Welfare Standards in Competition Policy

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1. **Introduction**

Competition policy focuses on the defense of market competition in order to increase welfare. One fundamental question is determining which welfare standard should be applied in antitrust enforcement. This question has been intensively debated for decades because different welfare standards, by producing different enforcements, create different incentives for firms to increase their productivity and investment and thus contribute to economic growth.

To illustrate this debate, let us start by reviewing a Canadian merger case between *Superior Propan Inc.* and *ICG Propane Inc*. In I988, these two firms, the two largest distributors of propane in Canada, announced their decision to merge. Canada's Commissioner of Competition first filed an application before the Competition Tribunal arguing that this merger would induce less competition in the vast majority of local markets. While the Tribunal accepted the Commissioner's argument, it also accepted evidence for significant cost efficiencies. Therefore, the application of a total surplus criterion initially led the Tribunal to authorize the merger. The Court of Appeal rejected the use of the total surplus standard and based on a consumer surplus's criterion, decided to block the merger. But the merger was finally accepted, and the application of a total surplus standard validated in this case.

As clearly illustrated in the above case, there are divergent views on which criterion to use and even a debate on whether any formal criterion should be used. We see antitrust practices which vary significantly from one country to another. The main goal of this report is to discuss the economic meaning underpinning the use of different welfare standards in antitrust cases.

This report is divided in three parts.

The first part discusses how economists have tried to construct objective measures of welfare. A particular emphasis is placed on the measure of the total surplus and the consumers' surplus. While computing the firms' profit is relatively simple, defining the mere notion of consumers' surplus proves to be much more complex. Depending on whether the benchmark refers to *ex ante* or *ex post* situations, two different concepts emerge to measure the variation of consumers' surplus associated with price changes. Fortunately, there exist some circumstances where this discrepancy between the various welfare change evaluation measures disappears.

The second part describes situations where the competition authority may decide to use a distorted decision rule that considers the consumer's surplus more than the firms' profit to *in fine* promote the total surplus. These situations rely on inefficiencies in the competition agency decision-making process that emerge from the presence of asymmetrical information (the agency does not have access to the entirety of firms' private information) or from the possibility that the competition agency may be influenced by the firms' lobbying activities. These two sources of imperfections are illustrated in cases of merger control.

The third part describes how antitrust policy has evolved over time in the United States and in Europe. It shows how this evolution has been influenced by the debate over the welfare standards. In the United States, antitrust has gradually adopted an effects-based approach that, contrary to a *per se* approach which conclusively presumes some anticompetitive behaviors to be "illegal per se", regardless of their long-term effects, makes use of economic insights to take into account the dynamic efficiency. Europe followed the United States trend to adopt laws that restrict anticompetitive behaviors, albeit belatedly, but considered the integration of the European market as an additional criterion. Today, the competition laws in the United States and in Europe have the same goals, but still differ in their welfare standards. In the United States there is no clear guidance from the Supreme Court, and it is left to the discretion of the lower courts which of the two standards—consumer surplus or total surplus —will be implemented. European texts seem to favor a consumer surplus criterion, but the move toward the use of an effects-based approach is still far from being endorsed.

2. **Construction of Welfare Standards**

1. The economic framework

The objective of this first part is to discuss how economists have tried to construct objective measures of welfare. These measures differ on how the benefits agents can gain in various economic situations are represented. Such benefits can accrue either to firms, where we will refer to them as profits, or to consumers, where we will refer to them as consumers' surplus. Let us note at this initial stage that the representation of these benefits does not depend on the process through which they are obtained.[1]

To compare two economic situations, we must compare the changes in both the profit and the consumers' surplus. While computing the first element is relatively simple, defining the mere notion of consumers' surplus turns out to be much more complex. To understand the complexity of this notion, and the reason why it has generated so much debate, let us start from the simple representation of an economic agent. We assume that this agent has an initial wealth W and must decide how to allocate it among the *n* goods in the economy. This choice will depend on two main elements. First, the preferences of the agent, and second, the vector of price $p=(p_1,p_2,\ldots,p_n)$. We denote V(p,W) the net utility of the agent, i.e. the maximal level of satisfaction the agent can gain in this situation.

2. Compensating Income variations vs. Equivalent Income variations

Let us consider a change in the economic conditions. This change can be generated by a merger, or the entry/exit of a firm. The precise origin of this change is not crucial at this stage. What matters the most are the consequences of this change on the market equilibrium, and in particular, the consequences on the vector of prices p. The new vector is denoted p'. How could we measure the utility variation induced by this change in the economic conditions?

A first approach consists in computing the amount of income that must be added to the initial consumer wealth to fully compensate him for the impact of the change in the price. Formally, we define the compensating income variation by C, where C is such that V(p,W)=V(p',W+C). The sign of C is therefore a direct measure of the impact of the changes on the consumers' utility. Suppose, for example, that the new prices are all greater than the old ones, so that p'>p. In this case, the compensating income variation will be positive.

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[1] This is an important point as the main way potential anticompetitive measures have been assessed in Europe has been precisely based on the process more than on the result. This point will be discussed in the last part of the report.

Note that the change in the economic conditions may induce not only price variations, but also income variations. Suppose that not only prices are affected by a potentially anticompetitive action, but also that the wealth is impacted and is now equal to W'. We can then say that the agent is better off in the new situation, if $W'>W+C$. Indeed, as the utility is increasing with the wealth, we have $V(p,W)=V(p',W+C)<V(p',W')$.

Even if this approach seems natural, there is an alternative way to measure changes in utilities, and therefore to compare alternative economic states. Indeed, we could compute the amount that must be subtracted from the initial level of wealth so that the agent maintains the same level of utility as the one reached with the final level of price. In other words, we define the equivalent income variation E by $V(p,W-E)=V(p',W)$.

Therefore, we have two ways to measure the change in utility induced by changes in prices. When using the compensating income variation C, the benchmark situation is the *ex ante* situation, while the concept of equivalent income variation E relates to the *ex post* situation. It results that these two measures are, in general, not equal.[2] This result, which may appear puzzling at first sight, comes from the fact that the value an agent has for one unit of money depends on what can be done with this money, and therefore on the prices of the different goods.[3]

3. Standard consumer surplus

In spite of this rather disappointing result, there are some circumstances where this discrepancy between the various welfare change evaluation measures disappears. Indeed, if we assume that there is one good whose marginal utility is constant or that the changes in the economic conditions are small, then the two measures of utility variations are equal. Willig (1976) shows that when there are many goods and the changes only impact one of the goods, the gap between the equivalent and the compensating income variations is negligible. Therefore, the variation in utilities can be computed using the standard demand function.

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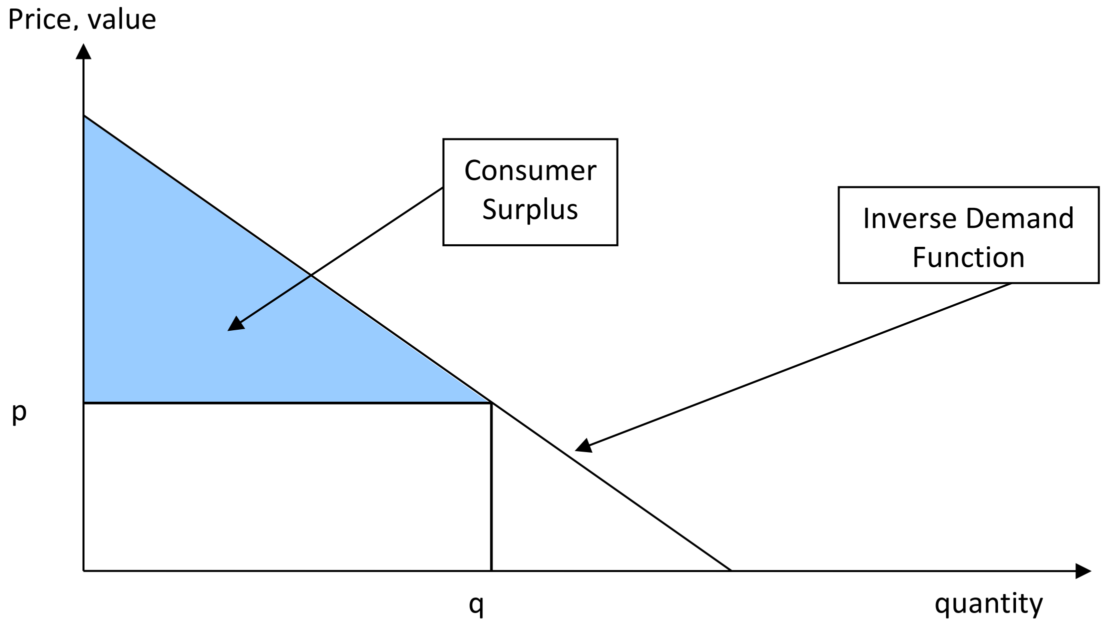
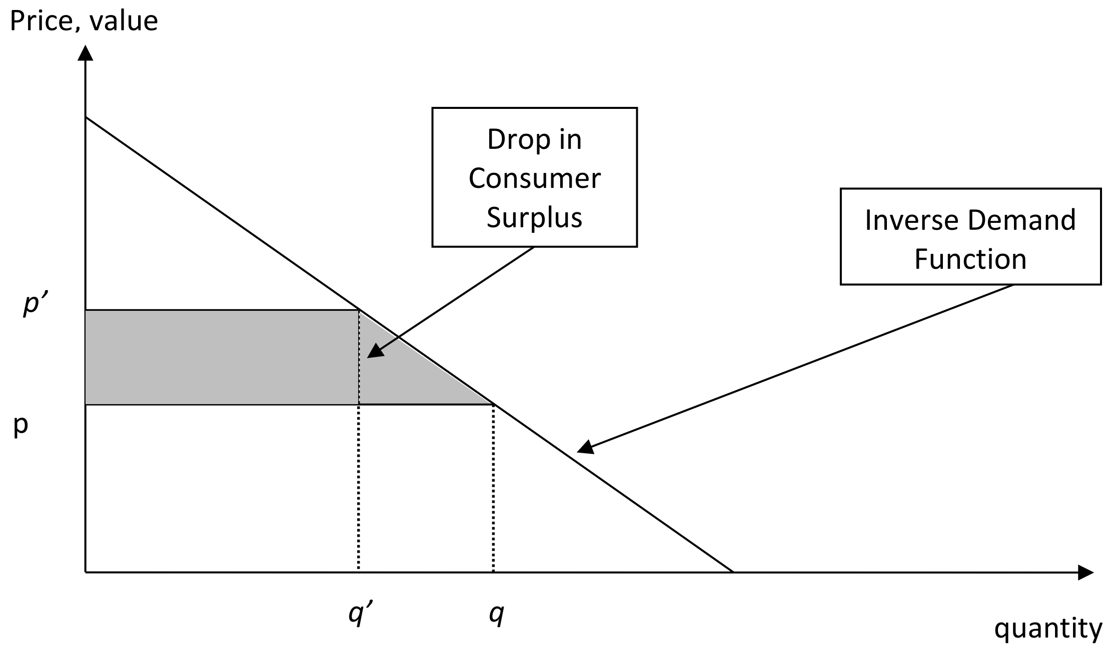
[2] Note that this difference between *ex ante* and *ex post* measures of utility change can be related to the classical price indices of Laspeyres and Paasche. It turns out that the Laspeyres index overestimates the compensating income variation whereas the Paasche index underestimates the equivalent income variation.

[3] When the good is normal, that is when the quantity increases with income, one can show that the compensation income variation is larger than the equivalent income variation.

We now focus on this case and will discuss the impact of price variation. Let us draw (see figure below) the inverse demand curve and the price line in the same graph. We can define the consumer's surplus by the area between the inverse demand curve and the price line. Accordingly, the benefits attached to a given economic state will be measured by this surplus. From there, two different states will be compared by examining the consumer surplus attached to these two states. In the second figure, we represent the change in consumer surplus when the price jumps from p to p'>p.





At this stage, we have only discussed the method for assessing the impact of some changes for one agent (or a group of agents having the same characteristics). How can we design a global measure for the whole set of consumers? A typical method consists in summing the surplus of every consumer. This measure is commonly referred to as the total consumers' surplus. Even if this method is widely used, it is not without consequence. In particular, this formula presumes that the planner puts the same weight on each unit of utility for every consumer. To put it differently, this means that all potential issues linked to income distribution between consumers are dismissed. Note that by income distribution, economists mean any transfer between agents, whether it is from the poor to the rich or the contrary. Therefore, the total consumer's surplus focuses on efficiency, leaving aside any concern for equity.

4. From consumers' surplus to total surplus

One major question, both from a theoretical and practical point of view, is how the firms' profit should be considered in the evaluation of economic changes. It is fairly common to contrast a first welfare standard based on total consumers' surplus and another based on total surplus (defined as the unweighted sum of total consumers' surplus and firms' profit). In the first case, it is as if the planner was choosing to introduce some distributional aspects into its evaluation criteria. This approach may then appear slightly contradictory to the procedure used to construct the total consumers' surplus.

Furthermore, using total consumers' surplus as a welfare measure for consumers relies on the idea that the distributional aspect between consumers should not be taken into account. But taking a general equilibrium approach, firms' profit will accrue to some consumers and therefore will be *ex post* one element of consumers' surplus. Therefore, by applying a welfare standard mostly or uniquely based on total consumers' surplus, a planner *de facto* introduces some differentiation between different types of consumers. More simply, there is a contradiction in choosing to use total consumer's surplus as a measure of consumers' utility while not equally weighing the firms' profit and the consumers' surplus in the welfare criteria. [4]

One way to solve this contradiction is to consider that part of the profit will go to some foreign firms and therefore, to some foreign consumers. Introducing international aspects into the analysis and a preference for domestic agents is thus a way to justify the use of welfare standard emphasizing consumers' surplus more than firms' profit.

In summary, the construction of welfare standard is based on some strong assumptions, in particular, the idea that the variations (in prices or quantities consumed) are small and the distributional aspects negligible. The consistency of this construction tends to favor a welfare standard where the planner accords equal weight to the consumers' surplus and the firm profit. Choosing to reduce the emphasis on the firms' profit allows the introduction of distributional issues between different groups of consumers. This aspect can hardly be reconciled with the mere construction of the total consumer's surplus, except when this originates from the desire to differentiate between domestic and foreign agents.

3. Welfare Standard with Imperfections

1. Decision rules vs. final objectives.

As discussed in the foregoing section, there are robust theoretical arguments that support the use of a welfare standard based on total surplus. Nevertheless, there are also many advocates for the use of a welfare standard based mostly on consumers' surplus. The objective of this section is to show how we can rationalize such discrepancy. More precisely, we will describe some situations where, even if the final objective is based on the total surplus, the goal the State should optimally assign to competition agencies turns out to be different.

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[4] One could also argue that taking some general equilibrium or long-run effects, it is not clear that using consumers' surplus as a welfare standard will always benefit consumers ex post.

Most of the contributions highlighting the difference between final objectives (the total welfare) and decision rules (the consumer's surplus most of the time) assume the presence of inefficiencies in the decision-making process. These inefficiencies may emerge from the presence of asymmetrical information. Indeed, firms involved in the merger process have more precise information on the consequences of their action under scrutiny, both for them and for society. The lack of information the authorities face may call for distorting the decision-rule they apply. The difference between objectives and decision rules may also originate from the existence of multiple layers in the decision-making process. In this process, one cannot always assume that each layer wants to maximize the same objective, i.e. the total welfare function. As the upper layer cannot control the lower layers, or cannot perfectly commit on his actions in all the dimensions, the decision process is not perfect. A solution to restoring at least partially the efficiency of public action may consist in choosing a welfare standard different from the one that would be chosen in a world of complete information. We will illustrate these sources of imperfection, and their consequences, in the case of merger control.

2. The Williamson trade-off on mergers

To examine this issue, let us first follow Williamson (1968) in his explanation of the main trade-offs in a merger decision. Let us therefore consider the case of a merger between two firms, A and B. The market power of the new firm AB is now greater than the market power of any of the two firms when they were separate. In this context of imperfect competition, the market price will be higher *ex post* than *ex ante*, which is detrimental to consumers. On the other hand, this merger may generate some efficiency gains, even if the way such gains will be transferred to consumers is not well defined. Nevertheless, taking a general equilibrium approach and considering that the gains represent revenues for some consumers, we will focus on the efficiency aspect of the problem.

To make this case even more transparent, let us assume that the merger leads to the creation of a monopoly (so A and B were the only firms operating on the initial market), while it allows a reduction of the marginal cost. If the *ex ante* situation was very competitive (e.g., perfect Bertrand competition, where firms compete in price, each one trying to undercut the other), the merger has strong detrimental effects on the consumers as the market price surges. If, on the contrary, the initial situation was not initially very competitive (e.g., a Cournot duopoly where capacities constraints limit the intensity of competition), the increases in the price would be limited. Williamson assumes that mergers should be allowed when they increase total surplus. In the first case (Bertrand), the efficiency gains necessary to allow the two firms to merge are therefore much higher than in the second case (Cournot).

There are two key aspects in this process. The first one is linked to the information one can have on the efficiency gains, or more generally, on the projects that could be proposed by the firms. This is often very difficult to know by outsiders, and the benefits for society are very likely to be overstated by firms. The second important aspect is the lobbying game between firms and the competition authorities, and the way the former try to influence the decision of the latter.

It is challenging for the competition authorities or for the State to set clear *ex ante* rules based on total surplus in order to evaluate the benefit of mergers. We will see how these rules must be designed to take into account the presence of these inefficiencies in the decision process.

3. Asymmetric information on efficiency gains

In a path-breaking contribution, Daniel Besanko and Daniel Spulber (1993) analyzed the choice of the optimal *ex ante* welfare standard in the case of a merger when the efficiency gains are private information of the merging firms. They show that expected social welfare is maximized when the antitrust authorities use a standard that is closer to the consumers' surplus than the total surplus criteria.

To understand this result, consider a situation where the authorities first set the welfare standard they want to apply, then the firms decide to merge and pay a fixed cost for this, and lastly, the authorities choose to investigate (or not) the merger. Two important assumptions must be highlighted. First, the fixed cost paid by the firms cannot be recovered, even if the merger is banned *ex post*. Secondly, once the authorities decide to investigate, the merger does not occur, even if it is socially beneficial. This last assumption is, of course, a shortcut of the analysis, as some mergers will still actually happen. But this captures the idea that, because of the investigation cost and delay, most of the merger gains will be lost.

In a dynamic game like this one, it is convenient to start by analyzing the very last stage, i.e. the decision from the authorities to challenge the merger or not. This decision will be based on two main elements: the set of firms that are likely to have initiated a merger and the type of welfare standard chosen *ex ante*. On this last point, it is assumed that the welfare standards take the form $\alpha\Pi+(1-\alpha)S>0$ (with α in [0,1]) where Π represents the firms' profit and S the consumers' surplus. With this modelling, when α is close to ½, the welfare standard is akin to the total surplus function, while with α close to zero, it is similar to the consumers' surplus.

As previously stated, the authorities cannot know the efficiency gains generated by the merger, so they will base their decision to challenge the merger according to their belief on the type of the merging firms. As a function of these beliefs, we then define the likelihood β that the authorities will challenge the merger. This likelihood increases with the belief on the marginal cost of the merged firm and with the weight put on the consumers' surplus in the welfare standard (decreasing with α).

It is assumed that when the firms decide whether to merge or not, they know that they will be successful only if the merger is not challenged by the authorities. More precisely, with probability β, the merger is challenged and there are no gains, while with probability $1-\beta$ the authorities do not challenge and the firms make a profit which increases with the efficiency gains. Therefore, there is a threshold of efficiency gains such that the firms try to merge when the gains are above the threshold.

Suppose first that the authorities can commit *ex ante* on the likelihood β to contest the merger before the firms choose to attempt to merge. In this case, they would choose $\beta=\beta^F$ high enough so that only very efficient mergers take place and so that using a welfare standard based on total welfare is efficient. The problem with this first best solution lies in the fact that effectively using the challenge probability β^F is not reasonable *ex post*. Indeed, if the authorities announce this challenge probability *ex ante* and the firms behave by taking this probability as given, the authorities will have some *ex post* incentives to challenge less often and to choose $\beta<\beta^F$.

There are two reasons explaining this difference between the best choice from the *ex ante* point of view of the best choice from the *ex post* point of view. First, there is a fixed cost of the merger and even if this cost is taken into account *ex ante*, it is neglected *ex post*. This is one of the reasons why authorities are more lenient *ex post*. Secondly, once the firms have made their decision, the average merger is extremely favorable to the total surplus. Since the authorities' *ex post* decision has no incentive effect on the firms' choice, the probability of intervention is reduced compared to β^F.

Besanko and Spulber then assume that the authorities cannot commit *ex ante* on the likelihood of challenge, but that they can commit on the welfare standard. As the authorities tend to be too lenient and not intervene often enough with a total surplus standard, they must distort this standard and put more weight in the consumer's surplus than on the firms' profit. The choice of a welfare standard mostly based on consumers' surplus is a means to offset the lack of commitment from the authorities at the challenge stage.

While the above contribution was based both on the lack of commitment of the competition agency and on the presence of asymmetric information, the same type of argument can be made by focusing solely on the second aspect. The initial idea developed by Lyon (2002), and then more formally by Armstrong-Vickers (2010), is that merger proposals are initiated by the firms, and not by the competition agencies. The whole set of possible merger projects are only known by the firms, while the antitrust authorities are only in a place to observe the characteristics of the mergers proposed. Consequently, there is a selection bias in the set of projects submitted to the appraisal of the authorities. What is certain is that the firms will only propose mergers that will increase their own profit.

Let us then compare two situations. In the first one, the antitrust agencies decide to apply a decision-rule based on total surplus. If we denote by Π the additional profit of the firm and by S the additional consumers' surplus, the projects characterized by a pair (Π, S) will be accepted if and only if $\Pi+S\geq 0$. In the second situation, the competition agencies that use a criterion based on consumers' surplus will accept a merger if and only if $S\geq 0$. Note that in the two situations, the final objective of the competition agencies is total surplus, i.e. Π+S.

The core of the argument still hinges on the idea that only the firms have access to the whole set of potential mergers. Suppose that there are 2 possible projects, A and B. For project A, we assume that the payoffs are (Π=3, S=3), while for project B, we assume that the payoffs are (Π=4, S=-1). If the agencies choose a welfare standard based on consumer's surplus, the firms would propose the first type of merger. This is indeed the best possible merger. Thus in this case, a consumer surplus standard promotes total surplus. Observe that it is also very easy to construct examples where a consumer surplus standard reduces total surplus. This would be the case with a project A of characteristics (Π=1, S=1) and project B yielding (Π=4, S=-1).

The above example illustrates that when certain elements cannot be controlled by the competition authorities, it may be better to depart from the total surplus standard, even when the final objective is to maximize total surplus. It also shows that the exact rule depends on the beliefs on the possible merger (see Armstrong-Vickers (2010) on this point). This departure from the use of a total surplus standard based on the presence of asymmetrical information mostly applies to the first phase of the procedure initiated by competition authorities, and is probably less relevant for the second phase.

4. Lobbying and mergers evaluation

While the above arguments relied on the presence of asymmetric information, the choice of consumers' surplus rather than a total surplus standard can also be justified by considering the internal organization of antitrust agencies. More specifically, we strive to produce arguments showing that the lack of accountability of these agencies, and the possibility that they could be influenced by the firms impacted by the agencies' decision, may justify the choice of welfare standard based on consumer surplus. This idea has been developed by Damien Neven and Lars-Hendrick Röller (2005), who have addressed how institutional settings interact with the choice of the standard.

Their work focuses on a single merger case, where the merger is potentially welfare enhancing. There are three interested parties: consumers, the merging firms and the non-merging firms. It is assumed that the decision to allow the proposed merger will depend not only on its consequences on society, but also on the lobbying activities of the interested parties. An important assumption is that only firms have the ability to lobby the agency. This assumption is realistic when the buyers are consumers, but may be questioned when buyers are themselves firms, as in the business to business case. In the model developed by Neven and Röller, lobbying takes the form of inefficient monetary transfers.[5] One must keep in mind that this idea of lobbying is a way of representing the influence firms can have on the authorities. Most of the time, firms do not actually bribe authorities with gifts or money, but they do spend considerable time and/or money trying to make their case and are more well-equipped to do so than individuals and small consumers.

In the spirit of Williamson, each merger is characterized by the level of efficiency it generates. And it is assumed that any merger will increase the market power of all the firms (merging, but also non-merging), so total surplus can increase only when the efficiency parameter is high enough.

At the constitutional level, two welfare standards may be chosen: one based on total surplus and another based on consumer's surplus. The level of efficiency required to allow the merger with the first standard (e^W) is smaller than with the second standard ($e^C > e^W$). Therefore, with a benevolent antitrust agency, choosing a standard based on consumers' surplus should induce fewer mergers than when the standard is based on total surplus. The agency's decision will impact all parties in the economy. Even if this choice cannot be directly controlled, the agency will be held responsible for the consequences, as this choice can be monitored *ex post*. When a review of the agency decision is launched, and the decision of the agency is not in line with the assigned standard, the agency will suffer from a penalty which increases with the difference between the optimal outcome associated with the official standard and the actual outcome. When making its decision, the agency will consider this threat but also the potential bribes (direct or indirect) it may receive from the interested parties.

Suppose first that the standard set of the constitutional level is based on total surplus. When the efficiency generated by the merger is above the socially optimal threshold e^W, the agency will accept the merger. On the other hand, when the efficiency generated is small, the merger will be blocked as the harm to consumers is so great that there is no way for firms to lobby the agency and convince it to change its mind. Suppose now that the

[5] The inefficiency of the lobbying process is modeled by assuming that when the firm gives 1 euro to the agency, the agency only receives a part of it. Therefore, the lobbying game does not have only redistributive effects between different groups but also efficiency effects.

efficiency generated by the merger is below the socially optimal threshold e^W, but not too small. By proposing a bribe to the agency, the merging firms can influence the decision and persuade the authorities to allow the merger. Therefore, in choosing a total surplus standard, two kinds of inefficiency emerge. First, too many mergers are allowed, and secondly, some resources are lost in the lobbying process.

Let us now consider the case where the welfare standard is based on consumers' surplus. When the efficiency generated by the merger is above the socially optimal threshold e^S, the agency will accept the merger. On the other hand, when the efficiency generated is small (here below e^W), the merger will be blocked by the agency as the harm to consumers is again too great to be offset by the firms' proposed bribes. But if the efficiency generated by the merger is below yet relatively close to e^C, the firms can influence the decision and the merger could be allowed by the agency. As in the previous case, the two kinds of inefficiency (inefficient decision and waste resource through lobbying) emerge.

How can we compare these two possible welfare standards? When the efficiency generated by the merger is sufficiently high or sufficiently low, the outcome is identical with both standards. The differences emerge only in the intermediate cases. Suppose that the efficiency generated is sufficiently small (less than e^W), but not too small (close to e^W). Firms can then easily lobby the agency when the total surplus standard applies, whereas they cannot do so successfully with a standard based on consumer's welfare. If the efficiency generated is sufficiently large (greater than e^W), but not too large (less than e^C), using a standard based on consumer's surplus results in blocking some welfare-enhancing mergers or forcing the firms to expend resources in the lobbying process.

Therefore, from an *ex ante* point of view, one should choose a total surplus standard when the mergers are likely to generate a high level of efficiency. On the contrary, a standard based on consumer's surplus should be advocated when the efficiencies generated by merger are likely to be limited.

Notwithstanding an absence of any informational or organizational inefficiency, a welfare standard based on total surplus would be the natural candidate as the optimal welfare standard. But the presence of asymmetric information or concerns linked to the necessary delegation of task and supervision may lead a benevolent legislator to use a welfare biased toward the defense of consumers' surplus. We will now describe the foundations of antitrust policy in modern economies and to what extent recent cases have been assessed using explicit or implicit welfare standards.

4. Competition law in practice

1. Goals

In United States (US) and Europe competition laws have three main elements in common.[6]

The first common element is prohibitive agreements which restrict free trade and competition. Primarily these include the repression of price-fixing, bid rigging, market allocations (dividing of geographic areas, types of products, or types of customers), restraints of trade, and other cartel agreements. The second element is the banning of abusive conduct by dominant firms, or practices that tend to give way to a dominant market position. Anticompetitive practices controlled in this way may include predatory pricing, exclusive dealing, product tying, price gouging, margin squeeze (in Europe), refusal to deal, and many others. Finally, the third element is the supervision of mergers and acquisitions of large corporations, including some joint ventures, where the effect may substantially reduce competition. The agencies typically consider whether the restructuring will reduce competition to an extent where the new entity will be able to increase its prices or decrease innovation.

Although the goal of competition law is the same in US and in Europe, its application may differ on each side of the Atlantic. To understand why and to what extent they differ, let us first have a look on the evolution and the practice of the competition law in the US, and then we will compare it to its evolution and practice in Europe.

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[6] EU competition law has the additional policy of controlling the Member States aid to companies (TFEU article 107).

2. Competition Law in the United States

a. History

Modern competition law began with the US legislation of the Sherman Act of 1890 and the Clayton Act of 1914. These two major pieces of legislation were passed to address oppressive business practices associated with monopolies, cartels, and trusts formed in the late 1800's and early 1900's.

Passed by Congress in 1890, the Sherman Antitrust Act prohibits certain business activities that federal government regulators deem to be anticompetitive (high prices, barriers to entry …), and requires the federal government to investigate and pursue trusts.

In 1911, the US Supreme Court ruled that the largest oil refiner in the world, Standard Oil Co. Inc., was an illegal monopoly and the US Justice Department ordered its breakup into 34 companies.

In 1914, Congress passed the Clayton Act to give more law enforcement to the Sherman Antitrust Act. Enforced by the Department of Justice (DOJ) and the newly-established Federal Trade Commission (FTC), the Clayton Act sought to prevent anticompetitive practices such as price discrimination, exclusive dealing contracts, tying agreements, or requirement contracts; mergers and acquisitions; and interlocking directorates.

From 1915 until the mid-1930s, the antitrust system entered a period of relative repose. The courts relied heavily on reasonableness tests to evaluate business conduct and often treated suspect behavior permissively. This shift in antitrust authorities' behavior seems to have its sources in two economically traumatic experiences. Firstly, World War I led many economists, business leaders, and government officials to believe that the business-government collaboration that guided the wartime mobilization also provided the best way to organize the economy in times of peace. Secondly, the economic collapse in 1929 repudiated the widely accepted competitive model of economic organization at the time and substantiated stronger steps to be taken by the government to orchestrate commerce.

Advocates of close coordination between government and industry exercised considerable influence in designing experiments of the early New Deal.

By the mid-1930s, the economic planning models that had inspired great hope early on in the New Deal had lost their luster. Instead, many influential advisors believed that competition was the key to economic restoration and tended to downplay efficiencies associated with government planning and large-scale enterprises accordingly. Such a belief was supported by Harvard School economics that was heavily “structuralist”, i.e. viewing anticompetitive behaviors as directly resulting from anticompetitive industry structures. This view led to an aggressive merger policy which placed a premium on preventing markets from becoming over-concentrated.

From 1940 to 1972, the Supreme Court made it clear that many practices were considered as *per se* unlawful, regardless of their actual effects.[7] *Per se* rules (i.e., form-based approach) were adopted to lessen the government’s burden of proof regarding numerous practices among: horizontal price-fixing agreements (these were treated as crimes); tying arrangements; vertical restraints to specific geographical areas; boycotts of manufacturers who distributed to discounters; and horizontal agreements allocating markets or customers.

By the early 1970s, the perception that U.S. firms were losing ground in international markets and surrendering market share at home attracted harsh criticism antitrust law’s extreme activism policy. Much of this criticism was formulated by a group of scholars known as the Chicago School and included Robert Bork and Richard Posner, who challenged the legality of many *per se* rules which the Court had created over the preceding 30 years. They argued that some conduct, such as vertical restraints, was often so benign or even pro-competitive, that the courts should allow it. During this era, under the Chicago School’s influence, the courts took a more permissive stance on mergers, and gave dominant firms considerable freedom to choose their own pricing, product development, and promotional strategies.

Since the mid-1990s, antitrust decisions and government enforcement policy reflects modern judicial use of game theory, with a particular focus on the role of information,

[7] See Kovacic and Shapiro (2000).

beliefs, incentives and strategic behavior of firms. Game theory was explicitly introduced in the 1992 revision of the Merger Guidelines, and its use has been reinforced since then in merger analysis.[8]

Today, the war on cartels, growing in scale since the 1990's, has reached new heights. The average percentage of defendants charged by the Department of Justice antitrust division who were then sentenced to jail time rose from 37% during the 1990's to 64% during the 2000's, reaching 70% for the period from 2010 to2013.[9],[10] At the same time, the average prison sentence for cartel offenses rose from 8 months during the 1990's to 20 months during the 2000's, reaching 25 months for the period from 2010 to2013.[11]

b. Robert Bork's critique of US antitrust law and the 'Consumer Welfare' prescription

The Sherman Act passed by Congress in 1890 does not specify explicit criteria for competition law. In 1978, the Judge Robert Bork published "*The Antitrust Paradox"* - now one of the most cited books on antitrust - that criticized the state of US antitrust law in the 1970s. Bork argued that the antitrust laws carried out at that time excessively protected firms from the competitive natural selection process. By protecting inefficient competitors rather than competition itself, antitrust enforcement paradoxically raised prices. Therefore, Bork urged authorities to make "consumer welfare" the goal of antitrust.

In 1979, the Supreme Court adopted the view that Congress had enacted the Sherman Act as a "consumer welfare prescription". Beginning in the late 1970's, the US Supreme Court repeatedly adopted and adhered to antitrust opinions articulated in "*The Antitrust Paradox*" and the book has been cited by over a hundred courts in the US to this day.

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[8] For instance, the 2010 revision introduced the "upward pricing pressure test" which measures the merger effect on the incentives to raise price instead of evaluating the change on the market shares. *Incentives* have also been used by the Justice Department which gives criminal immunity to the first cartel member to reveal and provide *information* on a cartel's existence. Also, government now prosecutes *behavior* that facilitates coordination among competitors, not just the coordination itself.

[9] See, http://www.justice.gov/atr/public/division-update/2011/criminal-program.html

[10] See, http://www.justice.gov/atr/public/division-update/2014/criminal-program.html

[11] The United States has long used the criminal process in the cartel cases. Cartel criminalization, with its higher penalties and personal liability, increases the burden of proof so that cases are built on direct evidence, although circumstantial evidence is admissible. Imprisonment sanction relates, among other reasons, to the corporate limited liability and the probable inability of firms to pay high fines, so the sentence is partly linked with the damage which is evaluated through an economic analysis.

c. The ambiguity of the 'Consumer Welfare' criterion.

"The Antitrust Paradox" ended the debate over the intrinsic goals of antitrust laws which became the 'consumer welfare'. Unfortunately, the book opened a new debate over the meaning of the term "consumer welfare", which is quite ambiguous and depending on its interpretation, can lead to very different policy decisions. The reason the term "consumer welfare" does not have a clear definition is that Bork's use of the term was inconsistent with its use by economists. Robert Bork believed that "competition", "efficiency", "wealth maximization", and "consumer welfare" align in theory and practice. He was wrong.

In economics, "consumer welfare" refers to the individual benefits derived from the consumption of goods and services. What Bork probably had in mind when he used the term "consumer welfare", was actually the "consumer surplus", as defined in the first section of this report. These two concepts can differ radically since welfare includes income, consumption and wealth, but also things less directly linked to prices such as health, education, personal activities, political voice and governance, social connections and relationships, environment (present and future conditions) and many others. For example, high prices for harmful items, like tobacco and alcohol, might be detrimental to consumer surplus but enhance consumer welfare (which factors in health).

d. Long-term vs short-term impact on welfare

The competition policy might recognize welfare as an essential long-term goal. An activity might harm consumers' short-term interests and simultaneously increase their long-term interest by realizing production and innovation efficiencies. It would make sense to allow such an activity given that it realizes substantial efficiencies across the board, is reasonable and proportionate so as to do as little harm as possible to consumers and does not lastingly impair competition. To examine the possibility that long-term gains may cover losses in short-term for consumers, the authority must adopt an *effects-based* approach which, contrary to the *per se* approach which conclusively presumes some anticompetitive behaviors to be "illegal per se" regardless of their long-term effects, makes use of economic insights to take dynamic efficiency into account.

Another advantage of the effects-based approach over the *per se* approach is that it allows assessment of the real anticompetitive effects of some presumed anticompetitive behaviors (e.g., price fixing, geographic market division, group boycott…). For example, when prices decline sufficiently so that no firm in an industry is earning economic profits and subsequently some of these firms exit the market, this outcome either reflects a highly competitive market adjusting to a temporary oversupply condition, or it indicates that a large competitor is employing a strategy of predatory pricing to drive its rivals out. Similarly, when a firm builds a large factory it may either be engaged in vigorous competition and new entry, or in creating excess capacity to raise output and cut prices quickly if circumstances warrant as an implicit threat to potential competitors.

For these reasons, after having long adopted a *per se* approach, and being subject to Bork's criticism that US antitrust law/policy stubbornly defends competitors possibly to the detriment of competition, the US authorities have gradually embraced an effects-based approach since the 1980's.

e. Today's competition policy in practice

The effects-based approach has been accepted in the US. However, the outcome of this approach depends on how the 'Consumer Welfare' criterion is construed. Today, there are two primary interpretations of the term "consumer welfare". One argues that the term should mean "consumer surplus", while the other asserts that the appropriate meaning is "total surplus" or "social surplus". The US texts are not explicit on how to interpret the term. There is no clear guidance from the Supreme Court, and it is left to the discretion of the lower courts which of two standards—consumer surplus or total surplus —will be followed. As we will see, such discretion is not permitted in Europe. Perhaps this is due to the fact that less explicit texts would grant national courts decision-making powers that might question European unity and its integration of its community market.

3. Competition law in Europe

a. History

As in US, European competition laws guard against firms improperly gaining or enhancing market power and their ability to raise prices above competitive levels.

Following the Second World War and the subsequent goal of unifying European countries, European Union (EU) competition law has its origins in the European Coal and Steel Community formally established by the Treaty of Paris in 1951. Article 65 of the Treaty banned cartels and Article 66 made provisions for concentrations, or mergers, and the abuse of a dominant position by firms. The provisions of these two articles are considered to be the product of the US' Sherman Act and Clayton Act.[12]

The primary reason for the introduction of competition policy in the Treaty of Paris was related to a desire to prevent a resurrection of the military power of Germany and to produce diplomatic and economic stability in Western Europe. This would be accomplished by some of the main enemies during Second World War sharing the production of coal and steel, which by that time were essential factors of production. The second main reason for competition policy in the Treaty of Paris is due to an idea developed in Austria and Germany by the so-called Ordo-liberal thought, according to which markets can fulfill positive functions only if the State establishes independent regulatory authorities to guarantee the protection of competitive markets (see, e.g., Flavio and Vatiero, 2015).

In 1957, competition rules were included in the Treaty of Rome which established the European Economic Community. The European Commission (EC) then gained authority to take legal actions against cartels (ex-Art. 81 EC, now Art. 101 TFEU), abuse of dominant market position (ex-Art. 82 EC, now 102 TFUE) and state aids (ex-Art. 87 EC, now 107 TFUE).

From 1958 to 1969, the foundations of European competition policy continued to be outlined. In 1962, the Council enacted Regulation 17/62 by which the Commission was made to take on the role of central enforcement authority as investigator, prosecutor and decision-maker, with support from the European Court of Justice (ECJ). During this time, the Commission's principal concern was more the integration of the Common Market, with the priority of fighting restrictive agreements, rather than addressing other practices that distort competition.

[12] Art.65 (prohibitive agreements which restrict free trade and competition) and Art.66 (merger control and abuses of dominant positions) are close to Sherman Act ss.1 and 2, and Clayton Act s.7. See, e.g., Weitbrecht, 2008.

From 1970 to 1989, the Commission began to test its powers through a series of experiments. It particularly explored the possibilities and limits of the application of Article 86 to mergers. In many cases the ECJ largely supported the Commission, even though it annulled certain aspects of the Commission's rulings.[13] By the 1980s the Commission was taking stronger enforcement actions supported by ideological and political contexts propitious for the development of competition policy. The development of neo-liberal ideas, rooted in the limitation of the State having the role of referee in an economy driven only by free-market dynamics, spread quickly from the US (Reagan in 1981) and Great Britain (Thatcher in 1979). The single-market program and the Single European Act of 1986 reinforced the market-integration objective and thus provided additional momentum for active competition policy. Increased confidence in EU competition policy culminated in the 1989 adoption of the original Merger Regulation (a merger is prohibited by the Commission for the first time in 1991), completing the European competition policy "toolkit".

From 1990 to 2004, triggered by the fall of the Soviet Union, the EU welcomed many of the eastern European states and expanded from 12 to 25 Member States. This put a newfound importance on market integration. Another watershed event that marked the beginning of a new era of EC competition law was the Merger Regulation which came into force in 1990. The ability of the Commission to pass judgment on the biggest European mergers, the biggest in the world, catapulted the Commission into a position of power and importance that no competition agency in Europe had ever enjoyed. The Merger Regulation was revised in 2004. The control of concentrations was adopted deliberately late in order to encourage cross-border mergers within the European Union.

The Treaty of Lisbon came into force in 2009, as the latest major amendment to EU competition policy. Just as the treaties before it, the Treaty of Lisbon did not consider the possibility for criminal sanctions against firms participating in cartels. This is a stark contrast to US law where participation in a cartel is considered a criminal offense. Criminal sanctions can only be imposed by Member States national authorities (in particular, courts). Traditionally, these sanctions, imposed by national authorities, do not result in criminal

[13] This cases includes *Continental Can* (1971-1973, cf ECR 215), *Commercial Solvents* (1972-1974, cf ECR 223), *United Brands* (1975-1978, cf ECR 207), *Hoffmann-La Roche* (1976-1979, cf ECR 461), *Michelin* (1981-1983, cf ECR 3461) and *Tetra Pak* (1988-1990, cf ECR II-309).

offenses but rather in civil and administrative repercussions.[14] Instead, the Commission has opted to further increase the fines paid by companies.

Today, composed of 28 Member States, the EU has established itself as one of two leading antitrust jurisdictions in the world. In becoming a leading antitrust jurisdiction, EC competition law has been heavily influenced by antitrust policy development in the US, while defining its own characteristics and identity. More specifically, the Commission has gradually adopted its own version of the consumer welfare approach.

b. ‘Consumer Welfare’ as a ‘Consumer Surplus’ criterion

While society's total welfare is usually the ultimate goal of competition policy, it is rarely the sole goal. The difference between competition policies lies in the particular way in which they reconcile the general will of the society with the particular interests of citizens. For example, there might be a tradeoff between maximizing the total welfare and distributing income (or political and economic power) “fairly”. Under the circumstances, the competition policy must also not restrict business opportunity too harshly.

In the EU where Member State aids which distort competition are prohibited, an additional criterion not found in the US is the integration of the common market. The integration of the European market was a primary goal of the EU, and several decades later, it is still a relevant objective of European competition law. For instance, under Article 101 (1) TFEU territorial protection is considered a restriction of competition, even when does not produce any effects on final consumers.

The term ‘consumer welfare’ - which is the criterion of US competition policy - is repeatedly pronounced in the EC’s policy declarations as a motto in reference to the ultimate objective of its competition rules. Some commentators (e.g., Akman, 2009) observe that there is great dissonance between EC policy declarations and the actual practice on the provision regarding ‘consumer welfare’ standard. Nonetheless, the term has been used by the Court in the judgment of several competition cases (e.g., *GlaxoSmithKline*, 2006, *Microsoft*, 2007, *Post Danmark*, 2012, and *MasterCard*, 2014).

[14] See, Gerber (2001). For a complete discussion on adding criminal enforcement to the administrative enforcement already existing at the EU and member state levels, see Whelan (2014).

EU texts are more explicit than US texts on the interpretation of the term 'consumer welfare'. EU competition law seems to emphasize consumer surplus more than producer surplus, and goes as far as accepting that wealth transfers from final consumers to producers might be a matter of concern for competition law enforcement. For example, Article 101(3) TFEU provides that a prerequisite for the application of the exception rule to cartel prohibition is that consumers/users should be awarded a fair share of the possible efficiency gains resulting from any producers' restrictive agreement. If a restrictive agreement is likely to lead to higher prices, consumers must then be fully compensated with increased quality or other benefits.

Three observations support the EU's approach to adopt a 'Consumer Surplus' criterion. First, the "consumer" is defined in a broad sense by EU law as encompassing all direct or indirect users of the products, including intermediate producers that use the products as an input, as well as distributors and final consumers. Second, in negotiations, this criterion allows the European authorities to adjust for an imbalance between consumers and producers. This is particularly true within specific industrial sectors where the producers benefit from powerful lobbying. Third, since the EU is unable to employ fiscal instruments to redistribute wealth from rich to poor Member States, competition law cannot focus exclusively on economic efficiency but also must focus on the allocation of that surplus among Member States. This is a stark contrast to the US which has the adequate fiscal instruments to pursue redistribution at the federal level at its disposal.

c. Today's competition policy in practice

Today the primacy of market integration does not hold anymore among the policy goals of European competition law.

Since the late 1990s, EU competition policy has experienced, as the US antitrust did at least one decade before, a noticeable shift from a *per se* legal approach to an effects-based economic approach. This shift has been gradually introduced through different channels such as the implementation of the EU merger regulation in the 1990s, the reform of the law on vertical restraints and cooperation agreements in the late 1990s and early 2000s, and the debate over the legal standards concerning the abuse of dominance provisions of EU competition law since 2005. Box 1 illustrates how the Commission used an effects-based approach in exclusionary abuse in 2012.

<u>Box 1: Post Danmark 2012 Case: Effects-based approach in exclusionary abuse.</u>

In Denmark, *Post Danmark* and *Forbruger-Kontakt* are the two largest undertakings in the unaddressed mail sector (advertisements, local newspapers etc.). Because *Post Danmark* was the incumbent of the market for addressed letters and parcels (a market partly liberalized in 2003) it controlled a nationwide network that it also used for the delivery of unaddressed mail (a wholly liberalized and unregulated sector).

In 2003, *Post Danmark* lured three customers (supermarket companies *SuperBest*, *Spar* and *Coop*) away from *Forbruger-Kontakt* by offering them attractive selective price cuts. According to *Forbruger-Kontakt,* this was done with the specific purpose of undermining its ability to remain a viable competitor on the market. *Forbruger-Kontakt* thus complained before the Danish Competition and Consumer Authority on grounds of the price cuts being predatory in nature, while discriminatory and loyalty enhancing.

In 2004, the Danish authority found no predatory pricing abuse but decided that the price cuts had been discriminatory. *Post Danmark* then appealed on the issue of discriminatory exclusions to the Danish Supreme Court, which in 2010 put questions before the ECJ.

In responding to the questions from the Danish Supreme Court in 2012, the ECJ ruled that a dominant firm charging prices below its average total costs, but above the incremental cost of serving the customer concerned to attract a rival's customers is not inherently abusive.[1] To constitute abuse, the selective price-cutting must be shown to be part of a scheme to dominate and furthermore to be capable of having that effect, rather than merely reflecting competition for customers. The ECJ also noted that as a general rule, where a dominant company sets its prices at a level that covers most of its costs, an equally efficient customer could compete with those prices without suffering losses that are unsustainable in the long term.

By considering the economic effects of pricing decisions before determining their legality, the ECJ judgment then rejects the per se condemnation of form-based conduct and unequivocally adopts an 'effects-based' analysis which is in line with the EC's approach in recent years.[2]

[1] Case C-209/10 Post Danmark A/S v Konkurrencerådet [2012] ECR I-0000

[2] Guidance on the Commission's enforcement priorities in applying article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C45/7.

There are inherent welfare costs associated with each legal standard. The effects-based approach may have a non-negligible procedural cost in terms of investigation and delay of decision that is absent from a *per se* approach. Further, it incorporates a degree of legal uncertainty that might be detrimental for the business activity. For this reason, the effects-based approach, which may be more accurate than *per se* rules to examine the welfare consequences of a given activity, might be not optimal when we take into account the welfare costs associated with this standard. Box 2 illustrates a very recent verdict by the Commission that used a *per se* approach and rejected one party's appeal to use an effects-based approach. Some commentators interpreted this case as a possible return to a *per se* approach.

Box 2: Intel 2014 Case: return to a form-based approach?

In 2009, the EU found that *Intel* had engaged in abusive anticompetitive conduct and subsequently fined *Intel* €1.06 billion -the largest antitrust fine ever ordered by the Commission. *Intel* was found to have given rebates to computer manufacturers (including *Dell*, *Hewlett-Packard*, *Lenovo* and *NEC*), who exclusively used *Intel* chips in their products, and who shunned the products of Intel's main competitor, *Advanced Micro Devices* (*AMD*).

Intel appealed the Commission's verdict because the exclusivity rebates were not proven on a case-by-case basis to restrict competition. Instead, the firm argued that the rebates benefitted the manufacturers and subsequently, the final customers.

In June 2014, the General Court rejected the appeal and argued that the effects-based analysis is largely unnecessary for exclusivity-inducing rebates because these types of rebates are, by nature, designed to restrict the purchaser's freedom to choose alternative suppliers.

The Intel judgment appears as a forceful statement of the Court that it is intent on upholding its form-based doctrine, at least as far as exclusivity rebates are concerned.

In their choice of the legal standards, the authorities also take into account the welfare costs associated with the errors that a given standard can produce. Selecting the effects-based approach does not exclude the possibility of mistake because it is sometimes impossible – due to our limited economic and legal understanding or to a lack of data - to measure with precision many of the important factors that will determine the likely welfare consequences of a given activity. Consequently, any legal standard is likely to erroneously prevent a pro-competitive or benign action (Type I error) or fail to prevent an anticompetitive or harmful action (Type II error). Thus, legal standards should minimize the sum of the welfare costs caused by decision errors of Type I and Type II.

5. **Conclusion**

In the United States, the competition authorities have evolved from using a form-based analysis to an analysis based partly on the effects of a firm's (or firms') actions in order to judge both the real anticompetitive effects of practices and to assess their long-term effects on the welfare. In Europe, the competition authorities have also followed this trend, albeit in the wake of American authorities. Whereas it was previously accepted as the appropriate approach, this is now the subject of debate in Europe.

These analyses, whether form-based or effect-based, struggle with choosing a rigorous criterion that has a clear economic definition.

Currently, European texts seem to favor, if any, a consumer surplus criterion. The United States texts are less explicit on the choice of any specific economic criterion as they continue to mention the term "consumer welfare", which remains economically vague. The United States thus allow the agencies and courts greater flexibility in interpretation, in such a way that they are free to select the economic criterion on a case-by-case basis.

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