

EXCESSIVE PRICING: TOWARDS A WORKABLE AND OBJECTIVE RULE



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I. INTRODUCTION

As some authors have acknowledged, exploitation is the most intuitive and direct form of abusing a dominant position.² A firm exerts its market power by increasing the price it charges for a product or service significantly above competitive levels and, by doing so, it increases its profits. However, the control of excessive prices using competition law has traditionally been a controversial and less accepted form of control of market power than tackling exclusionary behavior. We argue the policy remains an important tool for competition authorities, especially in markets where regulation might be weak or blurred, monopolies remain in place and entry is difficult due to factual, legal or economic causes.

Indeed, from the competition law perspective, the relevant analysis must not focus on the fairness (in abstract) of the price charged. Even a dominant firm is allowed to charge prices as high as possible for its products, unless there are strong reasons justifying a restriction. The relevant analysis consists of establishing a measure or parameter to measure whether a price is excessive. Most of the controversy surrounding excessive pricing policy dwells precisely on the parameter. Perhaps for this reason, in some jurisdictions, such as South Africa, Turkey or Korea,³ it is defined statutorily. In most countries, however, the measure is left to the case-law.

In this short note, we aim to advance towards the creation of a workable and objective rule for determining when a price should be deemed excessive – minimizing, at the same time, the risk of damaging innovation or research and development (“R&D”). We propose a test that combines different benchmarks to set a threshold. In a nutshell, if the price a super-dominant firm actually charges is below the threshold, there should be no review of the price. Conversely, if the price a super-dominant firm charges is above the threshold, the firm must justify why it is charging a price that exceeds such a level. The threshold is the maximum between two alternative prices: the optimal price estimated from a utilitarian planner that maximizes total welfare, and the price the dominant firm actually charges in a static equilibrium considering a previously defined market share.

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² Bishop & Walker, *The Economics of EC Competition Law: Concepts, Application and Measurement*, Sweet & Maxwell, 3rd ed., 2010, p. 237.

³ Elhauge & Geradin, *Global Antitrust Law and Economics*, 2nd ed., 2011, p. 413-415.

The rule aims to advance the practical application of an excessive pricing policy, which is, so far, hardly accepted both by scholars and authorities. On the one hand, tackling excessive pricing using competition policy does not rank high in many authors' preferences. It is a practice deemed interventionist or at least extremely difficult to implement, either because of the difficulty of computing the "right price" or the unsuitable remedies available. On the other hand, it is not an enforcers' favorite either. Indeed, excessive pricing is out of the realm of U.S. antitrust law, unlike the other exploitative abuse: price discrimination. Conversely, in Europe and other jurisdictions, such as Chile and South Africa, laws sanction excessive pricing as an abuse of dominance. Nevertheless, competition authorities have attacked excessive prices very rarely. In most jurisdictions, the number of cases remains low and for the most part dated.⁴

Auspiciously, we might be observing a change in the trend. For instance, the practice is taking central stage in Europe again, after AG Wahl issued a non-binding opinion in a case concerning a request for a preliminary ruling from a Latvian court on abuse of dominance through excessive pricing (on April 6, 2017).⁵ In addition, the European Commission launched a formal investigation into Aspen Pharma's pricing of five cancer drugs (on May 15, 2017).⁶ Whether this is a real drift remains to be seen. However, AG Wahl's opinion is in line with our idea of looking for a thorough approach that allows dealing with these kinds of cases in a workable and objective manner, without damaging innovation.

II. THE TEST FOR ASSESSING EXCESSIVE PRICES

To deal with excessive pricing cases, it has become common to use a three-step test. Each of them is directed, respectively, to: (i) assess whether the firm is dominant; (ii) determine whether the price actually charged by that firm exceeds a certain threshold – i.e. whether it presents a significant difference with a benchmark, competitive price; and (iii) define whether there are any legitimate (economic) justifications for setting the price above the competitive level.

The test comes from the 1978 EU case *United Brands*,⁷ where the European Court of Justice ("ECJ") regarded as contrary to what is now Article 102 TFEU the application of a price which had no reasonable relation to the economic value of the product supplied, and therefore was deemed excessive. In that case the ECJ compared the profit margin demanded by the dominant firm and the cost of providing the good or service concerned. Since then, several subsequent decisions have used a similar approach.

In Chile, despite the fact there were previous cases on exploitative abuses (including excessive pricing cases), the three-leg test was only explicitly applied for the first time in 2014, in a case known as *Campomar* (judgment 140/14).⁸ In that case, a group of condominium landlords brought an antitrust action against a real estate developer alleging the latter was abusing its dominant position by charging excessive prices to the former for their drinking water supply. After stating expressly that excessive pricing is an offense under Chilean Law,⁹ the Tribunal established the test, although without mentioning the third limb, which remained implicit. In the end, the complaint was dismissed because the landlords did have reasonable alternatives for their water supply and the plaintiff did not evidence the barriers to entry in the relevant market –i.e. dominance was not proved.

⁴ Among other jurisdictions, cases may be found in South Africa, the Netherlands, the UK, the EU and Chile.

⁵ Case C-177/16, *Biedrība 'Autortiesību un komunikāciju konsultāciju aģentūra – Latvijas Autoru apvienība' v. Konkurences padome*, English version available at: <http://curia.europa.eu/juris/document/document.jsf?text=&docid=189662&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=609171>.

⁶ The Commission's press release can be found at: http://europa.eu/rapid/press-release_IP-17-1323_en.htm.

⁷ Judgment of February 14, 1978, *United Brands and United Brands Continental v. Commission*, 27/76, EU:C:1978:22.

⁸ For an analysis of the judgment, see Vázquez, "Excessive Pricing: A View from Chile," Working Paper CCLP(L) 41, Center for Competition Law and Policy, Oxford University, 2015.

⁹ Before this judgement the point was unclear, with few precedents accepting excessive pricing as an offense and one rejecting it. The decision in *Campomar* was not unanimous. Two judges stated that excessive pricing is not an offense in Chilean competition law. As a disclaimer, we were in the majority. The Supreme Court (that has the power to review the Competition Tribunals' judgment in full appeal) later affirmed the judgement.

III. REFINING THE APPROACH: TOWARDS A WORKABLE AND OBJECTIVE RULE

The three-step test can be qualified in a number of forms, in order to make it workable in practice and, at the same time, imposing some restrictions on the possibility of bringing actions accusing excessive pricing. The control of excessive prices must be selective and carried out in a restrictive manner. Our approach is, in this sense, explicitly pro-defendant. Competition authorities should look at a price only when it is *extremely* excessive.

A. First Step: Looking for “Super-Dominance”

Being a unilateral offense, any assessment of excessive pricing must start defining the relevant market and its structure, in order to determine whether the defendant has a dominant position and the barriers to entry existent in that market. In principle, this is not different from any other abuse of dominance case.

However, the first limb of the test allows narrowing the scope of possible cases to review from scratch. First, the threshold for dominance should be higher than the one used for other cases – i.e. the requirement is one of “super-dominance.” Despite the fact the term is difficult to define or not accepted in many jurisdictions (including Chilean law), it allows us to summarize in a word the need for being stricter in the dominance assessment when dealing with excessive pricing cases.¹⁰ For our purposes here, we define it simply as a firm that has more than 75 percent of market share. However, the idea is to determine whether the plaintiff has credible alternatives to the product or service the super-dominant firm offers.

A higher threshold for dominance ensures that only markets where there are extremely high barriers to entry will be subject to the second part of the assessment. The ultimate reason for this is to avoid tackling innovation or risk investment. However, unlike other works,¹¹ we do not assess at this stage whether the super-dominant position comes from innovative products or services. This limb focuses merely on market shares and entry barriers. Only after we carry out the first two steps of the test, do we then put the burden on the firm to argue that the price it charges can be justified on innovation.

B. Second Step: Determining the Excessive Price

The second limb of the test deals with the pricing conduct of the super-dominant firm. From an economic perspective, it is possible to assess whether prices are excessively high considering several benchmarks. Among the most common ones are the margin price-average variable cost or the comparison of prices charged historically by the firm, or charged to different classes of customers.

Each of these methods has been subject to criticisms that make unadvisable their separated use. Conversely, the common recommendation is to use them simultaneously (combined), as long as the benchmark is reasonable and provides useful information on the price concerned and its relative position *vis-à-vis* the competitive price. This was the method advised in Chile in *Campomar*, in the UK case *NAPP*, and by AG Wahl in his aforementioned opinion.

However, we are not aware of any actual proposal specifying how such combination of methods should be applied in practice. In this section, we propose a test that combines different benchmarks to set a threshold. The price the super-dominant firm actually charges should be reviewed depending on if it is below or above the threshold. As mentioned, the threshold we propose is the maximum between two alternative prices. On the one hand, there is the optimal price estimated from a utilitarian planner that maximizes total welfare. We call this price p^* , which depends on the firm’s average variable, fixed and sunk costs. These parameters can be obtained from the firm’s own accounts or public sources of information. On the other hand, there is the price the dominant firm actually charges in a static equilibrium. We call this price p^d , which depends on several economic parameters such as marginal costs, demand elasticity or the competitors’ supply elasticity.

¹⁰ Note that, on this, our approach is similar to Conditions 1 and 2 proposed by Motta & de Streel, “Excessive Pricing in Competition Law: Never Say Never?,” in *The Pros and Cons of High Prices*, Konkurrensvetket (Swedish Competition Authority), Kalmar, 2007, p. 22.

¹¹ Ibid.

Since both prices depends on different parameters, they can have different values. Up to the 75 percent the dominant firm may charge any price p^d freely, even if it is above its average total costs. Over that market share, the comparison must be done with p^* , unless the latter is lower than p^d . Otherwise, a given price actually charged below p^d might be legal at 75 percent, but illegal over that market share if such happens to be above p^* . Therefore, for reasons of fairness or regulatory symmetry, the threshold cannot be p^* if $p^d > p^*$.

A simplified example may clarify the idea. Let's assume a firm has 85 percent of the market. Using similar numbers as Kahai, Kaserman & Mayo (1996)¹², we obtain that p^d is 1.89¹³. Assuming that average variable and marginal costs are similar, the ratio p^* is the inverse of the ratio of variable to total costs of the super-dominant firm.¹⁴ Then, assuming that 70 percent of this firm's costs are variable, $p^* = 1.43$, which clearly implies that p^d is higher than p^* . If the price actually charged by the super-dominant firm is between both numbers (say, 1.68), it cannot be considered as excessive, because if the firm were merely dominant (i.e. it had a market share below 75 percent), the price of 1.89 had been considered legal. Then a price lower than 1.68 cannot be considered as unlawful, regardless of the actual firm's market share.

We now proceed to formalize the rule. Let's first assume that the firm is dominant (*not* super-dominant) at the margin. As we have mentioned, in this case the firm should be able to charge any price, regardless of the source of its market power. To state this idea in a simple way, we assume the other competing firms in the market (the fringe) are less efficient. Therefore, the dominant firm acts as a monopoly of the residual demand¹⁵ and, accordingly, the price it charges in a static equilibrium is given by the following:

$$p^d = c' + \frac{\eta + s \cdot \varepsilon}{\eta + s \cdot \varepsilon - (1 - s)} \quad (1)$$

Where c' is the marginal cost, η is the demand elasticity, ε the supply elasticity of the fringe, and s is the fringe's market share. Therefore, if the market share to become super-dominant is 75 percent, $s = 0.25$. As a result, the price that is deemed excessive must be, at least, higher than the price of the dominant firm when its market share is exactly 75 percent.

As a caveat, it must be taken into account that in equilibrium $\eta > 1 - s \cdot (1 + \varepsilon)$. Thus, the acceptable range of demand elasticity may even fall under the inelastic part of the demand, because the condition would be $\eta > 0.75 - 0.25 \cdot \varepsilon$. It is straightforward to see that the higher the supply elasticity of the rivals, the lower the minimum value of a demand elasticity in equilibrium, so the demand of the market can be elastic or inelastic.

Let's now assume that the dominant firm participates in a regulated industry. In this case, what would be the acceptable margin over the operational costs, so that the firm can cover its fixed and sunk costs? To solve this question, we assume a utilitarian central planner that solves the following problem in order to estimate the efficient price of a firm that sells a single product in a given moment of time:

$$\begin{aligned} & \text{Max}_Q \int [P(Q)dQ] - c(Q) \\ & \text{subject to } \pi(Q) = 0 \end{aligned}$$

¹² Kahai, Kaserman & Mayo, "Is the 'Dominant Firm' Dominant? An Empirical Analysis of AT&T's Market Power," *Journal of Law and Economics* 39: 499-517, 1996. The numbers are used for the long-distance telecoms market in the US.

¹³ This number assumes that demand elasticity is 0.49, the fringe's supply elasticity is 4.4, and the fringe's market share is 0.25. Then apply Equation (1) below and assume marginal cost equal to 1.

¹⁴ See Equation (3) below and assume average variable cost equal to 1.

¹⁵ The model of price-leadership of a dominant firm is commonly used in competition cases. For a discussion about how suitable it is as benchmark, see Rassenti & Wilson, "How Applicable is the Dominant Firm Model of Price Leadership?," *Experimental Economics* 7(3): 271-288, 2004.

where $P(Q)$ is the inverse demand function; $\int [P(Q)dQ]$ is the gross consumer surplus; $c(Q)$ the function of total costs; and $\pi(Q) = P(Q) \cdot Q - c(Q) - F$ the super-dominant firm's profits, being F a measure of its annual fixed and sunk costs.¹⁶ The problem to solve can be stated as a Lagrangean, where μ is the shadow cost of a dollar of rent for the firm:

$$L = \int [P(Q)dQ] - c(Q) + \mu \cdot [P(Q) \cdot Q - c(Q) - F]$$

The first order condition in this case is:

$$\frac{\partial L}{\partial Q} : P(Q) - c' + \mu \cdot \left[P(Q) + Q \cdot \frac{\partial P}{\partial Q} - c' \right] = 0$$

All functions are evaluated at the optimal production arising from this problem, that we will call Q^* . Then, $P(Q^*) \equiv p^*$. The first order condition can then be rewritten as:

$$(p^* - c') \cdot (1 + \mu) = \mu \cdot Q \cdot \frac{-1}{\frac{\partial Q}{\partial P}}$$

If the elasticity of demand is defined as:

$$\eta \equiv - \frac{\partial Q}{\partial P} \frac{P(Q)}{Q} . \text{ Also, if } \theta \equiv \frac{\mu}{1 + \mu} , \text{ then } \frac{(p^* - c')}{p^*} = \theta \cdot \frac{1}{\eta}$$

Using some algebra, the optimal price depends on c' , η y θ :

$$p^* = c' \cdot \left[\frac{\eta}{\eta - \theta} \right] \quad (2)$$

If the functional form of the inverse demand is known, it is also possible to know the direct demand function:

$$Q^* = P^{-1}(p^*).$$

However, the parameter θ is not exogenous. It depends on the size of the fixed costs and other variables. Let's take the restriction $\pi(Q^*) \equiv p^* \cdot Q^* - c(Q^*) - F = 0$; or,

$$c' \cdot \left[\frac{\eta}{\eta - \theta} \right] \cdot Q^* - c(Q^*) - F = 0$$

Let's now divide both terms by Q^* . We define C_{avg} and F_{avg} as the average variable, and fix and costs, respectively. Applying some algebra, we can solve for $(\eta - \theta)$, resulting in:

$$(\eta - \theta) = c' \cdot \eta \cdot \left[\frac{1}{C_{avg} + F_{avg}} \right]$$

¹⁶ The planner's problem remains the same if it faces rivals in the market – indeed, as long as the dominant firm makes its decisions regardless those of its rivals'.

Now we replace this result in Equation (2):

$$p^* = C_{avg} + F_{avg} \quad (3)$$

To some extent, this is an obvious result. It is just stating that the efficient price is the one that covers exactly the total average costs (that is, the average variable and fixed costs of the operation plus the average sunk costs).

However, note that this information is easier to estimate than the price resulting straight from Equation (1). Information of average costs may be obtained from the firm's own accounts, so it is unnecessary to know economic parameters such as marginal costs, demand elasticity or the competitors' supply elasticity.

Moreover, in practice it is possible to obtain a good proxy of the costs of relatively "big" firms. These are normally open corporations and their accounting is audited. Operational or exploitation costs include both fixed and variable costs. Conversely, sunk costs are normally unknown and cannot be derived from the firm's accounts. Nevertheless, a reasonable proxy is the annual value of the capital invested, that is, the industry's cost of capital multiplied by the capitalized investment costs in the firm's balance sheet. As a consequence, a general rule can be stated as

$$C_{avg} + F_{avg} \approx \textit{Exploitation Costs} + ko \cdot \textit{Investments},$$

where ko is the firm's cost of capital, the sole variable that needs to be estimated or taken from a benchmark (i.e. the same market in a different country).

In sum, the threshold for maximum prices allowed is the following:

$$\textit{Threshold} = \max\{p^*, p^d\}$$

In other words, the threshold is the maximum value between the prices arising from Equations (1) and (3). If the price the firm actually charges is below the threshold, there should be no review of the price. Conversely, if the price charged is over the threshold, the firm must justify why it is charging a price that exceeds both its total average costs and the price that a super-dominant firm should charge.

The decision to use p^d instead of p^* as threshold would be correct if, and only if, if $p^d > p^*$. Since the fringe's supply elasticity is generally unknown, the following restriction arises after using Equations (1) and (3) and some algebra:

$$\varepsilon \leq \frac{(1-s)}{s} \cdot \frac{1}{\varphi} - \frac{1}{s} \cdot \eta \quad (4)$$

where $\varphi \equiv F_{avg}/(C_{avg} + F_{avg})$ is the proportion of fixed and sunk costs to total costs of the super-dominant firm.¹⁷

As can be seen from Table 1, the resulting value is highly dependent on the percentage of fixed and sunk costs of the dominant firm. This is relevant. Since we are using publicly available information or information that is, at least, easy to contrast with public information, Table 1 makes the analysis easier.

Table 1 shows that if most of the costs of the firm are variable, then the right comparison must be between the actual price and p^d . It is unlikely that the fringe's supply elasticity is above 4 (see first column from the left). As fixed and sunk costs become more important, to use p^d instead of p^* requires to show that the total demand is mainly inelastic. Finally, in cases

¹⁷ Equation (4) assumes the ratio between the marginal and average variable costs is equal to one. This assumption simplifies the result, but it is not always true in the short run. It may be expected that this ratio is generally lower than one. Let $\gamma \equiv C_{avg}/c'$, then condition (4) should be $\varepsilon \leq (1-s)/s \cdot [\gamma/(\varphi(1-\gamma)) - 1/s] \cdot \eta$, and we must assume that.

where fixed and sunk costs are more relevant than variable costs, such as in infrastructure services or networks, it is highly likely that p^* is the right threshold (see the column at the extreme right).

Table 1. Maximum Fringe's Supply Elasticity to use p^d instead of p^* (considering $s = 0.25$)

Total Demand Elasticity	% Fix costs over total costs			
	15%	30%	45%	60%
0.5	18,00	8,00	4,67	3,00
0.75	17,00	7,00	3,67	2,00
1	16,00	6,00	2,67	1,00
1.25	15,00	5,00	1,67	0,00
1.5	14,00	4,00	0,67	Negative
1.75	13,00	3,00	Negative	Negative
2	12,00	2,00	Negative	Negative
2.25	11,00	1,00	Negative	Negative
2.5	10,00	0,00	Negative	Negative
2.75	9,00	Negative	Negative	Negative
3	8,00	Negative	Negative	Negative

Source: Authors' elaboration.

Therefore, only cases that fall in the grey cells in Table 1 require a deeper analysis. In particular, it is necessary to estimate the fringe's supply elasticity in order to determine whether the threshold is p^d or p^* .

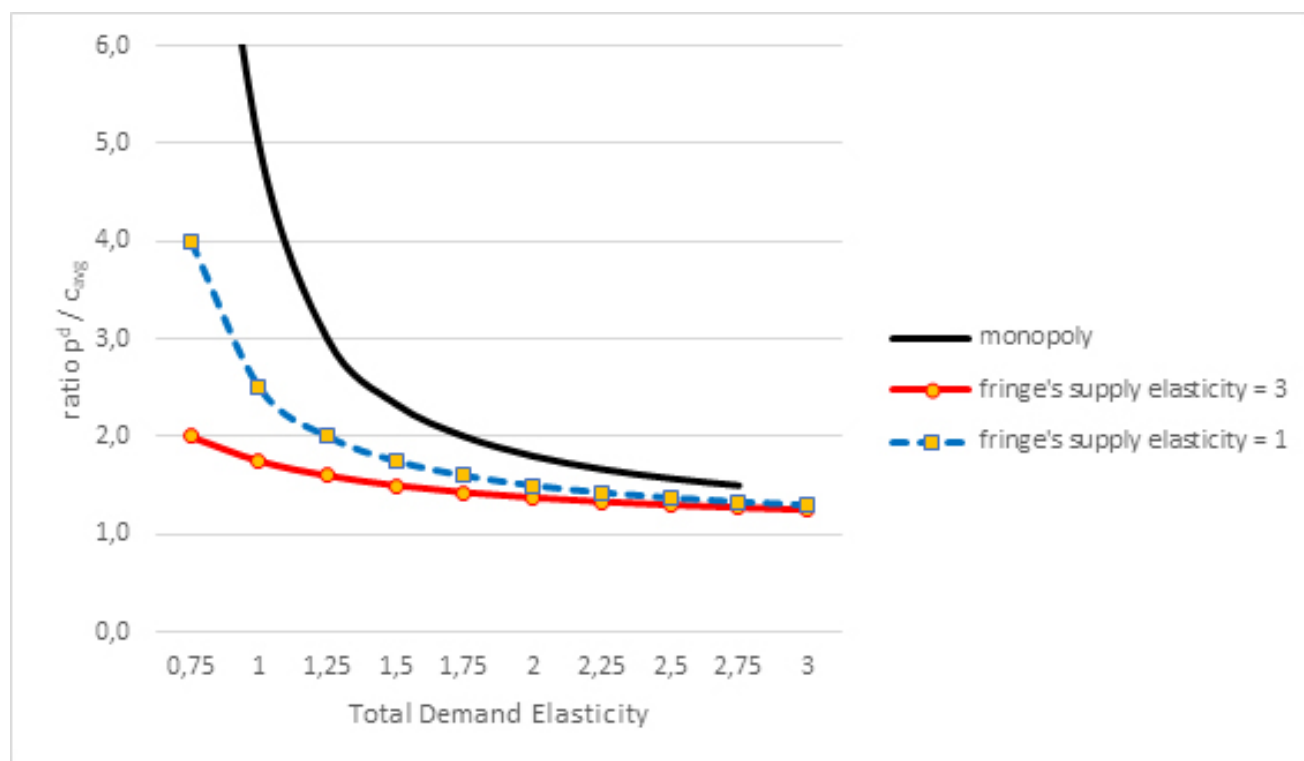
Finally, let's assume that the right comparison should be done between the price actually charged and the threshold p^d , and that the average variable cost is close enough to the marginal cost. Then, the ratio between the threshold and the average variable cost depends on several values, such as demand and the supply of the fringe's elasticities. This ratio is shown in table 2 and Figure 1. For comparative purposes, we also show the optimal price a monopoly would charge.

Table 2. Ratio p^d/C_{avg} , Maximum Acceptable (considering $s = 0.25$)

Total Demand Elasticity	Monopoly Pricing	Fringe's Supply Elasticity				
		0	1	2	3	4
0.75	∞	∞	4.00	2.50	2.00	1.75
1	∞	4.00	2.50	2.00	1.75	1.60
1.25	5.00	2.50	2.00	1.75	1.60	1.50
1.50	3.00	2.00	1.75	1.60	1.50	1.43
1.75	2.33	1.75	1.60	1.50	1.43	1.38
2	2.00	1.60	1.50	1.43	1.38	1.33
2.25	1.80	1.50	1.43	1.38	1.33	1.30
2.50	1.67	1.43	1.38	1.33	1.30	1.27
2.75	1.57	1.38	1.33	1.30	1.27	1.25
3	1.50	1.33	1.30	1.27	1.25	1.23

Source: Authors' elaboration.

Figure 1. Maximum Acceptable Overpricing of a Dominant Firm (considering $s = 0.25$)



Source: Estimations made from Table 2.

For any level of demand elasticity higher than 1, the price above costs charged by a monopoly is substantially higher than the price a dominant firm, that at the margin becomes super-dominant ($s = 0.25$), would charge. This difference increases as long as the fringe's supply is more elastic, although for demands more elastic than 1.5 the increase is less relevant.

C. Third Step: Possible Justifications

Excessive prices should be punished only when they do not reflect reasonable innovations or risk investments. Therefore, once it has been established *prima facie* that the price is excessive, the super-dominant firm may have the opportunity to justify why it is charging a price over the threshold (being the latter either p^d or p^*). In this section we highlight three possible justifications and analyze their plausibility.

A first justification is linked to the valuation of fixed and sunk investments. The firm might argue that it has invested in physical assets the IFRS accounting method does not reflect (whatever the reason). Similarly, it might argue it has invested on R&D but that these investments are not “mature” yet, so there are no patents protecting the investment. Lastly, the firm could also state it has invested on publicity to differentiate its product from those of competitors, so the investment adds value. These and other arguments of higher fixed costs are plausible in so far as the firm is able to demonstrate they are related to the product or service concerned.

A second possible justification is that the firm is multiproduct – that is, it commercializes several product or services, giving rise to both economies of scope and demand interdependence. From the economies of scope perspective, the firm might try to assign all fixed costs to the product concerned. This is incorrect. The analysis should be directed to the group of products that share common costs. From the interdependence of demand viewpoint, bear in mind that some products are in more demand than others. Hence the efficient pricing decision would be to under-marginalize those products that foster other demands, recouping its margins charging higher prices on the other products. Such commercial pricing policy may explain prices set above the threshold. When analyzed as a whole, this behavior may not be considered exploitative. In the presence of demand interdependency, a reasonable argument consists of explaining and quantifying the spillovers from one market to the other. For example, instead of carrying out the analysis product by product, the average price may be analyzed along with the average costs of the firm.

A similar situation occurs when the firm has launched a new product to the market, but at a loss. It is expected, however, that the loss is recovered by charging prices above the costs in the future. Such a situation is plausible as long as the firm demonstrates there are demand spillovers over time – i.e. demand grows as more consumers become aware of the product. Also, there may be a process of “learning by doing” on the firm’s productive processes, so its costs will be lower the more it has sold the product in the past.

Finally, a similar defense might be to argue that there are spillovers in the market due to externalities in related markets. In this case the firm qualifies as a platform¹⁸ and the market as two- or multi-sided. In these markets, the platform may adopt its pricing policy so that one side of the market subsidizes the other. It would be possible, then, to observe higher prices by unit than the threshold. In this situation, the platform has to demonstrate that the average revenue of all its activities does not exceed the average costs in all its markets. If this is not possible (since we are interested in unit, not fixed prices), the firm may still prove that the revenue resulting from unit prices fulfils such condition.

IV. CONCLUDING LESSONS

We have highlighted the importance of controlling excessive prices using competition policy. Such control is feasible and workable. We have proposed a three-step rule that combines the analysis of prices and costs of a super-dominant firm in order to assess when a price should be deemed too high. Future research may explore this and other alternatives.

18 On platforms, two references are Evans & Schmalensee, *Matchmakers. The New Economics of Multisided Platforms*, Harvard Business Review Press, 2016; and Rochet & Tirole, “Two-Sided Markets: A Progress Report,” *RAND Journal of Economics* 37(3): 645-67, 2006.