RBB Economics

Territorial supply constraints: the economic arguments

RBB Economics, March 2013

Executive Summary

On 31 January 2013, the Commission published a Green Paper on unfair trading practices in the business-to-business food and non-food supply chain in Europe. Defining unfair trading practices as practices that "grossly deviate from good commercial conduct and are contrary to good faith and fair dealing", the Commission identifies a number of such practices that it suggests may adversely impact on investment and innovation, as well as on the functioning of the Single Market.

This paper, prepared by RBB Economics at the request of the European Brands Association (AIM), examines one practice that the Green Paper identifies: territorial supply constraints. The Commission suggests that territorial supply constraints imposed by some suppliers (to the extent possible given the existing case law restricting the scope for such constraints) may impede retailers from sourcing identical goods cross-border in a central location and distributing them to other Member States.

The Green Paper makes it clear that the Commission's underlying concern with territorial supply constraints is that they, as the Commission suggests, result in cross-country price differentials. Critically, the Green Paper assumes that such differentials negatively impact consumers.

However, as this paper demonstrates, there is no basis for this conclusion on the effects on consumers. Contrary to what the Green Paper implies, cross-border price differentials, where these occur, often reflect the efficient functioning of markets, the characteristics of which considerably differ between Member States. Indeed, economic theory indicates that so-called "price discrimination" is often welfare-enhancing. Blanket measures aimed at reducing cross-border price differentials are likely to have a number of adverse long-term consequences that are likely to harm consumers.

<u>Understanding cross-border price differences</u>

Prices for consumer goods are influenced by a number of factors, both demand and supply related. Many of these factors differ considerably between Member States.

For example, the demand for consumer goods may differ between countries because of differences in average income, differences in consumer attitudes and differences in brand strength. Differences in brand strength in part reflect the relative fortunes that the brand owner has enjoyed in developing the brand, for example through advertising. Supply conditions may differ between Member States as a result of differences in costs (for example, the cost of labour and the cost of advertising differ very significantly between Member States), differences in market conditions and differences in taxation.

When undertaking cross-border price comparisons, as the Green Paper does, it is furthermore important to note that these typically focus on *retail* prices. Although wholesale prices are an important determinant of retail prices, retail prices are also influenced by other factors (notably retail margins) that lie outside the control of suppliers. For example, the Belgian supermarket study that the Green Paper invokes concluded that only a small portion of observed retail price differences could be ascribed to underlying differences in prices charged by suppliers. Like

suppliers, retailers will respond to local market conditions, as can be expected to occur in competitive markets.

Exchange rate fluctuations are also a possible factor that can contribute to cross-border price differences, in particular in the short run. This is because domestic prices cannot be expected to immediately adjust following an exchange rate shock. It is such a shock that appears to be the primary cause for the UK/Ireland price differentials referred to in the Green Paper.

Nonetheless, since price levels in a market are ultimately determined by the intersection of demand and supply, both of which considerably differing between Member States, efficient wholesale price levels will often vary between countries. As such, any cross-country differences in the wholesale prices charged by producers of consumer goods (or, as the Green Paper puts it, "price discrimination based on the country of establishment of the buyer") will often reflect the efficient functioning of markets. Hence, a simplistic application of the principle that price differentials are undesirable could have adverse effects on economic efficiency, consumer welfare and even cross-border integration.

Economic aspects of price discrimination and arbitrage

Economic theory provides no support for the inherently negative stance that the Green Paper takes towards price discrimination. Price discrimination is a ubiquitous phenomenon occurring in countless markets, including highly competitive ones. The widespread application of price discrimination reflects the efficiency benefits that price discrimination may give rise to. For example, price discrimination may result in efficient fixed cost recovery, or allow additional markets to be served. Importantly, by enabling firms to compete aggressively for new customers without creating spill-over effects to other markets, price discrimination may give rise to an important dynamic benefit in terms of more intense competition overall.

Price discrimination can also give rise to negative effects. For example, this is the case when price discrimination gives rise to "anticompetitive foreclosure": a situation where rivals are marginalised as a result of the conduct of a dominant firm and consumers end up being harmed. But crucially, in such circumstances, it is not price discrimination as such that gives rise to concern but rather the *extent* to which prices are differentiated. Accordingly, the Commission's Article 102 Guidance Paper does not identify price discrimination in general as a distinct abuse but focuses on more specific practices, a principle confirmed by the ECJ in its *Post Danmark* judgment.

The key question to be answered for policy purposes is whether price discrimination is on balance likely to benefit or harm consumers. In the short term, situations can certainly be imagined where price discrimination will harm consumers. For example, consumers who are charged a high price will in the short term clearly be worse off relative to a situation in which prices are uniform. But in the longer term, even these consumers may benefit from the intensification of competition that price discrimination often brings about.

Ultimately, given its ubiquitous nature and clear long-term efficiency benefits, price discrimination must be presumed pro-competitive in most circumstances. Consequently, the Green Paper is wrong in asserting that price discrimination negatively affects consumers. The opposite is much more likely to be the case.

Price discrimination is only possible if customers cannot engage in perfect arbitrage. Arbitrage occurs when customers or intermediaries simultaneously buy and sell a product in order to benefit from price differences. If this is costless, suppliers will no longer be able to charge different prices to different groups of customers.

In a number of cases, arbitrage has benefits, including in terms of contributing to the potential for the Single Market to bring about maximum gains from trade. Whilst arbitrage thus clearly has a role to play, it is however important not to confuse the clear role of arbitrage in pursuing Single Market objectives and the often more questionable role of arbitrage in pursuing economic efficiency. One reason for this is that unlimited arbitrage possibilities ultimately eliminate the scope for price discrimination. Since price discrimination often increases economic welfare, measures that prevent price discrimination are likely to have the opposite effect. It follows that restrictions on arbitrage are efficient and desirable whenever these contribute to efficient price discrimination. Another set of circumstances in which arbitrage may harm economic welfare is where this gives rise to "free-riding" concerns, further discussed below.

Blanket rules aimed at reducing cross-border price differentials are likely to harm consumers

While the Green Paper identifies the various possible unfair trading practices, it does not contain any concrete policy proposals aimed at addressing them. However, in respect to territorial supply constraints, an eventual outcome can certainly be imagined under which suppliers would effectively no longer be able to charge different prices to customers located in different countries.

In the short term, the increased sourcing possibilities for retailers that the Commission appears to have in mind will act to reduce or eliminate cross-border differentials in wholesale prices. But this would provide retailers with a free-riding opportunity. Retailers would continue to take brand strength into account when setting retail prices, charging higher prices in countries where suppliers have succeeded in building particularly strong brands. But if retailers were able to source from a low-price country, retailers would be able to avoid the associated costs.

Any such situation is however unlikely to be sustainable: suppliers are very unlikely to sit idle and watch retailers earning short-term arbitrage profits by free riding on suppliers' past brand-building efforts. A number of adverse long-term consequences would likely result from this that are highly likely to harm consumers.

First, if suppliers are no longer able to offer low prices without affecting margins earned in other countries, their incentives to offer low prices to begin with are reduced. Whenever a supplier wishes to cut prices in a particular national market, the supplier would need to take account of the risk of retailers in other countries also seeking to take advantage of this. In many cases, such price cuts will therefore become less attractive. For example, it will become less attractive to cut prices in a particular country in order to grow market share there. It may also become less attractive to run sales promotions. As such, the proposals that the Commission appears to have in mind risk fundamentally impacting on the dynamics of competition in many markets.

Second, suppliers will find it less attractive to sell identical products in multiple countries. Once retailers are able to source at the price charged in the lowest price country, selling a given product in multiple countries will come at the cost of effectively reducing pricing freedom in any

given country. Consequently, rather than selling identical products in various countries, suppliers could consider (re-)introducing national product varieties, national sub-brands etc. And rather than being active in multiple countries to begin with, some suppliers may ask the question whether they would not be better off divesting brands in current low-price countries, or even withdrawing from such markets altogether. Paradoxically, all of the above options are likely to lead to market fragmentation – the opposite of what the Green Paper appears to envisage.

Third, as in any free-riding scenario, negative effects can also be expected on suppliers' investment incentives. If suppliers are no longer able to reap the rewards of any efforts to increase the value of their brand to consumers, suppliers' incentives to engage in such efforts are likely to weaken. The resulting reduction in investment is, in the long run, highly likely to be detrimental to consumers.

Fourth, a negative impact is likely on entry. When a firm is entering a new market, the optimal price that the firm would wish to charge in that new market often differs from prices that they charge in established markets. This possibility would however be severely restricted, if not eliminated. Consequently, suppliers' incentives to enter new markets may weaken.

Conclusion

The story around territorial sourcing constraints is far more complex than the Green Paper is seeking to portray. Contrary to what the Green Paper suggests, price discrimination cannot be presumed to harm consumers – the opposite is much more likely to be the case. Indeed, given the fact that both demand and supply conditions for consumer products may differ between Member States, efficient price levels are likely to differ across countries too.

Under the European competition rules, there is already significant protection for entities wishing to engage in arbitrage. Whilst arbitrage clearly has a role to play, it would be a mistake to assume that unfettered arbitrage opportunities will always increase economic welfare. By contrast, such opportunities would provide retailers with extensive free-riding opportunities that will ultimately provoke harmful longer-term consequences to the detriment of consumers.

Given the fact that efficient price levels will often differ between countries, it is certainly not valid to characterise suppliers' use of different prices in different countries, as well as any steps taken by suppliers to preserve these differences, as being harmful to economic efficiency, consumer welfare, or even market integration – on the contrary, simplistic measures to prohibit price differentials might well have the opposite effects. Rather, such price differences will most often reflect the efficient functioning of markets for consumer goods in the EU, to the ultimate benefit of consumers.

1. Introduction

This paper has been produced by RBB Economics at the request of the European Brands Association (AIM). Its purpose is to respond to part of the Green Paper on business-to-business unfair trading practices in the retail supply chain, namely the part that deals with territorial supply constraints.

At the outset, it is important to note that under existing competition law, the scope for suppliers to impose territorial supply constraints is already severely restricted. The extensive case law that has been developed over the years, under both Article 101 and Article 102, implies that many types of territorial supply constraints are unlawful.

The Green Paper makes it clear that the Commission's underlying concern with territorial supply constraints is that they, as the Commission suggests, result in cross-country price differentials. Specifically, the Green Paper claims that

> *"If not justified on objective efficiency grounds (such as logistics), such restrictions on cross-border sourcing are likely to lead to price discrimination based on the country of origin. As a result, consumers are negatively affected by higher prices and a narrower product choice and do not benefit from access to better prices and the smooth functioning of the Single Market."*

In this paper, we show that this concern is unjustified. The paper is structured as follows:

- Section 2 takes a closer look at cross-border price differentials and shows that these often reflect the efficient functioning of markets;
- Section 3 considers the economics of price discrimination and arbitrage (of which cross-border sourcing is an example);
- Section 4 explains that the increased sourcing opportunities for retailers that the Green Paper appears to have in mind are likely to harm consumers; and
- Section 5 concludes.

2. Understanding cross-border price differences

As the Green Paper indicates on the basis of a few examples, prices for consumer goods may differ between Member States. The implicit policy message that the Green Paper conveys is that consumers suffer from this and that consumers thus stand to benefit as a result of any measure aimed at reducing or eliminating these price differences.

In reality, however, cross-border price differentials are often the result of the efficient functioning of markets. As we demonstrate in this section, both demand and supply conditions for consumer products differ significantly between Member States. These differences are reflected in the prices for consumer products in the various countries. Retail factors and exchange rate fluctuations may also contribute to differences in consumer prices.

The structure of our discussion is as follows. First, in Section 2.1, we discuss key factors that determine prices of consumer goods. In Section 2.2, we consider the factors impacting on wholesale price differences in more detail. In Section 2.3, we note that cross-border comparisons of prices charged to consumers, such as the comparisons referred to in the Green Paper, will also need to take the retail side into account. In Section 2.4, we discuss the impact of exchange rate fluctuations that may also contribute to cross-border price differences, particularly in the short term. Section 2.5 concludes.

2.1. Factors impacting on prices of consumer goods

When undertaking cross-border price comparisons of consumer goods, it is important to determine what price is being compared. The price comparisons referred to in the Green Paper appear to relate to prices as they are actually charged to consumers: “retail prices”. Separately, it is possible to consider prices as they are charged by suppliers to retailers: “wholesale prices”. Within wholesale prices, it is furthermore possible to distinguish between prices before discounts and prices after discounts (the latter often being referred to as “net net prices”).

In any market where prices are freely determined, prices are influenced by both demand and supply factors. In economic theory, the “demand” for a product is taken to indicate how much customers are willing to buy at a given price. The “supply” of a particular product indicates how much producers are willing to supply at a given price. In order to understand prices for consumer goods, and in particular to understand cross-border price differences for such products, it is therefore necessary to consider both demand and supply factors.

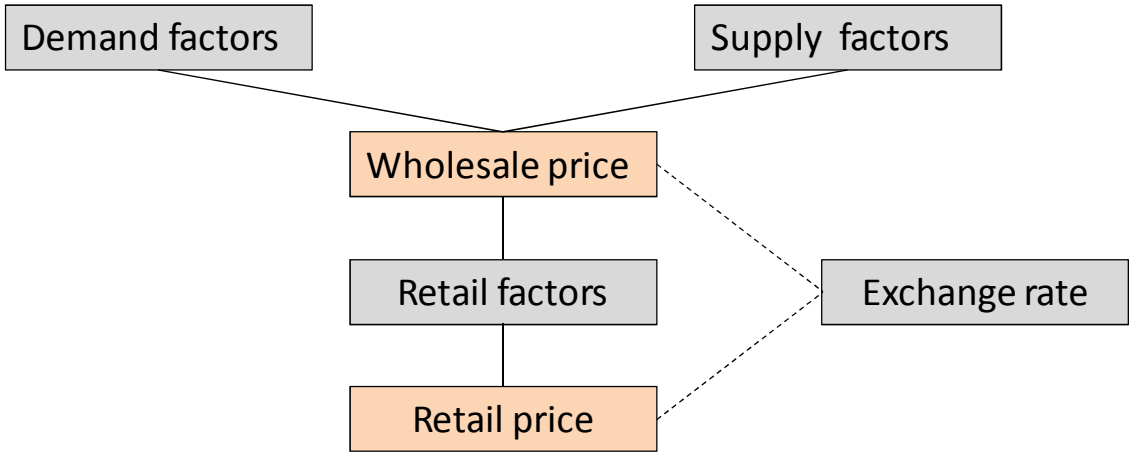
Ultimately, prices for consumer goods are typically set by retailers. Wholesale prices are an important factor influencing retail prices, but retail prices are also influenced by other factors. For example, if the retail market in a particular country suffers from a lack of effective competition or high costs, retailers may add a higher mark-up to the wholesale price than in highly competitive retail markets. Any cross-country comparison of retail prices will need to take retail factors into account as well.

In addition to differences in demand and supply conditions (including tax differences), cross-country price differences can also be caused by exchange rate fluctuations, particularly in the

short term. This is because domestic prices often do not immediately adjust in response to exchange rate fluctuations. Of course, exchange rate fluctuations are not relevant in case only euro area countries are being compared.

The above framework, discussed in more detail in subsequent sections, is summarised in Figure 1 below.

Figure 1: Factors impacting on price differences for consumer goods



2.2. Factors impacting on wholesale price differences

2.2.1. Demand side factors

Economists usually characterise the demand for a particular good in terms of the "elasticity of demand": the extent to which demand varies in response to changes in price.[1] When the demand for a good is "elastic", customers[2] can be said to be price-sensitive; the opposite is the case when the demand is "inelastic". The elasticity of demand is directly related to prices that firms choose to set: firms will generally charge higher prices when facing less elastic demand.

The price elasticity of demand for a particular product, also referred to as "own price elasticity", is influenced by a number of factors. An important one of these is the availability of substitute products: customers will normally be more price sensitive (i.e. demand will be more elastic) if close substitutes to a particular product exist and less price sensitive if this is to a lesser extent the case.[3]

[1] Formally, the price elasticity is defined as the percentage change in the sales quantity of a product in response to a one per cent change in price.

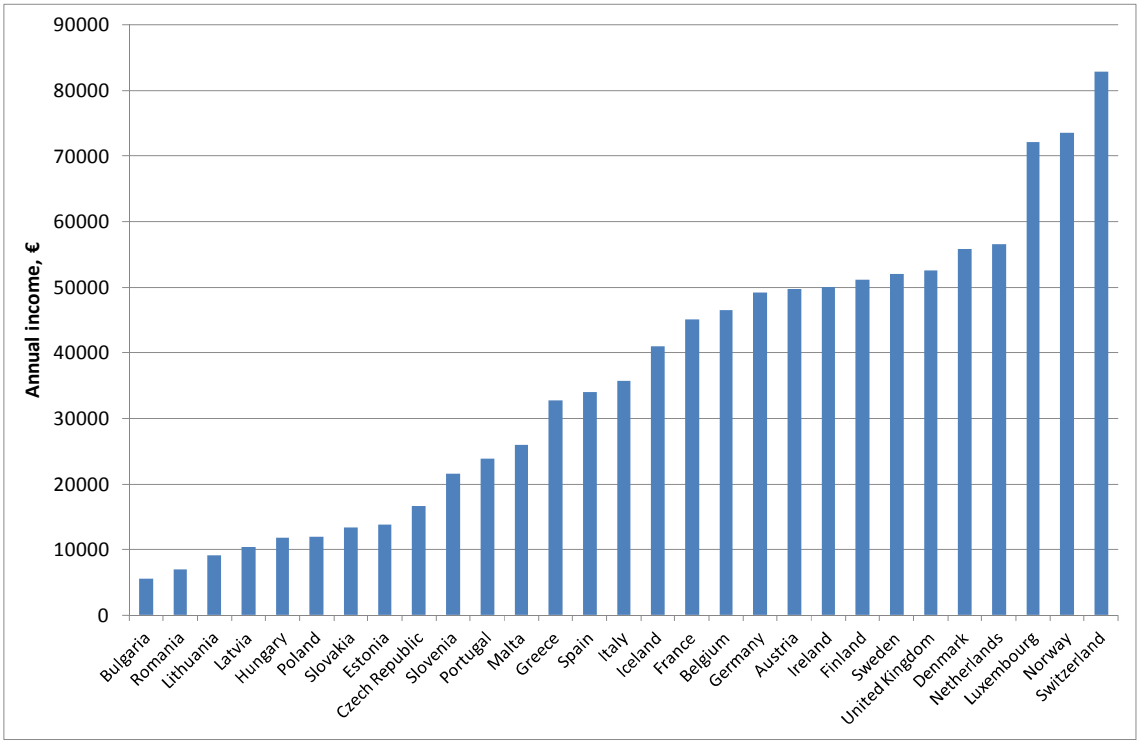
[2] The "customers" that suppliers face at wholesale level are in most cases retailers. However, retailer demand for a particular product is of course heavily influenced by the demand of final consumers for that product. For ease of exposition, we do not make this distinction in the remainder of the text.

[3] The extent to which customers consider two products to be substitutable can be measured using the "cross-price elasticity": the extent to which the demand for product A varies in response to a change in the price of product B.

Another factor impacting on the demand for consumer products is the level of income in a particular country. Although the relationship between income and demand is complex and will vary by product, it is for most goods the case that demand increases when income increases.[4]

Within Europe, average incomes vary very substantially. Figure 2 illustrates this by showing, for the EEA plus Switzerland, average incomes earned in 2010 by a family comprising two earners.[5] As the figure shows, average annual family incomes in that year ranged from just over €5,000 in Bulgaria to over €70,000 in Luxembourg, Norway and Switzerland.

Figure 2: Average incomes across EEA countries + Switzerland, 2010



Source: Eurostat. Liechtenstein and Cyprus are missing.

As predicted by economic theory, prices for consumer goods in richer countries are likely to be higher than in poorer countries.[6] The very significant differences in income levels across European countries thus represent an important possible explanation for any differences in prices for consumer goods charged in different countries.

[4] So-called "inferior goods" represent an exception – here demand falls with increases in income. Inexpensive and unhealthy foods may represent an example of inferior goods. As income rises, customers are likely to switch the pattern of their purchases towards healthier but more expensive products.

[5] More precisely, the incomes shown are for a two-earner married couple, one at 100% and the other at 67% of the average wage, with two children.

[6] This theory is known as the "Balessa-Samuelson effect" or "Balessa-Samuelson hypothesis". For the original contributions, see Balessa, Bela (1964) "The Purchasing-Power Parity Doctrine: A Reappraisal", *Journal of Political Economy*, 72, 584-596; and Samuelson, P.A. (1964) "Theoretical Notes on Trade Problems" , *Review of Economics and Statistics*, Vol. 46, No. 1, pp 145-154.

Apart from differences in average incomes, the demand for consumer goods in individual countries may also be influenced by differences in consumer attitudes. For example, eating habits differ significantly across Member States. As a result, a particular food product may attract very high demand in certain Member States while being a niche product in others. Reflecting these differences, producers of consumer goods may offer country-specific products, or even differentiate the taste of otherwise identical products sold under the same brand.

An important way in which producers of consumer goods can influence the demand for their products is through advertising. Suppliers may use advertising to educate consumers about the characteristics of a particular product, to increase demand for a particular product category, to differentiate their product from rival products (including private labels), to lend their brand a particular image etc. Advertising is an important element in the business model of many consumer goods suppliers. Although some advertising takes place globally (e.g. sponsorship of sports events) or locally (e.g. in-store promotion efforts), most advertising for consumer products tends to take place at national level (e.g. on TV, in periodicals etc.).

Importantly, the value that consumers attach to a particular product is often influenced by the cumulative advertising effort in which the supplier has engaged over time. The reason for this is that the effects of advertising take time to materialise: consumers are not only influenced by ads that they have recently seen but also by their exposure to advertising in the past. As a result, brand owners may be able to charge higher prices in countries where they have historically heavily invested in advertising, resulting in consumers attaching a greater value to their product, than in countries where past advertising efforts have been more limited.

The relationship between advertising and success is however not guaranteed. Advertising is a risky business that does not produce immediate pay-offs. Moreover, advertising on its own is unlikely to be sufficient to build a strong brand: factors such as product quality, innovation, availability, competitor responses and so on all play an important role as well. There have been many examples of firms that have unsuccessfully invested in advertising and failed to recoup the associated costs. Such failures are an inherent feature of competitive markets. Yet, the prospect of substantial potential rewards, possibly of many times the original investment, drives firms to continue to invest in advertising.

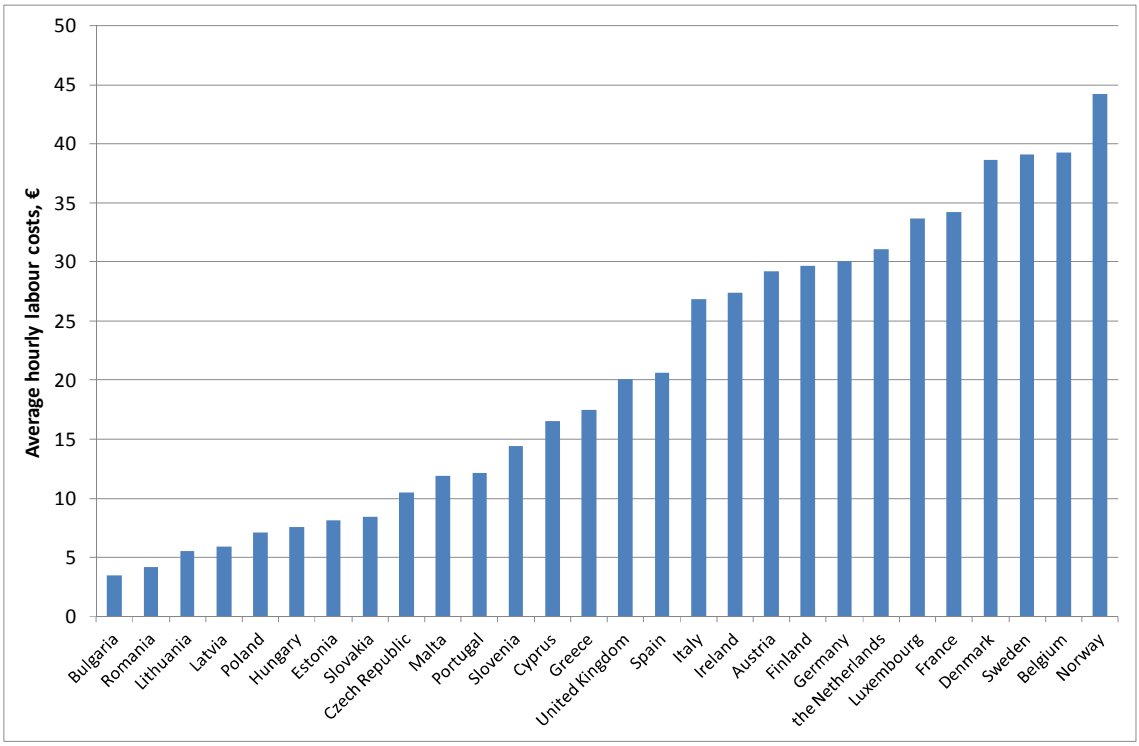
2.2.2. Supply-side factors

In addition to demand factors, prices of consumer goods are influenced by supply-side factors. An important supply-side factor is cost. Economic theory suggests that price decisions taken by a profit-maximising firm are in the short run most likely to be driven by variable (marginal) costs. In practice, however, firms often take price decisions based on total costs, variable as well as fixed. In addition, fixed costs may impact on prices in indirect ways. For example, high fixed costs may act as an entry barrier. This may increase the level of concentration of a particular industry, allowing the firms active in the industry to earn sufficiently high margins to recoup the high fixed costs over the long term. As a result, both differences in variable costs and differences in fixed costs need to be considered when seeking to explain cross-country price differences for consumer products.

The costs of consumer goods usually include factors such as raw materials costs, production (conversion) costs, distribution costs, advertising & promotion costs, research & development costs, overhead costs etc. Costs are influenced by many factors: the nature and quality of the supplier's products, the width of the assortment carried, the way production and distribution are organised, the importance of advertising and R&D, etc. Although some cost components may not differ according to the country in which the product is sold (e.g. international R&D investment), many cost categories will display cross-country variation.

For example, consumer goods producers will normally incur at least some labour costs in the countries in which they sell their products. As shown in Figure 3 below, labour costs in European countries differ very significantly. This is partly in line with the differences in income levels discussed above, but also the result of differences in taxation and social security contributions. For example, Belgium has much higher labour costs per hour than would be expected on the basis of Belgium's position in Figure 2.

Figure 3: Labour cost per hour across EEA countries, enterprises with 10 or more employees, 2011



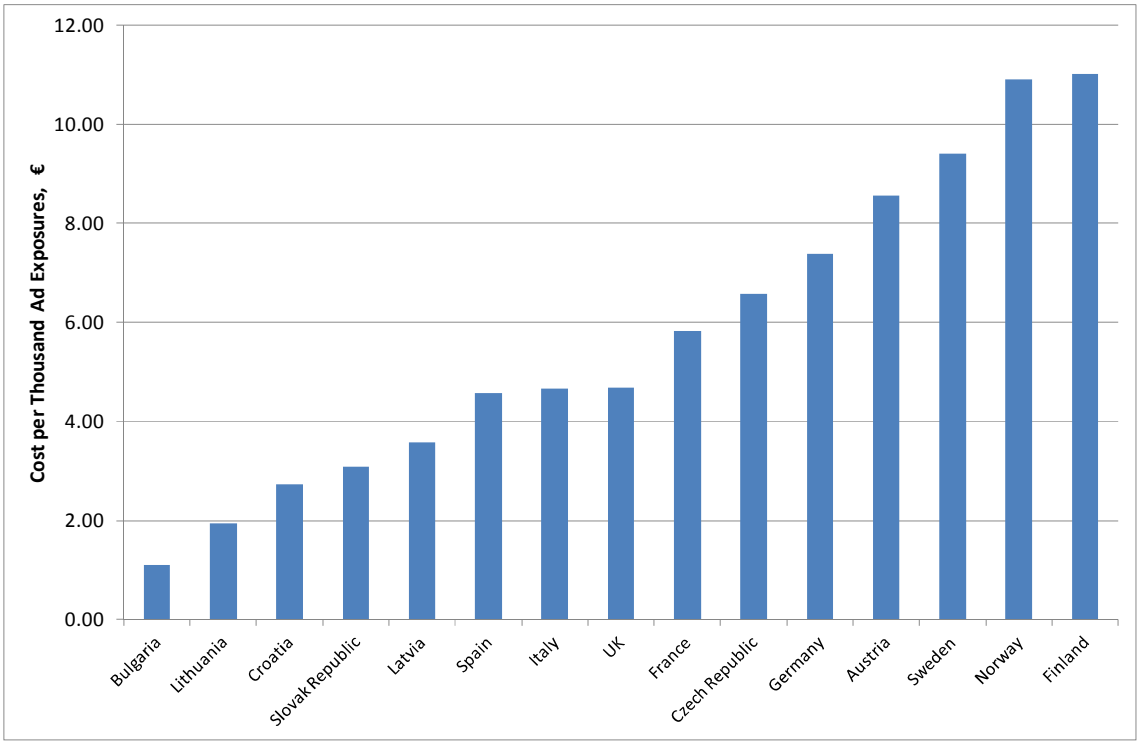
Source: Eurostat. Data for Greece and Romania are for 2010. Liechtenstein and Cyprus are missing.

A further important factor in the costs of many consumer goods producers, particularly those that heavily rely on brands, is advertising. The cost of advertising differs very significantly between European countries. One reason for this is the fact that population sizes differ: TV advertising in France will be more expensive than TV advertising in Luxembourg simply because more viewers will be reached in France. But even after adjusting for this, which can be

done by expressing the cost of advertising in terms of the cost per thousand ad impressions (CPT[7]), costs differ significantly.

Figure 4 contains data on the average 2011 cost per thousand TV ad exposures to adults in European countries for which data are available. As the figure shows, this cost varied between around €1 in a country such as Bulgaria to over €10 in Norway and Finland.

Figure 4: Average cost per thousand ad exposures, television, adults, 2011



Source: WARC

Another supply-side factor that may influence the price that a consumer goods supplier will charge in different countries is its market position. For example, suppliers may wish to charge a lower price, or run more sales promotions, in countries where they have recently entered than in countries where they have an established position. More generally, prices may be impacted by differences in the competitive environment between countries. Although the relationship between the nature of competition and prices is complex, suppliers are in general likely to charge lower prices when they face close substitutes (as perceived by the consumer) than in circumstances where this is to a lesser extent the case.

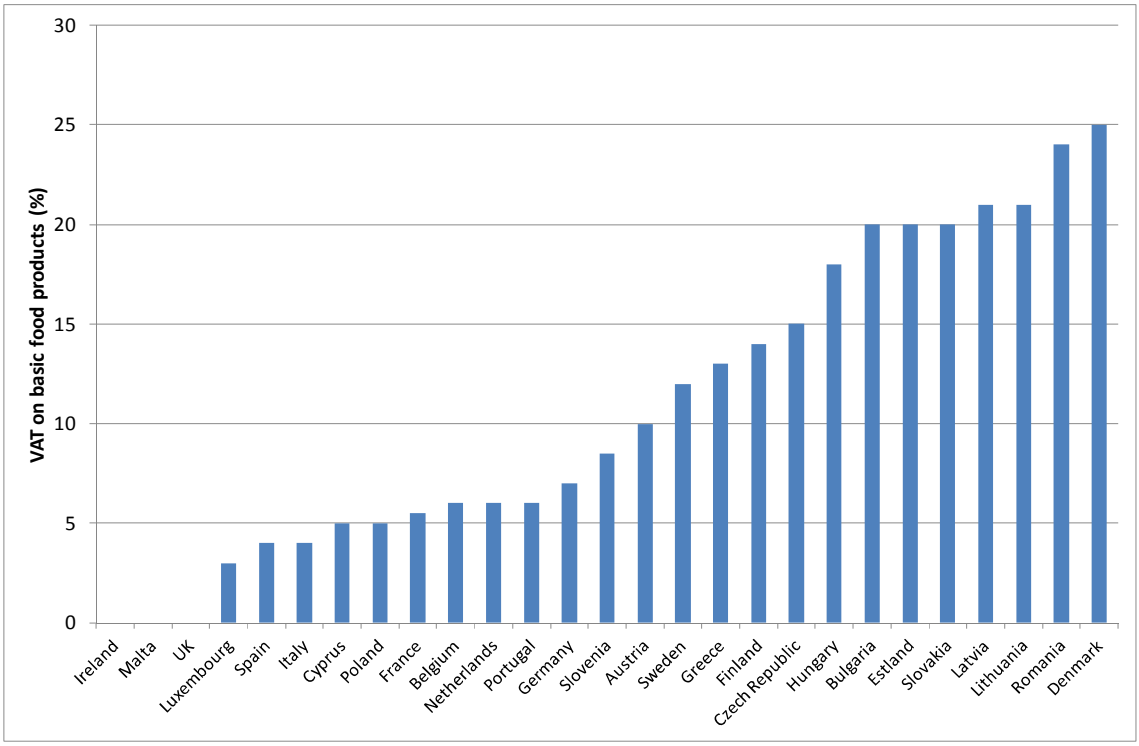
Finally, prices may differ between countries because of differences in taxation. An important tax levied on consumer products is value added tax (VAT). The structure of VAT differs significantly between Member States, both in terms of the headline rates (e.g. the standard rate differs from 15% in Luxembourg to 27% in Hungary) and in terms of the products that qualify for reduced

[7] Also called cost per mille (CPM).

rates. For example, although pharmaceutical products qualify for reduced VAT rates in many Member States, they are subject to the standard VAT rate in a country such as Germany.[8]

Figure 5 illustrates the differences in VAT between Member States, using the case of basic food products. As the figure shows, VAT rates on such products differ from 0% in the UK, Ireland and Malta to 25% in Denmark.

Figure 5: VAT rates on basic food products



Source: European Commission, VAT Rates Applied in the Member States of the European Union, Situation at 14th January 2013.

Some industries are also subject to more specific taxes, the level and structure of which also differs between Member States. For example, a significant degree of country-level variation exists in excise duty rates on alcoholic beverages.[9]

Importantly, although differences in tax rates are likely to impact on consumer prices in the first instance, they may also give rise to differences in wholesale prices (before tax). This is because, as economic theory suggests, taxes will not necessarily be passed on in full. In countries where tax levels are high, suppliers may thus have an incentive to charge lower wholesale prices than in countries with lower tax rates.

[8] See European Commission, VAT Rates Applied in the Member States of the European Union, Situation at 14th January 2013, p. 4, http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf.

[9] See European Commission "Excise duty tables – Part I Alcoholic Beverages", http://ec.europa.eu/taxation_customs/resources/documents/taxation/excise_duties/alcoholic_beverages/rates/excise_duties-part_i_alcohol_en.pdf

2.3. Factors impacting on retail price differences

In practice, cross-border price comparisons for consumer goods tend to focus on *retail* prices, since only these are publicly observable. Wholesale prices are clearly an important determinant of retail prices. However, retail prices are also influenced by other factors that lie outside the control of suppliers.

An important factor impacting on retail prices for consumer goods is the margin that the retailer will set. A complex set of demand and supply-related factors impacts on the margins that retailers choose to set for different products. On the demand side, retailer margins will be influenced by the price sensitiveness of consumers and the extent to which they are prepared to shop around. Supply-side factors may include costs (e.g. real estate costs or labour costs[10]), the market position of the retailer (if the retail market in a particular country suffers from a lack of effective competition, retailers may add a higher mark-up to the wholesale price than in highly competitive retail markets), the strategy of the retailer (does the retailer heavily rely on promotions or does it apply a strategy of every-day-low-pricing?), the nature of the product (retailers may apply low margins on products that heavily influence their price perception in the eyes of consumers), and so on. In addition, retailer pricing for branded products may be influenced by their private label offering.

All of these factors may differ between countries. As such, retail price differences may occur between countries that are not, or only in part, driven by underlying wholesale price differences.

The study "*Niveau de prix dans les supermarchés*", undertaken by the Belgian competition authority in early 2012 and referred to in the Green Paper, is an example of a study comparing *retail* prices between different countries.[11] The study found that supermarket prices in Belgium are between 7 and 11% higher than those in the countries surrounding Belgium. However, the study found a significant part of this difference to be due to retail factors: differences in wages for supermarket staff, differences in real estate costs for supermarkets, differences in employer social security contributions etc. Out of the total retail price difference of 10% between Belgium and the Netherlands, differences in purchase costs (i.e. wholesale costs) were estimated to account for less than 2% (percentage-point).[12] The study also found that price differences within Belgium are more significant than price differences between Belgium and the Netherlands.

A further indication of the fact that retail price differences do not necessarily reflect underlying wholesale cost differences is given by retailers' price policy for their private label products. Retailers that are active in multiple countries may sell identical private label SKUs in different countries. Retailers frequently source private label products on an international basis, implying that wholesale costs for these products may be similar. However, retail prices may differ. For

[10] In the short term, many costs that retailers face do not vary with output. However, in the long-term, the level of fixed costs that retailers face in a particular country are likely to impact on prices, possibly indirectly. For example, if fixed costs in a particular market are very high, the number of retailers that the market in question can sustain may be low. The resulting high degree of market concentration is likely to impact on prices.

[11] The study can be accessed via http://economie.fgov.be/fr/modules/publications/analyses_etudes/etude_niveau_de_prix_dans_les_supermarches.jsp.

[12] Out of the total 10% price difference between Belgium and the Netherlands, the study was able to explain about 6% (percentage points). The remainder of the price difference was unexplained. The study did not seek to explain the observed price difference between Belgium and France (7%) or that between Belgium and Germany (11%).

example, in June 2008, the average price difference between Tesco's own label products sold in Northern Ireland and the Irish Republic was found to be 17%.[13]

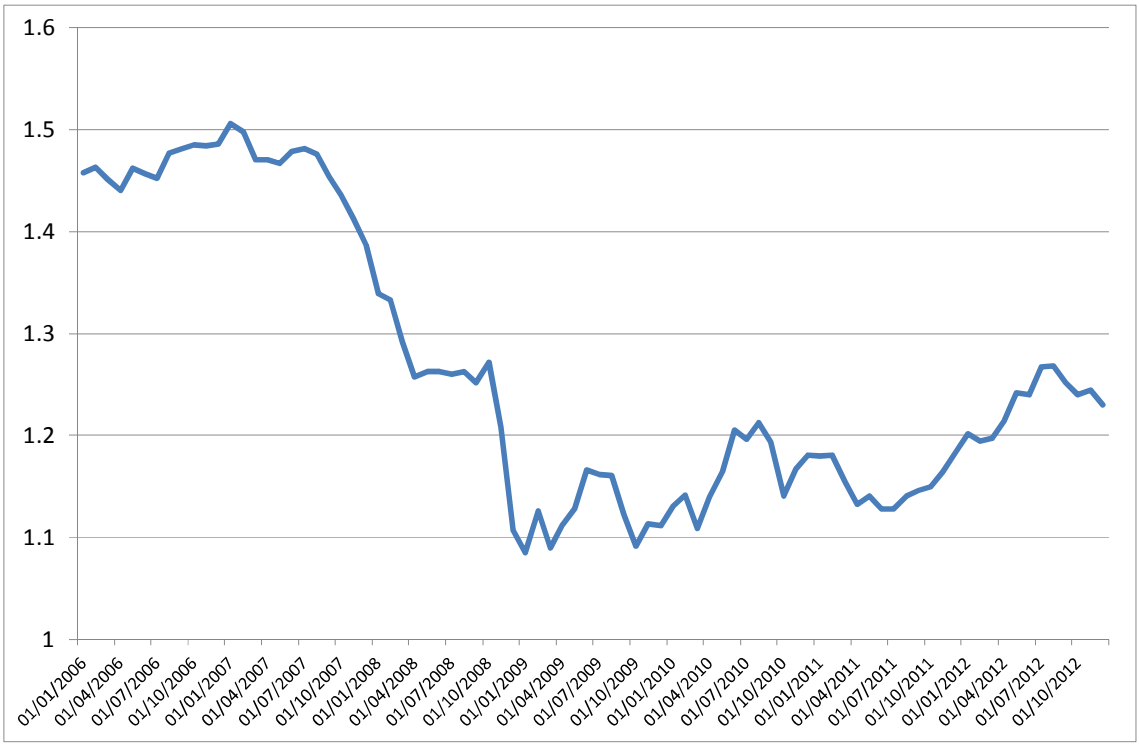
The above is not to say that there are no cross-country differences in wholesale prices – such differences clearly do exist. However, any practical cross-border price comparison based on retail prices will need to carefully consider what part of observed retail price differences is due to underlying wholesale price differences and what part is due to other factors.

2.4. The impact of exchange rate fluctuations

Another important factor that may contribute to price differences between countries is given by exchange rate fluctuations. These are of course not relevant when comparing prices between euro area countries, but can have a significant impact on price differences between countries of which at least one is not part of the euro area, particularly in the short term.

One of the sharpest exchange rate fluctuations within the European Union in the last five years has been the fall in the value of the British Pound between mid-2007 and late 2008: the value of GBP 1 fell from around EUR 1.48 to around EUR 1.10 during this period, a fall of some 25% (see Figure 6).

Figure 6: GBP/EUR exchange rate, 2006-2012



Source: www.oanda.com

[13] See http://corporate.nca.ie/eng/Media_Zone/news-archive/news-2008-2/Branded_goods_more_expensive_in_South.html.

Such exchange rate fluctuations may cause price differences between countries because prices that are charged domestically may not immediately respond to these fluctuations. In the short term, domestic prices may be constrained by existing supply-agreements, existing customer expectations etc. A euro area supplier selling into the UK may therefore be unable to increase its GBP selling prices in the short term following a fall in the value of the pound. And even when prices can in principle be adjusted, the supplier may wish to wait and see whether the fall in the exchange rate proves permanent; premature price increases as a result of exchange rate changes that do not prove permanent can risk a supplier's market position.[14]

In the period immediately following a devaluation of a country's currency, prices in that country are thus likely to look cheap in relation to other countries. Indeed, this was very much the case in the UK at the time, as most starkly shown in the price differences between Northern Ireland and the Irish Republic referred to in the Green Paper. However, in the medium term, prices are likely to adjust. When a country's currency depreciates, imports into that country become more expensive. Ultimately, this will cause domestic prices in the country in question to increase. Prices may also go up as a result of an increase in exports from the country, which become more attractive when the country's currency devaluates, possibly resulting in a reduction of supplies into the domestic market. Although such adjustment processes can be long lived, cross-border price differentials resulting from currency fluctuations are unlikely to be permanent.

2.5. Conclusion

The above discussion has shown that prices of consumer goods are influenced by many factors. Not all of these are influenced by suppliers: cross-country differences in retail prices can be caused by differences in retail market conditions as much as by underlying wholesale differences. Sometimes, price differences are caused by exchange rate fluctuations.

Ultimately, price levels in a market are determined by the intersection of demand and supply. As we have seen, demand and supply conditions may considerably differ between Member States.[15] In such cases, efficient price levels will vary between countries.

As such, any cross-country differences in the wholesale prices charged by producers of consumer goods will thus most often reflect the efficient functioning of markets. Indeed, as we will see in the next section, economic theory points to the same conclusion.

[14] Indeed, as the chart shows, the fall in the GBP exchange rate has been partially reversed in the years since 2009.

[15] Indeed, "relevant markets" for competition policy purposes are consistently defined nationally. Recent phase II merger cases in which this principle has been confirmed include case M.5658 *Unilever/Sara Lee Body Care* and case M.5046 *Friesland/Campina.*

3. Price discrimination and arbitrage

As noted earlier, the Green Paper takes the view that price discrimination between countries is inherently undesirable and that, therefore, cross-border sourcing opportunities should be maximised. Specifically, the Green Paper states that.

> *"… such restrictions on cross-border sourcing are likely to lead to price discrimination based on the country of establishment of the buyer. As a result, consumers are negatively affected by higher prices and a narrower product choice and do not benefit from access to better prices and the smooth functioning of the Single Market."*

However, as we explain in this section, there is no basis for the inherently negative attitude of the Green Paper towards price discrimination. Likewise, the Green Paper is wrong in implying that increased cross-border sourcing opportunities, or, in economic terms, increased scope for arbitrage, necessarily increase economic welfare.

In Section 3.1, we demonstrate, on the basis of examples, that price discrimination exists in many types of markets, including highly competitive ones. In Section 3.2, we discuss the pros and cons of price discrimination and show that price discrimination often increases economic welfare. Section 3.3 comments on the role of arbitrage and explains that although arbitrage clearly has a role to play, arbitrage may negatively impact on economic efficiency in certain cases. Section 3.4 concludes.

3.1. Price discrimination is a ubiquitous phenomenon

Countless transactions in numerous markets are subject to some form of price discrimination. By way of illustration, we provide a number of examples in the list below.

- Airlines, and many other transport companies, extensively price discriminate between their passengers. For example, business passengers are charged a higher price than leisure passengers, even when travelling in the same accommodation. Airlines achieve this by offering different ticket types, with the cheapest fares available to passengers that book far in advance and commit to a certain flight. These conditions are rarely acceptable to business travellers, who consequently need to purchase more expensive tickets that do offer flexibility.

- Supermarkets may price discriminate between their customers in various ways. They may do so using data available from supermarket loyalty cards or using the address of customers. For example, supermarkets may send personalised discount coupons to customers living close to competing outlets, or to customers whose loyalty data suggest that they have recently switched purchases to rival stores. Alternatively, supermarkets could target discounts based on customers' purchase history. For example, a customer typically spending around €40 on a shopping trip could be offered a discount conditional on spending at least €50.

- Producers of consumer goods may charge different prices to different customers by periodically running sales promotions: more price-sensitive customers are more likely to purchase the product, or to buy large quantities of it for consumption in the future, whenever the product is being promoted.

- Public utilities price discriminate between their customers by charging a "two-part tariff", consisting of a fixed component as well as a per-unit charge. The impact of such schemes is that the average price per unit falls as consumption increases. Mobile telecommunications use highly refined schemes by offering customers a choice between numerous tariffs featuring different combinations of fixed as well as usage-based charges.

- Banks may price discriminate between their customers by, for example, offering more favourable savings interest rates to high-value customers.

- Producers of electronics equipment may price discriminate between different customers by initially charging a high price for the product, aimed at so-called "early adopters", and subsequently lowering this price in order to target other potential purchasers.

- Book publishers can achieve a similar outcome by first publishing a hardback edition, at a high price, and only purchasing a cheaper paperback option at a later stage.

- Software producers often charge very different prices to different customers, particularly when prices are subject to individual negotiation.

- More generally, price discrimination invariably occurs whenever prices are individually negotiated. This occurs in many B2B transactions, e.g. those between firms at different stages of the supply chain, but also when e.g. cars or kitchens are sold to consumers.

- Suppliers can price discriminate between wholesalers or distributors by offering conditional rebate schemes. For example, distributors could be offered a lower price on purchases exceeding a certain threshold.

The prevalence of price discrimination in many markets, including highly competitive markets,[16] suggests that price discrimination is in most cases pro-competitive. We further discuss this below.

3.2. The pros and cons of price discrimination

Price discrimination is a phenomenon that has received extensive attention in the economic literature. Likewise, policy makers have extensively focused on price discrimination in the past, resulting in legislation originally being enacted in both the EU and the US order to limit or

[16] We note in this context that an ability to price discrimination requires an ability to charge prices above marginal costs for at least some customers. Since some economists define market power as an ability to charge prices in excess of marginal costs, an ability to price discrimination can be said to require a degree of market power. However, virtually all firms in the economy, including those in highly competitive markets, enjoy a degree of market power defined this way: most firms are able to price above marginal costs (otherwise they would never be able to cover fixed costs). The view that price discrimination requires a degree of market power is thus entirely consistent with price discrimination occurring in highly competitive markets.

prevent price discrimination.[17] However, the attitude towards price discrimination has changed significantly in the years since these legal instruments were first put in place: the practical enforcement of them has largely ceased. Indeed, as we explain below, price discrimination is in most cases welfare enhancing and only warrants intervention in very specific circumstances, in particular when price discrimination gives rise to anticompetitive foreclosure.

We first identify, in Section 3.2.1, a number of key efficiency benefits that price discrimination gives rise to. In Section 3.2.2, we comment on the main circumstances in which price discrimination may give rise to anticompetitive effects. Section 3.2.3 considers the overall effect of price discrimination on consumers.

3.2.1. Efficiency benefits of price discrimination

Price discrimination implies that some customers pay more than others for one and the same product. Clearly, this is by itself a potentially contentious result: some customers may perceive that they are not treated "fairly" in relation to their peers who obtain a better deal. Indeed, the Green Paper appears influenced by such perceptions.

However, this type of reasoning overlooks the fact that consumers are not homogeneous. Economists have long recognised that consumers are different from each other. Such differences manifest themselves in differences in the "willingness to pay" that consumers have for a particular product. Some consumers value the product highly and, as a result, have a high willingness to pay for it. Other customers attach a lower valuation to the good and will therefore be more sensitive to price.

Various factors can contribute to differences in the willingness to pay that consumers will have for a particular product: differences in income, preferences, requirements, past experience etc. will all play a role. As a result of these, customers also differ in the extent to which they are prepared to consider competing products. The demand that most firms face consists of a combination of "marginal" and "infra-marginal" customers, with the former category being most prepared to switch to competing products (or refrain from buying altogether).

It is these differences that lie at the heart of many of the ways in which price discrimination can generate efficiency benefits. Below, we discuss the following four possibilities:[18]

- price discrimination may facilitate efficient recovery of fixed costs;
- price discrimination may result in additional markets or customers being served;
- price discrimination may increase the intensity of competition; and

[17] In particular the 1936 Robinson-Patman Act in the U.S., as well as Article 102(c) in the TFEU.

[18] These are not intended to be complete. For example, the economic literature also ascribes efficiency benefits to price discrimination because the ability to price discriminate presents monopolists with a "commitment problem". The basic idea here is that because price discriminating firms selling a good at a certain price to customer A (e.g. high value customers buying in period 1) cannot credibly commit to offer the same price to customer B (e.g. low value customers buying in period 2), customer B may end up being offered a lower price than customer A. But if customer A foresees that customer B will be offered a lower price, customer A may seek to also qualify for the lower price (e.g. by delaying the purchase to period 2). This threat will erode the monopolist's market power. A prohibition of price discrimination addresses the commitment problem and may thus restore the monopolist's market power. See e.g. 10 and 11 of Armstrong, M (2006) "Price discrimination". *Handbook of Antitrust Economics*, ed. by P. Buccirossi, MIT Press, 2008.

- price discrimination may be used to align the incentives of suppliers and distributors.

Price discrimination may facilitate efficient recovery of fixed costs

A basic micro-economic result is that economic welfare is maximised when prices are set equal to marginal costs: the costs of serving one additional customer. In that case, each customer pays no more than the additional costs that he or she imposes on the supplier. Marginal cost pricing maximises output: customers whose willingness to pay only just exceeds the marginal costs that they impose can also be served.

In practice, however, marginal cost pricing is rarely possible because this will not enable firms to recoup fixed costs (i.e. costs that do not vary with output). Virtually all firms in the economy need to set prices above marginal costs if they are to recover their fixed costs and be profitable in the long run. Unfortunately, however, with prices set some way above marginal costs, customers whose willingness to pay only just exceeds marginal costs will no longer purchase the product, even though they had been willing to compensate the suppliers for the additional costs that they would impose.

The basic idea behind many forms of price discrimination that can be observed in practice is to recover fixed costs in the most efficient way possible. This can be achieved by charging a relatively high price to customers who are willing to pay such a price and by charging a relatively low price to more price-sensitive customers. As it is the price-sensitive consumers who in particular would have cut back their purchases following a price increase, offering them a relatively low price and instead recovering most of the fixed costs from price-insensitive customers is likely to maximise total output.[19]

Price discrimination may result in additional markets or customers being served

The efficiency benefits of price discrimination are particularly pronounced when price discrimination allows a particular group of customers to be served that would not be served under uniform pricing.

Consider for example a firm selling into two countries: a high-income country and a low-income country. If the firm was required to sell at the same price into both countries, it is possible that it would make no or very few sales into the low-price country. But if the firm was allowed to charge different prices in the two countries, it could charge a lower price in the low-income country and thus realise significant sales in both countries. As a result of the increase in output in the low-price country, overall consumer welfare is likely to increase.

Interestingly, price discrimination in this context will not necessarily come at the expense of consumers in the high-price country. We illustrate this with a numerical example. Suppose that the profit-maximising prices in country A and country B are €2 and €10 respectively and that at these prices, 50 customers are attracted in each country. As shown in Table 1 below, the firm will earn total revenue of €600 under this scenario.[20]

[19] Economists refer to such a pricing scheme as "Ramsey pricing". Under Ramsey pricing, prices should be inversely proportional to the elasticity of demand.

[20] For ease of exposition, we abstract from costs in this example.

Table 1: Numerical example

	Country A	Country B	Total
Number of customers	50	50	
Price under price discrimination	2	10	
Revenue under price discrimination	100	500	600

Now suppose that the supplier was required not to price discriminate, i.e. to set a uniform price, and that the highest price that customers in country A will bear is €2.50. Consequently, a uniform price under which customers in both countries would continue to be served would have to be no higher than €2.50. But is this the price that the supplier will choose to set? This seems unlikely as this would involve a very significant departure from the profit-maximising price in country B of €10. Rather than setting a uniform price of €2.50, it seems more likely that a uniform price of €10 would be chosen. Under this price:

- the supplier would likely maximise total profit;
- customers in country A would no longer be served; while
- customers in country B would pay the same price as under price discrimination.

As such, it is not possible to conclude in this example that price discrimination harms customers in the high-price country: they will pay the same price of €10 regardless of whether price discrimination is in place. It is clear though that a *prohibition* of price discrimination will harm customers in country A, since they would no longer be served in that case.

Price discrimination may increase the intensity of competition

Much of the original economic literature on price discrimination has considered the effects of price discrimination when practised by a monopolist. More recent strands of the literature have considered the effects of price discrimination in more realistic settings characterised by competing firms. An important conclusion arising from this work is that price discrimination can in many cases result in more intense competition between firms, thus benefiting consumers.

The intuition behind this result is simple. As we have seen above, consumers differ from each other in numerous respects. In particular, some customers, so-called “marginal” customers, are more likely to consider competing offers than other, “inframarginal” customers. In many cases, a firm seeking to win market share at the expense of a rival can only realistically target the rival’s marginal customers: it is only in respect to these customers that it stands a sufficiently high chance of winning. Likewise, the firm stands most exposed to losing its own marginal customers to rivals.

When contemplating whether or not to compete for new customers, for example by lowering prices, firms will compare the costs of doing so with the resulting benefits. A price cut may generate new customers, but will also lead to lower margins earned from existing customers. Only when the additional margin from new customers exceeds the margins that will be lost on existing customers will a price reduction be worthwhile.

When firms are able to price discriminate, they are likely to have a stronger incentive to engage in price competition with rivals than in a situation when prices are uniform. The reason for this is that price discrimination enables price cuts to be targeted at marginal customers only. By minimising the impact of price reductions on margins earned from inframarginal customers, price reductions become less costly and therefore more attractive.

For example, firms may wish to compete aggressively on price in markets where they wish to grow market share. Price discrimination enables them to do so without creating spill-over effects to other markets. Absent price discrimination, price cuts are often less attractive. As one economic paper puts it:

> *"denying a firm the right to meet the price of a competitor on a discriminatory basis provides the latter with some protection against price attacks. The effect is then to weaken competition, contrary to the belief of the proponents of naive application of legislation prohibiting price discrimination like the Robinson-Patman Act."* [21]

Importantly, different firms may consider different markets to be marginal. If one firm decides to compete aggressively in a particular market, other firms may be forced to respond. But if these other firms in turn compete aggressively in other markets, prices in these markets may fall as well. Under plausible conditions, this leads to a situation where price discrimination results in all firms being worse off, to the benefit of consumers.[22]

Of course, in certain circumstances, the selective price cuts that price discrimination implies may end up being anticompetitive. We return to this risk below.

Price discrimination may be used to align the incentives of suppliers and distributors

A further pro-competitive way in which price discrimination may be used is to provide downstream firms with appropriate incentives. Any non-vertically integrated supplier depends on the efforts of downstream distributors to get his products distributed and sold. However, the incentives of suppliers and distributors are not necessarily aligned. This is because distributors will only take account of the impact of their efforts on their own sales and will disregard the effect of these on the supplier's profitability. Price discrimination can be used to better align the two sets of incentives.

For example, price discrimination can be used to incentivise promotional activities on the part of distributors, for example by offering a rebate conditional on engaging in such activities. Price

[21] See Thisse, J.-F., and X. Vives (1988): "On the Strategic Choice of Spatial Price Policy," *American Economic Review*, 78(1), pp. 122-137.

[22] For a more detailed discussion, see Corts, K S (1998) "Third degree price discrimination in oligopoly – all out competition and strategic commitment". *The RAND Journal of Economics*, Vol 29, No 2 (Summer), pp. 306-323.

discrimination can also be used to stimulate sales more directly, for example by offering discounts conditional on meeting a certain sales target.

Again, the ability to use price discrimination to stimulate sales also implies a risk of anticompetitive effects. We discuss the circumstances in which these may occur below.

3.2.2. Anticompetitive effects of price discrimination

When discussing the possible anticompetitive effects of price discrimination, economists usually distinguish between so-called "primary line injury" and "secondary line injury". Primary line injury occurs at the seller level: a firm selectively reduces prices in a particular market with the aim of excluding rivals from that market. Secondary line injury occurs at the buyer level, for example when certain firms are charged higher prices than others with the effect of distorting downstream competition.

Price discrimination in primary-line injury settings can have negative effects when this results in "anticompetitive foreclosure". This term, used by the Commission in the Article 102 Guidance Paper, refers to a situation where rivals are marginalised as a result of the conduct of a dominant firm, ultimately leading to higher prices to consumers.

In certain circumstances, price discrimination can have such effects. For example, as the Guidance Paper indicates, loyalty rebates can give rise to anticompetitive foreclosure if equally efficient rivals can only compete for part of the demand and if loyalty rebates prevent them from doing so in a profitable manner. However, the Guidance Paper also makes it clear that such anticompetitive effects do not occur in all circumstances and that these have to be assessed on a case-by-case basis.

Indeed, in such circumstances, it is not price discrimination as such that gives rise to concern but rather the *extent* to which prices are differentiated. The scope for a loyalty rebate scheme to give rise to competition concerns will crucially depend on the exact parameters of the scheme.

In view of the above, the Article 102 Guidance Paper does not deal with price discrimination as a possible abuse: price discrimination practised by a dominant firm in primary-line injury settings can only give rise to anticompetitive foreclosure in specific circumstances. But whenever anticompetitive foreclosure does occur, intervention is warranted.

This principle has also been accepted by the ECJ in the *Post Danmark* judgment, in which the following point was made:[23]

> *"[T]he fact that the practice of a dominant undertaking may, like the pricing policy in issue in the main proceedings, be described as 'price discrimination', that is to say, charging different customers or different classes of customers different prices for goods or services whose costs are the same or, conversely, charging a single price to customers for whom supply costs differ, cannot of itself suggest that there exists an exclusionary abuse."*

[23] Case 209/10 Post Danmark A/S v Konkurrencerådet, judgment of 27 March 2012, paragraph 30.

By contrast, the scope for price discrimination to give rise to concerns in secondary-line injury settings is, in most cases, much less clear. Suppliers' interests are generally best served by a competitive distribution market. A lack of competition among distributors will cause distributors to apply a high mark-up on the wholesale price. The resulting higher retail prices will depress sales and ultimately hurt the supplier. As such, it is not clear why the supplier would want to take actions that would have the effect of distorting competition among distributors (unless the supplier is vertically integrated[24]).

Of course, it may be the case that larger buyers are able to strike better deals than smaller buyers. It is this type of concern that originally gave rise to the 1936 Robinson-Patman Act in the US.[25] However, although such differences may harm smaller buyers, they are in general unlikely to harm consumers. By contrast, as long as the large buyers reflect their input cost savings in their selling prices, consumers stand to benefit from them.

3.2.3. Overall impact on consumers

Ultimately, the key question to be answered for policy purposes is whether price discrimination is on balance likely to benefit or harm consumers. Above, we have seen that whenever price discrimination practised by a dominant firm gives rise to anticompetitive foreclosure, consumers' interests will be harmed and intervention is warranted. But what about all remaining cases?

Clearly, *some* consumers' interests will be harmed if firms charge different prices to different customer groups. In the short term, customers who are charged a high price will be worse off relative to a situation in which prices are uniform. In addition, customers facing a high price who, at the margin, decide not to buy the product ("just-dissuaded customers") may value the product more highly than marginal customers facing a low price who do decide to purchase the product ("just-persuaded customers"). This may give rise to a so-called "allocative inefficiency" – welfare would increase if the product was reallocated from the latter group of customers to the former. However, such inefficiencies occur everywhere in the economy and do not in themselves justify taking a hostile chance towards price discrimination. Crucially, any practical evaluation of the long-term impact of price discrimination on consumers must take account of dynamic impacts on e.g. investment and entry that price discrimination may bring about.

The economic literature contains many studies of the welfare effects of price discrimination. These studies are based on highly stylised settings, e.g. markets in which only one or two firms are present, and frequently ignore dynamic effects. Many of these studies conclude that price discrimination increases total welfare. However, the results of such studies may be sensitive to the welfare standard adopted: total welfare (i.e. across producers and consumers combined) may increase whereas consumer welfare may fall. This applies in particular when price discrimination is practised by a monopolist, as one strand of the economic literature considers.[26]

[24] A situation where the supplier applies different prices to its own downstream subsidiary than to independent downstream firms may give rise to "margin squeeze" concerns. We do not further discuss these here.

[25] See e.g. O'Brien, D P and Shaffer, G (1994) "The Welfare Effects of Forbidding Discriminatory Discounts: A Secondary Line Analysis of Robinson-Patman", *Journal of Law, Economics and Organization*, vol. 10, issue 2, p. 296.

[26] See e.g. Section 3 of Armstrong, M (2006) "Price discrimination". Published in *Handbook of Antitrust Economics*, ed. By P. Buccirossi, MIT Press, 2008.

The ubiquitous nature of price discrimination, including its widespread application in many highly competitive markets, suggests that price discrimination will in practice often be pro-competitive and be beneficial to consumers, particularly in the long run. In particular, as we have seen, price discrimination may intensify competition - to the ultimate benefit of consumers. Price discrimination may also allow firms to efficiently recover fixed costs. Even where this does not produce an immediate consumer benefit, efficient fixed cost recovery provides strong investment incentives and may increase the number of firms that a particular market can sustain. And price discrimination may allow customers to be served that would not be served at all under uniform pricing conditions.

Consequently, the Green Paper is wrong in asserting that price discrimination negatively affects consumers. The opposite is much more likely to be the case.

3.3. The pros and cons of arbitrage

Price discrimination is only feasible if customers cannot engage in perfect arbitrage. Arbitrage occurs when customers or intermediaries simultaneously buy and sell a product in order to benefit from price differences. If this is costless, suppliers will no longer be able to charge different prices to different groups of customers.

In a number of cases, arbitrage has benefits, including in terms of contributing to the potential for the Single Market to bring about gains from trade (see Section 3.3.1). While arbitrage thus clearly has a role to play, it is however important not to confuse the clear role of arbitrage in pursuing Single Market objectives and the often more questionable role of arbitrage in pursuing economic efficiency. Indeed, by suppressing the scope for efficient price discrimination and/or by giving rise to free-riding concerns, unfettered arbitrage opportunities risk *negatively* impacting on economic efficiency, and ultimately harming consumers, in many cases (see Section 3.3.2).

3.3.1. The benefits of arbitrage

One basic efficiency benefit of arbitrage is that it results in goods being transferred from customers with a low willingness to pay to customers with a high willingness to pay. If, at the margin, customers differ in their valuation of a particular product, economic efficiency dictates that additional units of the product are directed to customers who value it most, or that supplies are redirected from customers with a low valuation to customers with a high valuation. Arbitrage can have precisely this effect.

Arbitrage will have the effect of reducing or eliminating price differentials. Suppose for example that a supplier offers low prices to customer group A and high prices to customer group B. An arbitrageur may be able to take advantage of this by buying the product from customer group A and reselling it to customer group B. The price at which the arbitrageur offers the product to customer group B would be slightly lower than the price that the supplier charges to this customer group, but still high enough for the arbitrageur to make a profit. As a result, the supplier may no longer be able to sell to customer group B at the original price. Ultimately,

assuming the arbitration activity to be costless, arbitration could prevent price differentials altogether.

Financial markets represent a well-known example of markets in which arbitration plays an important role by eliminating price differences between different asset classes that are not related to underlying differences (e.g. in terms of risk) in the characteristics of these assets. Since arbitration on financial markets is almost costless, arbitration continuously occurs between all types of financial instrument. By ensuring that prices of financial instruments remain close to fundamental values, arbitrage plays a crucial role in ensuring the efficient functioning of financial markets.

Arbitrage is also an instrument that facilitates the free movement of goods within the Single Market. As this has been, and continues to be, a strong policy objective, the Commission has historically strongly encouraged cross-border arbitrage opportunities. It is with a view to maximising such arbitraging opportunities that EU competition law severely restricts the scope for suppliers to impose territorial supply constraints.

3.3.2. Competition-distorting effects of arbitrage

Arbitrage may prevent efficient price discrimination

Whilst arbitrage thus has the potential to produce benefits, it is crucial to realise that unfettered arbitrage opportunities may come at the expense of economic efficiency and ultimately be harmful to consumers.

We illustrate this using an example from the airline industry. As noted above,[27] airlines extensively price discriminate, for example between business and leisure passengers. Airlines do so in order to efficiently cover fixed costs: a (price-insensitive) business traveller typically contributes significantly more towards fixed cost recovery than a (price-sensitive) leisure traveller. As a result, price sensitive leisure travellers can be offered a price close to marginal costs. This maximises the number of leisure passengers who can travel by air and likely maximises economic welfare.

An airline could not price discriminate between business and leisure travellers if arbitrators were able to purchase tickets aimed at leisure travellers and subsequently able to resell these to business travellers. Large scale arbitrage of this kind would ultimately defeat price differentials and force airlines to charge a uniform price. But uniform airline prices are very unlikely to produce efficient outcomes. A uniform price would likely be too high for many leisure travellers and would likely result in a substantial reduction in leisure travel. The resulting reduction in output will likely cause a reduction in economic welfare.

In view of the above, restrictions on arbitrage that all airlines impose (e.g. tickets being non-transferable, with substantial fees charged for name changes) are highly likely to be welfare-enhancing. The reason for this is that these restrictions facilitate efficient price discrimination.

[27] See Section 3.1.

Arbitrage may give rise to free-riding concerns

A specific set of circumstances in which arbitrage may harm economic welfare is where this gives rise to "free-riding" concerns. Free riding occurs when firm A benefits from the actions, for example promotion efforts, of firm B without contributing a fair share of costs of these efforts. Free riding can harm economic welfare because it may reduce the incentives on the part of firm B to engage in promotion efforts to begin with.

The free-riding concern represents an important justification for imposing restrictions on trade, as for example recognised in the Commission's Guidelines on Vertical Restraints.[28] A well-known example is a situation where a distributor considers heavily investing in promotion of a particular brand in the area in which it is active. The distributor will only engage in such promotion efforts if it has a sufficiently strong prospect of recouping the associated costs through increased sales. In the absence of any restraints, however, other distributors could enter the territory on the back of the increased brand awareness that the promotion efforts have generated without shouldering any of the associated costs. Given this prospect, the original distributor may not be able to recoup its promotion investment. This free-riding threat may prevent the distributor from making the investment in the first place. Exclusive territories, which effectively restrict arbitrage, may be a solution to this problem and may thus give rise to efficiencies.[29]

A similar concern arises in the relationship between suppliers and retailers. By purchasing from a low-priced country and transporting the goods to a high-priced country, retailers are acting as arbitrageurs, seeking to benefit from cross-country differences in prices charged by suppliers. However, in doing so, retailers may be free riding on the efforts of the supplier, potentially harming economic welfare. We illustrate this using an example.

Suppose a particular supplier sells into two countries: A and B. In country A, the supplier has over time heavily and successfully invested in long-term brand-building efforts, resulting in a strong brand that is highly valued by consumers. In country B, the supplier has not undertaken a similar investment, or has been less successful, resulting in its brand being much weaker in that country. Reflecting the greater strength of the brand, the supplier charges a higher wholesale price in country A than in country B.

In such a situation, a retailer in country A can free ride on the past efforts of the supplier in that country by sourcing the product at the low wholesale price in country B and reselling it at a high price in country A. The retailer will be able to charge a high price in country A because the retailer ultimately benefits from the strong demand for the product, caused by the supplier's marketing efforts. However, the retailer does not bear any of the associated costs.

Arbitrage by the retailer risks harming economic efficiency here because the supplier in country A will, ultimately, no longer be able to reap the rewards of its past marketing investment. This may make the supplier reluctant to further invest in marketing in that country, or indeed in any other country where the supplier may be hoping to establish a high-valued brand.

[28] Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:130:0001:0046:EN:PDF; see paragraph 107.

[29] See the Vertical Guidelines, paragraph 164.

3.4. Conclusion

As our discussion in this section has shown, price discrimination is a ubiquitous phenomenon. Price discrimination occurs in many markets, including highly competitive ones. As such, price discrimination is often likely to increase economic welfare and ultimately benefit consumers.

Arbitrage is also a feature of many markets and clearly has an important role to play. However, circumstances can be imagined where arbitrage is outright harmful to economic efficiency, for example when arbitrage prevents efficient price discrimination or when arbitrage gives rise to a free-rider problem. In such circumstances, unfettered arbitrage is not desirable.

In view of this, the Green Paper is wrong to assert that price discrimination necessarily harms consumers and that consumers necessarily stand to benefit if restrictions on cross-border sourcing/arbitrage are lifted. Indeed, in the next section we show that blanket measures aimed at reducing cross-border price differentials for consumer goods are likely to have a number of adverse consequences that are likely to harm consumers.

4. Blanket rules aimed at reducing cross-border price differentials are likely to harm consumers

While the Green Paper identifies the various possible unfair trading practices, it does not contain any concrete policy proposals aimed at addressing them. However, in respect to territorial supply constraints, an eventual outcome can certainly be imagined under which suppliers would effectively no longer be able to charge different prices to customers located in different countries. But as we explain in this Section, any such outcome would be highly undesirable from an economic efficiency point of view. Indeed, a number of adverse long-term consequences would likely result from this that would be highly likely to cause consumer harm.

In the short term, the increased sourcing possibilities for retailers that the Commission appears to have in mind will act to reduce cross-border differentials in wholesale prices. But, as we explain in Section 4.1, this would provide retailers with a free-riding opportunity. In Section 4.2, we show that the resulting situation would not be sustainable and that a number of adverse long-term consequences would likely result from this.

4.1. Short-term impact: a free-riding opportunity for retailers

The increased sourcing possibilities for retailers that the Green Paper appears to envisage are likely to significantly impact on negotiations between suppliers and retailers. In particular, retailers would know that they could always resort to sourcing from the lowest-price country. In the absence of any response by the supplier (discussed in Section 4.2), retailers could use this fact to force the supplier to lower prices for domestic deliveries in their country of establishment.

This can be illustrated with an example. Suppose the supplier charges a price of €50 in country B, a country where its brand is relatively weak. The price in country A, where the supplier has enjoyed a much greater success in building a strong brand, is equal to €70. Transport costs from country B to country A are equal to €5. For simplicity, we assume that the supplier faces equal costs in country A and country B.

In this example, a retailer in country A will no longer be prepared to pay the €70 price originally charged by the supplier in country A. This is because the retailer also has the option of buying in country B at a price of €50. In combination with the costs of transporting the good into country A, total costs in that case are equal to €55.

The retailer will be able to use this to negotiate a new price in country A equal to €54. At this price, the supplier makes a higher margin than when the product is sold in country B at a price of €50.[30] The retailer will be also be slightly better off at this price because the price of €54 is lower than the total costs of €55 that he would incur when buying the good in country B and transporting it into country A.

[30] As noted above, we assume that the supplier faces equal costs for delivery in country A and country B.

The above example makes it clear that the increased sourcing possibilities for retailers that the Green Paper seems to have in mind would effectively restrict cross-country wholesale price differences for identical products to transport costs.

One possible way of interpreting the Green Paper is that it assumes that the analysis ends here. As the Green Paper appears to imply, increased sourcing possibilities for retailers would force suppliers to reduce prices in what currently are high-price countries, resulting in consumer benefits.

However, any such analysis would be far too simplistic and, indeed, highly misleading. Ultimately, the responsibility for setting consumer prices lies with retailers. If the strength of a supplier's brand differs between country A and country B, a retailer active in both countries is highly likely to continue setting different prices for the brand in the two countries even when facing identical purchasing costs in both countries.[31]

As such, the arbitrage strategy by the retailer gives rise to a free-riding concern. Retailers would continue to benefit from country-specific differences in brand strength and, in particular, from instances where suppliers have succeeded in building particularly strong brands. However, by engaging in arbitrage in the way described above, retailers will be able to avoid the associated costs.

Any such situation is however unlikely to be sustainable: suppliers are very unlikely to sit idle and watch retailers earning short-term arbitrage profits by free riding on suppliers' past brand-building efforts. We discuss possible longer-term consequences below.

4.2. Long-term consequences: adverse effects highly likely

As we demonstrate in this section, the increased sourcing possibilities for retailers that the Commission appears to have in mind are likely to give rise to a number of adverse long-term consequences which are highly likely to harm to consumers. In particular, these would likely,

- adversely impact on suppliers' incentives to offer low prices (see Section 4.2.1);
- risk giving rise to market fragmentation (see Section 4.2.2);
- risk negatively affecting suppliers' investment incentives (see Section 4.2.3); and
- risk negatively impacting on entry (see Section 4.2.4).

4.2.1. Impact on suppliers' incentives to offer low prices

First, an adverse effect would likely occur in respect of suppliers' incentives to offer low prices at national level. To see this, it is useful to recall the fundamental reasons why firms may choose to charge different prices in different countries, discussed in Section 3. Firms may price

[31] At the margin, however, the retailer's pricing incentives are likely to be impacted by the reduction in marginal costs in country B.

discriminate in order to charge low prices to certain customers without affecting margins earned on other customers. For example, by sending individualised discount coupons to customers living close to a rival store, a supermarket can lower prices to this group without affecting margins earned from customers living nearby. Likewise, by offering discounts to senior citizens, a transport company can attract additional passengers from this group without sacrificing revenue earned from other types of passengers.

In the context of consumer goods suppliers, prices in certain countries may, as discussed in Section 2, be lower than in others for reasons such as consumers' purchasing power in those countries, possible brand weakness in those countries, the fact that the supplier has only recently entered the market in question, differences in taxation[32] etc. By price discriminating, suppliers are able to charge low prices to customers in these countries without affecting margins earned in other countries. Because of the absence of this link, an ability to price discriminate maximises suppliers' incentives to offer low prices in countries where this is appropriate.

Once retailers are able to source at the price charged in the lowest price country, this would change. In that case, suppliers would no longer be able to charge low prices in a particular country without affecting margins earned in other countries. The reason for this is that whenever a supplier is contemplating offering a low price in a given country, account would have to be taken of the scope for retailers in other countries to also take advantage of that low price. If charging a low price in a particular country negatively impacts on margins earned in other countries, that low price becomes costlier than before. Consequently, the incentives to offer low prices at national level will be reduced.

As such, *whenever* a supplier wishes to cut prices in a particular national market, the supplier would need to take account of the risk of retailers in other countries also seeking to take advantage of this. In many cases, such price cuts will therefore become less attractive. For example, it will become less attractive to cut prices in a particular country in order to grow market share there. It may also become less attractive to run sales promotions. As such, the proposals that the Commission appears to have in mind risk fundamentally impacting on the dynamics of competition in many markets.

4.2.2. Risk of market fragmentation and reduced integration

When deciding on their product range to carry in different European countries, suppliers face a basic trade-off between uniformity and local diversity. Selling uniform products across different countries will typically generate benefits in terms of efficiencies and brand strength. However, reflecting differences in consumer attitudes, multinational suppliers sometimes have a country-specific offering. This may consist of different brands, different products or even different tastes for otherwise identical products.

The increased sourcing possibilities for retailers that the Green Paper appears to envisage are unlikely to impact on country-specific products: these are by definition less likely to appeal to

[32] For example, as discussed in Section 2.4, suppliers may have an incentive to charge relatively low wholesale prices in countries with high VAT rates.

consumers situated in other countries. The main effect is thus likely to concern those products or brands that are currently sold in a range of countries. As we explain below, if it would effectively no longer be possible to charge different prices for such products in different countries, the case for selling identical products in different countries is likely to weaken. This may result in market fragmentation, the opposite of what the Green Paper is trying to achieve.

No longer able to charge different prices in different countries, suppliers may in the first instance consider the option of equalising prices charged in the various countries.[33] The theoretical short-term profit maximising uniform price would be some weighted average of the price charged in the different countries. The average would be influenced by factors such as the relative sizes of the various markets as well as the nature of demand in each of these.

Equalising prices in the way explained above will involve price increases in what are currently low-price countries. However, although this may be profit maximising in the short run, it will not always be clear whether this is a sustainable price level going forward. Will the supplier still have a sustainable business model in current low-price countries, taking account of the need to cover country-specific fixed costs?

For example, advertising represents an important element of the business model of many consumer goods suppliers, involving substantial fixed costs that are largely country-specific (e.g. TV advertising). Suppliers will only be able to invest in advertising if they have a sufficient prospect of recouping the associated costs in the long term. Will advertising in current low-price countries still be worthwhile if prices in such countries have to be increased, possibly by a significant margin, resulting in a reduction in volumes?

Such questions would become even more pertinent if the supplier risks being undercut in countries where it currently charges a low price, for example by local rivals or by retailers selling private label products. The proposals that the Commission seems to have in mind would distort competition between suppliers wishing to sell in more than one country and suppliers choosing to focus on a single country: the pricing freedom of suppliers active in multiple countries would effectively be restricted while their local rivals would continue to enjoy complete pricing freedom. Suppliers selling in multiple countries would effectively have to raise their prices in countries where they currently charge a low price, but local rivals would not need to do so. Local suppliers active in the countries concerned would thus be able to increase market share even they were less efficient than rivals that are active in multiple countries. As a result, it is not difficult to imagine situations where suppliers face the prospect of marginalisation in current low-price countries once they are forced to raise prices there.

In view of this, suppliers may consider alternative options. Once retailers are able to source at the price charged in the lowest price country, selling a given product in multiple countries will come at the cost of effectively reducing pricing freedom in any given country. Consequently, rather than selling identical products in various countries, suppliers could consider (re-)introducing national product varieties. Rather than selling identical brands in various countries, suppliers may find it attractive to (re-)introduce national sub-brands. And rather than

[33] Alternatively, the supplier could considerably narrow price differences between countries, for example until these reflect transport costs (as per the above discussion). For ease of exposition, we focus in our discussion below on the case where prices would be equalised.

being active in multiple countries to begin with, some suppliers may ask the question whether they would not be better off divesting brands in current low-price countries, or even withdrawing from such markets altogether. Paradoxically, all of the above options are likely to lead to market fragmentation – the opposite of what the Green Paper appears to envisage.

The above considerations also make it clear that the Green Paper incorrectly asserts that territorial supply constraints negatively impact on consumer choice. Although it is hard to draw strong conclusions either way in this respect, it is certainly the case that suppliers' current ability to charge different prices in different countries maximises their incentives to offer a given product in as many countries as possible. Unfettered arbitrage opportunities would undermine this.

4.2.3. Impact on suppliers' investment incentives

Any proposal seeking to address territorial supply constraints also risks negatively impacting on suppliers' investment incentives. As we have seen earlier in this paper, one of the reasons why prices of consumer goods suppliers may differ between countries is related to differences in brand strength. In a country where a supplier has heavily and successfully invested in advertising, the supplier's brand is likely to be more valuable to consumers than in a country where advertising has been very limited. Consequently, prices in the former country may be higher than in the latter.

As explained earlier,[34] the success of advertising is however not guaranteed. Advertising may fail, resulting in suppliers failing to recoup the associated investment. Advertising may however also prove highly successful. It is the prospect of such successes that motivates firms to continue advertising notwithstanding the risk of failure. For firms to have appropriate incentives to engage in advertising, it is therefore important that they are allowed to reap the fruits of cases where advertising proves highly successful.

The changes that the Commission appears to be considering are likely to severely weaken the extent to which suppliers can benefit from their own advertising efforts. Instead, the benefits of particular successes achieved by particular suppliers in particular countries are now likely to accrue to retailers, who would be able to free-ride on these in the way described above.[35] If suppliers are no longer able to reap the rewards of any efforts to increase the value of their brand to consumers, suppliers' incentives to engage in such efforts are likely to weaken. The resulting reduction in investment is, in the long run, highly likely to be detrimental to consumers.

4.2.4. Impact on entry

Finally, any measures risk negatively impacting on suppliers' ability and incentive to successfully enter new markets. When a firm is entering a new market, the optimal price that the firm would wish to charge in that new market often differs from prices that they charge in established markets. This possibility would however be severely restricted, if not eliminated. Consequently, suppliers' incentives to enter new markets may weaken.

[34] See Section 2.1.

[35] See Section 4.1.

One possible reason for charging a different price in newly entered markets is related to the need to grow volumes and to create a favourable price perception in the eyes of consumers in the period following entry. Firms may therefore charge a relatively *low* price for a period following their entry into a particular market, or to run many sales promotions during this period.

However, unlimited arbitrage possibilities on the part of retailers would reduce suppliers' incentive to charge low prices in countries where they have recently entered. This is because, as discussed above, retailers based in other countries would then likely take advantage of this, severely increasing the cost associated with the low price. Will suppliers still have prospects to grow market share in newly entered countries and to establish a sustainable presence if they are no longer able to initially charge a low price or run many sales promotions?

Alternatively, firms may wish to position their product differently in countries where they are a recent entrant than in countries where they have an established position. Entering a new market involves costs, for example relating to advertising or establishing a distribution network. Firms will only enter a new market if they have a reasonable prospect of recouping the associated costs. One way of achieving this is to enter into a market segment not already adequately served by existing brands.

Consider for example a market in which a number of mass-market brands are already present. In such a country, the scope for a new entrant to acquire high volumes may be limited, at least in the short term. However, entry opportunities may exist in particular market niches. For example, there may be scope for entry by positioning the product as a premium product. Volumes in such market niches are however likely to be relatively low, potentially resulting in entry into such niches only being profitable if relatively high prices can be charged.

When retailers are able to source at the price charged in the lowest-price country, however, any attempt by the supplier to charge high prices in a recently entered market for a product positioned into a particular niche will fail if retailers are able to source identical or similar products with the same brand from lower-priced countries. Consequently, the scope for suppliers to enter new markets by targeting niche segments in these markets is likely to weaken.

5. Conclusion

The above discussion has shown that the story around territorial sourcing constraints is far more complex than the Green Paper is seeking to portray. Contrary to what the Green Paper suggests, price discrimination cannot be presumed to harm consumers – the opposite is far more likely to be the case. Indeed, given the fact that both demand and supply conditions for consumer products may differ between Member States, efficient price levels are likely to differ across countries too.

Under the European competition rules, there is already significant scope for arbitrage, which clearly has a role to play. But it would be a mistake to assume that unfettered arbitrage opportunities will always increase economic welfare. By contrast, as we have demonstrated, such opportunities would provide retailers with extensive free-riding opportunities that will ultimately provoke harmful longer-term consequences to the detriment of consumers.

Given the fact that efficient price levels will often differ between countries, it is certainly not valid to characterise suppliers' use of different prices in different countries, as well as any steps taken by suppliers to preserve these differences, as being harmful to economic efficiency, consumer welfare, or even market integration – on the contrary, simplistic measures to prohibit price differentials might well have the opposite effects. Rather, such price differences will most often reflect the efficient functioning of markets for consumer goods in the EU, to the ultimate benefit of consumers.