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# Cross-country analysis of price levels and dispersion in online and offline environments: an empirical analysis in France and Germany

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## Abstract

**Purpose** – The purpose of this research is to take into consideration the country effect in online and offline environments and compares price levels and dispersion online v. offline across the two largest Continental European markets, thus adding a new dimension in price comparisons and multichannel pricing strategies.

**Design/methodology/approach** – Based on an empirical analysis of data collected in one product category (CDs), our findings for France and Germany show that price levels -including shipping costs – are always higher online than offline in each country and price dispersion is persistent across markets. Calculating mean prices for the two countries, ANOVA tests reveal significant differences among the two sets of data. Using standard deviation as the measurement for price dispersion, Levene statistics reveal a higher degree of online price dispersion than offline and statistically significant differences between the two sample countries.

**Findings** – Even if our approach need to be extended to more product categories and more countries, our article may be interesting for practitioners, policy makers and managers. It clearly shows that the “frictionless capitalism and cost transparency hypothesis” has proven to be wrong most of the time even if many retailers still believe they must sacrifice the possibility of pricing up when they go on the internet. As demonstrated by our findings, retailers can take advantage of online relative indifference to price to capture some margin premium and enjoy excellent results.

**Originality/value** – Our results also demonstrate that, even if results show some similarities and common trends, differences among France and Germany still remain important. As a consequence, marketers should continue to approach the European marketplace with full awareness of its diversity.

**Keywords** Pricing, Statistical dispersion, France, Germany

**Paper type** Research paper

## Introduction and research questions

In spite of the initial predictions about the “frictionless effect” of the internet (Bakos, 1997) in the last few years a growing number of theoretical and empirical studies have found that price dispersion is persistent among e-tailers and is no lower online than offline (Scholten and Smith, 2002); the same is for price levels, which in many cases could be higher online than offline (Ancarani and Shankar, 2004). Moreover, with the emergence of the internet as a significant channel, retailers increasingly compete in multiple channels and competition arises among three types of retailers: pure-play internet e-tailers, bricks-and-mortar or traditional or offline retailers, and bricks-and-clicks or multichannel retailers, which

sometimes coexist for most product categories (Zettelmeyer, 2000). Moreover, comparison of prices with shipping costs is different from that of posted prices, thus showing the critical role of shipping costs in price differentiation for online retailers (Ancarani and Shankar, 2004).

Prior research on price levels has examined price differences between both pure-play internet e-tailers and bricks-and-mortar retailers and has also compared all the three types of retailers at the same time: the typical level of the above-mentioned studies, however, is one single country. As a consequence, with the exception of few studies (Baye *et al.*, 2003), possible differences across countries are not accounted for; moreover, Baye *et al.* (2003) focus on only one e-tailer, namely Kelkoo. Recent research on international cross-country price comparison, mainly connected with the Euro (€) changeover, has not focused on the online world; a review of previous studies (Allington *et al.*, 2005) suggests that many

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causes can act against the so-called Law Of One Price (LOOP), i.e. the process of convergence of price levels and dispersion in a single currency area. Among the obstacles, transportation and shipping costs play an important role, as well as cross-border search costs and lack of price transparency. The internet is supposed to reduce these frictions and to drive prices towards the direction of LOOP: is this the reality?

In the present research, differently from previous research on online price comparison, we take into account the country effect and compare price levels and dispersion across different countries. Differently from previous research on cross-country price comparison, we take into consideration online v. offline comparison.

Some competing hypothesis may emerge.

Retailer prices and price dispersion by retailer type may be similar across countries, because the different European countries are undergoing a process of gradual economic convergence (Halliburton and Hünerberg, 2004). The boundary-less feature of the internet can have a positive influence on similarity of retailer price levels and dispersion across countries (Sinha, 2000). But retailer prices and price dispersion may also be different in different countries (Müller-Lankenau *et al.*, 2006). In fact, internet adoption is diffusing at different rates in different countries, consumer behavior with regard to use of internet may be different across countries, price sensitivities may differ across countries and retail competition may be different in different countries. Moreover, cross cultural differences may affect prices (Ackerman and Tellis, 2001; Kaynak and Jallat, 2004).

By knowing the relative levels of prices and price dispersions in the online and offline world, we can gain insights into the nature of competition across countries, thus adding a new dimension in price comparisons in online and offline environments.

In this paper, we address the above questions and gaps in prior research and we present our empirical analysis based on data in one product category – compact discs (CDs) for the two largest Continental European markets, namely France and Germany.

## Review of relevant literature and hypothesis development

In the following paragraphs we will briefly review two streams of literature; the stream of literature on the effects of the internet on price levels and dispersion and the one on cross-country price comparison.

### Study on the effects of the internet on price levels and dispersion

The effect of the internet on pricing has been traditionally analyzed on three dimensions: price levels, price sensitivity and price dispersion, following the Smith *et al.* (2000) classification. The authors classify existing research on online pricing by dividing it into three different streams:

- 1 Price levels online/offline expressed as the mean of levels of pricing online/offline, with and without shipping costs.
- 2 Price sensitivity or price elasticity of the customers measured as the change in demand related to a particular change in price.

- 3 Price dispersion online/offline. The measure for absolute price dispersion is price range; the measure for relative price dispersion is standard deviation.

As regards to price levels, while some studies show higher online price levels (Lee (1997) for automobiles, Bailey (1998) for books, CDs and software and Ereveles *et al.* (2001) for vitamins), other studies find lower online prices (Brynjolfsson and Smith (2000) for CDs and books, Morton *et al.* (2001) for automobiles) or similar levels in the two channels (Clay *et al.* (2002) for books). Therefore, results are controversial. However, most empirical studies show that price levels are higher online than offline, thus rendering “fictional” the idea of frictionless e-commerce (e.g. Murray and Haubl, 2001). The role of shipping costs may be critical in online v. offline comparison, causing online prices to be higher than offline prices. The emergence of multichannel retailers introduces a new possible subject of comparison and forces researchers to include this new type of retailer into their analysis. Few studies compare prices at pure play e-tailers and multichannel retailers. Tang and Xing (2001) in the DVD industry find lower price levels for pure play e-tailers than those of online multichannel. Pan *et al.* (2002a) find similar results for CDs, DVDs, desktop and laptop computers; they observe similar prices for PDAs and electronics and higher prices for pure play e-tailers for books and software. Pan *et al.* (2002b) reach the same conclusions for eight categories (apparel, gifts and flowers, health and beauty, home and garden, sports and outdoors, computer hardware, consumer electronics, and office supply). Ancarani and Shankar (2004) compare the price levels at pure play e-tailers, multichannel and traditional retailers for the book category. Their findings reveal that pure play e-tailers have the lowest list prices and traditional retailers have the highest list prices; multichannel retailers have the highest prices if shipping charges are included; pure play e-tailers may have the lowest prices if shipping costs are included.

As regards price sensitivity, research shows more convergent results. Many researchers demonstrated that online consumers are not more sensitive to prices than offline consumers (e.g. Degeratu *et al.* (2000) for groceries). Lynch and Ariely (2000), through an experimental study with two online stores selling wine, reached similar conclusions and found that price sensitivity declined as customers received more information. Therefore, an increase in search costs for quality information can lead to lower price sensitivity. Shankar *et al.* (2001) introduced an important distinction between price search (the customer’s proclivity to undertake a search for better prices) and price importance (that is the weight a customer attaches to price in relation to other attributes). Their results from the hotel industry show that the online medium increases price search but not price importance, that is, online price sensitivity is lower, even if the price search is higher than offline. Baker *et al.* (2001) conducted a study on purchasing managers in the B2B context and found that only 30 percent of the sample focused on price as the most relevant benefit in online purchasing; in the remaining 70 percent of the sample, the reduction in transaction and search costs was considered more important than lower prices. To summarize, the empirical evidence on online price sensitivity suggests that this measure is lower online than offline, when firms are able to offer their customers a rich flow of non-price product information. This

finding suggests the possibility of higher prices online than offline.

As regards price dispersion, according to the frictionless commerce hypothesis, it should be much lower in online markets than in traditional markets. Results of empirical research are however mixed and they do not confirm completely the efficiency hypothesis. Many researchers (Bailey (1998) in the book and CD markets, Clemons *et al.* (2002) in the online travel industry, Erevelles *et al.* (2001) in the vitamin industry) found that online price dispersion is the same or even higher than offline price dispersion. Brynjolfsson and Smith (2000) found that online price dispersion is equal or even higher than in the traditional economy. However, after weighting the prices by proxies of market share, they found price dispersion to be lower online than in conventional stores. Brown and Goolsbee (2002) and Morton *et al.* (2001) also found lower levels of online price dispersion in the life insurance and internet car retailing industries, respectively. Tang and Xing (2001) found that price dispersion was lower for pure play e-tailers than multichannel retailers. Ratchford *et al.* (2003) found that online price dispersion is persistent although it generally declined from November 2000 to November 2001 for eight categories (books, CDs, DVDs, desktop and laptop computers, software, PDAs and consumer electronics).

In spite of some controversial results, the growing number of academic papers is gradually questioning the frictionless commerce thesis and proposing alternative explanations. Not only do customers have lower search costs for information about pricing, but firms and retailers also have lower search costs for information about their customers (Pitt *et al.*, 2001). If firms can manage their e-commerce and pricing strategies “smartly”, they have the possibility to compete in a pricer’s paradise (Baker *et al.*, 2001). As stated before, at the present moment the typical level of analysis is the country level and the cross-country comparison is relatively neglected. On the contrary, we argue that a better understanding of cross-country differences in price levels and dispersion could shed new light on the dynamics of competition among retail channels.

### Studies on international cross-country price comparison

Some studies have recently focused on the subject of cross-country online price comparison, mainly related to the joint effect of the Euro changeover. Baye *et al.* (2003) study the impact of prices for six main product categories (games, consoles, music, PDAs, printers and scanners) charged by online retailers within the EU, before and after the Euro introduction; they show that, contrary to what one could have expected from the “frictionless capitalism and cost transparency hypothesis” (e.g. Bakos, 1997; Sinha, 2000) the final effect of the Euro introduction (after controlling for cost, demand and market structure effects) was to raise average prices in the Euro zone by 3 percent and average minimum prices by 7 percent. They find also that price dispersion inside EU countries increased, relative to price dispersion within non-EU countries, after the introduction of the Euro. However, the study of Baye *et al.* (2003) focuses only on one pure play retailer, namely Kelkoo. Allington *et al.* (2005), by investigating the degree of price dispersion among countries in the Euro zone, in contrast with previous empirical research, find robust empirical support to the

integrating effect of the Euro, thus supporting the so called LOOP, i.e. the hypothesis that prices of identical tradable goods priced in the same currency should, under competitive conditions, be equal across all locations, national and international (Allington *et al.*, 2005, p. 3). The literature review offered by Allington *et al.* (2005) confirms the fact that, with the relevant exception of the Baye *et al.* (2003) study, all previous studies on cross-country comparison have not focused on online price comparison; moreover, the Baye *et al.* (2003) study is focused on one e-tailer, whereas in our study we try to offer a cross-country comparison of online v. offline world.

As a consequence, on the basis of the existing literature, showing controversial results for price levels and price dispersion in the online v. offline comparison, but also more convergent results showing the empirical “weakening” of the so called “frictionless commerce” – also for the critical role of shipping costs in competition between retailers – our hypotheses are the following:

- H1. Online list prices (without shipping costs) are lower than offline prices within countries.
- H2. When adding shipping costs, online prices are higher than offline within countries.
- H3. Online prices as well as offline prices differ across countries, even with the same currency (€).
- H4. Price dispersion of online list prices is higher than offline within countries.
- H5. When adding shipping costs, price dispersion of online list prices plus shipping costs is higher than offline within countries.
- H6. Online price dispersion as well as offline price dispersion differ across countries, even with the same currency (€).

### Data, measures and methods

In order to test our hypotheses we developed a research design that covers:

- different channels (online versus offline);
- different pricing modes (list price versus list price plus shipping costs); and
- different countries (France versus Germany), adopting the same currency.

As regards products, we choose CDs for our empirical analysis since this category:

- has been widely studied by other researchers; and
- allows comparison of completely homogeneous products.

Over a period of five weeks in 2003 we conducted weekly price observations and collected price quotes by following the structure as indicated in Table I.

France and Germany were selected as survey countries since the two markets are the most important in Continental Europe in terms of size and development and are generally considered as somewhat similar with respect to legal constraints and some habits of consumption.

For each country we created a list of the current 20 top selling CDs on the market. Radio stations, music magazines and also retailers regularly publish rankings of that kind and our study revealed a high degree of congruence between different sources of information. Although the two lists of CDs were not identical for the two countries, we regard the

Table I Sampling structure

<i>n</i>	Country	Title (Artist)	Dealer	Observation date	Price
<i>n</i> = 1.546	Germany ( <i>n</i> = 800)	Robbie Williams	Offline:	2003:	Offline:
		Norah Jones	WOM	Week 1	Store price
		Eminem	Media Markt	Week 2	Online:
		Nena	Online:	Week 3	List price
		Metallica	Amazon (G)	Week 4	Shipping (1 item)
		Shania Twain	Alphamusic	Week 5	Shipping (3 items)
		Grönemeyer			
		Wir sind Helden			
		The Rasmus			
		Catterfeld			
		Simply Red			
		Outlandish			
		Aguiliera			
		Ramazzotti			
		Daniel K.			
		Xavier Naidoo			
		Beyonce			
		Avril Lavigne			
		Jeanette			
		Andrea Berg			
	France ( <i>n</i> = 746)	Robbie Williams	Offline:		
		Norah Jones	Carrefour		
		Eminem	Auchan		
		Taxi 3	Online:		
		Accentus	Amazon (F)		
		Andre Rieu	Alapage		
		Harcourt			
		Lucky Petterton			
		Massive Attack			
		Asian Dub Foundation			
		Carla Bruni			
		Patrick Bruel			
		Star Academy			
		Indochine			
Johnny Hallyday					
Corneille					
Phil Collins					
Aaliyah					
Shakira					
Mariah Carey					

two of them as fulfilling and serving the same need for consumers in each country and thus appropriate as an object of comparison for our purpose in the paper[1]. Dealers have been selected according to the “market share criterion” (Brynjolfsson and Smith, 2000), offline or online, thus excluding niche retailers. As had to be expected the list of dealers again is not identical for the two countries. However one dealer, namely Amazon, appears on both. From this observation we draw even more support for our basic proposition of investigating cross country effects on price levels and dispersion among retailer types.

As far as price modes are concerned, four different price quote types are included in our study: store prices for CDs from offline dealers, and for online dealers’ pure list prices, prices including shipping costs when one item is ordered, and prices including shipping costs when three items are ordered.

This design leads to 800 price quote observations in our study for each country. For France not all CD titles remained on each retailer’s shelves or product list over the complete period of our study. This led to a loss of altogether 54 price quotes for the country. However, we consider this as still acceptable and not reducing the general validity of our study. For Germany, all 800 price quotes from the sample structure were available.

## Results

The data set as resulting from this survey accommodates for multiple ways of comparing price quotes. As a first step we calculated mean prices over all titles and all observation dates for each channel and respective pricing mode in the two countries. Results are depicted in Table II.

Table II Mean prices within country

	Offline (store price, €)	Online (€)	F-value	df	Sig.
<i>Mean prices in France</i>					
List price	18.10 (n = 176)	17.31 (n = 190)	6.477	365	0.011
Shipping (1 item)		18.75 (n = 190)	4.638	365	0.032
Shipping (3 items)		17.79 (n = 190)	0.957	365	n.s.
<i>Mean prices in Germany</i>					
List price	16.23 (n = 200)	15.02 (n = 200)	70.752	399	<0.001
Shipping (1 item)		17.97 (n = 200)	148.191	399	<0.001
Shipping (3 items)		15.44 (n = 200)	27.102	399	<0.001

An average store price at offline dealers of €18.10 per CD versus an average list price of €17.31 at online dealers in France supports hypothesis *H1*. ANOVA test for the two concerned sub-samples of price quotes in fact reveals that this difference is significant at a sufficient level ( $F$  6.477;  $df$  365; sig. 0.011). The same picture emerges for Germany where the level of significance is even more supportive ( $F$  70.752;  $df$  399; sig. <0.001).

When alternating the point of reference for our comparison from pure e-tailer list prices to e-tailer prices including shipping cost for a single item, however, the order changes with online being more expensive than offline for consumers. ANOVA results for the German data set thus support *H2* clearly ( $F$  148.191;  $df$  399; sig. <0.001). For France adjusted online prices are also higher than offline store prices with the level of significance for this difference as calculated from ANOVA being still sufficient but slightly weaker than for Germany ( $F$  4.638;  $df$  365; sig. 0.032).

These results support *H1* and *H2*, in that list prices are lower online than offline, but become higher when adding shipping costs.

For the second step of our data analysis we switched from within country comparisons of mean price levels to an across countries data analysis. Table III discloses the central findings.

For the two retailer types, online as well as offline, and all pricing modes as they apply to the respective dealer type, we discover a clear country effect with mean prices being consistently lower in Germany as compared to France. ANOVA for the different sub-samples indicates a strong significance for this finding. Thus, with  $F$ -values between 11.04 and 91.81 and levels of significance at 0.001 or below our hypothesis *H3* receives clear support (see Table III).

Standard deviation was used as the measurement for price dispersion. We calculated standard deviations for altogether eight data subsets and results are shown in Table IV. In order to identify statistical significance for differences in standard deviation we used the Levene statistic as implemented in SPSS 16.0. A first look at the values for standard deviation reveals for Germany as well as for France a higher degree of online price dispersion than offline. With respect to statistical significance we meet good standards for the German data

sub-set and receive support for hypothesis *H4* and hypothesis *H5* ( $F$  4.175;  $df$  796; sig. 0.006). For the French data set significance standards are not met ( $F$  0.031;  $df$  742; sig. >0.010).

A cross countries comparison for standard deviation as measurement for price dispersion reveals clear and statistically significant differences between the two sample countries. This accounts for both dealer types and over all pricing modes, with an increased level of price dispersion in France when compared to Germany. In all cases the significance of findings is very strong with values below 0.001, and  $F$ -values (Levene statistic) range between 22.023 and 50.526. Thus, we can conclude that hypothesis *H6* is supported clearly by our data.

## Discussion

Our results on online v. offline price levels and dispersion comparison extend prior research (e.g. Pan *et al.*, 2002a; Scholten and Smith, 2002; Ancarani and Shankar, 2004) by showing that:

- list prices are lower online than offline in the two countries and the difference between online and offline list prices is very small in the two countries;
- when shipping costs are included, on the contrary, prices are higher online than offline in the two countries;
- price dispersion is higher online than offline in the countries, with or without shipping costs;
- dispersion is persistent in online markets across countries; and
- dispersion increases online merely by bundling a completely homogeneous product with a reasonably homogeneous service (shipment service), regardless of the country.

Moreover, by focusing on two different European countries in the same economic area and using the same currency, our results extend prior research in the following respect:

- regardless of the process of convergence of economies and currencies, price levels are still different in the two different countries, even with a reasonably homogeneous sample of products and retailers created with the same methodological approach; and

Table III Mean prices across countries

Dealer type	Price mode	Country	Mean price (€)	F-value	df	Sig.
Offline	Store	France	18.10 (n = 176)	67.46	375	<0.001
		Germany	16.23 (n = 200)			
Online	List	France	17.31 (n = 190)	88.56	389	<0.001
		Germany	15.02 (n = 200)			
	Shipping (1 item)	France	18.77 (n = 190)	11.04	389	0.001
		Germany	17.97 (n = 200)			
	Shipping (3 items)	France	17.80 (n = 190)	91.81	389	<0.001
		Germany	15.44 (n = 200)			

Table IV Heterogeneity of standard deviation within &amp; across countries

Country	Across countries				Levene statistic	df	Sig.
	Offline Store price	List price	Online Shipping (1 item)	Shipping (3 items)			
<b>Within country</b>							
Germany	1.351 (n = 200)	1.522 (n = 200)	1.504 (n = 200)	1.662 (n = 200)	4.175	796	0.006
France	2.887 (n = 176)	3.067 (n = 190)	3.056 (n = 190)	3.035 (n = 190)			
Levene statistic	50.526	40.469	35.830	22.023			
df	374	388	388	388			
Sig.	<0.001	<0.001	<0.001	<0.001			

- regardless of the process of convergence of economies and currencies, price dispersion is still different in the two different countries, even with a reasonably homogeneous sample of products and retailers created with the same methodological approach.

Many are the possible causes of cross-country differences in price levels and price dispersion online.

One first set of explanations could be related to the different structure of the internet market in the different countries. The number of internet users is different (30 millions in France, 43 in Germany, source: EIAA), as well as the penetration rate, which varies among European countries (41 percent in France, 56 percent in Germany, source: National Statistics). The same holds true for the size of the internet market and for the percentage of online sales on total retail sales (1 percent in France, 2.7 percent in Germany, source: Eurostat and BCG). The growth of online markets is different across countries, even if definitely more convergent (3.3 percent in France, 3.4 percent in Germany, source Eito). Moreover, bandwidth connections as well as bandwidth usage vary significantly across countries (7,000,000 connections in France and 28,250,000 connections in Germany, source Eito and

ECTA). Also costs of bandwidth connection vary significantly across country (from €14.90 for an average monthly rate in France to €22.99 in Germany).

One second set of explanations could be related to consumer attitudes towards the internet. Whereas in some countries consumers prefer searching for information online while buying offline, in other countries consumers are more ready to buy online. In some countries, moreover, there is a sort of reluctance to use the credit card in online transactions.

One third set of explanations could be related to different retail market structure. In spite of the European Union convergence process (Halliburton and Hünerberg, 2004), retail markets in many countries are still very different from one another (Müller-Lankenau *et al.*, 2006) and this has an important impact on price competition in online as well as offline distribution channels. Germany is, after the Scandinavian countries, the European market where the market share of large retailers (and discount retailers) is the biggest in Europe (5 percent against 2 percent France). Moreover, Germany has the cheapest index of prices in the European Retail Market (83), as compared to France (86) (source: A.C. Nielsen).

## Managerial implications

Our study may be interesting for practitioners, policy makers and managers in mainly two respects.

### Considerations related to online v. offline comparisons and multichannel opportunities

Our research clearly shows that the “frictionless capitalism and cost transparency hypothesis” (e.g. Bakos, 1997; Sinha, 2000) has proven to be wrong most of the time even if many retailers still believe they must sacrifice the possibility of pricing up when they go on the internet, a supposedly price-transparent medium (Calkins *et al.*, 2000). Many reasons may account for our systematic conclusions:

- Far from being a price destroyer, the internet can bring new detail to pricing strategy and an analysis of consumer click-through behavior reveals that most buyers keep returning to the same sites and do very little cross-shopping. According to Baker *et al.* (2001) for example, 81 percent of music buyers purchase product at first web site visited. In the same respect, Calkins *et al.* (2000) found that buyers shop online more for convenience than for cost and that only 20 percent of online shoppers use “bots” (automatic-shopping agents) or other search engines to secure the lowest price.
- Even given the assumption of reduced search costs, a major aspect of choice and selection is the “trust factor”, argued extensively by Brynjolfsson and Smith (2000): a customer might be willing to pay a premium for a product from a vendor, who the customer can rely on. This factor can be judged in the USA for example, where Amazon.com is the undisputed leader in online book sales, while it still charges a premium and has competition available which charges lower prices for the same product.

Our article also indirectly offers insights for companies that would like to develop a multichannel distribution strategy. As previously emphasized, multichannel strategies may lead to price premium opportunities (Calkins *et al.*, 2000). One important aspect leading to a price premium for multichannel stores over traditional or pure players is the strengthening brand-name recognition along with giving local customers a physical location to return merchandise or buy items right away without having to pay shipping costs. Another argument focusing on the competitive prices offered by multichannel retailers suggests that they can lower the promotional costs through cross-marketing and cross-merchandising opportunities and expanding the customer base (Grosso *et al.*, 2005).

Additionally it has also been argued that shoppers, who have multiple channels of access to a retailer and its products, are more likely to be loyal customers if not the best ones (Lester, 2006). As demonstrated by our findings, retailers can take advantage of online relative indifference to price to capture some margin premium and analyze all their channels to make thoughtful, strategic choices and enjoy exceptional results (Calkins *et al.*, 2000; Grosso *et al.*, 2005).

### Considerations related to differences in price levels and dispersion across France and Germany and a single European approach

Our results show that Europe is still not a monolith, homogeneous market (Kaynak and Jallat, 2004). Even if results between the two major economies in Continental

Europe show some similarities and common trends, differences among the two countries still remain important. As a consequence, marketers as well as policy makers should continue to approach the European marketplace with full awareness of European diversity: a “politically unified” Europe and hundreds of legislation enacted through the European Parliament has still not created full convergence when compared to countries like the USA. And, as emphasized in the previous paragraph, this is not only due to cultural differences but also to structural and competitive ones.

As pointed out by Ackerman and Tellis (2001), culture can influence an important social activity like shopping. And our study show that cross-cultural differences in consumer shopping may also lead to differences in retail prices. In that respect, we demonstrated that price levels are systematically lower in Germany when compared to France. But aside some cultural and behavioral differences, these differences may also be due to the supply side of the equation. In a recent study, Müller-Lankenau *et al.* (2006) investigated the diversity in the European Retail Grocery Industry in terms of two factors that are assumed to influence strategic choices on a national level: the individual retailer’s general marketing strategy and national market structures. The authors clearly reveal that, while the “discounter model” (where retailers are offering mainly grocery items at low prices and with very limited service) is the dominant one in Germany, France is largely characterized by the “hypermarket model” (with stores stocking a large range of items, including non-food items like CDs where they have a dominant position in the country). The competitive environment of the two countries is also quite different in other respects:

- Germany did not have multichannel dealers before 2003 while France has been a battleground for multichannel players with large valued-adding features and on-line retailing activities for a long time already.
- On the CDs market and for some of the structural reasons just mentioned before, national champions are playing a dominant role in France while they just have a marginal position in Germany. This is clearly demonstrated in traffic rankings for CDs (source: Alexa): While Amazon.de is the 7th most visited internet site in Germany and still leads the national market, national French pure players like PriceMinister (22nd) or CDdiscount (38th) took the lead over Amazon.fr (55th) some time ago.

Therefore, retailers who plan to enter national or foreign markets in Europe should be aware of cultural and structural differences that can sometimes lead to substantial differences in equilibrium prices and customers’ preferences (Ackerman and Tellis, 2001).

## Limitations and directions for future research

The current study has many limitations, thus opening space for further research.

The study is referred only to one product category (CDs) in two European countries. In further research perspective, it can be extended to more product categories and more countries, including the USA and Asia. In particular, since we analyze only one product category, our findings can be difficult to generalize and more work is needed to check if the



same results hold true for other product categories. Besides, the study is focused on best selling products, thus opening the problem of a “loss leader” bias. In further research perspective, it could be useful to create mixed samples of best selling products and other randomly selected products.

The study shows interesting results of persisting differences in prices – either price level or price dispersion - (online and offline) for the two countries. This is only a descriptive result; it could be useful, in a further research perspective, to understand formally the drivers of differences of online and offline price levels and price dispersion across countries. In this respect, we searched for available data on structural differences between countries; more comparable data and primary data would be useful to estimate the impact of such drivers on price levels and price dispersion between countries.

More subtle considerations based on international comparisons would be needed as well. A more sophisticated study of cross-country differences in price levels and dispersion should be adjusted for service quality across the two types of retailers (Pan *et al.* 2002b) and an analysis of market share outcomes for the two types of retailers would be useful.

## Note

- 1 Their incongruence can still be attributed to existing cultural differences between the two populations in terms of preferences for individual artists and music titles. However, three CDs appear on both lists (Robbie Williams, Norah Jones, and Eminem), which gives some evidence to the emergence of a common market for contemporary music in the two countries -as well as in the rest of the EU. It also supports the assumption of comparability as we stated it above.

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