



## **Master's Degree in Specialized Economic Analysis**

**“Dominance assessment post-Intel: Towards an effects-based approach of art. 102 cases”**

Authors:

Frederic L. Gardner and Ilaria Tucci

Director:

Anna Merino

*Date: June 2018*

## **ABSTRACT IN ENGLISH**

The application of Article 102 to rebates has been chaotic and entrenched in an object-based approach. This is fundamentally awed because it ignores the material economic effects that may arise from rebates. Although they have the ability to be anti-competitive and foreclose rivals, there exists the potential for an offsetting pro-competitive scope which can make consumers better off overall. The Intel case offers the perfect opportunity to adopt a new legal standard which eliminates the unnecessary segregation of different types of rebates and opens the door to an effects-based approach. We use information on the economics of rebates and elements of competition policy to suggest a framework for analyzing rebates under an effects-based approach. This framework is then briefly applied to two current and controversial rebate cases: Intel and Qualcomm.

## **ABSTRACT IN CATALAN**

L'aplicació de l'Article 102 en reemborsaments ha estat caòtic i atrinxerat en un punt de vista basant en l'objecte, fet bàsicament sorprenent ja que ignora els efectes econòmics concrets que puguin sorgir dels reemborsaments. Tot i tenir la capacitat dels reemborsaments de ser anti competitiu i d'excloure els rivals, existeix el potencial que sorgeixi un àmbit pro-competitiu compensatori que afavoreixi els consumidors en general. El cas d'Intel ofereix una autèntica oportunitat d'adoptar un nou marc legal que elimini les segregacions innecessàries de diferents tipus de reemborsaments i que obri una porta a un enfoc basat en els efectes. Utilitzem informació dels reemborsaments econòmics i elements de polítiques de la competència per suggerir un marc des d'analitzar els reemborsaments sota un enfocament basat en efectes. Subseqüentment, apliquem breument aquest marc a dos casos actuals i controvertits sobre els reemborsaments: Intel i Qualcomm.

## **KEYWORDS IN ENGLISH (3):**

Reimbursements  
Object-based approach  
Competitive scope

## **KEYWORDS IN CATALAN (3):**

Reemborsament  
Enfoc basat en objectes  
Àmbit competitiu

MASTER PROJECT

# **Dominance Assessment Post-Intel: Towards An Effects-Based Approach of Article 102 Cases**

**Luke Gardner (151816) & Ilaria Tucci (151855)**

*M.Sc. Specialized Economic Analysis: Competition & Market Regulation*



Barcelona Graduate School of Economics  
Barcelona, Spain

Submitted: July 3, 2018

## Abstract

The application of Article 102 to rebates has been chaotic and entrenched in an object-based approach. This is fundamentally flawed because it ignores the material economic effects that may arise from rebates. Although they have the ability to be anti-competitive and foreclose rivals, there exists the potential for an offsetting pro-competitive scope which can make consumers better off overall. The *Intel* case offers the perfect opportunity to adopt a new legal standard which eliminates the unnecessary segregation of different types of rebates and opens the floor to an effects-based approach. We use information on the economics of rebates and elements of competition policy to suggest a framework for analyzing rebates under an effects-based approach. This framework is then briefly applied to two current and controversial rebate cases: *Intel* and *Qualcomm*.

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Rebates: Theory &amp; Practice</b>	<b>2</b>
2.1	Types of Rebates & Contestable Demand . . . . .	2
2.2	Anti- and Pro-Competitive Effects . . . . .	5
2.2.1	Anti-Competitive Effects . . . . .	5
2.2.2	Pro-Competitive Effects . . . . .	5
2.3	Elements of Competition Policy Related to Rebates . . . . .	7
2.3.1	The Guidance Paper . . . . .	7
2.3.2	The As-Efficient Competitor Test . . . . .	8
2.4	Case Law Relevant To Rebates . . . . .	9
<b>3</b>	<b>Towards An Effects-Based Approach</b>	<b>11</b>
3.1	The Opinion of General Advocate Wahl . . . . .	11
3.2	The ECJ's Judgment & Potential Ambiguity . . . . .	12
3.3	Framework for an Effects-Based Approach . . . . .	13
3.3.1	Market Definition & Dominance . . . . .	15
3.3.2	Foreclosure . . . . .	16
3.3.3	Efficiency . . . . .	19
3.3.4	Legal Standard . . . . .	20
<b>4</b>	<b>The Framework In Practice</b>	<b>21</b>
4.1	Application to <i>Intel</i> . . . . .	21
4.2	Extension to <i>Qualcomm</i> . . . . .	22
<b>5</b>	<b>Conclusion</b>	<b>24</b>
<b>6</b>	<b>References</b>	<b>26</b>
<b>7</b>	<b>Annex</b>	<b>27</b>

**List of Figures**

1	Incremental vs. All-Unit Rebates . . . . .	3
2	Legal Standards for Rebates . . . . .	11
3	Summary of the Case Law and Opinions of the GA and ECJ . . .	13
4	Framework for an Effects-Based Analysis . . . . .	14
5	Market Definition and Coverage . . . . .	15

**List of Tables**

1	Sensitivity Analysis for <i>Intel</i> . . . . .	22
2	Sensitivity Analysis for <i>Qualcomm</i> . . . . .	24
4	Summary of Sensitivity Analysis Criteria . . . . .	27

# 1 Introduction

Few are the areas where Law and Economics are more intertwined than the area of competition policy and enforcement. Economic theory is simply unavoidable when assessing practices that could potentially harm competition. From the definition of the relevant market, to the welfare implications of a conduct, without forgetting the assessment of potential efficiencies, sound economic analysis is of paramount importance. The European Courts and the Commission have made large use of economic tools when assessing cases under Article 101 TFEU and in the merger control area. The same, however, cannot be said for Article 102 cases, where *per se* rules still play a key role in the evaluation of dominance.

In particular, the application of Article 102 TFEU to discounts and rebates is one of the most contentious topics in EU competition law. Legal definitions of rebates have been made which make no economic sense, and the European Commission and Courts continue to apply an object-based approach which ignores actual material effects. It is true that under certain conditions, rebates can be used in an anti-competitive manner to foreclose rivals or force them into serving only a niche market. However, an object-based method is dangerous in that it disregards the analysis of whether a practice actually results in the foreclosure of rivals, and if that foreclosure harms consumers —since the main consideration of competition law in Europe is consumer surplus. Indeed, there may also be some cases where rebates generate pro-competitive effects and efficiencies that make consumers better off overall. For this reason, commentators have been advocating for a “more economic approach” to rebates, one that could reconcile economic theory with legal standards for the sake of economic consistency and legal certainty.

In this regard the Intel case offers a great opportunity to analyze the current position of the European Court of Justice (ECJ) on exclusivity and loyalty rebates, and further develop a possible standard that could be used for ongoing and future cases. The ECJ quashed the General Court’s (GC) decision on the case, arguing that if the parties submit an efficiency analysis, it is the duty of the Commission to look in-depth into it. The fact that these types of rebates are considered *per se* anti-competitive according to the case law does not exclude the necessity of an economically sound assessment of potential efficiencies. The judgment, therefore, seems to open the door to an economic analysis of rebates, which is unprecedented. The consequences of this decision could be of various nature and it is our aim to go over them in the following paragraphs.

The adoption of a new legal standard will also require an accompanying framework. We propose that the Commission adopts a “capability-then-likelihood” style of foreclosure assessment. The as-efficient competitor test plays a necessary and crucial part in our recommended analysis, and new elements suggested by the General Advocate such as market

coverage, duration, and conditions of the rebate are also included. If foreclosure is identified, it is then up to the defendant to demonstrate sufficient pro-competitive effects which offset the harm caused by foreclosure. This framework has an effects-based analysis at its heart and will ensure that overall consumer harm does not arise. To demonstrate our framework, we will briefly apply it to two on-going controversial cases —*Intel* which is currently in front of the General Court, and *Qualcomm*. The EU Commission recently completed a case involving Qualcomm’s LTE baseband chipsets and a multi-billion dollar rebate agreement it made with Apple. Even though a complete quantitative analysis cannot be carried out due to a lack of publicly available information, we are able to apply the qualitative aspects of our framework to these cases.

Our paper will proceed in the following manner: Section 2 will look at the different types of rebates, and the economics of loyalty rebates in particular. It will also identify key elements of competition policy related to rebates, and review the confounding precedence in European case law. Section 3 will discuss the current movement towards an effects-based approach and propose a framework for analyzing rebates using economic intuition. In Section 4, we will briefly apply our method of analysis to *Intel* and the recent Commission case involving Qualcomm. Section 5 concludes.

## 2 Rebates: Theory & Practice

### 2.1 Types of Rebates & Contestable Demand

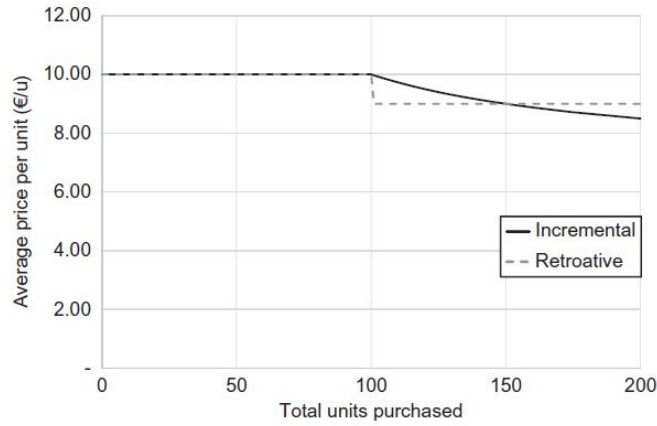
#### *Types of Rebates*

There are many different types of rebates, but this paper focuses on those which induce loyalty. They can first be distinguished as conditional discounts —the rebate is *conditional* on the customer meeting certain criteria specified by the issuing firm.<sup>1</sup> Typically the criteria involves customers purchasing a certain share or quantity of sales from the issuing firm during a specific reference period that exceeds their regular purchase frequency. Conditional discounts can also differ in whether they are “retroactive”. An incremental unit rebate where discounts are given only on units purchased after a specific threshold is not retroactive. The Commission and Courts do not have an issue with incremental unit rebates since they are most often linked to the issuing firm’s economies of scale. Anti-competitive effects are more capable of arising when rebates have retroactive properties. Retroactive quantity rebates are only applied with reference to the issuing firm, and include all-units discounts which are almost identical to incremental unit rebates but applied to all units previously purchased in a given time period. They usually have multiple discrete changes in prices as purchased volumes increase. Figure 1 below shows how average prices

---

<sup>1</sup>This is in contrast to unconditional discounts which are “no strings attached” price cuts. Such discounts are analyzed under predatory pricing.





**Figure 1: Incremental vs. All-Unit Rebates** —At 150 units a customer would be indifferent between an incremental and retroactive rebate based on their average pricing properties. The retroactive rebate is preferred below 150, and the incremental rebate above 150. The customers overall threshold requirements determine which is more likely to be preferred by them in reality. (Retrieved from Dechamps and Niels (2018)).

vary under incremental and all-unit rebate structures. Rebates which reference market shares do not just consider the firms own quantities, but also the quantities of a rival implicitly. They are granted when a customer makes purchases above a threshold share of their overall requirements in a specific time period. For example, 95% of the overall purchases in a given period are made with the issuing firm. It is more profitable to use market-share rebates if there is uncertainty about demand, e.g. to distinguish between the rebate increasing customer purchases or simply market growth.<sup>2</sup> The issuing firm does not need constant information to recalculate a threshold in every period. In the past, courts distinguished between retroactive quantity (all-unit) and market-share rebates as loyalty (or fidelity) and exclusivity rebates respectively. However, following the recent opinion of General Advocate Wahl, these should together be classified simply as loyalty rebates since both may induce loyalty from a customer but in marginally different ways. We continue using this definition throughout the paper.

Firms of all sizes can find it optimal to use loyalty rebates instead of incremental unit rebates for three reasons.<sup>3</sup> First, they are necessary when a firm wants to differentiate itself in the market where competing for exclusive customers is necessary.<sup>4</sup> Loyalty rebates create more incentives for customers to increase their purchase volumes than simple incremental unit rebates where there is no threshold in terms of payment for the issuing firm, e.g. The customer has more freedom to decide when they want to stop purchasing

<sup>2</sup>See Majumdar and Schafer, 2007.

<sup>3</sup>See Dechamps and Niels, 2018.

<sup>4</sup>Such as when only few downstream firms are available and there are high fixed costs for production or R&D upstream. This can be to reduce risk and build brand quality.

under an incremental unit rebate. Second, their retroactive property allows a firm to achieve growth more easily because the rebate is linked to a time horizon, and can create incentives for the issuing firm to invest in relationship-specific production or services.<sup>5</sup> Third, incremental unit rebates are difficult to implement when different customers can be charged different prices for different transactions. The retroactive payment of a loyalty rebate allows a customer to realize and predict transactions in terms of average prices and calculate total expenditures more easily. The use of loyalty rebates should not be immediately condemned as anti-competitive. They have legitimate justifications and there is demand for them by *both* the customers downstream and the issuing firm, even if they are not dominant.

Other clauses tied to a rebate, however, are more likely to have anti-competitive implications. For example, firms may additionally impose “naked restrictions”, or paying to prevent or delay the production of products made with rival inputs, which occurred in *Intel*. It is very difficult to see how consumers would benefit from the delay or elimination of a viable alternative. Another relevant clause is “liquidated damage provisions” where the use of a competitors input in a product results in the customer paying back all or some of the previous rebates it received, as in *Qualcomm*. This is less serious than a naked restriction since it is still possible to use rival inputs, but it can increase the chances of foreclosure by requiring rivals offering a competitive discount to also compensate customers for these additional losses. The specific terms of the provisions will determine how serious the result would be for a rival. The presence of these clauses should also be taken into consideration when undertaking an efficiency analysis.

### *Contestable Demand*

The economic analysis and theories of harm for loyalty rebates rely on the notions of contestable and non-contestable demand. The contestable portion of a consumers demand consists of purchases with a high elasticity of demand for the product in question. These input requirements are purchased from either the dominant firm or its rivals, depending on who offers a better price. Consumer purchases in the non-contestable portion represent inelastic demand. They are constraints to purchase from the dominant firm because of scale economy requirements, high switching costs, capacity constraints, or “must stock” brands.<sup>6</sup> For example, many OEMs may be forced to source the majority of their chip requirements from Intel because AMD has smaller production capacity. OEMs may further be constrained by consumer preferences for Intel chips downstream because of high switching costs and the reluctance to purchase computers with AMD chips. The concept of contestable and non-contestable demand is crucial for understanding the theory of harm

---

<sup>5</sup>This will be discussed further in Section 2.2.2.

<sup>6</sup>See O’Donoghue and Padilla, 2013.

arising from loyalty rebates. That is, the dominant firm leveraging its market power in non-contestable demand onto the contestable portion in order to foreclose rivals or force them into serving only a niche portion of the market.

## 2.2 Anti- and Pro-Competitive Effects

### 2.2.1 Anti-Competitive Effects

#### *Full or Partial Foreclosure*

As mentioned above, the main theory of harm associated with rebates is a dominant firm leveraging its market power from non-contestable demand onto the contestable portion to deny a rival the scale it needs resulting in foreclosure. This can either be in the form of full foreclosure where the rival firm no longer produces in the relevant market at all, or partial foreclosure where only niche consumers are served by the rival.<sup>7</sup> In an industry characterized by significant fixed costs, a firm will need a certain amount of consumers or purchases to make production efficient, recover these costs, and remain profitable. A dominant firm achieves this theory of harm by offering discounts where it faces competitive pressure from rivals, i.e. on the contestable portion of demand, to dampen the rival's ability to recover fixed costs. Rebates are given at such a level that the rival cannot achieve scale economies and would need to sell at a negative or near negative price to compete. The theory of harm applies to rivals which are as-efficient or more efficient only, competition policy does not seek to protect less efficient competitors. If full or partial foreclosure occurs, consumer welfare could be lower from higher prices afterwards due to the lack of competition in the same manner as predatory pricing, and could remain that way if entry is deterred.<sup>8</sup> Foreclosure is more likely to be realized under four conditions: when the dominant firm is certain there's an assured base of sales, price discrimination is feasible, a competitor cannot match the discount, and if there is little demand growth over time.<sup>9</sup>

### 2.2.2 Pro-Competitive Effects

#### *Efficient Recovery of Fixed Cost*

Price will always exceed marginal cost when an industry is characterized by large fixed costs for production, e.g. Production Plants or R&D Investments. This is to ensure the firm is able to recoup these expenditures in the long run and achieve sustainable production. There is a positive correlation between the size of fixed costs and consumer prices

<sup>7</sup>This is somewhat similar to cases with vertical integration, so we extract this methodology to distinguish results in rebates. Partial foreclosure is more likely to occur when the dominant firm is receiving some benefit from its rival, such as a licensing payment for a rival to use a dominant firm's patent.

<sup>8</sup>Higher prices is equivalent to lower quality or reduced innovation.

<sup>9</sup>See O'Donoghue and Padilla, 2013. It should also be noted that the use of a market-share rebate forgoes the need for the last three necessary conditions. The dominant firm does not need to know the threshold, and the rebate will be immune to demand growth.

—consumers may pay substantial amounts if fixed costs are extremely large. This is the case when a uniform price is charged to all consumers, however rebates are a form of price discrimination that can allow for a more efficient recovery of these costs.<sup>10</sup> The firm would charge a higher price on non-contestable demand, and a lower price to contestable demand. Profits recovered will be greater than in uniform pricing —the dominant firm acquires higher profits on infra-marginal units without losing volumes on marginal units, i.e. customers purchasing above the rebate threshold do not face the “higher price” on non-contestable demand.<sup>11</sup> The dominant firm uses these additional profits to recover its fixed costs more efficiently, and is now also supplying additional units to downstream firms or consumers that may have not purchased before.<sup>12</sup> These excess profits could also be used to invest in R&D to create new innovative products, but other competitive measures will determine if this actually occurs.<sup>13</sup>

### *Better Retailer Incentives & Mitigating the Hold Up Problem*

Rebates can be used to solve the moral hazard problem with downstream retailers. Suppose that an upstream firm invests in promotions, advertising, or a professional sales force downstream. These services do not only benefit the dominant firm but also spillover to generate benefits for rivals. For example, Intel may develop a sales force downstream with superior knowledge about x86 chipsets, but this information can also be used to increase AMD chipset sales. For this reason, a firm refrains from making such an investment and it is referred to as the “hold up” problem. Rebates can be used to provide products at a lower input cost which gives more incentive for downstream retailers to push products with the dominant firm’s input because of a higher profit margin. An upstream firm is now confident in making investments in a sales force, and retailers also benefit from lower input costs. End-consumers will benefit from these retail services since it supplies them with relevant information about the product. This can be critical for a durable good which a consumer would use for a long time, e.g. a computer.

### *Double Marginalization*

A common problem that occurs when both upstream and downstream firms have market power is double marginalization. An upstream firm sells their product at a marked up wholesale price to the downstream firms who then apply their own retail mark-up before

---

<sup>10</sup>While the term “price discrimination” carries a negative connotation, we should note that its welfare effects are generally ambiguous.

<sup>11</sup>Note that inefficient price discrimination is also possible. Prices are higher for firms not receiving the rebate, and lower for those that are.

<sup>12</sup>Although it should be kept in mind that this statement may refer to attracting new demand or simply acquiring demand from a rival.

<sup>13</sup>See Shapiro (2011) which emphasizes the role of contestability and appropriability on a firm’s incentives to innovate.

selling it to final consumers. Reducing market power or input prices upstream can result in consumer products being supplied at lower prices. If large sunk costs are an industry characteristic then increasing competition through entry may not be a viable option. Firms will need to make a sufficient mark-up to pay back these expenditures. However, loyalty rebates allow for a decrease in input prices upstream which are passed onto consumers downstream, i.e. rebates can reduce the extent of double marginalization. The benefits can propagate to all end-consumers regardless of which firms receive the rebate. If there is still competition at the retail level, these other downstream firms would have to offer final consumer goods at competitive prices, or the level set by their cheapest competitor.<sup>14</sup>

## 2.3 Elements of Competition Policy Related to Rebates

### 2.3.1 The Guidance Paper

The Guidance Paper was adopted by the Commission in February 2009. It is important to consider that it does not constitute an “official” interpretation of the Treaty nor a way to interpret Court decisions, it is simply a document that states what the enforcement priorities of the Commission are in selecting cases and carrying out investigations. With respect to price-based exclusionary conducts, the Commission establishes that it will only intervene “where the conduct concerned has already been or is capable of hampering competition from competitors which are considered to be as efficient as the dominant undertaking”, thus endorsing an effect-based analysis in these cases. In the following paragraphs we will go over two main elements of the Commission’s assessment, as laid down in the Guidance.

#### *Measure of Viable Costs*

In order to determine whether the dominant undertaking is engaging in below-cost pricing practices the Commission has to collect reliable cost data, either from the company under investigation or from other comparable sources available. The two cost benchmarks that the Commission will use are the Average Avoidable Cost (AAC) and the Long Run Average Incremental Cost (LRAIC). The former is “the average of the costs that could have been avoided if the company had not produced a discrete amount of (extra) output, in this case the amount allegedly the subject of abusive conduct”. Usually AAC coincides with average variable costs, as often only variable costs can be avoided.<sup>15</sup> Failure to recover these costs indicates that the undertaking is sacrificing short-term profits and therefore an

<sup>14</sup>This fact plays a role in the exclusionary argument of rebates. If they are offered to *all* firms in an industry, one firm foregoing the rebate can result in substantial losses from consumers buying downstream rival products instead. A competitive rebate or discount would have to be offered to compensate for the downstream firm switching upstream inputs, and ensure equal profitability.

<sup>15</sup>One issue arising from the use of AAC is what can truly be considered avoidable? In some cases, the Commission has determined some costs as being avoidable when this may not in fact be true. For example in Intel, the firm’s advertising costs were considered avoidable.

equally efficient competitor cannot match the performance of the firm without incurring losses. LRAIC is usually greater than AAC as it also includes fixed costs. Failure to cover this second category of costs indicates that the dominant undertaking is not recovering all of its costs.

### *Objective Necessity & Efficiencies*

The Commission will look into an objective justification defence put forward by the dominant undertaking, which will be required to demonstrate that the conduct is *necessary* and *proportionate* on the basis of factors external to the company. A dominant entity could submit an efficiency defence, proving, in this case, that the conduct under scrutiny produces offsetting efficiencies which outweigh any potential anti-competitive effects on consumers. The Commission will then assess whether the conduct is indispensable and proportionate. In cases where the efficiencies are not offsetting, but simply do not cause any net harm to consumers, the undertaking under scrutiny will additionally have to demonstrate that the efficiencies are directly induced by the conduct in question and that the practice will not eliminate effective competition. The dominant undertaking has to provide any evidence it possesses to argue in its defence, without limiting its plea to generic assertions. For the relevance it has with respect to our thesis, it is worth mentioning the Commission’s approach to the analysis of exclusive purchases. Especially in cases in which the dominant undertaking is a “unavoidable trading partner”, the contestable part of demand and the time horizon covered by the deals, will affect the likelihood of foreclosure.

### **2.3.2 The As-Efficient Competitor Test**

The conditions above point to the use of a price-cost analysis known as the “As-Efficient Competitor” (AEC) test, which measures the effective price a competitor as-efficient as the dominant firm would have to charge in order to competitively match the rebate scheme and comparing it to a relevant measure of costs.<sup>16</sup> If the effective price is below the cost, the conduct will be considered abusive. We now present the more mathematical interpretation of the AEC test found in Fumagalli et. al. (2018). The test is applied to each potential individual buyer, and it is calculated using the following equation.

$$p_{eff} \equiv p_I - dp_I - \frac{(1-s)QdP_I}{sQ} = (1 - \frac{d}{s})p_I$$

Where  $p_{eff}$  is the effective price which the rival must offer to match the incumbents discount,  $s$  is the share of contestable demand<sup>17</sup>,  $Q$  is the demand of the buyer,  $d$  is the per-unit discount, and  $p_I$  is the incumbents price. All we need to do is recover these values, plug them into the equation, and compare the effective price to a measure of costs.

---

<sup>16</sup> AAC or LRAIC, as stated above.

<sup>17</sup> Such that  $s \in [0, 1]$ .

It should be stressed that while the test looks simple there are many additional factors that should be considered. First, what measure of demand are we considering? Regarding *Intel*, is it the demand for business desktops, all desktops, or perhaps all x86 chips? Our choice here will impact the results of the test and the overall outcome. Second, the way we measure contestable demand will have strong implications for its accuracy. We must be sure the chosen measure of  $s$  is accurate and reflects the market being considered. Third, the test is very sensitive to changes in contestable demand when  $s$  is very low. Forth, higher contestable shares of demand will lead to a higher effective price and a lower measure of cost. The positive relationship between contestable share and the effective price is obvious since  $s$  is a value between 0 and 1. The measure of cost will be lower because we are using measures of average cost, so higher contestable shares mean more units sold and average fixed costs will be lower. Finally, as the time horizon increases so will the measure of contestable demand. This is inline with the idea that elasticity is higher in the long run. All of the above must be considered when applying this test and the authors stress a sensitivity analysis must also be done following the results.

## 2.4 Case Law Relevant To Rebates

### *Hoffman-La Roche (1979)*

In its first judgment on rebates the European Court of Justice found that Hoffman-LaRoche had abused its dominant position by entering into exclusive and loyalty agreements with some of its customers. In paragraph 89 of the judgment the ECJ establishes a *per se* rule with respect to rebates, saying that any contractual obligation by which purchasers promise to obtain all or most of their supplies from the dominant undertaking has to be considered abusive within the meaning of Article 102, irrespective of whether the quantity purchased is big or small.

### *Michelin I (1983) and II (2003)*

Contrary to the previous case, *Michelin I* dealt with rebates that were not exclusive. The General Court then elaborated the concept of abusive rebates, stressing that the anti-competitive element of these practices stems from their ability to induce loyalty. Whenever an agreement cannot be considered exclusive, the Commission is required to consider “all the circumstances of the case” in order to check whether a “loyalty-inducing” or a “fidelity-building” effect can be found. If this is the case, the *per se* rule set out in *Hoffman-La Roche* will apply. A somewhat similar conclusion arose in *Michelin II*. Both the Commission and the General Court adopted a very formalistic approach to a system of rebates similar to the one assessed in the previous case. The Commission completely disregarded any efficiency rationale put forward by Michelin and did not perform any price-cost test, neither case looked into the actual effects on competition and competitors.

### *Virgin/British Airways (2007)*

In this case the Commission found a powerful loyalty-inducing effect in the agreements

between the airline company and travel agents. The negative decision was fully upheld by the General Court and then reached the ECJ. The Court stated that, given the non exclusionary nature of the rebates, the relevant precedent was *Michelin I* and endorsed an effect-based analysis of the potential anti-competitive outcomes. The Court held,

“it first has to be determined whether those discounts or bonuses can produce an exclusionary effect, that is to say whether they are capable, first, of making market entry very difficult or impossible for competitors of the undertaking in a dominant position and, secondly, of making it more difficult or impossible for its co-contractors to choose between various sources of supply or commercial partners.”

#### *Tomra (2012)*

This case constituted in the opinion of many a “U-turn” in the jurisprudence of the General Court, which assessed the case in a very formalistic way, even stating that the Commission’s attempt to analyze the actual foreclosure effects was not necessary. Some commentators defined this judgment as a reverse in the progress on rebates.<sup>18</sup> The ECJ then did not assess any efficiency claims because the Guidance Papers were not applicable to the conduct under scrutiny, since the case began before the adoption of the document.

#### *Post Denmark II (2015)*

In this preliminary ruling the ECJ cautiously endorsed the need to perform the AEC test in cases of rebates under Article 102 and talked about the importance of assessing the effects on consumer welfare that the rebate scheme is likely to have. Moreover, the Court mentions the “probability” of foreclosure, which seems to suggest an assessment on the actual effects that the conduct has on competition and competitors.

#### *Intel (2017)*

In May 2009 the Commission found Intel responsible for infringing Article 102 by the means of two main conducts. The first consisted of conditional rebates granted to four main OEMs, which were conditional on them purchasing all or almost all of their x86 CPUs from Intel.<sup>19</sup> The second was a “naked restriction”, namely payment made by Intel to OEMs so that they would delay, cancel, or restrict the marketing of certain products equipped with AMD chipsets, Intel’s principal competitor. Intel challenged the decision before the General Court which dismissed the appeal and fully upheld the Commission’s decision. Intel then appealed again, this time before the ECJ, and the Court identified that some of the proposed grounds of appeal were founded and referred the decision back to the GC. At the moment of writing, the case is pending before the General Court and no final judgment on the matter has been made.

---

<sup>18</sup>See Federico, 2011.

<sup>19</sup>Market-share rebates for Dell, Acer, HP and Lenovo. They were also given to two downstream purchasers MSH and NEC.



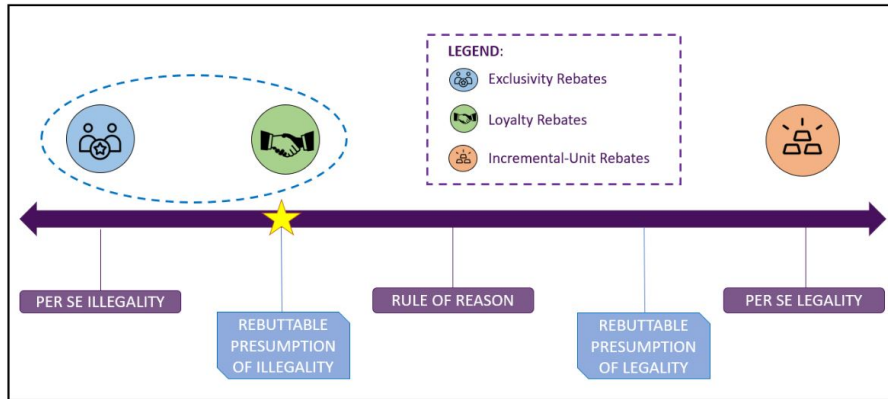
### 3 Towards An Effects-Based Approach

#### 3.1 The Opinion of General Advocate Wahl

##### *Exclusivity vs. Loyalty Rebates*

On the basis of the ECJ case-law, the General Court identified in its judgment against Intel three types of rebates: volume-based, exclusivity, and loyalty-inducing (fidelity). The General Advocate (GA) points out how the Court currently sees in the case-law three different legal standards for each of them. While the rebates belonging to the first category are presumed legal, the second and third are not. In particular, exclusivity rebates are, according to the GC, *per se* incompatible with the objective of undistorted competition, whereas loyalty rebates could in principle also have some competitive effect, which will have to be assessed on the basis of an “analysis of all the circumstances”. In other words, a presumption of legality, one of illegality, and one of a rebuttable presumption of illegality coexist for the same broad category of practices. The assessment of Intel’s conduct therefore depends on whether the assumption that “exclusivity rebates offered by a dominant undertaking result always, and without exception, in anti-competitive foreclosure” is to be considered correct or not.

In the opinion of the General Advocate, the GC erred in law when separating exclusivity from loyalty rebates, assigning to each of them different legal test. Only one category comprised of both rebates should be identified, and they should only be assessed against one legal standard —that is a rebuttable presumption of illegality. The Court should examine the context in which the contested conduct has taken place because “an abuse of dominance is never established in the abstract”.



**Figure 2: Legal Standards for Rebates** —Before *Intel* there were three separate legal standards as shown in the figure. The GA suggests combining the two on the left together under a rebuttable presumption of illegality.

##### *Assessment of All the Circumstances*

As we have learned in the previous sections, economic theory suggests that rebates are

not always harmful. Moreover, it is often the case that they have positive effect on the market, as they boost competition by increasing rivalry. For these reasons the General Advocate suggests that the Court examines “all the circumstances” when dealing with rebates. But what are those circumstances?

First, it is crucial to distinguish between conduct *capable* of foreclosing rivals from conduct *likely* to result in foreclosure. Lower probability is needed to fulfill a capability test, whereas a higher level is required for likelihood. The fact that dominant undertakings have a “special responsibility” on the market does not mean that “the degree of likelihood required for ascertaining that the impugned conduct amounts to an abuse of dominant position [is] nothing more than the mere theoretical possibility of an exclusionary effect”. The risk of choosing a level of probability too low is over-inclusion which could result in type II errors.

The Court identified the rebate’s market coverage, their duration, and contractual conditions as crucial elements that must be assessed in order to check the actual chances that the conduct will result in market foreclosure. Not so important is, in the opinion of the Advocate General, the presence of a strategy to eliminate rivals —which is simply a subjective intent —and the market performance of a competitor in the market is what truly matters. With regard to the AEC test, the GA concludes that it is a useful tool to assess exclusionary effects and, provided that the Commission carried out this analysis, the General Court erred in law when dismissing all complaints from Intel regarding the procedure followed in the administrative phase.

### 3.2 The ECJ’s Judgment & Potential Ambiguity

The European Court of Justice had the chance to refine the case-law on rebates, but in the opinion of many commentators it did not. What the Court says is very little, however very important for our discussion. The first line of argument followed by the ECJ deals with the Commission’s duty to look into any efficiency defence based on supporting evidence submitted by the party during the administrative procedure. In particular, the Court requires the Commission to analyze,

“first, the extent of the undertaking’s dominant position on the relevant market, and, secondly, the share of the market covered by the challenged practice, as well as the conditions and arrangements for granting the rebates in question, their duration and their amount; it is also required to assess the possible existence of a strategy aiming to exclude competitors that are at least as efficient as the dominant undertaking from the market.”

The Court then mentions an analysis of the “capacity to foreclose”, possible objective justifications and “advantages in term of efficiencies which benefit the consumer”, but without setting a clear probability threshold against which the capacity to foreclose should have to be assessed.

The second line of argument deals with the duties of the General Court when evaluating the Commission’s decision. The ECJ here is ambiguous because it states that

“if, in a decision finding a rebate scheme abusive, the Commission carries out such analysis, the General Court must examine all of the applicant’s arguments seeking to call into question the validity of the Commission’s findings concerning the foreclosure capability of the rebate concerned.”

The hypothetical clause poses one crucial question: Is the Commission required to carry out the effects analysis? Some commentators have read into this phrase as the possibility that an effect-based assessment will no longer be present in the Commission’s practice. Others, however, stress the importance of the parties’ submissions during the administrative procedure. Provided that the dominant undertaking gives sufficient evidence to argue an effects-based defence, the Commission will have to look into it and, as a consequence, the General Court will have to as well.

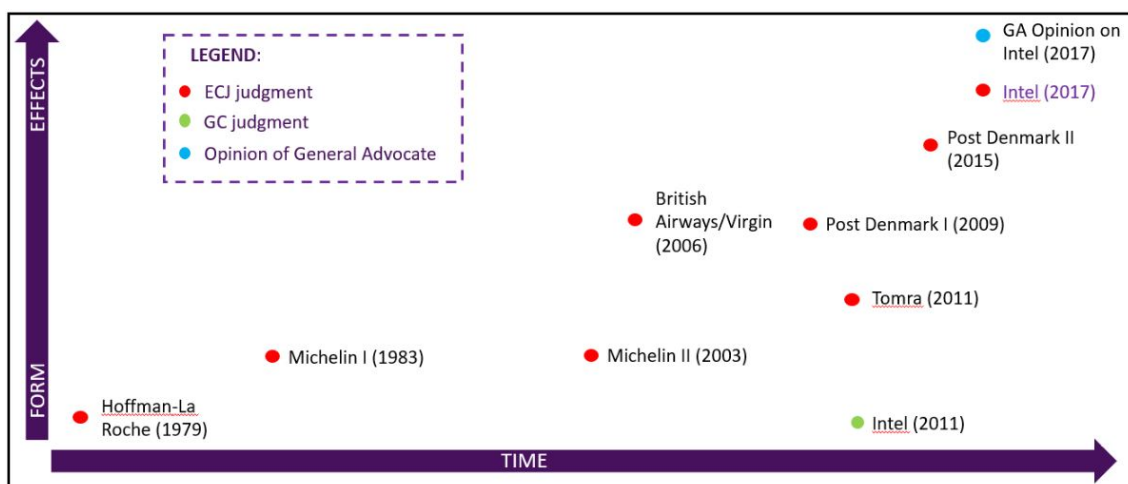


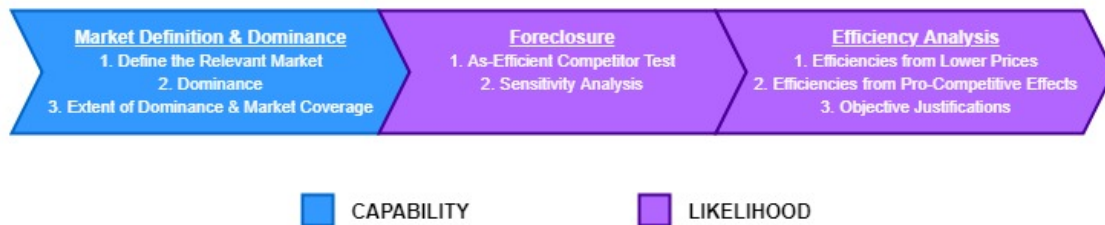
Figure 3: Summary of the Case Law and Opinions of the GA and ECJ

### 3.3 Framework for an Effects-Based Approach

The following section will entail advice to all the parties involved in the assessment of rebates, namely the Commission, the undertaking whose practice is under scrutiny and the General Court, who will potentially examine the appeal of the Commission’s decision. We propose that the framework outlined in Figure 2 be used when assessing loyalty rebates—assuming the Commission continues to endorse the effects-based analysis. It thoroughly considers all the concerns that could potentially arise while also ensuring that a rigorous analysis is avoided when unnecessary—limiting the substantial legal costs potentially incurred by both parties.

### *The Administrative Procedure*

When faced with the suspicion of an abuse of dominance through a set of rebates offered by a dominant undertaking, the Commission should be required to follow the four criteria set out by the ECJ in the Intel judgment that have been discussed in the previous paragraphs. First, it should identify the capability of foreclosure by defining the relevant market, determining if the undertaking holds a dominant position, and then looking at the extent of dominance and market coverage of the rebate. Once sufficient capability has been identified, the Commission should assess the likelihood of foreclosure.<sup>20</sup> This is done by carrying out the AEC test and following up with a sensitivity analysis to verify consistency of the results. If it is sufficiently likely that foreclosure will occur from the rebate, a thorough look at the potential efficiencies brought forward by the parties should be done to see if they offset the negative effects arising from the conduct.



**Figure 4: Framework for an Effects-Based Analysis**

### *The Parities*

When it comes to the assessment of capability, the parties should focus their efforts on the definition of the relevant market. This will have implications for the measurements of dominance and market coverage, and also on what foreclosure actually means in later assessments. In all cases, a broader market definition will be better since the extent of dominance and market coverage are likely to be lower. However, for foreclosure —narrower markets require less efficiencies to offset the overall effects arising from such a small level of foreclosure. In the likelihood phase, the parties should fiercely debate the level of contestable demand since this will ultimately affect the outcome of the AEC test. Further arguments may be possible in the sensitivity analysis, but what must be stressed is an argument for no economies of scale at this phase can be damaging when it comes to looking at efficiencies, i.e. economies of scale contribute to foreclosure but also the recovery of fixed costs. In light of what was stated in the ECJ judgment, the firm accused of abusing its dominant position has the burden of providing sufficient evidence to prove the existence of potential offsetting efficiencies and objective justifications. These efficiencies can arise

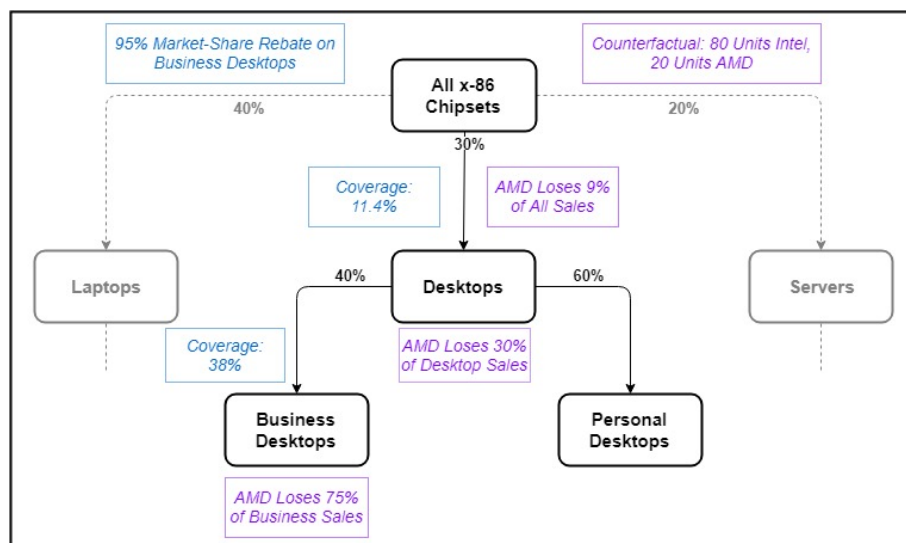
<sup>20</sup>It is also possible for the burden of proof to be placed on the Parties to demonstrate that the rebate scheme will *not* result in foreclosure. This may be more appropriate for a rebuttable presumption of illegality. However, the AEC test is used by the Commission to identify potential cases anyways.

from lower prices or other pro-competitive effects. Some objective justifications may exist with the use of market-share rebates.

### 3.3.1 Market Definition & Dominance

#### *Market Definition*

The first step in any Article 102 case is defining the relevant market. The Commission wants to identify the set of products that impose a competitive constraint on the dominant firm’s product, and this can be especially difficult due to the existence of the “cellophane fallacy”.<sup>21</sup> In the past the Commission has been criticized for defining markets too narrowly resulting in a higher capability of dominance and foreclosure. Care should be taken in this regard, and assessing the bigger picture is crucial. Foreclosure in a very narrow market does not necessarily mean the exit of a competitor in the broader market. Less offsetting efficiencies will be needed and the meaning of “entry barriers” will change since sunk costs may have already been incurred and recovered in the broader market. Everything must be taken with context. Often, we should be more concerned with foreclosure in the broader market. For this reason, there will be implications on the extent of dominance, market coverage of a rebate, and the exact definition of contestable demand depending on the market definition chosen. Therefore, this first stage is extremely crucial.



**Figure 5: Market Definition and Coverage** —Assuming the counterfactual sales in the business desktop segment are 80 for Intel and 20 for AMD. A 95% market-share rebate deprives AMD of 15 sales, or 75% of their counterfactual sales. As the market broadens, we can use the percent each segment represents to determine lost sales as we expand the market definition. This holds similarly for the market coverage. e.g.  $0.95 * 0.4 * 0.3 = 0.114$  or 11.4%, and  $0.75 * 0.4 * 0.3 = 0.09$  or 9% of all sales. It should be noted that this example assumes all downstream firms are given the rebate, so the actual impact may be even less if only a subset receive them.

<sup>21</sup>It can be difficult to identify counterfactual competitive conditions when the dominant firms market power implies prices naturally existing above competitive levels.

### *Extent of Dominance & Market Coverage*

The second step is to assess whether the defendant is dominant in the relevant market. The GA and ECJ’s first suggested criteria for assessing “all the circumstances”, the extent of dominance, will be relevant here. There is a perceived relationship between the level of dominance and the extent to which a firm is an unavoidable trading partner.<sup>22</sup> As dominance increases the share of non-contestable demand relative to total demand *in the relevant market* should also increase. Analyzing market coverage is also applicable at this stage and will further determine the capability of foreclosure. As more of the market is covered by a rebate, the possibility that it can be used for anti-competitive harm increases. However, we must distinguish between “market coverage” and “coverage of the relevant market”. Using *Intel* as an example, a 95% market-share rebate on business desktops might translate to 11.4% of total x86 processor devices.<sup>23</sup> While foreclosure is more capable of occurring in the narrow market, the overall negative impact in the broader market might be negligible. It would be wrong to say the market coverage of the rebate is 95% if the relevant market is defined as all x86 chipsets. Such a rebate scheme could be implemented for pro-competitive reasons such as developing a sales force for this subgroup of end-consumers.

Our overall assessment above indicates a strong relationship between the definition of the relevant market, the extent of dominance, and market coverage. We recommend they are all assessed together to determine the *capability* of foreclosure in the relevant market and before dedicating resources to the more intensive and costly foreclosure assessment. When the relevant market is determined, a look at the broader picture is also needed to fully understand the scope and impact of a rebate scheme. Results should be compared against basic intuitions on pro-competitive effects. If the capability of foreclosure is sufficiently high, then an in-depth analysis into the likelihood should be done.<sup>24</sup>

### **3.3.2 Foreclosure**

#### *As-Efficient Competitor Test*

When determining foreclosure, the Commission should begin with the as-efficient competitor test. Even though the Commission has stated that its concern with rebates is not over pricing, but exclusivity, it is easy to see that prices will have the ultimate impact on foreclosure. The two most crucial factors here are an accurate measure of contestable demand, and choosing the appropriate measure of costs. The choice of contestable demand should be in reference to the relevant market defined in the previous subsection. Determining this share is often done by simply asking buyers the portion of purchases

---

<sup>22</sup>This references the capability of restricting competition, but not likelihood.

<sup>23</sup>See Figure 3.

<sup>24</sup>However, we decline to comment on what this sufficient level should be.

they would consider making from rivals of the dominant firm. However, the contestable share of demand can differ depending on the market definition, i.e. whether a broader or narrower market is considered. The stated share of contestable demand should always be in reference to the defined market. Another key concern here is the difference between stated and revealed preferences. Stated preferences are not always accurate, and may even be distorted by the presence of the rebate. It might be more accurate to consider historical purchases, assuming the only thing that changed over time was the adoption of a rebate scheme in the market by a dominant firm, since this better reflects revealed preferences. A combination of both techniques may be even more preferred.

After contestable demand has been determined, we move onto choosing an appropriate measure of costs. When using average avoidable cost, the Commission must ensure that costs in the industry are actually avoidable, and consider arguments and evidence from the defendants if they believe that the Commission's calculations are incorrect. The relationship between contestable demand and costs needs to also be taken into account, as discussed in section 2.3.2. Applying the as-efficient competitor test as accurately as possible is crucial to the assessment of foreclosure. However, other factors supporting the likelihood of foreclosure should also be accounted for.

#### *Sensitivity Analysis: Factors Supporting Foreclosure*

Loyalty rebates are very similar to predatory pricing, and intuitions on the three phases of this parallel practice: attrition, recoupment, and growth will be relevant when discussing foreclosure and efficiencies in rebates.<sup>25</sup> Predatory pricing theories indicate that a dominant firm will be more successful during the attrition phase if there is asymmetry between predator and prey, and if the dominant firm has superior information on profitability and access to capital markets.<sup>26</sup> These factors can also apply equally to loyalty rebates because both have an attrition phase, although loyalty rebates rely on these somewhat less since they will be more successful from the possibility of recoupment *during* the attrition phase.<sup>27</sup> Nevertheless, the presence of these factors will give more evidence to the likelihood of foreclosure.

---

<sup>25</sup>In the attrition phase, firms compete aggressively in prices which benefit consumers, but eventually this can be unsustainable for the rival and it exits the market. During recoupment, higher prices are charged by the dominant firm who now faces less competitive pressure in order to recover lost profits from the previous phase, and consumers are worse off. In some cases even excess profits may be earned. These high profits and prices attract potential entrants, which if successful, will again depress prices to the benefit of consumers.

<sup>26</sup>The moral hazard problem contributes to a prey's inability to access sufficient capital to engage in a war of attrition. Creditors are uncertain whether the rival firm will spend the loan in an effective way, and therefore do not approve them. See Bolton and Scharfstein, 1990.

<sup>27</sup>Recall that rebates can increase a firm's profitability. Therefore, it sustains less losses during the attrition phase.

Other possible considerations from models found in Fumagalli et. al. (2018) indicate that the presence of economies of scale, incumbency advantage, weak buyer power, maturity/low market growth, and weak downstream competition are relevant to foreclosure. If economies of scale are needed to remain profitable in the industry, then a dominant firm can deprive its rival of scale using rebates. Incumbency advantage can be proxied by strong asymmetry in the availability of crucial infrastructure/input, a pre-existing customer base, and high or persistent market shares of the incumbent.<sup>28</sup> When downstream firms have weak buyer power, they will be more inclined to accept the dominant firms rebates even if they may not want to. Weak downstream competition can be counter intuitive to our argument regarding buyer power. However, it simply means that there are less firms the dominant firm will need to capture with its rebates, so the process of foreclosing a competitor can be easier. Low or mature market growth means the contestable share of demand can remain unchanged. A rival will never have access to new customers to offset those lost to the dominant firms rebates, and competing with its own discounts will be less successful if existing customers are sufficiently captured, i.e. firms already covered by the rebate are uncertain about the credibility of the rival's competing discount.<sup>29</sup>

The duration and amount of the rebate will also be relevant. Overall duration in general contributes to the loyalty-inducing effect of rebates. Consumers are less likely to switch the longer a rebate scheme is in effect. Increasing the amount of the rebate will increase incentives to accept its terms and may contribute to a shorter attrition phase if there is considerable asymmetry. However, these must both be analyzed in the context of predatory pricing. Higher duration and amounts are possible from the firms ability to dampen negative effects on profits during the attrition phase using rebates. However, sufficient recoupment would still need to be possible after the rival exits. Even if foreclosure occurred, if the recoupment phase is sufficiently short because of low entry barriers then gambling with high duration and amounts may not pay off.

When assessing loyalty rebate conditions, distinctions should be made between all-unit rebates and market-share rebates, and whether there are naked restrictions or liquidated damage provisions. The use of market-share rebates can improve the likelihood of foreclosure. In the section on anti-competitive effects of rebates we discussed four conditions which are needed for this theory of harm to be realized. These were an assured base of sales, knowing the threshold of sales for non-contestable demand, the inability of a competitor to match the discount, and little demand growth over time. Market-share rebates implicitly lead to many of these conditions being true because they are immune to asym-

---

<sup>28</sup>See Fumagalli et. al., 2018. Page 192.

<sup>29</sup>However, recall that market-share rebates are immune to uncertainty/growth, so competing with its own discounts may be difficult anyways.



metric information and market growth because thresholds do not need to be calculated *ex ante*. We could use their evidence to further support the likelihood of foreclosure. Naked restrictions will increase the likelihood of foreclosure, especially in durable goods markets. Delaying or preventing the entry of rival products removes potential consumer choices. When the good is durable, the foregone opportunity of a rival to sell its products will have stronger impacts on its short term profitability, since a customer may not make another purchase for many years. A similar result will hold for liquidated damage provisions, but it depends on the specific terms. The price a rival would have to offer a customer when competing against a dominant firm's rebate would need to also compensate them for damages if they switch to the rival's product. The extent of the damages will depend on the duration of the entire rebate scheme, and whether the provision applies to rebates in all periods or just the most recent period. When using a liquidated damages provision, price is more likely to be below the costs of an as-efficient competitor as duration of the scheme increases and if it's related to all periods. A table summarizing the sensitivity analysis criteria can be found in the Annex.

### 3.3.3 Efficiency

#### *Efficiencies from Lower Prices*

As we discussed briefly above, consumers benefit from lower prices when firms compete with each other using rebates or similar discount mechanisms, reducing double marginalization. Whether consumers will benefit overall will depend on the length of the attrition phase and the recoupment phase, similar to predatory pricing. If the recoupment phase is sufficiently short, then benefits from price competition outweigh greater prices following foreclosure. Factors that affect the length of recoupment include barriers to entry and reputation. The first is obvious, entry is needed for competitive pressure on the incumbent to lower prices. Factors which contribute to entry barriers include economies of scale, sunk costs, or necessary advertising expenses. The second might be less obvious, but is equally important. The dominant firm will have a reputation for using rebates to foreclose competition in the market. A potential entrant will be less likely to enter if they believe a similar strategy will be used against them.<sup>30</sup> Both of these factors must be considered when assessing efficiencies from lower prices. However, we must again keep the definition of the relevant market in mind. If the market is particularly narrow, the entrant could be an already established competitor and barriers to entry will be less of an important factor in the analysis.

#### *Efficiencies from Other Pro-Competitive Effects*

As discussed in section 2.2.2, loyalty rebates can also be associated with the efficient

---

<sup>30</sup>See Kreps & Wilson (1982).

recovery of fixed costs, better retailer incentives, and mitigating the hold up problem. The defendant should provide sufficient proof that these effects are likely to arise and demonstrate that their positive value exceeds the losses from foreclosure. The first can be difficult to prove since we don't witness counterfactual profits and recovery of fixed costs if the rebates had not existed. There may be room for some econometric analysis to determine how much larger profits were under the scheme, and then demonstrate that these additional revenues were used to pay off some substantial fixed costs or investment in innovation activities. However, this will be very difficult in a market characterized by volatile demand. The second and third effects will be easier to prove. The defendant must simply show that it invested in a sales force, or that retailers downstream began pushing products with the defendants input after the rebate scheme began. Internal documents or bringing in retail employees as witnesses could be sufficient. Overall demonstrating that these pro-competitive effects occurred, justifying their benefits, and proving they outweigh the negative effects can be difficult to prove in court. This is why we suggest strong debate over the relevant market and contestable share of demand in previous phases of analysis.

#### *Objective Necessity*

Objective necessities are normally very difficult to support in Article 102 cases. However, there can be a case for the use of market-share rebates as an objective necessity. If the industry is characterized by volatile sales conditions, the very existence of the rebate might hinge on the firm being able to use a market-share specification. The rebate scheme would substantially vary in its success from increased uncertainty and the dominant firm may simply stop using them if there are not sufficient benefits. We have shown that rebates can be a form of price competition between firms, and that they can generate pro-competitive effects and efficiencies. Market-share rebates can ensure these positive effects exist and therefore might have some objective justification to their use.

#### **3.3.4 Legal Standard**

An object-based approach would ignore the potential for all of these efficiencies to be realized. The existence of a rebate does not always lead to foreclosure and an in-depth analysis on its *likelihood* should be carried out only if we can be sufficiently certain the practice is *capable* of doing so. This is to minimize potential legal costs for all parties involved in a case. The new legal standard should be a rebuttable presumption of illegality. The Commission must demonstrate that the rebates would cause the foreclosure of an as-efficient competitor, and the dominant firm must provide sufficient proof that the pro-competitive effects exist and outweigh the anti-competitive effects. Achieving the pro-competitive effects should also be indispensable to the rebate scheme—that is, they are achievable by no other means.

## 4 The Framework In Practice

### 4.1 Application to *Intel*

#### *Market Definition & Coverage*

We do not have enough information to comment sufficiently on coverage, however the Commission's market definition is open for criticism. The relevant product and geographic market were appropriately chosen as x86 chipsets and worldwide, respectively. There is no supply-side substitution between x86 and non-x86 chips, and the downstream firms involved are global OEMs. Several relevant markets were defined. The first consisted of three separate markets: x86 chips for laptops, desktops, and servers, and the second was a broader market of all x86 chips. The Commission should be commended on looking at the broader picture in this case, however, the overall result highlights the flaws of a *per se illegal* approach. It was found that regardless of which market definition was used above, Intel failed the AEC test. This just means that foreclosure would occur and that Intel was found of abusing its dominant position, but one piece of relevant information is missing. The rebates were only applied to subsections within the defined market, e.g. a 95% market-share rebate on HP corporate desktops. An object-based approach ignores how narrow the rebates were applied, and doesn't account for offsetting efficiencies. There is also the question of what the share of contestable demand was in this case. Asking OEMs what percent of purchases they would make from Intel in regards to all x86 chips would be appropriate, but not in reference to the subsections which the rebates were applied to.. There could very well be some disjoint between the relevant market and the assessment of foreclosure when rebates are applied to subsections under an object-based approach.

#### *Foreclosure*

As we noted above, Intel failed the AEC test. In this test the contestable share of demand used for the AEC test was quite low. As we discussed earlier, low shares of contestable demand can lead to substantial changes in effective prices when small adjustments are made. Since we are not privy to the information needed to carry out calculations for the AEC test we cannot assess how sensitive the test is to these changes, but we can look at the criteria from our sensitivity analysis—a summary can be found in Table 1 below. From the information we do have, nearly all of the conditions are positive. When combined with the failure of the AEC test, there is a high likelihood that the rebates are being used for foreclosure. The next step is for the Commission to assess potential efficiencies identified by Intel.

#### *Efficiencies*

One of the arguments brought forward by Intel was that during the infringement period,

Criteria	Presence in <i>Intel</i> ?
Asymmetry	<b>Yes</b> —Intel has considerably greater production capacity and market presence.
Info on Profitability	<b>N/A</b> —However, Intel invented the first microprocessor in 1971 and AMD followed in 1975. It is likely that Intel does not have superior info on profitability.
Access to Capital Markets	<b>N/A</b> —But we can speculate that since Intel is a stronger company they are probably less risky when it comes to loans.
Economies of Scale	<b>Yes</b> —The production of chipsets will have economies of scale in production and R&D.
Incumbency Advantage	<b>Yes</b> —Persistently high market shares and strong asymmetry are present. Intel likely has superior access to inputs and infrastructure, and an existing customer base.
Buyer Power	<b>Maybe</b> —The four OEMs are strong brand names in personal and business computing, but there are many other OEMs for computers.
Market Growth	<b>Maybe</b> —The durable nature of computers means periods of fluctuating sales, but whether more computers are sold year-over-year is unknown.
Downstream Competition	<b>Yes</b> —There are many computer manufacturers.
Duration	<b>N/A</b> —Varied among those who were given rebates.
Amount	<b>N/A</b> —Varied among those who were given rebates.
Market-Share Rebates	<b>Yes</b> —Between 80% and 100% market-share rebates.
Naked Restrictions	<b>Yes</b> —Intel either restricted the delay of products with AMD chips, or specified their delay for up to two years.
Liquidated Damages Provisions	<b>No</b>

**Table 1: Sensitivity Analysis for *Intel***

AMD market shares increased and chipset prices fell. AMD attempted to compete with Intel’s rebates by offering its own discounts to OEMs but these were turned down, e.g. HP was offered 1 million x86 chips for free in exchange for a three year partnership. However, this did not stop competition from occurring on other merits. In particular, AMD differentiated its products by increasing the quality of its chipsets. This is another form of competition and led to higher market shares for AMD and lower chip prices —effectively reducing double marginalization in a similar and easily quantified manner. Whether other pro-competitive effects are present is unknown based on information available in the case files. Intel may also be able to use the market-share rebates as an objective justification for achieving the lower prices found above, giving more credibility to their argument.

## 4.2 Extension to *Qualcomm*

Strong parallels can be drawn between the Intel and Qualcomm cases. The Commission found Qualcomm guilty of abusing its dominant position using loyalty rebates for its LTE baseband chipsets between 2011 and 2016. Qualcomm paid billions to Apple for them to exclusively use Qualcomms basedband chipsets in all iPhones and iPads during the in-

fringement period, and also included a liquidated damages provision. The only information available on the case is a press release —detailed information is not available to the public. However, we can still apply some of our framework to what we do know about the case.

### *Market Definition & Coverage*

The relevant market is broad and consists of all LTE baseband chips used in smartphones and tablets to connect to cellular networks. This is appropriate given that it aligns with the application of the rebates, unlike in *Intel*. The LTE baseband chipset market is characterized by high barriers to entry due to significant R&D costs and Qualcomm intellectual property rights. Qualcomm is a dominant firm with market shares exceeding 90% during most of the infringement period, and its main competitor is Intel. The Commission stated that Apple was a key competitor with approximately 30% market share for smartphones, and that capturing them with rebates would strongly influence other OEMs to also purchase from Qualcomm. This argument is weak and ignores Intel’s ability to compete for other OEMs such as Samsung who also has a very high market share in smartphones. Nevertheless, there is sufficient evidence of dominance and high market coverage. The capability to foreclose is present in the *Qualcomm* case.

### *Foreclosure*

The Commission assessed and rejected a price-cost test carried out by Qualcomm. There are no further details regarding calculations for the contestable share of demand and other considerations necessary for carrying out the AEC test. However, a look at the sensitivity criteria found in Table 2 above demonstrates strong potential for the rebates to be used for foreclosure, but not nearly to the same extent as *Intel*. Intel is a dominant firm in other markets sharing similar characteristics and inputs to the production and research of LTE chips, and they are a globally powerful company. Qualcomm’s rebates were also very large and lasted for a long time. The application of liquidated damage provisions also doesn’t help Qualcomm’s case very much. The broad application of the rebates on the market means that substantial efficiencies will be needed to offset any foreclosure that may have occurred.

### *Efficiencies*

Information on prices and potential market shares is currently unavailable. Reducing double marginalization will be the easiest pro-competitive effect to demonstrate, but price reductions will need to be large. Intel could still engage in other competitive measures such as increasing quality, but LTE chips are not the same as microprocessors —where attributes such as speed are important to consumers. It is also unlikely that Qualcomm would need a sales force for LTE chips since they are not a main selling point for end-consumers. The possibility of rebates being used to incentivize retailers to push products

Criteria	Presence in <i>Qualcomm</i> ?
Asymmetry	<b>Maybe</b> —Although Qualcomm is the dominant firm in LTE baseband chipsets, Intel has strong production capabilities, brand recognition, and other factors from parallel markets which make it a strong player.
Info on Profitability	<b>N/A</b> —It is unknown when Intel first began producing and researching baseband chipsets, but again there is likely a lot of spillovers between baseband chips and microprocessors.
Access to Capital Markets	<b>N/A</b> —Both firms are strong and likely have similar access to capital markets. Loans to Intel may be slightly less if they specify their use for the LTE chip market because of market risk when competing with Qualcomm.
Economies of Scale	<b>Yes</b> —The production of chipsets will have economies of scale in production and R&D.
Incumbency Advantage	<b>Maybe</b> —Qualcomm was persistently dominant during the infringement period. However, asymmetry is unlikely, and both should have access to inputs and infrastructure.
Buyer Power	<b>Yes</b> —Apple has strong buyer power since it represents approximately 30% of smartphone sales.
Market Growth	<b>Maybe</b> —The adoption of smartphones has rapidly increased for the last decade. Many users may replace devices with new models after 1-3 years.
Downstream Competition	<b>Yes</b> —Samsung and Apple have high market shares in tablets and smartphones. Several other competitors are also present.
Duration	<b>High</b> —Two agreements, each for approximately 3 years.
Amount	<b>High</b> —Billions of dollars, but exact amounts are currently unknown.
Market-Share Rebates	<b>Yes</b> —Qualcomm used 95% market-share rebates.
Naked Restrictions	<b>No</b>
Liquidated Damages Provisions	<b>Yes</b> —Apple would have to pay back all rebates it received for the schemes entire duration (3 years in each agreement).

**Table 2: Sensitivity Analysis for *Qualcomm***

with Qualcomm chips is still relevant, but also very weak in the same context as investing in retail services. Qualcomm could also try to demonstrate a more efficient recovery of fixed costs, but such a task and argument will be difficult to defend in court. Finally, market-share rebates were used and therefore an objective justification may be present, but again we need to have offsetting efficiencies.

## 5 Conclusion

The Intel case offers the perfect opportunity for the Commission and Courts to correct the past error of endorsing an object-based approach. Rebates can be used in an anti-competitive manner by a dominant firm to foreclose rivals or force them to serve a niche portion of the market, but they can also have pro-competitive effects and other objective

justifications. EU competition policy is concerned with the welfare of consumers, so it is absolutely necessary to analyze the overall effects of a rebate scheme. We must not deprive consumers of lower prices, higher quality, and greater innovation. This goal can be achieved by adopting a new legal standard for loyalty rebates, in particular, a rebuttable presumption of illegality.

A novel framework of analysis should accompany the new legal standard. A "capability-then-likelihood" assessment will ensure the Commission's resources are not wasted. The three steps in this analysis include first, defining a relevant market, identifying dominance, and reviewing the rebate's coverage; second, carrying out an in-depth foreclosure assessment using the AEC test and accompanying sensitivity analysis; and finally, looking at the overall efficiencies and effects on consumers. The Commission will be required to carry out the first two steps, and if there is sufficient capability followed by likelihood of foreclosure, it will be up to the Parties to prove offsetting pro-competitive effects exist and that rebates are indispensable to achieve them. This framework is the embodiment of an effects-based approach.

Applying this framework to both *Intel* and *Qualcomm* demonstrates the ineffectiveness and legal uncertainty that may arise from an object-based approach. There seems to be a high likelihood of foreclosure in both cases based on the AEC test results from public information on both cases and on our qualitative assessment. However, ignoring lower prices and increased market shares of AMD in *Intel* and restricting the use of rebates could chill competition between the two firms that benefits consumers overall. Likewise in *Qualcomm*, the Commission is ignoring the possibility of Intel—a firm with strong branding and resources—competing with its own discounts for other big downstream players such as Samsung. A more in-depth analysis could reveal competition which is lowering prices or providing other consumer benefits. It's time for the Commission and Courts to drop the use of *per se* illegality in Article 102 cases, and allow their assessment to finally be on par with Article 101 cases and merger review by moving towards the more economic and rational effects-based approach.

## 6 References

- Bolton, Patrick, and David S. Scharfstein. 1990. "A Theory of Predation Based on Agency Problems in Financial Contracting". *The American Economic Review* 80 (1): 93–106. <https://www.jstor.org/stable/2006736>.
- Déchamps, Pascale, and Gunnar Niels. 2018. "The One Billion Euro Question for Intel : Moore ' s Law or Murphy ' s Law?" *Journal of European Competition Law & Practices* 9 (2): 124–130. doi:10.1093/jeclap/lpy002/4831075.
- Federico, Giolio. 2011. "Tomra v Commission of the European Communities: Reversing Progress on Rebates?" *European Competition Law Review* (Issue 3). <https://ssrn.com/abstract=2883875>.
- Fumagalli, Chiara, Massimo Motta, and Claudio Calcagno. 2018. *Exclusionary Practices: The Economics of Monopolisation and Abuse of Dominance*. Cambridge University Press. ISBN: 9781107017382. doi:10.1017/9781139084130. <https://www.cambridge.org/core/product/identifier/9781139084130/type/book>.
- Kreps, David M., and Robert Wilson. 1982. "Reputation and Imperfect Information". *Journal of Economic Theory*: 253–279. [http://www.sciencedirect.com/science/article/pii/0022-0531\(82\)90030-8](http://www.sciencedirect.com/science/article/pii/0022-0531(82)90030-8).
- Majumdar, Adrian, and Greg Shaffer. 2007. "Market-Share Contracts with Asymmetric Information". *Centre for Competition Policy (CCP) Working Paper*. <http://ssrn.com/abstract=1014008>.
- O'Donoghue, Robert, and Jorge Padilla. 2013. *Chapter 9: Loyalty Rebates and Related Practices*, 1008. ISBN: 9781849461399. <https://www.bloomsbury.com/au/the-law-and-economics-of-article-102-tfeu-9781849461399/>.
- Shapiro, Carl. 2012. "Competition and Innovation: Did Arrow Hit the Bull's Eye?" *National Bureau of Economic Research*: 361–404. <http://www.nber.org/books/lern11-1%20http://www.nber.org/chapters/c12360>.



## 7 Annex

Criteria	Intuition In Sensitivity Analysis
Asymmetry	Greater asymmetry between predator and prey implies higher likelihood of foreclosure. The predator can outlast the prey in attrition.
Info on Profitability	An advantage arising from asymmetric information. The incumbent/dominant firm can make choices with less risk, and carry out production and market activities more efficiently.
Access to Capital Markets	Banks have asymmetric information on whether the rival firm will efficiently spend loans meant to aid discount competition, therefore less loans are available to rivals (Bolton & Scharfstein, 1990). Superior access to capital markets can also help an incumbent survive a war of attrition.
Economies of Scale	If large economies of scale are needed in an industry, the incumbent can prevent a rival from achieving them by acquiring some of their contestable sales.
Incumbency Advantage	Proxied by strong asymmetry in crucial inputs and infrastructure, a pre-existing customer base, and high/persistent market shares (Fumagalli et. al., 2018: Page 192). Makes it easier for an incumbent/dominant firm to secure firms using rebates.
Buyer Power	Limits the scope of predation (and therefore rebates) by making it more difficult for a dominant/incumbent firm to secure a downstream firm —to the extent that there is no buyer mis-coordination. (Fumagalli et. al., 2018: Page 36)
Market Growth	More difficult to foreclose a rival when it is possible to capture new consumers with competitive discounts. Especially effective when there is also buyer power. (Fumagalli et. al., 2018: Page 36)
Downstream Competition	If downstream competition is sufficiently high, then competition among upstream discounts can be sufficient to mitigate foreclosure.(Fumagalli et. al., 2018: Page 37)
Duration	Higher duration creates more of a loyalty-inducing effect, but this only affects foreclosure weakly.
Amount	Higher amounts will parallel the lower effective price need to pass the AEC test, i.e. A greater amount can mean a more likely failure of the AEC test depending on costs. It may also have a weak loyalty-inducing effect.
Market Share Rebates	Can be used to bypass the four characteristics needed for anti-competitive effects to arise with rebates. However, they might be an objective necessity.
Naked Restrictions	Preventing or delaying rival products has no competitive justification and will be especially severe when the product is a durable good.
Liquidated Damages Provisions	Can make it more likely that the AEC test will fail since a competing discount would have to compensate a firm for past rebates as well. When combined with a long duration these can be severe. They creates powerful disincentives for firms to leave a rebate agreement.

Table 4: Summary of Sensitivity Analysis Criteria