
The economic effects of Decree no.2020-1724

What would be the impact of the switch from single-use to multiple-use packaging in eating and drinking establishments?

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1 Executive summary

This report has been prepared by RBB Economics (“RBB”) at the request of the European Paper Packaging Alliance (“EPPA”). It provides an assessment of the economic impact of Article 5 of the Decree no.2020-1724 of 28 December 2020 (“the Decree”) and Article L. 541-15-10, III, 2° of the Environmental Code Article 77 of Law No. 2020-105 of 10 February 2020 on the fight against waste and the circular economy (“the Law”).

Specifically, we have been instructed to answer the following questions in this report:

- What is the impact of the Decree and the Law on the single-use packaging suppliers’ value chain, eating and drinking establishments, and consumers?
- Do the Decree and the Law introduce distortionary effects? If yes, which ones and with what economic impact?

The Decree and the Law mandate that, as of 1st January 2023, all eating and drinking establishments with 20 seats or more, including in outdoor areas, can only serve meals and beverages for on-premises consumption using multiple-use plates, containers, cups, lids, and cutlery (“packaging solutions”).

We find that this will harm the single-use packaging suppliers value chain,¹ affected eating and drinking establishments, *and* consumers.

We also find that it may lead to distortionary effects on competition among eating and drinking establishments, as not all are equally affected.

We explain these findings in turn.

First, we estimate that the Decree and the Law could give rise to harm of c.€171-194 million per year to the single-use packaging suppliers value chain, affected eating and drinking establishments, and consumers.² This is comprised of the following components:

- The single-use packaging supply chain would lose revenue of c.€40 million per year.³ This estimate only considers the loss of demand from single-use packaging products no longer being used on-premises in affected outlets. However, this may understate the harm incurred by such suppliers as this loss in volume could lead to an increase in the cost per unit (and hence a reduction in profit) on their remaining sales (e.g., for takeaway use).⁴

¹ The effects on the value chain include the direct effects on single-use packaging suppliers and the indirect effects on these firms’ suppliers, their suppliers’ suppliers and so on.

² These are high level estimates meant to indicate the order of magnitude of the harm, rather than exact figures. This is true for all of the estimates provided throughout this report.

³ The Ramboll study referred to throughout this report is the report titled « *Évaluation comparative de l’analyse du cycle de vie de la vaisselle à usage unique et réutilisable dans la restauration rapide* », Ramboll, December 16, 2020. Our analyses are based on Ramboll’s *baseline* scenario. This number is based on the Ramboll estimates of the volumes of single-use packaging used by an average Burger Limited-Service Restaurant outlet, multiplied by the average of the market price estimates provided by the EPPA members for each single-use item. This per store estimate is then scaled up by our estimated total number of impacted outlets as estimated using Euromonitor data.

⁴ Such an impact could arise from their overhead costs (e.g., rent, back-office staff) now being spread over fewer volumes, and/or their cost of goods sold increasing (e.g., through reduced discounts for raw material).

- Affected eating and drinking establishments would be harmed by c.€46-77 million per year. These outlets face a restriction of their on-premises packaging options, which in turn increases their packaging costs, leading to a combination of three effects. First, affected outlets would together incur a packaging cost increase of c. €109 million. The vast majority of this cost increase is driven by the additional staff and electricity (as well as water, detergent, etc.) that would be required to wash the reusable cutlery and crockery between uses, as well as the cost of new equipment.⁵ Second, by (partly or fully) passing this cost increase on to consumers as a price increase, these outlets would likely be able to regain c.€54-108 million. However, (third) by doing so they would lose c. €23-46 million as the price increase will drive some consumers away, leading to a loss of profit for outlets.⁶
- Consumers will be harmed by c.€54-108 million per year. This is due to the price increases consumers would face as outlets pass on their cost increase.

Second, eating and drinking establishments affected by the Decree and the Law will be placed at a competitive disadvantage vis-à-vis outlets that are not affected. As outlined above, the Decree and Law will result in affected eating and drinking establishments facing cost increases, raising prices, and losing customers. However, it does not impact *all* outlets and those affected compete against non-affected outlets.⁷ Thus, the former will be placed at a competitive disadvantage relative to the latter. This would lead to price increases and/or consumer switching (away from affected outlets). Furthermore, smaller affected outlets will likely be placed at a greater disadvantage than larger outlets. In particular, smaller outlets (e.g., a family-owned coffee shop) have fewer units to spread large investment costs (e.g., dishwashers) over than larger outlets (e.g., a Starbucks outlet).⁸ Thus smaller outlets will likely experience a larger impact on their profit margin and ability to compete.

The remainder of this report is structured as follows:

- **Section 2** outlines the number and type of eating and drinking establishments that will be affected by the Decree and the Law, using Euromonitor data;
- **Section 3** presents a case study of the economic impact of the Decree and the Law on an average Burger Limited-Service Restaurant (“LSR”) outlet based on the Ramboll environmental study data;

⁵ Notably this estimate does not consider refurbishment costs. We understand that such costs may be incurred some outlets in order to make space for dishwashers, to install new collection bins for the multiple-use items and/or to separate flows of dirty and clean dishes. We understand that these costs could easily exceed €10,000 per outlet. Thus, this analysis may materially underestimate the true costs incurred by eating and drinking establishments that require refurbishments. Smaller outlets affected by the Decree could struggle to cover material renovation costs such as these.

⁶ Some of these lost consumers may switch to other eating and drinking establishments, but it is unlikely that many consumers would switch between impacted outlets (i.e., as they would also be increasing prices). Such consumer switches therefore do not benefit *affected* eating and drinking establishments.

⁷ A number of different types of discrimination arise. First, certain categories of outlet would be disadvantaged versus others. For example, we estimate that all Chicken LSRs will be impacted, but only 1% of Pizza LSRs. Thus, Chicken LSRs, for example, will be disadvantaged versus Pizza LSRs. Second, certain outlets would be disadvantaged versus others within the same category. Within most categories, some (but not all) outlets will be impacted (e.g., 42% of Bakery LSRs would be impacted). This means, for example, some bakeries would be at a competitive disadvantage versus other bakeries. Third, outlets with 20 seats or more would be disadvantaged versus smaller outlets.

⁸ For example, a €4,000 dishwasher (depreciated over 10 years) would cost an average Starbucks outlet 0.4 cents per transaction (over 109,524 transactions each year), but an average independent café 1.3 cents per transaction (i.e., over 30,009 transactions each year).

- **Section 4** combines the results of the previous two sections to estimate the impact on the single-use packaging supplier value chain, affected eating and drinking establishments, and consumers; and
- **Section 5** explains the distortionary impact on competition of the Decree and the Law.

2 Number and type of eating and drinking establishments affected by the Decree and the Law

This section estimates the number and type of eating and drinking establishments that will be affected by the Decree and the Law. The Decree and the Law require outlets to use multiple-use packaging solutions for on-premises consumption if they have a seating capacity of 20 seats or more, including in outdoor areas. Therefore, outlets would be affected if they:

- have an on-premises capacity of 20 seats or more, including in outdoor areas: *and*
- do not *already* exclusively use multiple-use packaging on-premises.

To estimate the number of sites affected by the Decree and the Law we have relied on Euromonitor data. Euromonitor provides details of the number of outlets, transactions, and revenue of different categories of outlet in France. However, it does not record which of these outlets have 20 seats or more and use single-use packaging on-premises. Thus, we added this to the dataset using desk research with the EPPA members (see Annex A.1 for details).⁹

Table 1 below lists the different categories of restaurant listed in Euromonitor. For each, we present the total number of sites, our estimated proportion of each category of outlet that will be affected by the Decree and the Law (as explained in Annex A.1), and the corresponding estimated number of sites affected. We have relied on 2019 data as data from 2020 would be impacted by the COVID-19 pandemic and would thus not be representative of regular market conditions (e.g., due to lockdowns and other COVID-19 restrictions).¹⁰

The table highlights two key points regarding the impact of the Decree and the Law:

- **First, many outlets will be affected, totalling around 10,500 sites.** Most of these are Burger LSRs (2,213 sites), Bakery LSRs (4,796 sites) and Independent Cafés (1,266 sites).
- **Second, the impact will differ materially among different types of outlet.** For example, almost all Burger LSRs will be affected, but only 1% of Pizza LSRs (because Pizza LSR outlets are more likely to have an on-premises capacity below 20 seats, see Annex A.1).

⁹ This desk research was carried out by RBB and then reviewed/amended by CEE Schisler.

¹⁰ The Euromonitor data also include data from 2023 (i.e., forecasts). However, we have not used these data because we need to combine the Euromonitor data with the Ramboll data which reflect current data. Therefore, to the extent that there are any changes over this time it would make the data no longer on a like-for-like basis. In any event, we note that there is not a material difference between the number of sites in 2019 and 2023 Euromonitor data (so the year used would not have a material impact on our analysis).

Table 1: Estimated number of sites affected by the Decree and the Law in France

Category of restaurant	Euromonitor number of sites	RBB estimated proportion of sites affected	Number of affected sites
Bars/Pubs	20,364	0%	0
Independent Cafés	15,823	8%	1,266
Juice/Smoothie Bars	128	0%	0
Specialist Coffee and Tea Shops	715	47%	335
Asian LSR	1,164	10%	116
Bakery LSR	11,298	42%	4,796
Burger LSR	2,260	98%	2,213
Chicken LSR	318	100% ¹¹	318
Convenience Stores LSR	57	0%	0
Ice Cream LSR	296	0%	0
Latin American LSR	261	98%	257
Middle Eastern LSR	10,319	5%	516
Other LSR ¹²	649	63%	411
Pizza LSR	1,519	1%	21
Self-service cafeterias	762	32%	243
Total	65,933	16%	10,492

Source: RBB analysis of Euromonitor data

¹¹ The finding that all Chicken LSRs will be impacted arises because the only Chicken LSR brand-by-brand data contained in Euromonitor is for KFC (i.e., to allow our desk research of whether they use single-use and have 20 seats or more). Therefore, this finding is based on KFC only (see Annex A.1 for details). However, in any event we note that KFC accounts the vast majority of such sites (i.e., 260 of the 318) and revenue (96%) included in Euromonitor. Therefore, the impact on KFC is likely indicative of the overall impact on Chicken LSRs overall.

¹² The "Other LSR" category includes brands such as Exki (Exki SA), Mezzo di Pasta (NSR SA), Dubble (Dubble Food Developpement Sarl), Cojean (Cojean SA), Francesca (Francesca SA), PastaCosy (Pasta Cosy (PC) Developpement Sarl), Jour (Jour SA), Planetalis (Origine Planetalis SARL) and Stratto (SO2R Sarl).

3 A Burger LSR case study of the impact of the Decree and the Law

3.1 Overview

This section provides a case study of the impact of the Decree and the Law on a Burger LSR outlet, building on the Ramboll environmental impact study. The Ramboll data estimate the volume of various inputs that would be required by an average Burger LSR outlet operating (i) a single-use packaging system and (ii) a multiple-use packaging system on premises.¹³

In this case study we consider three effects of the Decree and the Law:

- first, how the Decree and the Law would impact its on-premises packaging costs;
- second, how a Burger LSR may change its price in reaction to these cost changes; and
- third, how consumers may react to the price increase.

We explain each of these effects in turn.

3.2 Impact of the Decree and the Law on a Burger LSR's costs

3.2.1 Overview

This section explains the likely impact of the Decree and the Law on a Burger LSR's packaging costs using the Ramboll packaging volume data in its baseline scenario. The Ramboll data estimate the annual volume of on-premises single-use packaging items that an average Burger LSR outlet uses, and estimate what the same outlet would use if it were to switch to a multiple-use packaging solution (including electricity, water, etc).¹⁴

The Ramboll data only consider volumes used for on-premises consumption. Our analysis thus assumes (in line with the Ramboll study) that outlets would still use single-use packaging for takeaway sales. If outlets also switch to multiple-use packaging for takeaway, the cost impact estimated below would likely be larger (as it would be incurred over more sales).¹⁵

On this basis, we outline our estimates of the packaging costs incurred from using single-use and multiple-use packaging in turn. We summarise our findings in subsection 3.2.4.

3.2.2 Costs using single-use packaging solutions

This section outlines our estimates of the on-premises packaging costs incurred by an average Burger LSR outlet using single-use packaging. Single-use packaging is used once (and disposed of to be recycled), and so the only costs incurred are those of the packaging itself.

¹³ As noted above, we rely on the baseline scenario of the Ramboll analysis.

¹⁴ We understand that, while Ramboll does not consider all single-use items that an outlet may use (e.g., straws), it considers all of the items that are covered by the Decree and the Law. Therefore, these data accurately capture the single-use packaging volumes that will be lost by single-use packaging suppliers due to the Decree and the Law.

¹⁵ For example, the estimated number of multiple-use items that would need to be washed (and thus staff costs incurred) would be higher if takeaway sales also generated multiple-use items to be washed (and not only those on-premises).

In this regard, the Ramboll data provide the annual volumes of on-premises single-use packaging items used in a Burger LSR outlet. We convert these into costs using price estimates of each item based on averages of the estimates provided by each EPPA member.

Table 2 below lists the different packaging items, the annual on-premises volume used, the estimated average price per item, and corresponding total cost per outlet. The table shows that, on this basis, a Burger LSR's annual single-use packaging cost per site is c.€11,000.¹⁶

Table 2: Annual on-premises single-use packaging costs incurred by a Burger LSR

Single-use cost item	Number of units	Average price per unit	Total cost
Cold cup	164,615	[REDACTED]	[REDACTED]
Hot cup	10,585	[REDACTED]	[REDACTED]
Lid for hot cup	10,585	[REDACTED]	[REDACTED]
Cold dessert cup	37,595	[REDACTED]	[REDACTED]
Paper wrap	214,255	[REDACTED]	[REDACTED]
Paper fry bag	181,040	[REDACTED]	[REDACTED]
Clamshell	17,155	[REDACTED]	[REDACTED]
Salad box	8,030	[REDACTED]	[REDACTED]
Fry box	48,910	[REDACTED]	[REDACTED]
Wooden cutlery	94,170	[REDACTED]	[REDACTED]
Total	786,940	€0.014	€11,275

Source: Ramboll data for list of items and number of units, EPPA members price estimates for price per unit

3.2.3 Costs using multiple-use packaging solutions

This section outlines our estimates of the on-premises packaging costs incurred by a Burger LSR using multiple-use packaging. Multiple-use items are washed between uses and so costs would be incurred both to buy the reusable items *and* to wash them between uses.

We rely on Ramboll's estimates of the volume of the inputs required by the Burger LSR outlet to utilise multiple-use packaging. Ramboll estimated the reusable cutlery and crockery, dishwashers, electricity, water, detergent, and rinse aid that a Burger LSR outlet would require to replace the single-use items covered by the Decree and the Law.

In addition to these cost items, outlets would likely also require additional staff hours.¹⁷ In particular, Ramboll estimated that 786,940 single-use packaging items are currently used on

¹⁶ As noted above, this may understate the actual overall costs of single-use packaging incurred by an outlet because the Ramboll study does not include all single-use packaging items. However, we understand that the Ramboll study covers all single-use packaging that is covered by the Decree and the Law. Therefore, these are the packaging volumes and costs to restaurants that is relevant to our analysis (i.e., the part that would change due to the Decree and the Law).

¹⁷ The Ramboll study was focussed on the environmental impact. Therefore, relevant economic costs may not be in the Ramboll study data if they were not relevant to the environmental impact. Similarly, we have not considered all items in the Ramboll study if we did not expect them to have a material economic cost. For example, we have not considered the environmental data provided for waste incineration, recycling, and transport.

premises annually. This would translate to around 200 multiple-use items being used per hour on average.¹⁸ We estimate that collecting used items, and loading / unloading the dishwasher with them could require 30 minutes of staff each hour (and thus 2,002 staff hours per year).¹⁹

To convert the volume requirements of these items into costs, we conducted desk research to obtain an indication of the cost per unit (details of this research can be found in Annex A.3). For staff costs, we were informed by EPPA that an outlet would incur costs of €14.50 per hour (including wage plus employer costs).²⁰ These prices are multiplied by the volumes required in order to estimate the overall packaging cost. The results of this analysis can be found in Table 3 below.

The table shows that packaging costs may be around €42,000 per year after switching to multiple-use packaging. The table also shows that this cost is compiled of materially different cost items to when using a single-use solution. In particular, c.80% would now be accounted for by staff costs and electricity, while only c.10% of the costs would be the packaging itself. This contrasts to the single-use system for which 100% of costs were for the packaging items themselves.

¹⁸ This is calculated as the 786,940 single-use items used in a given year, divided by the average assumed opening hours per day (11), then divided by 7 days (assuming that Burger LSRs are open every day of the week) and again divided by 52 weeks a year. This gives an average of 197 items used per hour. Note that the opening days/hours do not impact the final additional staff costs that would be estimated. In particular, if we assumed longer hours, we would estimate that fewer dishes per hour need to be washed (so fewer staff required) but paying each of these staff during more opening hours. If we assumed shorter opening hours, we would estimate more dishes need to be washed per hour (so more staff required) but paying these staff during fewer opening hours.

¹⁹ This is estimated based on the assumption that each single-use item would require per item *on average* (i) 3 seconds to collect and sort (e.g., from a bin or a customer's table), (ii) 3 seconds to load the dishwasher and (iii) 3 seconds to unload the dishwasher (and store). This is intended only to provide a high-level indication of the amount of staff time. 2,002 hours in total is then calculated as the 0.5 staff members required per hour, multiplied by 11 (hours per day), multiplied by 7 (days a week), multiplied by 52 (weeks per year). As explained in the footnote above, the opening days/hours do not impact the final additional staff costs that would be estimated.

²⁰ EPPA informed us that €14.50 is the average hourly cost per operator that a Burger LSR outlet incurred in 2021.

Table 3: Annual costs incurred using multiple-use packaging solutions

Multiple-use cost item	Units	Number of units	Price per unit	Total cost
All multiple-use packaging items	Number of items	9,173 ²¹	€0.40 ²²	€3,712
Dishwasher	Number of items	0.2 ²³	€4,804	€961
Electricity for washing	kWh	26,006	€0.14	€3,745
Water for washing	Litres	305,811	€0.003	€917
Detergent	Kilograms	362	€4.70	€1,704
Rinse agent	Kilograms	39	€23.83	€941
Wastewater	Litres	305,811	€0.002	€612
Staff costs	Hours	2,002	€14.50	€29,029
Total				€41,620

Source: Ramboll, RBB desk research and RBB assumptions

Moreover, the above does not consider refurbishment costs. We understand that such costs may be incurred some outlets in order to make space for dishwashers and/or to install new collection bins for the multiple-use items, and to separate flows of dirty and clean dishes. We understand from a Burger LSR that these costs could easily exceed €10,000 per outlet. Thus, this analysis may materially understate the true costs incurred by eating and drinking establishments that require refurbishments.

3.2.4 Conclusion

In summary, a Burger LSR outlet switching from single-use to multiple-use packaging would increase its packaging costs by approximately €30,000 per year (i.e., from €11,275 to €41,620), which represents a c.270% increase. Moreover, this difference could be even larger (e.g., where refurbishments are required, and to the extent that we have underestimated the additional staff costs required).

3.3 Impact of the Decree and the Law on Burger LSR prices

In this section we assess how the aforementioned cost increase could impact a Burger LSR outlet's prices. We assume that, in reaction to the packaging cost impact incurred for on-premises sales, outlets would spread any price increase across all sales (i.e., also takeaway).

²¹ This 9,173 figure is comprised of (i) 1,646 polypropylene ("PP") cold cups, (ii) 106 PP hot cups, (iii) 106 PP lids for hot cups, (iv) 2,300 PP baskets, (v) 1,851 PP serving covers, (vi) 80 PP salad boxes, (vii) 80 PP lid for salad boxes, (viii) 376 PP dessert cups, (ix) 314 PP cutlery sets, and (x) 2,314 acrylic plates.

²² The Ramboll data reports cold cups, hot cups, lids for hot cups, baskets, serving covers, salad boxes, lids for salad boxes, dessert cups, cutlery (all PP) and acrylic plates separately. We have conducted our desk research of prices on this product-by-product basis (see Annex A.3) but report them grouped together here.

²³ The Ramboll study estimates that a Burger LSR would need to buy an additional 2 dishwashers in total, but that this would be used/depreciated across 10 years. Therefore, this would result in a Burger LSR purchasing 0.2 dishwashers per year (i.e., 2 dishwashers divided by 10 years).

If outlets increased on-premises prices only, the increase would be larger but apply to fewer sales.²⁴

The size of any price increase depends on the size of the cost increase vis-à-vis prices, and the amount of this that the outlet would choose to pass-on. We discuss each of these in turn.

Regarding the size of the increase, a €30,000 cost increase translates to approximately 1% of a Burger LSR's price. We estimate this as follows. An average Burger LSR outlet makes 327,323 transactions annually.²⁵ Therefore, a cost increase of €30,000 equates to around €0.09 per meal (transaction).²⁶ In terms of prices, Euromonitor records the average price of a Burger LSR meal at around €9.37.²⁷ €0.09 is c.1% of €9.37.

Regarding the amount that would be passed-on, we are unable to precisely estimate this as it would depend on a number of factors which would be difficult to quantify. However, economic theory predicts that at least some of this cost increase would be passed on based on the following key considerations:

- The cost increase would also impact many of the outlet's rivals. This is important because the extent to which a firm can raise price profitably (to pass on the cost increase) depends on the sales it will lose from the price increase.²⁸ However, as many rival outlets would also face a cost increase, they too would face incentives to raise price. If many rivals increase price, all else equal, they each lose fewer sales (making it more profitable to do so).²⁹
- The cost increases are driven by increases in variable cost. Changes in a firm's variable costs usually have the most immediate influence on pricing decisions.³⁰ In this regard, the key drivers of the cost increase are staff costs and electricity which would vary with the amount sold (i.e., as selling more would generate more reusables to wash).

We have therefore considered two scenarios. One where 100% of the cost increase is passed on, and another in which 50% is. Table 4 below summarises the expected price increase in each of these scenarios.

On this basis, outlet prices would likely increase by €0.05 (0.5%) - €0.09 (1%) per meal.

²⁴ For example, consider a restaurant with 100-unit sales and 50% of these are on premises (i.e., 50 units). Consider that the restaurant incurs an additional cost on its on-premises sales of €100 in total and wants to pass this on in total as higher prices to consumers. Our analysis would consider a price increase of €1 across all 100 units. However, if it only increased its price for on-premises sales, it would increase the price of the 50 on-premises units by €2.

²⁵ Euromonitor indicates that Burger LSRs made 739,749,800 transactions in 2019, and there were 2,260 Burger LSR sites. 739,749,800 divided by 2,260 is 327,323.

²⁶ We note that the Euromonitor data provide data in terms of the number of "transactions". A given transaction could include multiple meals (e.g., a family jointly purchasing a meal each).

²⁷ Euromonitor indicates that Burger LSRs earned €6,932,400,000 across 739,749,800 transactions in 2019. This renders an average price per transaction of €9.37.

²⁸ The impacted outlet can increase its price to try and obtain a higher profit margin again. However, this is a trade-off. By increasing its price the outlet regains a higher profit margin, but also loses the profit margin earned on sales it loses as a result of charging higher prices. Therefore, the greater the elasticity of consumer demand (i.e., the responsiveness of consumer demand to a change in price), the larger the reduction in demand that the outlet would face if it chose to increase prices.

²⁹ Thus, any price elasticity of any single supplier that was estimated assuming the price of its rivals do *not* also increase would overstate the extent to which consumers would switch due to a price increase following the Decree and the Law.

³⁰ At the same time, fixed costs (i.e., costs that do not vary with the level of output) are predicted to affect those decisions in some specific situations and, notably, over the longer term.

Table 4: Impact of the Decree on Burger LSRs' prices under each pass-through scenario

Pass-through	Original average price per meal	New average price per meal	Price increase
100%	€9.37	€9.46	€0.09 (1%)
50%	€9.37	€9.42	€0.05 (0.5%)

Source: Euromonitor

3.4 Reaction of consumers to the outlet price increase

The reaction of consumers to the price increase depends on the price elasticity of demand of those consumers. Price elasticity measures the sensitivity of demand to a change in price. The greater the elasticity, the more consumers that would switch away due to price increases.

We do not have data to estimate the price elasticity of Burger LSR consumers.³¹ However, we have been provided with an economic study by Ecuity which estimates an elasticity of demand of -0.84 for “coffee prices, takeaway food and other drinks”.³² This elasticity of -0.84 implies that a price increase of 10% would result in the volume of sales falling by 8.4%.

Table 5 below outlines our calculations of applying this elasticity to the price increases above. **Based on the number of transactions currently made in a Burger LSR site, such a price increase would likely result in around 1,500 to 2,500 meal sales per store being lost. This would amount to a loss of around €13,000 to €25,000 worth of sales for the outlet** (i.e., multiplying the lost meals by the average price per meal of €9.37). Consumers who continue to purchase from the outlets after the price increase would now pay an additional c.€15,000 to c.€30,000 after the price increase (i.e., multiplying the remaining meals by the price increase).

Table 5: Predicted annual sales lost per Burger LSR outlet as a result of the price increase

Pass-through scenario	Expected price increase	Transactions lost	Revenue lost	Additional amount paid for remaining sales
Complete (100%)	€0.09	2,720	€25,490	€30,093
Partial (50%)	€0.05	1,360	€12,745	€15,110

Source: RBB analysis, Euromonitor and Ecuity's paper cup levy study

3.5 Conclusion

In conclusion the Decree and the Law are likely to result in affected eating and drinking establishments facing cost increases, charging higher prices, and losing consumers as a result. In this regard, Table 6 below summarises the various impacts explained throughout this section.

³¹ Indeed, we discussed with a Burger LSR and it indicated that all studies would assume that the price of its closest rivals would remain unchanged (such that the extent of switching away would be overstated).

³² “Economic Analysis of a Takeaway Paper Cup Levy: Final Results Presentation”, 13th March 2018.

Table 6: Summary of the impacts of the Decree and the Law on a Burger LSR outlet

Impact	Partial pass-through	Complete pass-through
Packaging cost increase (€)	30,345	30,345
Price increase (%)	0.5	1
Amount passed-on to consumers (€)	15,110	30,093
Sales lost from price increase (transactions)	1,360	2,720
Sales lost from price increase (€)	12,745	25,490

Source: Euromonitor, Ecuity paper cup levy study, Ramboll, desk research and EPPA price data

4 Impact on the single use packaging supplier value chain, affected eating and drinking establishments, and consumers

4.1 Overview

In this section we estimate the overall market-wide impact of the Decree and the Law on the single-use packaging supplier value chain, affected eating and drinking establishments, and consumers. We estimate this by taking the impact to a typical Burger LSR (i.e., as outlined in Section 3 above) and scaling it up by the total number of sites that we estimated to be affected by the Decree and the Law (i.e., as outlined in Section 2).

The c.10,500 affected sites contain a variety of different types of outlet (e.g., bakeries, cafés, burger outlets, etc.). Different types of outlet may currently use a different amount of on-premises single-use packaging and would thus be impacted differently. Therefore, in order to scale up our case study (based on a typical Burger LSR) to a market-wide view, we first convert the number of affected sites to a number of “Burger LSR equivalent” sites.

To do this, we have assumed that on-premises revenue per site is a reasonable indicator of the amount of packaging used on-premises. We thus scale up or down the number of affected outlets within each category based on whether it makes more or less on-premises revenue per site than a Burger LSR.³³ This analysis is outlined in Annex A.2. Based on this analysis we estimate that the Decree and the Law will impact 3,579 Burger LSR equivalent sites.

On this basis, we outline the overall harm to (i) the single-use packaging supplier value chain, (ii) eating and drinking establishments affected by the Decree and the Law, and (iii) consumers in turn.

4.2 Impact on single-use packaging supplier value chain

Single-use packaging suppliers would be directly harmed by the Decree and the Law. They would face a reduction in demand as their products that are covered by the Decree and the Law can no longer be used on-premises in affected outlets.

We estimate that single-use packaging suppliers and their supply chain would lose around €40,000,000 per year in revenue from the loss of on-premises sales. This is estimated as the c.€11,000 sales of single-use packaging currently made per Burger LSR outlet for on-premises consumption (i.e., those that would be lost after the introduction of the Decree and the Law), multiplied by the 3,579 Burger LSR equivalent sites affected by the Decree and the Law.

EPPA informed us that the newly freed-up capacity from these lost sales would not be utilised elsewhere (e.g., for manufacturing and sales of other products). Therefore, this lost revenue would not be offset by an increase in other sales. It also means that single-use suppliers

³³ For example, a bakery's on premises revenue per site is 10% that of a Burger LSR. Thus, we multiply the c.5,000 affected bakery sites by 10% to obtain the number of bakery “Burger LSR equivalent” sites (i.e., c.500).

would face a reduction in the volume of production. This volume loss could result in single-use suppliers facing a higher cost per unit on their remaining sales. Such an impact could arise from their overhead costs (e.g., rent, advertisement and back-office staff) now being spread over fewer volumes, and/or their cost of goods sold increasing (e.g., through reduced discounts for raw material and other inputs).

This would lead to further harm to single-use suppliers *not* captured by our analysis. In particular, single-use suppliers would face a reduction in the profit made on remaining sales (which could lead to price increases for single-use packaging and further harm downstream).

4.3 Impact on eating and drinking establishments affected by the Decree and the Law

Eating and drinking establishments will have their choice of on-premises packaging restricted (i.e., they can no longer use single-use packaging). As outlined in subsection 3.2, switching to multiple-use will likely increase Burger LSR outlets' packaging costs by c.€30,000 per year.

We estimate that the overall harm incurred by affected eating and drinking establishments will be between €46 million and €77 million per year. This harm originates from the increase in packaging costs, but this cost increase leads to three effects:

- Switching to multiple-use packaging will increase outlets' costs. We estimate this will total around €109 million across all affected outlets. This is calculated as the €30,000 packaging cost increase incurred per outlet, multiplied by the 3,579 Burger LSR equivalent sites affected by the Decree and the Law). As outlined in subsection 3.2.3, most of the cost is attributable to additional electricity and staff costs required to wash the reusables.
- This cost increase will likely be (at least partially) passed-on to consumers via a price increase. As explained in subsection 3.3, this is because the cost increase will be experienced by many rivals, and the increase is mainly of *variable* costs. Assuming that 50%-100% of this cost increase would be passed on, we estimate that €54-108 million would be passed on (via a 0.5%-1% price increase). This is calculated as the extra €15,000-€30,000 a Burger LSR site would earn on retained sales, multiplied by the 3,579 Burger LSR equivalent sites affected by the Decree and the Law.
- Consumers will likely purchase less due to the 0.5%-1% price increase. We estimate that between €46 million and €91 million of sales would be lost due to the price increase. This is estimated as the €13,000 to €25,000 lost by a Burger LSR increasing its price multiplied by the 3,579 Burger LSR equivalent sites affected by the Decree and the Law. We note that some consumers may switch to other eating and drinking establishments, but it is unlikely that many would switch between *affected* outlets (i.e., as they would also increase prices). Assuming than an average restaurant makes a gross margin (on variable costs) of around 50% on its sales³⁴, we estimate that the price increase would see restaurants' profits fall by between €23 million and €46 million.³⁵

³⁴ EPPA informed us that the average gross (variable) margin for a fast-food outlet is around 50%.

³⁵ As well as causing a loss of €23-€46 million to restaurants' suppliers.

As noted above, this overall cost increase may be understated as it does not consider the cost of refurbishments that may be incurred by some outlets (e.g., to make space for dishwashers).

4.4 Impact on consumers

Consumers would be harmed by being charged higher prices for food and drink in outlets. As explained in subsection 3.3, prices charged by affected outlets could increase by 0.5%-1% due to the Decree and the Law.

We estimate that consumers would incur harm of between €54 million and €108 million. As set out in subsection 4.3, this is the additional amount consumers will pay each year as a result of the Decree and the Law (i.e., the amount of the cost increase passed on by outlets).

4.5 Conclusion

In short, the Decree and the Law will harm the single-use packaging supplier value chain, outlets impacted by the Decree and the Law, and consumers. This harm could total up to over €194 million, of which up to over €108 million would be paid for by consumers.

Table 7 below summarises the harms set out in the previous subsections. Namely that:

- The single-use packaging supply chain will lose c.€40 million per year in revenue.
- Impacted eating and drinking establishments will be harmed by between c.€46 million and c.€77 million per year.
- Consumers will be harmed by between c.€54 million and c.€108 million per year.

Table 7: Summary of overall market-wide harm in each scenario

Harm	Complete pass-through (100%)	Partial pass-through (50%)
Harm to the single-use packaging supplier value chain (€)	40,348,162	40,348,162
Harm to impacted eating and drinking establishments (€)	45,608,059	76,873,744
Harm to consumers (€)	108,139,430	54,182,512
Total harm (€)	194,095,651	171,404,418

Source: RBB's analysis of data from Ramboll, EPPA members, Euromonitor and the Ecuity paper cup study

5 Distortionary impact of the Decree and the Law

The Decree and the Law may distort competition among eating and drinking establishments in France. As outlined in Subsection 3, impacted eating and drinking establishments will face cost increases, charge higher prices, and lose consumers. Moreover, as outlined in Section 2, only outlets with 20 seats or more that currently use single-use packaging are impacted.

In particular, eating and drinking establishments affected by the Decree and the Law may be placed at a competitive disadvantage vis-à-vis those that are not. This in turn would make the affected outlets less profitable and/or lose consumers to outlets that are not. Such distortions are likely to arise in a number of ways:

- **Certain (Euromonitor) categories of outlet would be disadvantaged versus others.** As outlined in Section 2, a higher proportion of certain categories of outlets are impacted than other categories. For example, almost all Burger LSRs will be impacted, but only 1% of Pizza LSRs. In this example, Burger LSRs will be placed at a competitive disadvantage versus Pizza LSRs (compared to the counterfactual absent the Decree and the Law).³⁶
- **Certain outlets would be disadvantaged versus others within (Euromonitor) categories.** Within most categories of outlet, some (but not all) outlets will be impacted by the Decree and the Law (e.g., 42% of Bakery LSRs). **This means certain outlets would be placed at a competitive disadvantage versus others, despite selling similar products.** For example, affected bakeries would be placed at a competitive disadvantage versus other bakeries.
- **Outlets with 20 seats or more would be disadvantaged versus smaller capacity outlets.** Outlets with less than 20 seats are not impacted by the Decree and the Law. Therefore, these would be at a competitive advantage vis-à-vis those with 20 or more seats.

Last, smaller outlets (e.g., family-owned cafés) are likely to suffer larger impacts vis-à-vis large outlets (e.g., a Starbucks outlet). In particular, these have fewer units to spread large investment costs over than larger outlets. For example, a €4,000 dishwasher (depreciated over 10 years) would cost a Starbucks outlet 0.4 cents per transaction (over 109,524 transactions per year), but an average independent café 1.3 cents per transaction (over c.30,000 transactions per year).³⁷ The same is true for potential refurbishment costs.

Therefore, the Decree and the Law can be expected to lead to a larger impact on smaller outlets' profit margins and prices vis-à-vis larger outlets.

³⁶ The amount of such switching between the different categories will depend on how substitutable consumers consider these different types of outlet (e.g., how close of alternatives do consumers consider pizzas and burgers to be).

³⁷ The number of transactions for a Starbucks outlet and an average independent café are based on Euromonitor data for 2019.

A Annexes

A.1 Estimation of the proportion of sites affected by the Decree and the Law

This annex explains the methodology adopted to estimate the number of outlets affected by the Decree and the Law in Section 2. This is based on Euromonitor data. The Euromonitor data provide details of the number of sites, transactions, and revenue, for different categories of restaurants in France. The Euromonitor data we have been provided with cover cafés/bars; LSRs; and self-service cafeterias.

The Euromonitor data are disaggregated by categories of outlet (e.g., Burger LSR, Chicken LSR, etc.). Within each category, the data are further disaggregated on a brand-by-brand basis for some brands (e.g., the Burger LSR sub-category presents disaggregated figures for, *inter alia*, McDonald's and Burger King). However, each category also contains an aggregate "others" figure of all other brands (i.e., for which a brand-by-brand breakdown is not available).

To estimate the proportion of outlets impacted by the Decree and the Law from these data, we followed the following two-step methodology.

First, we provided CEE Schisler with the list of brands for which brand-by-brand data are available in Euromonitor. CEE Schisler indicated whether each of these brands typically:^{38, 39}

- has 20 or more seats for on-premises consumption; and
- currently use single-use packaging on-premises.

Brands were considered to be "affected" by the Decree and the Law if they typically have 20 or more seats and currently use single-use packaging on-premises. Some brands were indicated to currently use single-use and multiple-use packaging on-premises. Therefore, these would be impacted by the Decree and the Law, but to a lesser extent than if they exclusively used single-use packaging. We considered that *half* of the sites for these brands would be impacted by the Decree and the Law.⁴⁰

The results of this exercise can be seen in Table 8 below. This presents the brands found in the Euromonitor data received, the number of sites each brand has, and the categorisation applied to each regarding the number of seats and on-premises packaging use.⁴¹

³⁸ RBB had tentatively completed this exercise in order for CEE Schisler to confirm/amend.

³⁹ Indeed, there could be variation within a brand (e.g., it has some sites smaller than 20 seats and other larger). However, the table has been completed based on the *typical* characteristics of the outlets of each brand in order to provide a high-level indication of the outlet categories that will and will not be affected by the Decree and the Law.

⁴⁰ For example, if a brand with 100 sites with 20 or more seats used a single-use and multiple-use packaging solution, we would consider that 50 sites from this brand were impacted.

⁴¹ Brands that use single-use and multiple-use packaging on-premises are marked as "Single-use + Multi-use".

Table 8: Restaurant chains affected by the Decree and the Law

Category	Brand Name	Number of sites	Typically has capacity of 20+ seats / <20 seats	Single-use / multi-use typically used on-premises	Affected by the Decree and the Law
Bars/Pubs	Au Bureau (Groupe Bertrand CHR)	142	20+ seats	Multi-use	No
	Au Fût et à Mesure (AFEM Sarl)	28	20+ seats	Multi-use	No
	Le Comptoir du Malt (Le Comptoir du Malt SA)	16	20+ seats	Multi-use	No
	Frogpubs (Frogpubs SAS)	11	20+ seats	Multi-use	No
	Café Leffe (Groupe Bertrand CHR)	6	20+ seats	Multi-use	No
Specialist Coffee and Tea Shops	McCafé (McDonald's Corp)	220	20+ seats	Single-use + Multi-use	Yes
	Starbucks (Starbucks Corp)	195	20+ seats	Single-use + Multi-use	Yes
	Columbus Café (Colombus Développement, Sarl)	190	20+ seats	Single-use + Multi-use	Yes
	French Coffee Shop (Société French Coffee Shop SARL)	56	20+ seats	Single-use + Multi-use	Yes
	Segafredo (Massimo Zanetti Beverage Group SpA)	29	<20 seats	Single-use + Multi-use	No
	Illy (Illycaffè SpA)	15	<20 seats	Multi-use	No
	Costa Coffee (Coca-Cola Co, The)	10	20+ seats	Single-use + Multi-use	Yes
Juice/Smoothie Bars	Zumo Juice Bar (Jump Juice Bars Ltd)	14	<20 seats	Single-use	No
	Feel Juice (Feel Developpement Sarl)	5	<20 seats	Single-use	No
	Boon (Happy Concept Developpement SASU)	5	<20 seats	Single-use	No
Burger LSR	McDonald's (McDonald's Corp)	1,490	20+ seats	Single-use	Yes
	Burger King (Restaurant Brands International Inc)	351	20+ seats	Single-use	Yes
	Quick (QSR Belgium NV)	135	20+ seats	Single-use	Yes
	Big Fernand (Big Groupe SAS)	53	20+ seats	Single-use	Yes
	231 East St (C Mouwi Eurl)	31	20+ seats	Single-use	Yes
	Steak 'n Shake (Steak 'n Shake Operations, Inc)	25	20+ seats	Single-use + Multi-use	Yes
	Speed Burger (Speed Burger Diffusion SARL)	32	<20 seats	Single-use	No
	Five Guys (Five Guys Holdings Ltd)	18	20+ seats	Single-use	Yes

Category	Brand Name	Number of sites	Typically has capacity of 20+ seats / <20 seats	Single-use / multi-use typically used on-premises	Affected by the Decree and the Law
Bakery LSR	Marie Blachère (Boulangeries BG SA)	503	20+ seats	Single-use	Yes
	Subway (Doctor's Associates Inc)	420	20+ seats	Single-use	Yes
	Paul (Holder, Groupe)	337	20+ seats	Single-use + Multi-use	Yes
	La Brioche Dorée (Le Duff, Groupe)	238	20+ seats	Single-use + Multi-use	Yes
	La Croissanterie (La Croissanterie SA)	239	20+ seats	Single-use	Yes
	La Mie Caline (SAS Monts Fournil)	235	<20 seats	Single-use	No
	La Panetière - Secrets de Pain (La Panetière SA)	220	<20 seats	Single-use	No
	Boulangerie Ange (Boulangerie Ange SA)	152	20+ seats	Single-use	Yes
	Class'Croûte (Apagor SA)	128	<20 seats	Single-use	No
	Boulangerie Louise (Holding Louise SAS)	120	<20 seats	Single-use	No
	Coeur de Blé (Casino Guichard-Perrachon SA)	121	<20 seats	Single-use	No
	Pomme de Pain (Neuhauser International)	90	<20 seats	Single-use	No
	Bagelstein (Bagels Sarl)	82	<20 seats	Single-use	No
	Pat' à Pain (France Restauration Rapide SAS)	52	20+ seats	Single-use + Multi-use	Yes
	Pret a Manger (Pret A Manger (Europe) Ltd)	35	20+ seats	Single-use	Yes
Le Pain Quotidien (PQ Licensing NV SA)	23	20+ seats	Single-use + Multi-use	Yes	
Bert's Café (Groupe Bertrand CHR)	20	20+ seats	Single-use	Yes	
Lina's (Noura Foods Ltd)	10	20+ seats	Single-use	Yes	
Chicken LSR	KFC (Yum! Brands Inc)	260	20+ seats	Single-use	Yes
Latin American LSR	O'Tacos (O'Tacos Corp SAS)	211	20+ seats	Single-use	Yes
	Fresh Burritos (Fresh Burritos Sarl)	36	20+ seats	Single-use	Yes
	Clasico-Argentino & El Carrito (Clasico-Argentino SAS)	8	20+ seats	Single-use + Multi-use	Yes
	Chipotle Mexican Grill (Chipotle Mexican Grill Inc)	6	20+ seats	Single-use	Yes

Category	Brand Name	Number of sites	Typically has capacity of 20+ seats / <20 seats	Single-use / multi-use typically used on-premises	Affected by the Decree and the Law
Ice Cream LSR	Amorino (CPF SAS)	83	<20 seats	Single-use	No
	Häagen-Dazs (General Mills Inc)	76	<20 seats	Single-use	No
	Ben & Jerry's (Unilever Group)	26	<20 seats	Single-use	No
	Compagnie des Glaces (Cie des Glaces SAS)	12	<20 seats	Single-use	No
Middle Eastern LSR	Nabab Kebab (Nabab Developpement Sarl)	103	20+ seats	Single-use	Yes
Pizza LSR	Domino's Pizza (Domino's Pizza Inc)	404	<20 seats	Single-use	No
	Pizza Hut (Yum! Brands Inc)	140	<20 seats	Single-use + Multi-use	No
	Tutti Pizza (DFTP SARL)	80	<20 seats	Single-use	No
	La Boîte à Pizza (Socorest, Groupe)	90	<20 seats	Single-use	No
	Pizza Mania (NSR SA)	50	<20 seats	Single-use	No
	Pizza Cosy (Cosy Developpement Sarl)	22	20+ seats	Single-use + Multi-use	Yes
	Pizza Sprint (Framapizz)	6	<20 seats	Single-use	No
Other LSR	Exki (Exki SA)	43	20+ seats	Single-use	Yes
	Mezzo di Pasta (NSR SA)	40	<20 seats	Single-use	No
	Dubble (Dubble Food Developpement Sarl)	36	20+ seats	Single-use	Yes
	Cojean (Cojean SA)	32	20+ seats	Single-use	Yes
	Francesca (Francesca SA)	31	20+ seats	Multi-use	No
	PastaCosy (Pasta Cosy (PC) Developpement Sarl)	19	Unknown	Unknown	No ⁴²
	Jour (Jour SA)	18	20+ seats	Single-use	Yes
	Planetalis (Origine Planetalis SARL)	14	20+ seats	Single-use	Yes
	Stratto (SO2R Sarl)	12	20+ seats	Single-use	Yes
Self-Service Cafeterias	Flunch (Agapes Restauration SA)	232	20+ seats	Single-use + Multi-use	Yes
	À la Bonne Heure (Casino Guichard-Perrachon SA)	98	20+ seats	Multi-use	No

⁴² CEE Schisler was unable to populate the required information for Pasta Cosy (i.e., whether it has more than 20 seats and uses single-use packaging on-premises). Therefore, we conservatively assume that it would not be affected by the Decree and the Law.

Category	Brand Name	Number of sites	Typically has capacity of 20+ seats / <20 seats	Single-use / multi-use typically used on-premises	Affected by the Decree and the Law
	Crescendo (Crescendo Restauration Holding SA)	65	20+ seats	Single-use + Multi-use	Yes
	Cora Caf��t��ria (Koninklijke Ahold Delhaize NV)	56	20+ seats	Single-use + Multi-use	Yes
	C��t�� France (Autogrill SpA)	53	20+ seats	Multi-use	No
	LEO Resto (Sighor Management SA)	48	20+ seats	Single-use + Multi-use	Yes
	Ikea Restaurant (Inter IKEA Systems BV)	34	20+ seats	Single-use + Multi-use	Yes
	Arche (Elior, Groupe)	34	20+ seats	Multi-use	No
	Alinea Caf��/ Alinea Pause Caf�� (Alinea SAS)	29	20+ seats	Multi-use	No
	Vapiano (Vapiano AG)	27	20+ seats	Multi-use	No
	Eris Caf��t��ria (Groupe Bertrand CHR)	5	20+ seats	Multi-use	No

Source: Euromonitor, CEE Schisler

Second, we calculate the proportion of outlets of each category affected by the Decree and the Law based on the proportion of sites affected among the brand-by-brand data. For example, 2,091 out of 2,135 Burger LSR sites in the brand-by-brand disaggregated data were marked as being affected by the Decree (from 7 out of 8 outlet brands).⁴³ Therefore on this basis we estimate that 98% of all Burger LSR sites would be affected by the Decree and the Law (i.e., also including those listed under the “others” category).

There were four categories of outlet that we could not adopt this methodology for. This is because the brand-by-brand disaggregated data provided only covered a small portion of sites and brands in that category. The above approach may thus not render reliable results (for all other categories at least 19% of sites or 5 brands were covered by the brand-by-brand data):

- For *Middle Eastern LSRs*, the Euromonitor data only include disaggregated brand-by-brand data for 1 brand which covers only 1% of sites.
- For *Asian LSRs*, *Independent Caf  s* and *Convenience LSRs*, the Euromonitor data did not include any disaggregated brand-by-brand data (i.e., 0% coverage, and 0 brands).

For these four categories, we requested direct estimates from EPPA for the proportion of sites within these categories that would be affected by the Decree.⁴⁴

⁴³ One Burger LSR restaurant chain – Steak ‘n Shake – was indicated to currently use single-use and multiple-use packaging on-premises. Thus, we considered that half of Steak ‘n Shake’s 25 sites would be impacted by the Decree.

⁴⁴ Note that we only asked EPPA to provide estimates for Middle Eastern LSR, Independent Caf  s and Asian LSRs. We did not request estimates for Convenience Stores LSR because it only accounts for 57 sites in total. We conservatively assume that none of these sites would be impacted by the Decree and the Law.

Table 9 below summarises the results of the aforementioned steps and the calculated percentage of outlets affected within each category (i.e., as presented in Section 2).

Table 9: Estimated proportion of sites affected by the Decree and the Law among named brands

Category of restaurant	Number of affected sites among named brands	Total number of sites among named brands	Estimated proportion of sites affected
Bars/Pubs	0	203	0%
Independent Cafés	N/A	N/A	8%
Juice/Smoothie Bars	0	24	0%
Specialist Coffee and Tea Shops	335	715	47%
Asian LSR	N/A	N/A	10%
Bakery LSR	1,284	3,025	42%
Burger LSR	2,091	2,135	98%
Chicken LSR	260	260	100%
Convenience Stores LSR	N/A	N/A	0%
Ice Cream LSR	0	197	0%
Latin American LSR	257	261	98%
Middle Eastern LSR	N/A	N/A	5%
Other LSR	155	245	63%
Pizza LSR	11	792	1%
Self-service cafeterias	217	681	32%

Source: RBB analysis of Euromonitor data

Note: Categories listed with N/A are the four categories described above for which the percentages listed in the far-right column are the direct proportions provided by EPPA (i.e., not calculated based on the brand-by-brand data)

A.2 Calculation of number of “Burger LSR equivalent sites” affected

The 10,492 sites affected by the Decree and the Law are comprised of a variety of different categories. Each may use a different amount of single-use packaging for on-premises consumption (and would thus be impacted differently). Our estimated impact per site is based on an average Burger LSR store. Thus, to scale this up to a market-wide value, we first converted the number of affected sites to a “number of Burger LSR equivalent” sites. We outline the steps taken to do this in turn.

We first calculated the average revenue per site within each category of outlet. We then multiplied this by the Euromonitor estimate of the proportion of revenue each outlet category

makes from on-premises sales.⁴⁵ This provides the average revenue per site *from on-premises* sales within each outlet category. These calculations can be seen in Table 10 below.

Table 10: Revenue per site from on-premises sales for each outlet type, 2019

Category of outlet	Revenue (€ millions)	Number of sites	Revenue per site (€)	Revenue earned from on-premises sales (%)	Revenue per site from on premises sales (€)
Bars/Pubs	2,921	20,364	143,444	90%	129,243
Independent Cafés	2,539	15,823	160,437	90%	144,554
Juice/Smoothie Bars	16	128	125,781	90%	113,329
Specialist Coffee and Tea Shops	371	715	518,322	90%	467,008
Asian LSR	583	1,164	500,515	51%	254,762
Bakery LSR	3,366	11,298	297,964	51%	151,664
Burger LSR	6,932	2,260	3,067,434	51%	1,561,324
Chicken LSR	648	318	2,038,365	51%	1,037,528
Convenience Stores LSR	54	57	952,632	51%	484,889
Ice Cream LSR	155	296	523,986	51%	266,709
Latin American LSR	215	261	823,755	51%	419,291
Middle Eastern LSR	2,189	10,319	212,114	51%	107,966
Other LSR	422	649	649,615	51%	330,654
Pizza LSR	708	1,519	466,294	51%	237,343
Self-service cafeterias	1,434	762	1,882,152	88%	1,652,530

Source: RBB analysis of Euromonitor data

To convert the number of affected sites in each category to a number of “Burger LSR equivalent” sites, we assume the revenue earned per site for on-premises sales is a good indicator of the amount of packaging used. We thus scaled up or down the number of affected sites based on whether the on-premises revenue per site is higher or lower than a Burger LSR.

Table 11 below summarises this analysis. The table shows the number of affected sites for each category of outlet and the on-premises revenue per site earned. It then presents the following two calculations:

- First, it compares the on-premises revenue per site of each category (as a percentage) to that earned by a Burger LSR (i.e., vis-à-vis €1,561,324). For example, Bakery LSRs earn €151,664 per site for on-premises sales, this is 10% of that earned by a Burger LSR.

⁴⁵ The proportion of on-premises consumption is taken as the Euromonitor 2019 figure. The 2020 figure would not be representative of usual conditions (takeaway would be much higher due to the COVID-19 restrictions).

- Second it multiplies the number of affected sites with the percentage calculated above. For example, Bakery LSRs earn 10% of a Burger LSR's revenue per site on premises, so the number of impacted Bakery LSR sites (4,796) is multiplied by 10% to render 466. Thus 466 Burger LSR equivalent bakery sites are affected by the Decree and the Law.

On this basis we estimate that 3,579 Burger LSR equivalent sites would be impacted by the Decree and the Law overall, with the majority of these being actual Burger LSR sites.

Table 11: Estimated number of Burger LSR equivalent sites affected by the Decree and the Law

Category of outlet	Number of sites affected	Revenue per site from on premises sales (€)	On-premises revenue per site vis-à-vis Burger LSR	Number of Burger LSR equivalent sites affected
Bars/Pubs	0	129,243	8%	0
Independent Cafés	1,266	144,554	9%	117
Juice/Smoothie Bars	0	113,329	7%	0
Specialist Coffee and Tea Shops	335	467,008	30%	100
Asian LSR	116	254,762	16%	19
Bakery LSR	4,796	151,664	10%	466
Burger LSR	2,213	1,561,324	100%	2,213
Chicken LSR	318	1,037,528	66%	211
Convenience Stores LSR	0	484,889	31%	0
Ice Cream LSR	0	266,709	17%	0
Latin American LSR	257	419,291	27%	69
Middle Eastern LSR	516	107,966	7%	36
Other LSR	411	330,654	21%	87
Pizza LSR	21	237,343	15%	3
Self-service cafeterias	243	1,652,530	106%	257
Total	10,492		14%	3,579

Source: RBB analysis of Euromonitor data

A.3 Desktop research of multiple-use packaging prices

This section outlines the underlying prices and sources that underpin the average prices used in our analysis of the multiple-use packaging costs (in subsection 3.2.3).

Table 12 below summarises the desktop research prices for each multiple-use item. The first column lists the different cost items considered and the second column lists the units in which the price is recorded. For each row we present the price per unit found in up to 4 different

online sources (these prices are also hyperlinks to websites), and we then present the average of these. It is this average price per unit that is used in our analysis in subsection 3.2.3.

Table 12: Summary of desktop research of the price of the price per unit of multiple-use items

Multiple use cost item	Units	Price per unit €				Average
		Source 1	Source 2	Source 3	Source 4	
Cold cup (PP) ⁴⁶	Per item	0.427	0.15	0.105	0.186	0.22
Hot cup (PP)	Per item	0.538	0.598			0.57
Lid for hot cup (PP)	Per item	0.16	0.29	0.193	0.359	0.25
Basket (PP)	Per item	0.33	0.384	0.27		0.33
Serving cover (PP)	Per item	0.347	0.247	0.425	0.602	0.41
Salad box (PP)	Per item	0.147	0.338			0.24
Lid for salad box (PP)	Per item	0.061	0.323			0.19
Dessert cup (PP)	Per item	0.088	0.221	0.101		0.14
Cutlery (PP)	Per item	0.242	0.252	0.206		0.23
Plate (acrylic)	Per item	0.683	0.533	0.678	0.879	0.69
Undercounter dishwashers	Per item	5,642	3,929	4,842		4,804
Electricity for washing	Per kWh	0.13	0.158			0.14
Water for washing	Per litre	0.002	0.004			0.003
Detergent	Per kg	4.213	5.42	4.48		4.70
Rinse agent	Per kg	23.9	23.9	23.688		23.83
Wastewater	Per litre	0.002	0.002			0.002

Source: RBB desk research

⁴⁶ "PP" refers to polypropylene. Note that we have tried to find products of the exact same material wherever possible. However, in some instances we were required to rely on the price of other materials to obtain price points.