retailers simultaneously choose to accept (accommodate entry) or reject the entrant's offer
5. if no retailer accommodates the entrant, the state in the next period will continue to be M . If at least one retailer accommodates, then the entrant can choose either to pay the fixed cost, F_e , or not enter. F_e is such that that an entrant, faced with a market with competition (no exclusionary equilibria), will want to enter this market. The firm commits to pay F_e in the current period (that is, it becomes sunk), but the expense is incurred in the next²¹. If the fixed cost is sunk, the state then transitions to C , otherwise the state continues as M .

Once the entrant is active, then he has gained perpetual market access and competition between the two manufacturers is guaranteed in all periods post-entry. In particular, in a period beginning in state C the incumbent and entrant set simultaneously wholesale prices and per period lump-sum transfers²². Then retailers take these prices as their marginal costs and compete in the sale prices they charge consumers. Since retailers are perfect substitutes for each other, competition among retailers will resemble Bertrand competition with homogenous firms, with common and constant marginal costs. This establishes the following lemma:

Lemma 1: In every state, retailer profits (ignoring transfers) are zero.

This is a result of standard assumptions on the pricing in the stage game so that we can focus on the manufacturer's profits. The incumbent's period-profit in the monopoly state, not counting any transfers T_i , is denoted by π_i^M , and it is equal to the industry profits prior to entry. If the entrant is in the market, the incumbent's profit is $\pi_i^C < \pi_i^M$ and the entrant's is π_e^C .

Lemma 2: Transfers from manufacturers to retailers will not occur following entry (i.e. in the C state).

Since C is an absorbing state, those lump-sum transfers from the manufacturer to any retailer would only violate profit maximization on the part of the manufacturer without any effect on the quantity purchased or on the evolution of the state.

Lemma 3: There is always an equilibrium in which entry takes place and the entrant offers $T_e^r = 0$ to every retailer.

Although the interest of this model is to characterize when exclusion is possible in equilibrium, however, there are always equilibriums with no exclusion, as it is proven below.

²¹ To simplify the discounting of cashflows.

²² Those transfers do not differ between manufacturers in equilibrium.

Consider a period in which the state is M , and the entrant offers $T_e^r=0$ to every retailer. Then retailers have to decide simultaneously whether to accept or reject the entrant's offer. If one retailer accepts the offer, then entry occurs, the state changes to C , and payoffs to retailers are equal to 0, regardless of whether they accepted or rejected the offer. Thus, if one retailer accepts the entrant's offer, then the best response set of all other retailers will also include acceptance. Given this set of strategies on the part of the retailers, $T_e^r=0$ is optimal for the entrant.

Under the assumptions made above, Asker and Bar-Isaac propose that an exclusionary equilibrium in which the retailers never accommodate the entry exists if and only if

$$\frac{\pi_i^M - \pi_i^C}{n(1 - \delta)} \geq \frac{\pi_i^C}{1 - \delta} - F_e \quad (1)$$

where δ is the discount factor with which all firms discount future profits. The proof is presented below.

If all other retailers choose not to accommodate, retailer r will not accommodate either if the return of accommodation is weakly less than the return from refusing. That is if

$$\frac{\delta T_i}{1 - \delta} \geq T_e^r$$

This means we need to examine the maximum values of T_i and T_e^r , denoted by \bar{T}_i and \bar{T}_e respectively, that are individually rational for the incumbent at stage 1 and the entrant at stage 3, in state M . If the discounted value of \bar{T}_i is greater than \bar{T}_e , then an exclusionary equilibrium must exist. If not, then for every per-period transfer T_i , the entrant can offer some T_e^r to retailer r , that will induce that retailer to accommodate entry. Since for entry to occur, acceptance by one retailer is sufficient, then the entrant offers no transfers to any other retailers so as to minimize expenditure.

An entrant gets zero profit if he does not enter. Hence, his maximal transfer \bar{T}_e is such that the entrant's ex ante profits from entering the market is zero. That is,

$$\bar{T}_e = \frac{\delta \pi_e^C}{1 - \delta} - \delta F_e \quad (2)$$

The incumbent will be willing to set T_i such that profits without entry minus total per-period transfers, are at least as large as what would be gained from simply allowing entry. That is,

$$\pi_i^M - nT_i \geq \pi_i^C \quad (3)$$

Given this, the maximal per-period transfer to an individual retailer is

$$\bar{T}_i = \frac{\pi_i^M - \pi_i^C}{n} \quad (4)$$

Setting $\bar{T}_i/(1 - \delta) \geq \bar{T}_e$ demonstrates that the condition is necessary. To observe that it is also sufficient, note that the entrant could offer \bar{T}_e to one of the retailers (and nothing to any of the others).

If the fixed cost of entry is equal to zero, then Condition (1) reduces to

$$\frac{\pi_i^M - \pi_i^C}{n} \geq \pi_e^C \quad (5)$$

implying that, in the absence of fixed costs, the discount rate is not important in determining whether exclusionary equilibria are possible in this model.

Under Condition (1) and Lemma 3, we can extract that both an exclusionary equilibrium and an accommodating equilibrium can coexist. However, the exclusionary equilibrium is more appealing. As it is described from Lemma, retailers do not earn any profits and the incumbent is worse off with the presence of the entrant as a competitive threat. Therefore, in the exclusionary equilibrium both manufacturer and retailers are better off since retailers earn profits and the incumbent faces no competition.

Exclusion through RPM practices

Since RPM is a pricing restraint, the following modifications need to be made in our model. Rather than offering a lump-sum transfer each period, the incumbent sets a wholesale price and a retail price. The retail margin that this creates generates the rent transfer that is captured by T_i in the baseline model. Thus, the retailers enjoy a rent transfer equal to their margin (created by shutting down competition between them) multiplied by their share of the market. The same applies in state C , where both incumbent and entrant dictate the retail price, in addition to setting the wholesale price.

Lemma 4: Retailers and the incumbent make zero profits following entry (i.e., in the C state). The entrant's period profit is given by $\pi_e^C = (c_i - c_e)q(c_e)$.

Where we denote by c_i and c_e the incumbent's and the entrant's marginal costs respectively, with $c_i \geq c_e$, and by $q(p)$ the industry's demand. This Lemma, much like Lemma 1 stems from the assumption that manufacturers and retailer are Bertrand competitors with homogenous goods. That $\pi_e^C = (c_i - c_e)q(c_e)$ follows from the usual argument for Bertrand with asymmetric costs.

Following the logic in the baseline model, the fact that $\pi_e^C = (c_i - c_e)q(c_e)$ implies the maximal transfer \bar{T}_e , is such that $\bar{T}_e = \frac{(c_i - c_e)q(c_e)}{1 - \delta}$. Further, since $\pi_i^C = 0$, the incumbent will be indifferent between transferring all the rents from excluding the entrant to retailers and allowing entry to occur. Thus, if RPM is being used to transfer rents, the maximal rent transfer can be implemented by setting the wholesale price equal to the incumbent's marginal cost and the retail price equal to the monopoly

price. We assume that, with equal retail prices, retailers split the market equally, so $\bar{T}_i = \pi_i^M/n$. Hence, the condition for the existence of an exclusionary equilibrium in this simplified RPM setting is:

$$\frac{\pi_i^M}{n} \geq (c_i - c_e)q(c_e) \quad (6)$$

indicating that it is possible for an incumbent to use RPM to exclude a lower cost rival from a market and earn positive profits if the inequality is strong.

Chapter 3

Fixed Prices in the European Book Market

Resale Price Maintenance in the form of a Fixed Book Price agreement has existed in many developed countries with a significant book industry since the beginning of the 20th century. Throughout its large history it has been confronted with suspicion or support and in many cases that competition policies prevailed, it was casted aside. Some of the countries where fixed book price is still in force are Germany, Denmark, Italy, Portugal and Netherlands, while it has been repealed in the UK, Finland, Sweden and Ireland.

Typically there are two types of regulatory regimes: in countries that regulate book prices by law and countries that enforce fixed book prices by trade agreements. However, there is considerable heterogeneity among these price regulations. The most common differences are identified as a) the range of books covered, b) the time period the fixed price must be maintained, c) the trade terms negotiated between publishers and booksellers, d) the way authors' royalties are related to the fixed price system and e) the VAT. Many countries have turned from private agreements into laws and in most cases this was to escape from the increasingly pressure of the European Commission on competition policies. The fixed book price system restricts competition on the retail level and affects trade between member states and therefore it has always been considered by the Commission as a violation of Article 101(1) of the EU Treaty. Although member states can decide the form of pricing system they wish to adopt, fixed book price agreements that affect inter-state trade, that is, the agreements between Austria and Germany and between the Netherlands and Flanders, are forbidden.

One of the most interesting cases is Germany who not only has the biggest book industry in Europe but it is also a firm supporter of the fixed book price system. In 2010 its total book market revenue was almost 10 billion and it accounted for the 25% of the total book sales value in Europe, while for the same year 90% of the books in the German book trade were sold under a fixed book price agreement²³. Also, as from 2006 it has taken over the position of the largest European publisher of books from the United Kingdom.

Apart from its thriving book market Germany is also famous for its particularly long tradition of fixed book prices. The fixed book-price system was first introduced in 1888 where after much conflict with publishers, booksellers, in an effort to protect the weakest among them, succeeded in constraining competition. Until 2002, booksellers and publishers in Germany were part of a voluntary contractual agreement according to which booksellers were not allowed to offer discounts on the price that was fixed by the publisher, while publishers were not allowed to supply to booksellers who had

²³ European Commission Report (2012)

not signed the agreement. In 2002, resale price maintenance became mandatory by law in the German book trade²⁴.

The abolition of fixed book prices in the United Kingdom.

Resale Price Maintenance in the UK book market was employed in the form of the Net Book Agreement (NBA) for almost a hundred years until it was declared illegal. From 1900 all publishers had the right, but not the obligation, to fix the minimum price for their books and therefore to prevent retailers from discounting on their chosen price. This price had to be maintained for 12 months after the publication of the book and if any retailer deviated from the agreement, he would be refused the future supply of books by all publishers. Between 1990 and 1995 a few major publishers withdrew from the agreement. In 1995 it was abandoned completely by the UK Publishers Association and finally in 1997 it was declared illegal.

Studies held 12 years after the liberalization of the book market show that there are both winners and losers and that most predictions on the abolishment of NBA are validated. The impact of removing NBA on the separate groups interacting in the book market is presented below²⁵.

- *Consumers:* The change in pricing regime has allowed for discounts on the recommended retail price (RRP) set by the publisher, to be more extensive and also deeper. This is a result of the entry of some significant new players in the book market- supermarkets and internet sellers. Although these new types of retailers have widened the range of books they sell and the discounts applied on them, most academic and professional titles tend to have little or no discount at all on the RRP. This, along with the fact that book prices have risen the years following the deregulation leads to the assumption that consumers who read best-selling titles are more favoured from the repeal of the agreement as opposed to the readers of other minority-interest titles who are certainly paying more. At first consumers seemed to be more attracted to best-selling titles due to their greater discounts and bigger exposure, but as greater market share is gained by the internet retailers that sell a wider range of titles, this concentration on best-sellers seems slightly reduced. Concerning consumers' expenditure on books, it seems to have increased between this 12-year period, not only due to the increase in prices but also due to an increase in volume.
- *Retailers:* The removal of the NBA facilitated the entry of low cost retailers such as supermarkets and internet sellers that were able to gain market share by passing on their lower costs in lower prices to consumers. This made a positive contribution to the industry productivity but it was offset by the fact that the incumbent retailers were unable to respond more efficiently to the pressure created by the new entrants. Between 1998 and 2004 small independent

²⁴ See Verena Sich (2004), 'The system of fixed book prices in Germany'

²⁵ As it is presented in the OFT Report 981 (2008) and from Fishwick (2008)

bookshops were the main losers as a result of the price competition and their market shares were reallocated to internet sellers, supermarkets and the largest chains. Their inability to compete in prices was not entirely because they were less efficient than the new entrants but mostly because they could not obtain the low prices from publishers and wholesalers that were available to their larger competitors. Since 2004, their loss in market share started decreasing mainly because they were no longer competing on the discounts they could offer on best-sellers but provided a more personal service and concentrated on minority interest titles. During the same period, the largest chains also started losing their market share to internet sellers and supermarkets. As the competitive process kept on going they failed to lower their costs to the level of their competitors' and therefore, because of the higher costs of holding more physical stock, the more labour intensive-operations and expensive sites, they were unable to match their prices to the prices of their competitors.

- *Publishers:* All publishers started facing a more concentrated market with increasing buyer power. The pressure this put on their margins, forced them to increase their efficiency. An increase in productivity is observed both before and after the abolition of the NBA, although productivity growth post-NBA was to some degree slower. However, if we use Germany's book industry performance as a counterfactual, then having maintained NBA would have resulted in stagnant productivity as opposed to the moderate gains which actually occurred. Nevertheless, since there is no negative impact on publishers' productivity, then one could assume that publishers did not undergo the expected from the abolition of NBA and the price cutting that it allowed, such as demand uncertainty and reluctance by retailers to hold large inventories. Although some publishers focusing on minority-interest titles may have lost, most publishers have gained from the expansion of the total market. The end of the NBA facilitated the development of new distribution channels, particularly supermarkets and internet retailers, which helped at the wider exposure of books. The gloomier predictions that preceded the abandonment of NBA, that the intensified competition in the market for leisure will result in subsidizing books with other means of entertainment has not been verified as spending on books has been increasing.

The Greek Book Market²⁶

The book market is generally characterized by uncertain demand and short periods of profitability for each title. It is a very fragile market easily shaken by instabilities in the economy. It is no wonder that the book market was one of the first markets to get afflicted by the economic crisis whose consequences were visible from the beginning.

Book production reached its peak in 2008 with the publishing of 10,680 titles but it has been slowing down considerably ever since, reaching 8,333 titles in 2011. In the most recent survey by the Book Publishers Association, 64% of the publishers decreased its book production in 2015 in order to cope with their decrease in sales. Other measures taken by publishers during the last years are extensive discounts, decreases in their personnel and carefully selecting the new titles which are to be published. The Greek publishing industry is rather concentrated, with 18% of the publishers producing 77% of the total number of titles. Three publishers produce more than 200 titles in all subjects, accounting for 8.8% of total book titles.

Recently, due to the fact that publishers are more selective, self-publishing is becoming more and more popular among new writers. The current economic condition has made publishers frugal and more averse to the risk of a publishing failure. As the number of book titles published each year falls, it is becoming a problem for debutantes to get published. This led to contracts between writers and publishers where the former covers the total cost of production and the latter offers his brand name and distribution network.

The shrinking disposable income and the downturn in private consumption after 2008 were not the only problems Greek publishers had to face. Another important obstacle as 78% of the publishers state, is an increase in the Value Added Tax in the stages of book production from 6.5% to 23%. All this resulted in making the Fixed Book Price agreement favorable to all members of the Greek book market including writers, publishers and booksellers, as a relief to the extra pressure that recession put on them.

The Fixed Book Price agreement was first imposed in the Greek book market in 1997 with the Law 2557/1997, based on the French regulatory model. This law describes a very specific retail price maintenance mechanism according to which the price is set not by the retailer but by the publisher of the book. Retailers can only discount up to a maximum of 10% of the proposed retail price. Retailers in remote areas may charge a higher price than the given retail price, up to a maximum of 5%. These price restrictions apply not only to new publications but also to reprints and re-editions. The same restrictive retail price mechanism is extended, by Law 3905/2010, to include e-books. In 2014 the range of books covered by the law was modified. Specifically by

²⁶ The information included in this chapter is based on surveys by the National Book Center of Greece (EKEBI) and by the Book Publishers Association (SEKB). Unfortunately the last report of EKEBI before it was closed down was in 2012. After that there are no credible data on the Greek book production.

Law 4254/7.4.2014 there is still the 10% restriction in discount but only for first editions and only for literature books. Non-literature books are considered the scientific books (such as books of history, politics, social sciences, medicine and informatics), general practical books (such as books of self-help, cookery and travel guides), university textbooks, school textbooks and art books, and according to the last survey of the Greek National Book Center they occupied 57% of the book production. While only 21.7% of the book production was literature books, and even a smaller percentage first editions, then we could say that the FBP agreement was practically repealed.

In the retail part of the market, we can identify four separate groups: i) retailers specialized in the sales of books ii) non-specialist retailers for which books are an important category iii) retailers for which books are part of a wide range of goods, such as supermarkets and iv) internet retailers. In 2012 there were 1,500 bookshops in Greece and 3,500 point of sale outlets, including press agencies and supermarkets. Small mixed book and stationery shops account for 90% of bookshops while only 250 sell books exclusively. The fact that there are no data on the current condition in the sector makes the picture seem more complex and uncertain on whether what we are observing is the result of the economic crisis or the deregulation of the market or even both. During the past years we have seen both the opening of new stores and the closing of previously successful ones. In 2010 a large chain withdrawn from the Greek market but it was replaced by a new one operating more or less at the same concept. In the years following, we see the closure of two more large chains, one of which decided to operate exclusively through its online shop, the opening of a new chain of discount stores as well as the opening of a few small independent bookshops specializing in the sale of books. Also, the difficulties that have emerged in the Greek market to maintain a physical bookshop have led to the growth of the internet retailers. Books are easy to sell on the internet; they are well-defined, easy to transport, personal contact with the seller is not always needed and because of their lower costs bigger discounts can be granted.

The exclusion of non-literature books from the regulating law was not well received by the members of the book market, apart from a very few large retailers that saw it as an opportunity to increase their market shares. They claimed that price liberalization would lead to the closing down of small bookshops unable to cope with the competition and to less diversity in the books being published. However, the immediate effect of the deregulation is the ability of retailers to offer discounts and this is the focus of the next section.

Chapter 5

Data description

The purpose of our analysis is to assess the potential effect that the repeal of the Fixed Book Price agreement for non- literature books had on the competition in the market for this large category previously subjected to price restrictions. Our data includes a random selection of 415 book titles published in 2013, new editions of non-literature books and their prices as they have been gathered through the online catalogues of the six largest retail booksellers in Athens.

The variables per book title we included are the publisher's price and the prices the same set of titles had in three different points in time: 2013, 2015, and 2016 so that the overall sample would provide us the complete picture on the evolution of book prices between the time they were published and the present. The choice of those points in time was not merely random. In 2013 it was announced that the fixed book price agreement would be repealed for the non-literature books. 2015 would be the final year that non- literature books would be sold at the price set by the publisher if the fixed book price agreement were still in effect. Therefore, our set of prices for the same year captures the discounts on the publisher's price that retailers are now free to set. Finally, 2016 is the third year after the publication of those certain book titles and it is included in our dataset in order to capture the effect that time has on book prices (this year's prices were collected by the writer).

In addition, to identify more correctly the effect of deregulation on the price level we use data on the Consumer Price Index, gathered from the Greek Statistical Agency. As we discuss below, recession has contributed to the negative trend of the book prices, thus we use the CPI index to isolate the decrease in prices caused by recession.

Chapter 6

Empirical Analysis

As we have mentioned, in 2014 the Fixed Book Price regime was relaxed to not include the non-literature books, while it remained in effect for the literature books for the first two years of their publication. The analysis we undertake aims at evaluating the effect that the repeal of the Fixed Book Price had on the evolution of prices in the retail market for non-literature books in Greece. That is, to analyze the extent to which retailers took advantage of the opportunity to grant discounts on the publisher's price.

As it focuses on the price dimension, the dependent variable of interest is the price that retailers set for the non-literature books as a result of the competition between them, now that competition is not restrained by the price maintenance law. Of course,

this analysis is only meaningful in the presence of price variability over time. Therefore, as a preliminary step, we illustrate the evolution of prices of non-literature books.

Table 1: The price distribution of non-literature books and the average prices year by year.

Non-Literature Prices			
(1) Year	(2) 2013	(3) 2015	(4) 2016
Mean	15.17	13.26	12.82
%Change	-	-12.59%	-3.32%
Std. Deviation	8.29	7.45	7.31
Percentiles			
1%	3.83	3.29	3.15
5%	6.30	5.31	5.22
10%	7.67	6.55	6.26
25%	10.04	8.91	8.54
50%	13.77	11.90	11.51
75%	17.85	15.86	15.26
90%	23.97	21.68	20.70
95%	29.35	25.56	25.42
99%	36.00	33.94	33.98

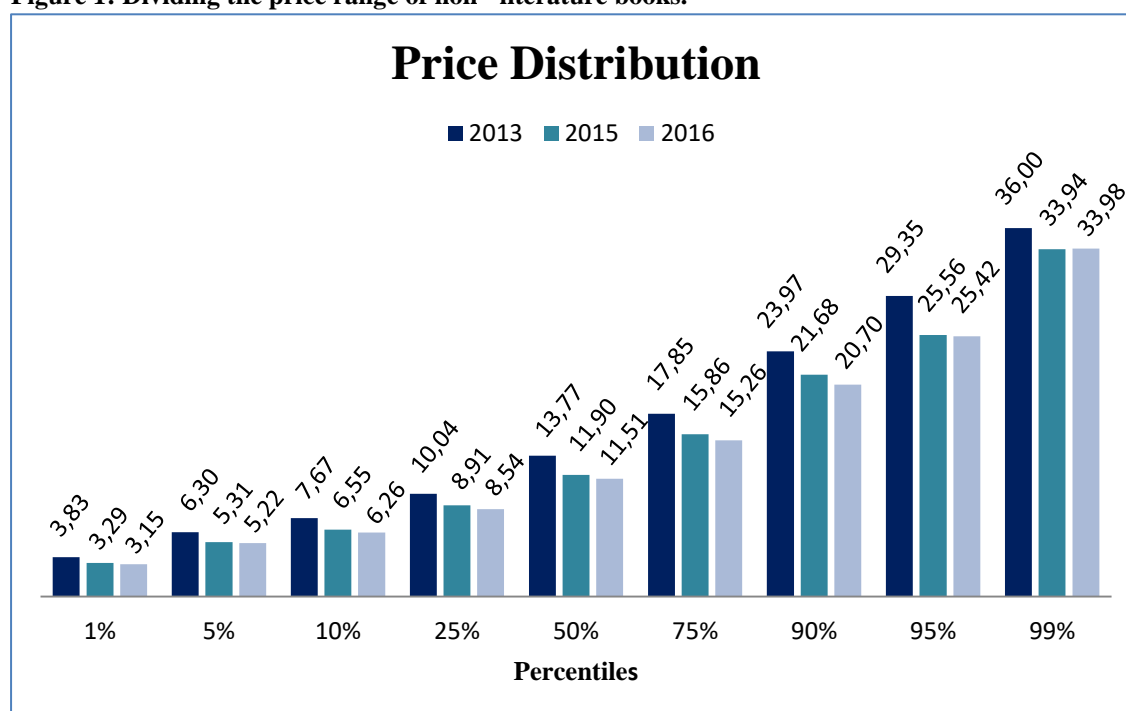
As Table 1 describes, over the last three years the prices of non-literature books have faced a total decrease of 15.49%. Although a decrease in prices is undisputed, it cannot be fully credited to the competition that retailers face due to the deregulation of the market. Specifically, we could claim that the evolution of prices of non-literature books is subject to the following effects:

- **The effect of deregulation.** The retail prices are no longer fixed by the publisher and books can be sold at a discount from the retailer. No price restrictions upon retailers means that competition between them intensifies and as a consequence prices decrease.
- **The effect of recession.** The negative trend in book prices also stems from the fact that book demand is rather income and price sensitive. As Ringstad and Loyland (2006) find, books are described by a high income elasticity which identifies them as “luxury goods”. Therefore, in times of economic downturn, the decrease in income is accompanied by a decrease in book demand which leads to lower book prices.
- **The effect of depreciation.** Books are generally characterized by a very short life-cycle as well as uncertain demand²⁷. Apart from unpredictable, books’

²⁷ See Canoy (2006) and Beck (2007)

popularity is usually short-lasting and for nearly all books the vast majority of sales occur in the first few months after their release²⁸. As older publications are being cast aside by newer ones, then a steady decrease of a book's sales over time is the dominant pattern. These features prove that consumers' willingness to pay follows a downward path, and retailers' pricing policy is forced to change accordingly.

Figure 1: Dividing the price range of non - literature books.



The purpose of our analysis is to isolate the net effect of deregulation on prices. In order to do so, our objective becomes to remove the parts of the price change attributable to recession and depreciation.

I. Removing the effect of recession

Consistent to our objective, we collect the Consumer Price Index from 2013 to 2016 for Recreational and Cultural Goods as it is displayed in Table 2 below²⁹. The index shows us the general movement of the prices of this set of goods, in which books are included and it indicates a negative trend as a result of the economic conditions. Decreases in the disposable income and in private consumption may result in lower prices, which if not corrected for, may give a false impression of the deregulation effect. In order to remove the effect of recession, we add the percentage change of the index to our prices. Specifically, CPI indicates a decrease in prices equal to 3.08% from 2013 to 2015, and a decrease equal to 1.74% from 2015 to 2016. Then the price

²⁸ See Sorensen (2007)

²⁹ <http://www.statistics.gr/el/statistics/-/publication/DKT87/>

of book i on year t , sold by retailer j , adjusted to this general negative movement, if denoted by $p_{itj}^{Adjusted}$, would stem from:

$$p_{itj}^{Adjusted} + p_{itj}^{Adjusted} \times \%CPI_{t-1,t} = p_{itj}$$

$$p_{itj}^{Adjusted} = \frac{p_{itj}}{1 + \%CPI_{t-1,t}}$$

where p_{itj} is the price that the book is sold during period t . Then, $p_{itj}^{Adjusted}$ could be interpreted as the price that the book would be sold if there were no recession.

Table 2: Consumer Price Index for Recreational and Cultural Goods.

Year	CPI	%Change
2013	95.12	-
2015	92.19	-3.08%
2016	90.59	-1.74%

Now, let's examine this in the following example. Suppose a title i which in 2013 and 2015 costs 15.3 and 11.9 respectively when sold by retailer j . Partially responsible for this decrease in prices, as we have already assumed, is recession and how it affects demand. The extent of the recession effect is indicated by the CPI percentage change between those years. Using the above formula we find that $p_{itj}^{Adjusted} = 12.28$ which shows us the price that the book would be sold if there were no recession. Therefore, we see a decrease in the price from 15.29 to 12.28 due to depreciation and deregulation and a supplementary decrease from 12.28 to 11.9 due to recession.

Following the same procedure for every book price, we revalue our set of prices and get the following results displayed in the Table 3 below. After controlling for recession we see that the prices have decreased on average 9.82% from 2013 to 2015, 4.61% from 2015 to 2016 and a total decrease of 13.97% from 2013 to 2016.

Table 3: The distribution and the average prices of non- literature books adjusted to recession year by year.

Non – Literature Prices Adjusted to Recession			
	(1)	(2)	(3)
Year	2013	2015	2016
Mean	15.17	13.68	13.05
%Change	-	-9.82%	-4.61%
Std. Deviation	8.29	7.69	7.44
Percentiles			
1%	3.83	3.39	3.21
5%	6.30	5.48	5.31

10%	7.67	6.76	6.37
25%	10.04	9.19	8.69
50%	13.77	12.28	11.71
75%	17.85	16.36	15.53
90%	23.97	22.37	21.07
95%	29.35	26.37	25.87
99%	36.00	35.02	34.58

II. *Removing the effect of depreciation*

In our attempt to disaggregate the total decrease in prices, now that decreasing book prices due to recession have been taken into account, a proxy for depreciation is essential. A possible approach would be to use the change in publishers' price. However, we see that three years after the books' publication, the publishers' price still remains at the same level, hence depreciation seems to have no effect.

An alternative approach would be to measure depreciation using the change in retailers' price between 2015 and 2016. Since the abolition of the Fixed Book Price agreement, retailers have started to offer considerable discounts on the prices set by the publishers which have replaced the previous fixed prices enforced by them for the first two years of a book's release. Therefore, the key assumption behind this approach is that the effect that deregulation has on the book prices is visible in the first period unlike the effect of depreciation which is visible in both the periods we examine. The first period starts from the publishing of the book in 2013 until 2015, and it is the period that prices would be protected by the regulation if the fixed book price agreement were still in force. If the deregulation of the market has any effect on the evolution of prices, then this effect is noticeable in the first two years of the book's publication because at the end of this two year period retailers would be free to set prices either way. The second period starts from 2015 until 2016 and it is the period that the effect of deregulation fades and therefore, what we observe is the clear effect of depreciation. In other words, we can get a conservative estimate on the deregulation effect by assuming that the introduction of competition in the book market has a significant effect on prices only in the first period.

Then in order to identify the impact of deregulation, we proceed in an algebraic decomposition of the decrease in prices in the first period. Following the same methodology as in the previous section, we calculate the net effect of deregulation by abstracting from the evolution of prices in the first period the pure effect of depreciation as it is viewed in the evolution of prices in the second period. For simplicity we will assume that depreciation follows a linear trend which means that $\Delta p_{t-1,t} = \Delta p_{t,t+1}$. In other words, depreciation affects prices to the same degree year after year. Then, for every book title i sold by retailer j using our recession-adjusted prices gathered in the previous section, the 2015 prices that are formed due to deregulation, if denoted by p_{ij2015}^{Net} , would stem from:

$$p_{ij2015}^{Net} + p_{ij2015}^{Net} \times \left[\frac{p_{ij2016}^{Adjusted} - p_{ij2015}^{Adjusted}}{p_{ij2015}^{Adjusted}} \right] = p_{ij2015}^{Adjusted}$$

$$p_{ij2015}^{Net} \times \left(1 + \frac{p_{ij2016}^{Adjusted} - p_{ij2015}^{Adjusted}}{p_{ij2015}^{Adjusted}} \right) = p_{ij2015}^{Adjusted}$$

$$p_{ij2015}^{Net} = \frac{p_{ij2015}^{Adjusted} \times p_{ij2015}^{Adjusted}}{p_{ij2016}^{Adjusted}}.$$

As $p_{it}^{Adjusted}$ shows us what would be the price if there were no recession, then p_{ij2015}^{Net} shows us what would be the price if there were no recession and depreciation. Therefore, the change from the price that the book is actually sold in 2013 (p_{ijt}) to the adjusted to recession and depreciation price in 2015 (p_{ij2015}^{Net}) is the clear change attributed to deregulation.

We will fully understand this within the context of the following example. Let's assume a book that in 2013, 2015 and 2016 costs 14.38, 11.15 and 9.99 respectively. By gradually removing the partial effects of recession and depreciation we get the prices displayed in the table below. What this table shows us is that retailers' competition led to a decrease in prices from 14.38 to 13.01, the fact that this title got unpopular over time led to an extra decrease from 13.01 to 11.5 and finally, slack demand in the book market resulted in the book being sold at the price of 11.15 in 2015.

Table 4: An example of breaking down the partial effects on prices. Column 2 shows the price the book is sold, column 3 the price adjusted to recession and column 4 the price adjusted to recession and depreciation which is equal to the net effect of deregulation.

Year	p_{ijt}	$p_{ijt}^{Adjusted}$	p_{ijt}^{Net}
(1)	(2)	(3)	(4)
2013	14.38	14.38	14.38
2015	11.15	11.50	13.01
2016	9.99	10.17	-

Chapter 7

Main Findings

In this section we report our aggregate results of the approach that we followed in order to capture the net effect that deregulation had on the market for non-literature books. As we have mentioned, although a decrease over time in the book prices is an

obvious fact, not all of it can be attributed to the abolition of the fixed book price system. In fact, we have acknowledged two additional separate influences on retail price cutting. Apart from a decrease caused by the change in competition policy that allowed for retailers to grant discounts, the approach we employ also suggests a decrease due to recession, as a result of the shrinking disposable income which led to a declining book demand, and due to depreciation, a result of the short-lasting books' popularity and the inevitable effect that time has on most books.

Based on our calculations, the average price of books went from 15.17 in 2013 to 13.26 in 2015. The main focus of our analysis was to isolate the three simultaneous effects responsible by decomposing the average decrease in retail prices. The outcome of the two sets of calculations that were necessary to remove the partial effects of recession and depreciation are presented in Table 6. As we have stated in the previous section p_t shows us the average price that the book is sold in year t , $p_t^{Adjusted}$ shows us the average price that the book would be sold if there were no recession and p_t^{Net} shows us the average price that the book would be sold if there were no recession and depreciation. Hence, $(p_t - p_t^{Adjusted})$ represents the recession effect, $(p_t^{Adjusted} - p_t^{Net})$ represents the depreciation effect and finally the deregulation effect is given by $(p_{2015}^{Net} - p_{2013})$.

Therefore, by decomposing the average decrease in prices we get the following results. First, the repeal of the FBP agreement that encouraged competition in the retail sector was responsible for a -2.24% decrease in prices, from 15.17 in 2013 to 14.83 in 2015. Second, books' substitution to newer titles is responsible for a -7.75% decrease in prices from 14.83 to 13.68 in 2015 and third the general negative trend of prices observed in the category of cultural goods explains a -3.07% decrease from 13.68 to 13.26, the average price of books in 2015. For the evolution of prices in the next period, as we have already stated, only recession and depreciation are acknowledged to have an effect. Prices fell from 13.26 in 2015 to 13.05 in 2016 due to depreciation and from 13.05 to 12.82 due to recession.

Table 5: Breaking down the partial effects responsible for the decrease on average prices. Column 2 shows the price that the book is sold, Column 4 the price adjusted to recession and Column 6 the price adjusted to recession and depreciation.

Year	p_t	%Change	$p_t^{Adjusted}$	%Change	p_t^{Net}	%Change
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2013	15.17	-	15.17	-	15.17	-
2015	13.26	-12.59%	13.68	-9.82%	14.83	-2.24%
2016	12.82	-3.32%	13.05	-4.61%	-	-
Total %Change	-	-15.49%	-	-13.97%	-	-2.24%

Figure 2: The partial role deregulation, depreciation and recession played in the average price decrease from 15.17 in 2013 to 13.26 in 2015.

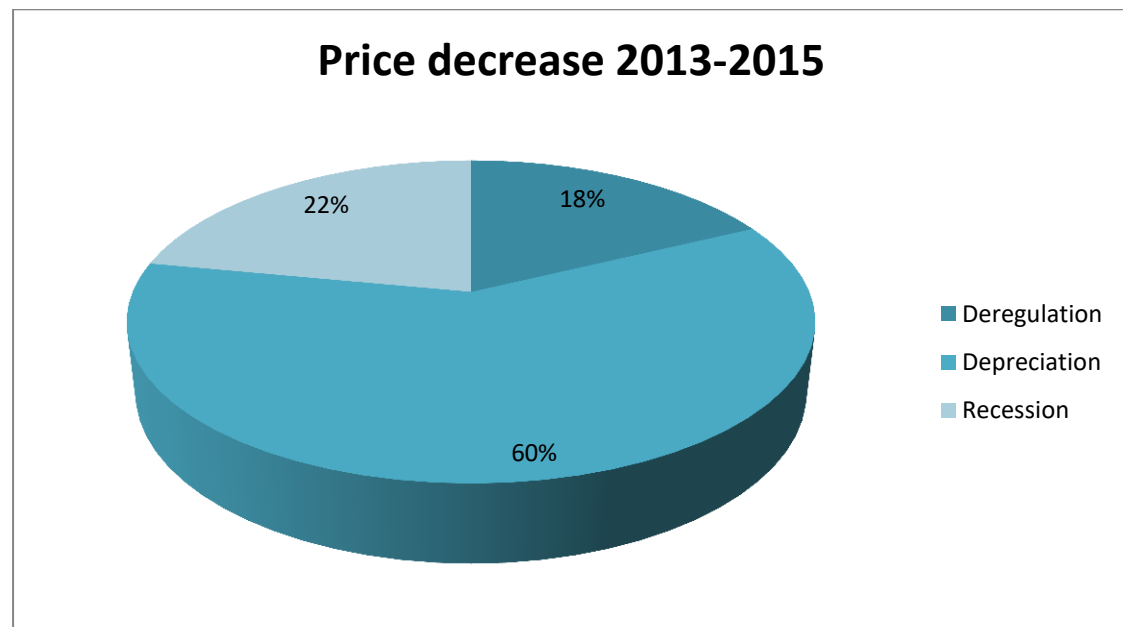


Figure 3: The decomposition of the average decrease in prices. The 1st column shows us the partial effects present in the first period where prices fall from 15.17 to 13.26. The 2nd column shows us the partial effects present in the second period where prices fall from 13.26 to 12.82.

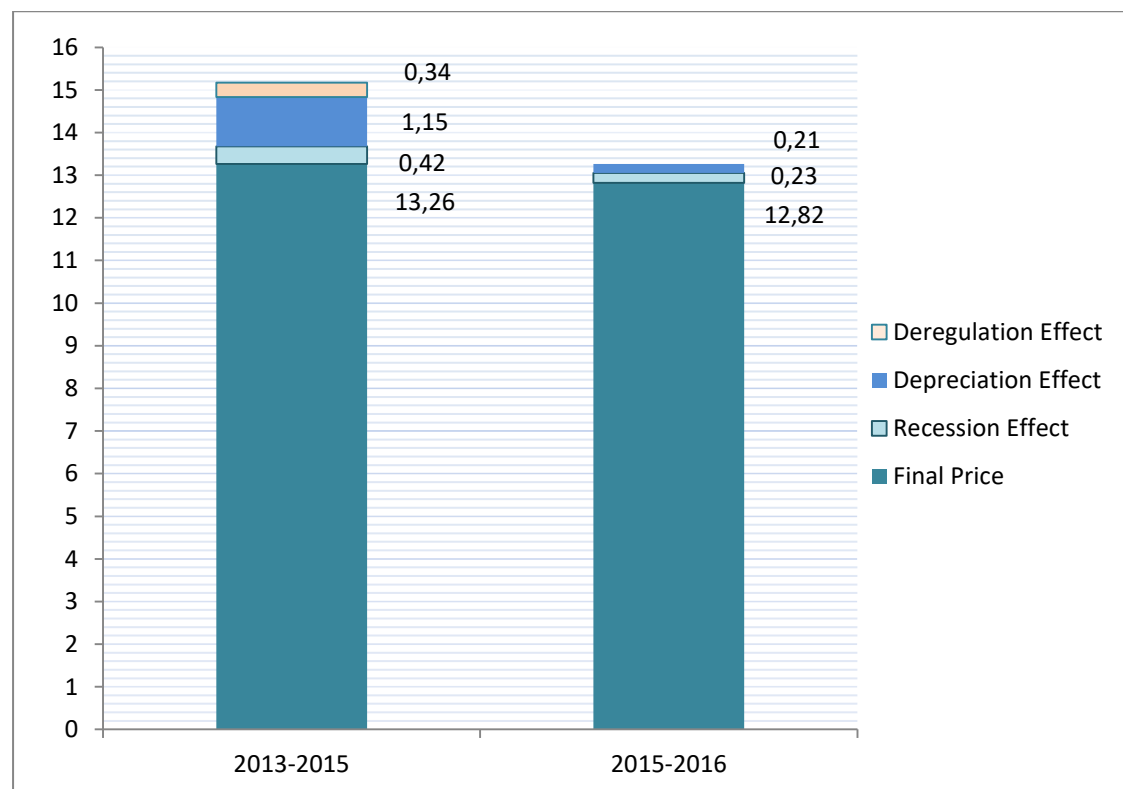


Table 6: The clear effect that the deregulation of the market had on the price distribution. Column 3 shows us what would have been the prices if there had been no recession and depreciation.

Non-Literature Prices Adjusted to Recession and Depreciation		
(1)	(2)	(3)
Year	2013	2015
Mean	15.17	14.83
%Change	-	-2.24%
Std. Deviation	8.29	8.96
Percentiles		
1%	3.83	3.31
5%	6.30	5.59
10%	7.67	6.92
25%	10.04	9.44
50%	13.77	13.09
75%	17.85	18.05
90%	23.97	24.10
95%	29.35	29.84
99%	36.00	41.22

Now that decreasing book prices due to recession and depreciation have been taken into account, we see that although deregulation and the increase in retail competition had the expected impact on retail prices, its significance can be argued. Therefore, in order to improve our understanding of competition in retailing sector, we further proceed to illustrate our retailer-specific results.

At first glance, we see no price convergence among all retailers' pricing since discounts differ substantially. There is heterogeneity in prices which is evidence to suggest that some retailers took advantage of the ability to price freely to a lesser extent. The fact that we fail to see uniform prices for the same book when sold by different retailers can be attributed to the different characteristics among those retailers and it is according to those characteristics that we divide the retailers we examine into two sub-categories: the ones competing in prices and the non-price competitors.

In the first category we could place "Retailer 1" and "Retailer 2", two retailers specialized in the sales of books and "Retailer 3", a non-specialist retailer for which books are an important category though. Those three retailers seem to be subject to tougher competition and as a result deregulation not only had a greater impact on their prices, but as the parallel decrease in their average prices proves it was also to the same extent. The results can be viewed in Table 7 below.

Table 7: The effect on average prices of recession, depreciation and deregulation of the retailers engaging in price competition. Column 2 shows the price that the book is sold, Column 4 the price adjusted to recession and Column 6 the price adjusted to recession and depreciation.

“Retailer 1”						
(1) Year	(2) p_{it}	(3) %Change	(4) $p_{it}^{Adjusted}$	(5) %Change	(6) p_{it}^{Net}	(7) %Change
2013	15.17	-	15.17	-	15.17	-
2015	12.20	-19.58%	12.59	-17.01%	12.80	-15.62%
2016	12.17	-0.25%	12.38	-1.67%	-	-
Total %Change	-	-19.78%	-	-18.39%	-	-15.62%

“Retailer 2”						
(1) Year	(2) p_{it}	(3) %Change	(4) $p_{it}^{Adjusted}$	(5) %Change	(6) p_{it}^{Net}	(7) %Change
2013	15.17	-	15.17	-	15.17	-
2015	11.85	-21.89%	12.23	-19.38%	12.74	-16.02%
2016	11.83	-0.17%	12.04	-5.20%	-	-
Total % Change	-	-22.02%	-	-20.63%	-	-16.02%

“Retailer 3”						
(1) Year	(2) p_{it}	(3) %Change	(4) $p_{it}^{Adjusted}$	(5) %Change	(6) p_{it}^{Net}	(7) %Change
2013	15.17	-	15.17	-	15.17	-
2015	12.28	-19.05%	12.67	-16.48%	12.79	-15.69%
2016	12.31	0.24%	12.53	-1.11%	-	-
Total % Change	-	-18.85%	-	-17.40%	-	-15.69%

In the second category we have “Retailer 4”, “Retailer 5” and “Retailer 6”, the ones that could be described as non-price competitors. “Retailer 4” is exclusively an internet retailer and the only retailer selling e-books. Since e-books are substitutes to printed books, by engaging in price competition on printed books with the other retailers, they would undermine their sales on e-books which are promoted as the cheaper solution. In the first period, although there is a decrease in his prices, it is not substantial enough. This retailer offers a discount not only lower than the CPI index, but also lower than the depreciation effect as it is viewed in the second period (Table 8, Column 4). Subsequently, the prices of this retailer do not move along with the general trend in the book market and a book bought from this retailer in 2015 is relatively more expensive than it was in 2013. Their prices are not well adjusted in the first period to the economic conditions to include neither the effect of recession nor the effect of depreciation and therefore deregulation seems to have no effect on this retailers’ pricing. This in our analysis is depicted by a positive percentage change in the prices adjusted to recession ($p_{it}^{Adjusted}$) and in the prices adjusted to recession

and depreciation (p_{it}^{Net}), in order to mirror the real cost for consumers. In other words, when a retailer fails to take into consideration for his pricing the partial effects of recession, depreciation and deregulation, then in our analysis this is depicted by a positive percentage of change of $p_{it}^{Adjusted}$ and p_{it}^{Net} from year to year.

Table 8: The effect of recession, depreciation and deregulation on the prices of “Retailer 4”. The absence of any of those effects is indicated by a positive percentage of change in the adjusted prices as column 5 and 7 show.

“Retailer 4”						
(1) Year	(2) p_{it}	(3) %Change	(4) $p_{it}^{Adjusted}$	(5) %Change	(6) p_{it}^{Net}	(7) %Change
2013	15.17	-	15.17	-	15.17	-
2015	15.00	-1.12%	15.47	1.98%	20.34	34.08%
2016	11.98	-20.13%	12.19	-21.20%	-	-
Total % Change	-	-21.03%	-	-19.64%	-	34.08%

“Retailer 5” is a retailer that tries to promote book culture and not just books. For that reason he uses other activities to attract consumers apart from price promotions. He often hosts various publicity events such as presentations of new editions by their author, seminars on writing books, and art exhibitions. Their prices are well adjusted to recession since their decrease in both periods is higher than what the CPI index indicates for the industry but the decrease in the first period is not great enough to cover the effect that time has on books which in our analysis is referred to as the depreciation effect. Similarly as with the previous retailer, the positive percentage of change of the net prices indicates that deregulation did not have a substantial effect for this retailer.

Table 9: The effect of recession, depreciation and deregulation on the average prices of “Retailer 5” engaging in non-price competition. The absence of the deregulation effect is indicated by a positive percentage change in net prices as column 7 shows.

“Retailer 5”						
(1) Year	(2) p_{it}	(3) %Change	(4) $p_{it}^{Adjusted}$	(5) %Change	(6) p_{it}^{Net}	(7) %Change
2013	15.17	-	15.17	-	15.17	-
2015	14.42	-4.94%	14.88	-1.91%	15.64	3.10%
2016	14.13	-2.01%	14.38	-3.36%	-	-
Total % Change	-	-6.86%	-	-5.21%	-	3.10%

“Retailer 6” is a retailer that does not engage in price war due to its location for two reasons. First of all, all of its branches are placed in the suburbs where higher income, not price-sensitive groups reside. It addresses a different profile of customer who is attracted to higher quality service and he is willing to pay slightly higher prices. Secondly, it is the biggest retailer in the northern suburbs, therefore even if consumers

are of lower incomes, they still have to face the tradeoff between getting the book they seek in a lower price and travelling a greater distance to get it. In the first period their prices are not well adjusted to recession and depreciation which gives us a positive percentage of change from 2013 to 2015 as we can see in Table 10-Column 5 and 7. As in the previous cases, deregulation, recession and depreciation do not seem to affect this retailers' pricing in the first period and this indicates that consumers pay a relatively higher price in 2015 than they did in 2013.

Table 10: The effect of recession, depreciation and deregulation on the prices of “Retailer 6” engaging in non-price competition. The absence of those effects in the first period is indicated by a positive percentage change in the adjusted prices as column 5 and 7 show.

“Retailer 6”						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	p_{it}	%Change	$p_{it}^{Adjusted}$	%Change	p_{it}^{Net}	%Change
2013	15.17	-	15.17	-	15.17	-
2015	14.85	-2.11%	15.33	1.05%	15.51	2.24%
2016	14.57	-1.89%	14.83	-3.26%	-	-
Total % Change	-	-3.96%	-	-2.24%	-	2.24%

To sum up, after isolating the net effect of deregulation we see that on average it does not have a significant effect on prices. However, if we examine the evolution of prices of each retailer separately, then they are automatically grouped into two categories; the ones including deregulation into their pricing policy and the ones ignoring it. One common characteristic the former and the latter have is the type of competition that they have chosen to focus on. Our results indicate that deregulation has a substantial effect on prices when retailers engage in price competition while for the opposite group not only deregulation does not seem to have any effect but also the observed decrease in prices is in some cases even smaller than the decrease that would have been expected due to the decrease in every books' demand as they get older and the decrease in the aggregate book demand caused by recession. In order to have a clearer view on the deregulation effect, we have grouped our results based on the retailers' characteristics in Table 11 below. In the tables that follow it is reported the distribution of prices for each retailer before and after our attempt to control for recession and depreciation.

Table 11: The grouped average effects. Price competitors vs. non-price competitors. Deregulation seems to have an effect only on the first group.

“Retailer 1” “Retailer 2” “Retailer 3”						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	p_{it}	%Change	$p_{it}^{Adjusted}$	%Change	p_{it}^{Net}	%Change
2013	15.17	-	15.17	-	15.17	-
2015	12.11	-20.17%	12.50	-17.60%	12.78	-15.75%
2016	12.11	0.00%	12.32	-1.44%	-	-
Total % Change	-	-20.17%	-	-18.79%	-	-15.75%

“Retailer 4” “Retailer 5” “Retailer 6”						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	p_{it}	%Change	$p_{it}^{Adjusted}$	%Change	p_{it}^{Net}	%Change
2013	15.17	-	15.17	-	15.17	-
2015	14.77	-2.64%	15.24	0.46%	17.14	12.99%
2016	13.60	-7.92%	13.84	-9.19%	-	-
Total % Change	-	-10.35%	-	-8.77%	-	12.99%

Figure 4: The average percentage change in retail prices by retailer.

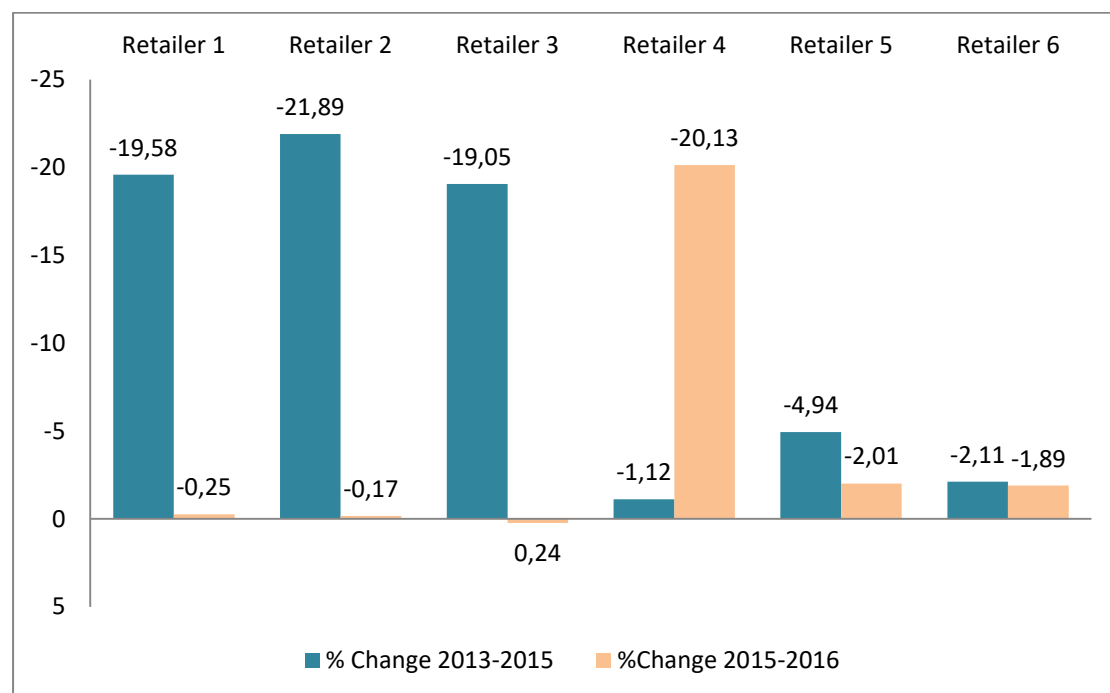


Figure 5: The average percentage change in the prices adjusted to recession and depreciation by retailer. As mentioned above the first three retailers seem to have responded to the deregulation of the market by lowering their prices as opposed to the other three.

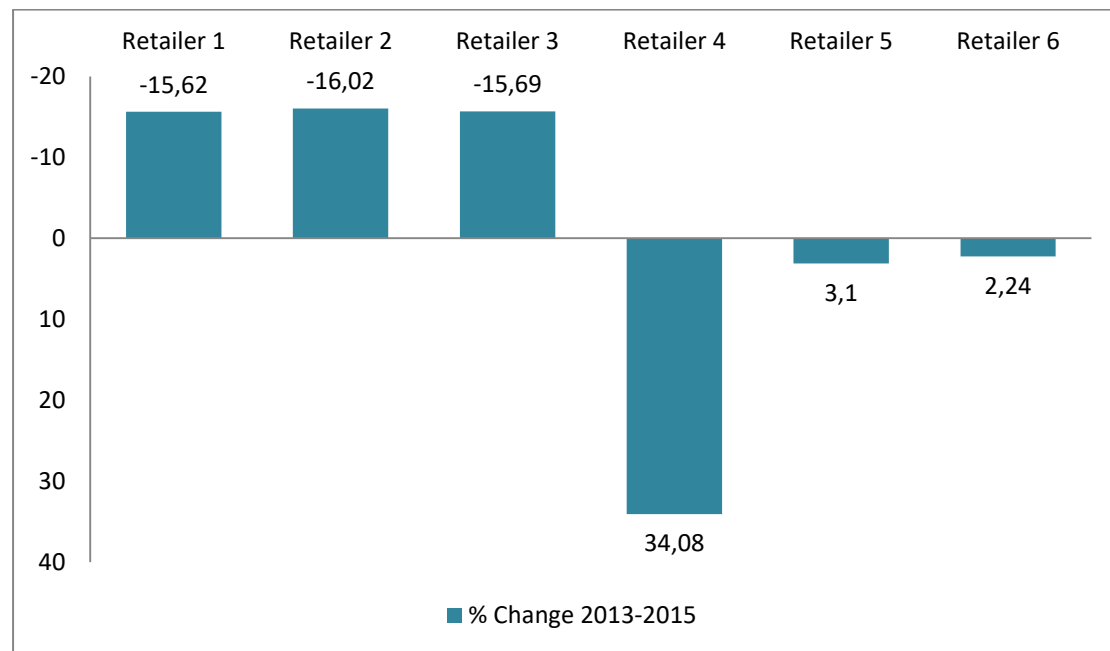


Table 12-17: Retailer-specific distribution of prices: The price the book is sold vs. the price clean of the effect of recession and depreciation.

“Retailer 1”					
	p_{it}			p_{it}^{Net}	
(1)	(2)	(3)	(4)	(5)	(6)
Year	2013	2015	2016	2013	2015
Mean	15.17	12.20	12.17	15.17	12.80
%Change	-	-19.58%	-0.25%	-	-15.62%
Std. Deviation	8.29	7.16	7.22	8.29	7.68
Percentiles					
1%	3.83	2.8	2.81	3.83	2.92
5%	6.30	4.67	4.65	6.30	4.94
10%	7.67	5.97	5.94	7.67	6.19
25%	10.04	7.95	7.85	10.04	8.26
50%	13.77	11.15	11.13	13.77	11.67
75%	17.85	14.13	14.02	17.85	15.26
90%	23.97	19.88	19.9	23.97	20.8
95%	29.35	24.59	24.59	29.35	26.34
99%	36.00	31.85	32.10	36.00	36.51

“Retailer 2”					
	p_{it}			p_{it}^{Net}	
(1)	(2)	(3)	(4)	(5)	(6)
Year	2013	2015	2016	2013	2015
Mean	15.17	11.85	11.83	15.17	12.74
%Change	-	-21.89%	-0.17%	-	-16.01%
Std. Deviation	8.29	7.08	7.07	8.29	7.54
Percentiles					
1%	3.83	2.56	2.7	3.83	3.27
5%	6.30	4.95	4.9	6.30	5.13
10%	7.67	5.73	5.96	7.67	6.23
25%	10.04	7.74	7.98	10.04	8.71
50%	13.77	10.5	10.5	13.77	11.23
75%	17.85	13.88	13.47	17.85	14.69
90%	23.97	19.63	19.17	23.97	20.92
95%	29.35	22.67	22.50	29.35	23.88
99%	36.00	32.49	33.95	36.00	32.52

“Retailer 3”					
	p_{it}			p_{it}^{Net}	
(1)	(2)	(3)	(4)	(5)	(6)
Year	2013	2015	2016	2013	2015
Mean	15.17	12.28	12.31	15.17	12.79
%Change	-	-19.05%	0.24%	-	-15.69%
Std. Deviation	8.29	7.23	7.23	8.29	7.80
Percentiles					
1%	3.83	2.98	2.98	3.83	2.97
5%	6.30	4.47	4.62	6.30	4.68
10%	7.67	5.96	5.95	7.67	5.94
25%	10.04	7.98	7.95	10.04	8.04
50%	13.77	11.19	11.14	13.77	11.69
75%	17.85	14.26	14.71	17.85	14.82
90%	23.97	19.90	19.90	23.97	20.90
95%	29.35	25.41	25.32	29.35	26.67
99%	36.00	32.00	32.00	36.00	36.99

“Retailer 4”					
	p_{it}			p_{it}^{Net}	
(1)	(2)	(3)	(4)	(5)	(6)
Year	2013	2015	2016	2013	2015
Mean	15.17	15.00	11.98	15.17	20.34
%Change	-	-1.12%	-20.13%	-	34.08%
Std. Deviation	8.29	8.33	6.74	8.29	11.48
Percentiles					
1%	3.83	3.81	3.15	3.83	5.11
5%	6.30	6.27	5.19	6.30	8.43
10%	7.67	7.61	5.94	7.67	10.23
25%	10.04	10.04	8.36	10.04	13.73
50%	13.77	13.69	10.8	13.77	18.69
75%	17.85	17.20	13.74	17.85	23.2
90%	23.97	23.29	19.02	23.97	32.08
95%	29.35	28.62	23.00	29.35	38.49
99%	36.00	35.83	29.70	36.00	48.18

“Retailer 5”					
	p_{it}			p_{it}^{Net}	
(1)	(2)	(3)	(4)	(5)	(6)
Year	2013	2015	2016	2013	2015
Mean	15.17	14.42	14.13	15.17	15.64
%Change	-	-4.94%	-2.01%	-	3.10%
Std. Deviation	8.29	8.44	8.44	8.29	9.39
Percentiles					
1%	3.83	3.83	3.3	3.83	3.45
5%	6.30	5.75	5.7	6.30	6.05
10%	7.67	7	6.75	7.67	7.22
25%	10.04	9.8	9.59	10.04	10.36
50%	13.77	13.03	12.71	13.77	13.72
75%	17.85	17.01	16.72	17.85	18.83
90%	23.97	23	23	23.97	25.20
95%	29.35	26.88	27	29.35	30.96
99%	36.00	36	36.22	36.00	39.07

“Retailer 6”					
	p_{it}			p_{it}^{Net}	
(1)	(2)	(3)	(4)	(5)	(6)
Year	2013	2015	2016	2013	2015
Mean	15.17	14.85	14.57	15.17	15.51
%Change	-	-2.11%	-1.89%	-	2.24%
Std. Deviation	8.29	6.56	6.54	8.29	7.20
Percentiles					
1%	3.83	3.82	3.5	3.83	3.79
5%	6.30	6.3	6.3	6.30	6.59
10%	7.67	7.65	7.63	7.67	8.02
25%	10.04	10.23	9.95	10.04	10.45
50%	13.77	13.89	13.44	13.77	14.12
75%	17.85	17.52	16.92	17.85	18.29
90%	23.97	23.4	23.4	23.97	24.95
95%	29.35	28.62	28.62	29.35	30.55
99%	36.00	35.83	32.83	36.00	37.66

Chapter 8

Discussion & Conclusions

From the present analysis a safe conclusion on whether the abolition of fixed prices for non- literature books has benefited or hurt the book market cannot be drawn. However, we have proved that the situation for a large number of readers is much more improved due to the fact that retailers are now able to offer discounts on the majority of book titles.

The estimates of its impact may seem small on average because not every retailer has responded to the liberalization of the non-literature book market with price cuts. Some of them differentiate themselves by offering quality services or the advantage of convenience. Now consumers have the opportunity of deciding for themselves whether they need no service and low prices or more personal attention and better service at a higher price. Both types of customer can be satisfied making an increase in consumer's welfare undisputable. It is necessary to point out that both types of retailers started offering discounts, but deregulation was not solely responsible for them. As we also recognized the effects of recession and depreciation on book prices, the decomposition of the average decrease proved that the abolition of the fixed book price agreement did not influence the pricing of half of the retailers in our sample. While for the remaining half, price competition due to deregulation resulted in substantial discounts.

The change in the regulation of non- literature books could be argued as necessary from many points of view. As we have already mentioned, in this wide category one can find scientific books, textbooks and general practical books such as travel guides and cookbooks. The market for non- literature books is a market less-likely to be associated with distortions such as free riding and imperfect information as they are less of experience goods. Their content is usually easier to screen because there are often more objective quality criteria. Therefore, a fixed book price agreement cannot be justified for this category on the cultural objective of diversity which is supposed to be undermined by market failures.

Although all non-literature books have in common that their retail price is no longer set by the publisher, they have major differences concerning their price elasticity. When it comes to general practical books we could claim that they are of rather high elasticity and they face serious competition from other information sources. External competition given their rather price-sensitive demand should be dealt with lower prices in order to lure consumers back into the book market. On the other hand, scientific books and textbooks face a more price inelastic demand. This, in addition to their low substitutability, allowed publishers to set rather high prices and rip off a large part of consumers' surplus without being punished too much since demand would not fall substantially. Now that competition is allowed readers of this specific book category can enjoy lower prices.

One of the cultural objectives on which the fixed book price system is most often justified, is that it promotes reading by maintaining an extended retail level and making books easily accessible to everyone. Well, an alternative way we could reach this objective is by lower book prices as they are achieved through the deregulation of the market. Increased competition reduces prices, which increases demand thereby increasing both the number of people that read and the time spent reading. The substitutability between literature and non-literature is zero or at least quite modest and hence, no business-stealing effect. This means that lower prices can attract more people in the bookstore and increase the volume of sales of the book market in total.

Finally, as for diversity in the books published, it is not bound to be affected by deregulation. The cross- subsidization argument, where publishers and retailers use their protected profit margin from the sales of popular books to cover for their losses on higher-risk books, can still hold. A best-seller or a popular enough book is most likely to be a literature book, whose prices are still regulated and therefore the profit margin is still protected, since this category appeals to a wider audience. Thus, publishers are still able to place a wide range of titles on the market and secure variety.

References

- Appelman, M. and A. van der Broek (2002), “Book and Market”, Discussion paper, SCP/CPB
- Asker, J. and Bar-Isaac, H. (2012), “Vertical Practices Facilitating Exclusion”, NYU Working Paper No. 2451/31653.
- Barker, R.E. and G.R. Davies (1966), “Books are different: an account of the defense of the Net book agreement before the Restrictive Practices Court in 1962”, Macmillan.
- Beck, J. (2007), “The Sales Effect of Word of Mouth: A Model for Creative Goods and Estimates for Novels”, *Journal of Cultural Economics*, 3, pp. 5–23
- Belleflamme, P. and Peitz, M. (2010), “Industrial Organization: Markets and Strategies”, Cambridge University Press.
- Canoy, M., Van Ours, J.C. and Van der Ploeg, F. (2006), “The Economics of Books”, in Ginsburgh, V. and Throsby, C.D., “Handbook of the Economics of Art and Culture”, 1, pp. 721–761, North Holland Press.
- Deneckere, R., H. P. Marvel, and J. Peck (1997), “Demand uncertainty and price maintenance: markdowns as destructive competition”, *The American Economic Review*, 619–641.
- Dobson, P W., and Waterson, M, (2007), “The competition effects of industry-wide vertical price fixing in bilateral oligopoly”, *International Journal of Industrial Organization*, 25, 935-62.
- European Commission (2012), “The Book Publishing Industry”, Report EUR 25277EN/6
- Fishwick, F. (2008) “Book retailing in the UK since the abandonment of fixed prices”.
- Jullien, B. and P. Rey (2007), “Resale price maintenance and collusion”, *The RAND Journal of Economics* 38(4), 983–1001.
- Klein, B. and Kevin M. Murphy (1988), “Vertical Restraints as Contract Enforcement Mechanisms”, *Journal of Law and Economics*, Vol. 31, No. 2, pp. 265- 297.
- Korah, V. and Denis O’Sullivan (2002), “Distribution Agreements under the EC Competition Rules”, Hart Publishing.
- Mathewson, F. and Winter, R. (1998) “The Law and Economics of Resale Price Maintenance”, *Review of Industrial Economics*, 13: 57–84.
- Motta M. (2003), “Competition Policy: Theory and Practice”, Cambridge University Press.

National Book Centre of Greece (2012), “The Book Market in Greece”, see <http://www.ekebi.gr/frontoffice/portal.asp?cpage=NODE&cnode=397&clang=1>

O'Brien D P, and Shaffer G (1992), “Vertical control with bilateral contracts”, *RAND Journal of Economics*, 23, 299-308.

Office of Fair Trading (2008), “An Evaluation of the Impact upon Productivity of Ending Resale Price Maintenance on Books”, see http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared_offt/economic_research/oft981.pdf

Rey, P. and Verge, T. (2004), “Resale price maintenance and horizontal cartel”, CMPO Working Paper Series No. 02/047

Ringstad, V. and K. Løyland (2006), “The Demand for Books, Estimated by Means of Consumer Survey Data”, *Journal of Cultural Economics*, 30, 141–155.

Sorensen, A., (2007), “Bestseller Lists and Product Variety”, *Journal of Industrial Economics*, 55, pp. 715–738.

Spengler, J.J. (1950), “Vertical Integration and Anti-Trust Policy”, *Journal of Political Economy*, 58: 347-352.

Van der Ploeg, F. (2004), “Beyond the Dogma of the Fixed Book Price Agreement,” *Journal of Cultural Economics*, 28, 1 – 20.

Verena Sich (2004), ‘The system of fixed book prices in Germany’.

Winter, R A, (1993), “Vertical control and price versus nonprice competition”, *Quarterly Journal of Economics*, 108, 61-76.