# /ЧЛАНЦИ

УДК 338.532.421; 346.546

CERIF: S 144, S 185

DOI: 10.51204/Anali\_PFBU\_22201A

Nikola NJEGOVAN, PhD\*

Bojan RISTIĆ, PhD\*\*

# THE ANATOMY OF PRICE GOUGING: A REGULATORY OR COMPETITION LAW ANTIDOTE

Unlike other natural disasters, the coronavirus disease pandemic is global in character, which is why interest among researchers in the price gouging phenomenon is on the rise. Without disputing many solid arguments favouring the market mechanism, we will reconsider the goals and means of potential government intervention. One possibility lies in economic regulation, the other in competition law. In the first case, price ceilings are usually imposed for necessary goods, followed by rationing and export restrictions. On the other hand, competition policy focuses on preventing the exercise of temporary market power. We will try to show that market failures can provide specific

 $<sup>^{\</sup>ast}$  Assistant Professor, University of Belgrade Faculty of Economics, Serbia, nikola. njegovan@ekof.bg.ac.rs.

<sup>\*\*</sup> Assistant Professor, University of Belgrade Faculty of Economics, Serbia, *bojan. ristic@ekof.bg.ac.rs*.

arguments for regulation but relying on competition protection policy seems unjustified. Still, since the critical issue is defining excessive prices in the short run, we expect competition authorities to address this issue, considering that they are permanently monitoring various markets.

**Key words:** Price gouging. – Excessive prices. – Competition law. – Regulation. – Windfall market power.

"High prices and high profits might be an indication that it is worth looking at the industry [...] but certainly by themselves they cannot justify intervention by competition authorities."

Massimo Motta (2004, 70)

#### 1. INTRODUCTION

In some regions of the world, nature causes disasters (floods, hurricanes, wildfires, etc.) more often than in others. They often lead to pessimism accompanied by substantial supply or demand shocks, i.e. shortages or sudden hikes in the prices of certain goods. When the hike is significant, the consumers may face price gouging. Due to frequent accidents, the abundant experience of those regions has been crystallised, in the formal legal sense, in the adopted rules for combating such situations. Elsewhere, such laws are absent or barely existent. The shortage of medical face masks and disinfectants during the coronavirus disease pandemic illustrates this problem well. The question is whether the suppliers exploit this situation to make high short-term profits.

For example, during the shortage of masks in March 2020 in Serbia, the Prima chain of pharmacies in Belgrade increased the price of surgical masks to 200 dinars. It previously sold them for 80, while the price was 27.70 dinars in state-owned pharmacies. It was widely reported by the media at the time that this trade practice was not an isolated case. However, a somewhat more interesting case happened in the US, where the manufacturer of masks itself complained about the high prices. A lawsuit was filed against retailers on Amazon who sold N95 face masks to consumers at a price close to 20 times higher than the one suggested by the manufacturer, the 3M Company. In both

<sup>&</sup>lt;sup>1</sup> See: Vlaović (2020).

<sup>&</sup>lt;sup>2</sup> See: US District Court, C.D. California. Case No. 2:20-CV-05049 3M Co. v. KM Bros. Inc. https://www.leagle.com/decision/infdco20200819744 (last visited 25 January, 2022).

cases, the increase was not permanent, and it did not apply to all consumers, but rather to those who used such sales channels. The circumstances have significantly affected the consumers' reservation prices for this product, which many retailers have tried to take advantage of.

Imposing some form of government intervention requires a clear and precise definition of price gouging and, consequently, its recognition by some corresponding law. Since specific laws that prevent price gouging practices exist in many states, they can serve as a good starting point for a definition. Despite some differences in treatment, different laws seem to have some common elements (Zwolinski 2010, 335): a) almost all laws state that they refer only to a certain period of disaster or state of emergency; b) laws often refer to certain classes of products necessary for survival or combatting the problems caused by the disaster, however, in some cases, the law may apply to other products as well; and c) laws aim to set a price ceiling and are often accompanied by export restrictions and rationing during a state of emergency. These three points depict the anatomy of the phenomenon of price gouging. Of course, the main goal of price ceilings is to prevent "excessive" prices. However, there is still a lack of consensus on how "excessive" should be defined, as can be seen from the subsequent definition attempt by Zwolinski (2010, 336): "Price gouging occurs when, in the wake of an emergency, the price of some good that is necessary or extremely useful for coping with the emergency is set at what appears to be an unfairly high level."

There are several problems with the accuracy of this definition that the author himself acknowledges. Even if we exclude the issues of defining the state of emergency, the definition of "necessity" could be too narrow or too broad. Of course, the idea is that during a snowstorm, the prices of shovels are treated differently from the prices of, say, lawnmowers. However, the increase in the demand for alcoholic beverages in the same situation can lead to a sharp rise in their price, but we could hardly label alcohol as a necessity. The problem is that necessity is always defined with reference to a given end. Sandbags are helpful for fighting floods, but they are not essential for survival in other emergencies. Hence, Zwolinski considered that "necessary or extremely useful for coping with the emergency" could be a good solution. The biggest problem is with the "unfairly high" attribute. What price increase should be deemed unfairly high? There are severe problems with the *legal predictability* of a such defined property, as it may be subject to different interpretations.

We have already shown (Njegovan et al. 2021) some weaknesses of arguments for intervention by comparing the neoclassical and Austrian approaches to price gouging. This paper aims to consider under what

conditions intervention might be desirable and what form it should take. In general, we focus on economic regulation and competition policy. *Economic regulation* usually implies the imposition of price ceilings and the related complementary policies to prevent goods shortages. For example, the US laws mentioned above provide the basis for such intervention. In addition, if this sudden rise in prices is attributed to the exploitative abuse of a dominant position (in some jurisdictions but not in the US<sup>3</sup>), the development falls within the domain of *competition law*, which should prevent such practices. In the latter case, it is justified to ask whether the phenomenon of price gouging is equivalent to excessive prices because the prices are "too high" in both cases. Finally, these two policies are not mutually exclusive and can be implemented simultaneously.

In this context, we will try to examine the hypothesis set by the OECD (2020b) that some form of economic regulation is necessary but should exclude competition policy. However, competition authorities may still play an essential role in combating this problem. The statement, from the beginning of the paper, by Motta (2004, 69–70) is precisely in line with this hypothesis. More specifically, we will try to point out that externalities and the need for price stabilisation impose the need for economic regulation. However, not every price increase should be considered price gouging. Some price increases may be just a manifestation of cost increases, so intervening in such cases may be superfluous and even harmful. Furthermore, standard arguments against competition policy apply both to excessive prices and price gouging. In addition, it will turn out that the specific time dimension that characterises price gouging provides more conclusive arguments against applying competition law.

The rest of this paper is organised as follows. In section 2, we will briefly review the experience in treating the phenomenon of price gouging in light of the ongoing COVID-19 pandemic. Section 3 will highlight the most important arguments for implementing economic regulation in this case, while Section 4 considers the possibility of applying competition law. Furthermore, we will examine the link between the exploitative abuse of a dominant position and price gouging. Section 4 will also address the issue of the price gouging benchmark. Finally, Section 5 concludes this discussion.

Exploitative abuse is prohibited in many other countries, including all OECD countries, except the U.S., Canada, Australia, New Zealand, and Mexico (Gilo, Spiegel 2018).

#### 2. PANDEMIC EXPERIENCE

Different countries have seen different reactions to the same phenomenon during the COVID-19 pandemic. Despite the long history of emergencies, the world generally seemed unprepared for price gouging. The case of the United States differs somewhat from this general statement thanks to the experience with devastating hurricanes that often hit this country. That is why most US states had laws in this area (about 2/3 of the states) even before the COVID-19 pandemic. However, an increase in the number of the US states with price gouging laws during the pandemic was noticeable. Hence, as of March 2021, as many as 42 US states have laws related to price gouging, although there is still no federal law regulating this phenomenon. Curiously, in 2012, 40 leading economists from American universities participated in a survey on attitudes regarding the need to pass a law that would prohibit "unconscionably excessive" price gouging during natural disasters in Connecticut.<sup>4</sup> Only 3 participants took the unequivocal position that such a law should be passed.

The declaration of a state of emergency in the United States created a precondition for implementing laws governing price gouging in individual states. Moreover, US President Donald Trump signed an executive order to prevent the hoarding of vital medical equipment and resources, as well as price gouging, which provided a broader base for price gouging treatment in the United States than the laws of individual states. As in all the cases of exploitative abuse of dominant position caused by excessive prices, the role of antitrust in treating price gouging was omitted. Price gouging should have been detected and banned as an unfair and thus unlawful business practice but outside the scope of exploitative abuse. This non-interference approach to excessive prices did not mean that the bodies implementing this policy such as the Department of Justice (DOJ) and the Federal Trade Commission (FTC)—would not interfere in a certain way in the case of price gouging. Namely, as good connoisseurs on the functioning of the market, the DOJ and the FTC are expected to play an active role, however, outside of exploitative abuse, with some other antitrust tools. Accordingly, on 9 March 2020, the DOJ announced, "Individuals or companies that fix prices or rig bids for personal health protection equipment such as sterile gloves and face masks could face criminal prosecution. Competitors who agree to allocate among

See: Initiative on Global Markets (2012).

themselves consumers of public health products could also be prosecuted".<sup>5</sup> For example, the DOJ formed a COVID-19 Hoarding and Price Gouging Task Force to reach this end.

In the European Union, at the national and supranational level, which "does not recognise" price gouging in the US sense, one gets the impression that price gouging can be regulated based on the Article 102(a) of the Treaty on the Functioning of the European Union (TFEU), related to the exploitative abuse of a dominant position.<sup>6</sup> This is supported by the words of the European Commissioner for Competition Margrethe Vestager: "a crisis is not a shield against competition law enforcement" (Cary et al. 2020). In other words, a pandemic cannot be an excuse for violating competition law. However, it is evident *ex post* that despite numerous initiatives to include competition law enforcement in solving this problem, 8 few cases have been formally opened. The activities of the EU competition authorities have focused mainly on just monitoring. The activities of the United Kingdom in this field had a similar course as in the EU. Namely, the Competition and Markets Authority (CMA) formed a particular organisational unit (COVID Task Force) to monitor and receive complaints from customers about price gouging—but not to intervene from the standpoint of competition law enforcement. An exception in this regard is the South African competition authority, which has diligently enforced competition law whenever there was a clear indication of price gouging (Boshoff 2021). Some cases of price gouging were characterised as exploitative abuse of a dominant position and treated accordingly.

After introducing a state of emergency in Serbia (15 March 2020), the Government of the Republic of Serbia imposed temporary measures to prevent significant price hikes during the state of emergency: "Decision to limit the level of prices and margins of basic foodstuffs and protective equipment". This decision set price ceilings for necessary products at price levels prevailing on 5 March 2020 (immediately before the official introduction of the state of emergency). At the same time, from the standpoint of the exploitative abuse of the dominant market position, the

See: Department of Justice (2020).

<sup>&</sup>lt;sup>6</sup> Unlike the EU competition law, laws related to price gouging apply to any undertakings, regardless of their market power.

<sup>&</sup>lt;sup>7</sup> For a short overview and analysis of some competition authorities' responses to the COVID-19 emergency see: Rakić (2020).

<sup>&</sup>lt;sup>8</sup> For examples of European countries where competition authorities have considered this phenomenon see Cary *et al.* (2020).

Official Gazette of RS No. 30/2020.

Commission for Protection of Competition of the Republic of Serbia (CPC) did not react to "unfair" prices<sup>10</sup> — unambiguously justified according to the position that this paper advocates.

Previous examples show that a particular type of intervention took place in the mentioned jurisdictions. Other jurisdictions relied solely on economic regulation, with the exception of South Africa, which boldly applied competition law as if it were the case of excessive prices. However, the common point that "competition authorities had a role to play" is precisely in line with the OECD (2020b) suggestion.

The fact that price gouging is a short-term phenomenon, whose occurrence cannot be predicted, limits the possibility that a particular regulator be permanently in charge and specialised for price gouging related issues. However, suppose we start from a reasonable assumption that good market knowledge, i.e. specific knowledge about the context in which various businesses operate, is paramount to the successful identifying of price gouging. In that case, the competition authorities may be a reasonable candidate. Of course, their role would be outside the context of competition law, aimed at monitoring and making policy recommendations (for example, the role assumed by the DOJ, the FTC, the CMA, and others). It should not be expected that competition authorities will become regulators in any case, particularly not in the case of price gouging. Accordingly, the following sections will consider the arguments related to applying regulation and competition law to price gouging.

#### 3. REGULATION AND PRICE GOUGING

Moral arguments are by far the most common ones when it comes to condemning price gouging practices as well as those related to preserving the competitive environment and ensuring the proper functioning of markets. We have previously discussed various arguments and counterarguments regarding this issue in detail (Njegovan *et al.* 2021). In this paper, we want to go further and consider the arguments *for* regulation related to market failures, namely, the inability of the market to generate an efficient outcome

According to Article 16 of the Law on Protection of Competition (LPC), Official Gazette of the RS, 51/2009 and 95/2013.

<sup>&</sup>lt;sup>11</sup> For further arguments on the distinction between immoral people and immoral acts, as well as with the problems of equality and distribution see: Snyder (2009a), Zwollinski (2009) and Snyder (2009b).

if there are circumstances due to which the market deviates significantly from that presented by economic models. Although the superiority of outcomes achieved by government intervention is not hypothesized in this case, nor is the notion of government intervention unambiguous (there may be different forms of intervention), the emergence of market failures could justify government interference.

# 3.1. Allocative Efficiency

One argument tries to point out the problem with the allocative function of prices in a state of emergency. Increasing the price leads to the product being bought only by those in great need. But a rich person may end up buying more of the product than a poor one even when the intensity of her need is lower. Hence the cardinalist argument for regulation that addresses distributive injustice. However, the Second Fundamental Theorem of Welfare Economics recalls the possibility of separating the allocative and distributive functions of prices (Njegovan *et al.* 2021, 62). If we believe that the problem is in the distribution, we should not try to solve this problem through the pricing system.<sup>12</sup>

# 3.2. Signalling Function of Prices

A sudden increase in some products' prices, which is not accompanied by a rise in their costs, leads to increased profits, which is a signal for entry. The standard argument goes that preventing price increases impairs the signalling function of prices, i.e. stifles innovation and discourages entry. Notwithstanding, Fung and Roberts (2021, 7–9) provide some arguments for regulation. First, they analyse the effects of the COVID-19 pandemic on both the demand and supply side. On the demand side, the pandemic limited the consumers' options (local shops became one of the few options available to some consumers due to lockdown rules), restricted their ability to shop around (social distancing created long queues, search costs possibly increased, while access to online groceries and shops was limited), and

Moreover, in anticipation of the signalling function argument, our moral intuitions often fail to consider the market dynamics. In a static world with fixed resources, we are faced with a zero-sum game where only the rich get the goods. We fail to see market competition as a process (Zwolinski 2008, 364).

inflated their willingness to pay (uncertainties and fear of shortage may lead to stockpiling behaviour). On the supply side, the intensity of competition was possibly reduced (lack of supply leads to higher markups for the remaining goods, and shortages may even be artificial), which is why some retailers gained windfall market power. Furthermore, as opposed to the seasonal demand fluctuations, the sellers did not necessarily charge below-average markups when the emergency was over.

Finally, Fung and Roberts (2021, 8–9) provide two main arguments for regulation. We agree with the first argument that in states of emergency retailers may be the one raising prices (just like in the mentioned case involving N95 masks) and limiting their margins will not affect the producers' incentives to expand. However, their second argument seems more controversial. Namely, economic theory does not imply that arbitrarily high prices are needed to induce efficient entry. Lower prices/profit margins with high sales volumes may be enough to lead to expansion. More precisely, since the industry short-run supply curve is almost vertical, the demand curve determines the price. The shock caused by the crisis shifts demand upwards, and the price increase is significant with a vertical short-run supply. The price does not need to be that high to ensure entry. The price ceiling could be set at a lower level and still ensure equilibrium in the long run, i.e. the intersection of demand and long-run supply curve. That would provide an increase in consumer surplus and lead to efficient entry.

The proposed argument for intervention is controversial on several grounds. Firstly, conventional theory implies that the abuse of market power is disputable based on creating inefficient outcomes (deadweight loss) and not on the redistribution of surplus between producers and consumers. Furthermore, Fung and Roberts (2021) assume that the supply and demand curves are known to the benevolent planner. Therefore, all the planner needs to do is set prices at the equilibrium level. One could claim that high prices may provide a stronger entry signal and cause faster adjustment. However, this argument would be inappropriate because Fung and Roberts (2021) assume that any price above the existing one is equally effective in encouraging entry. The real problems (dynamics, learning, subjective knowledge, competitive process) are explained away by assuming that the regulator has all the relevant information. The omniscient planner simply sets prices at the equilibrium level and thus ensures long-term equilibrium.

#### 3.3. Externalities

In some instances, price increases refer to a group of products that can cause significant positive externalities. For example, private demand for face masks does not reflect the positive external effects on society that wearing masks causes. Since the market cannot be expected to lead to an efficient outcome, intervention becomes a viable option, i.e. introducing regulations (mandatory use of face masks) or providing subsidies for their production. Suppose the circumstances accompanying the pandemic lead to a sharp increase in the price of face masks. In that case, an obstacle for positive externalities is created, and government intervention could be desirable to prevent this practice. Government intervention could make sense when externalities are very high, and market reactions to shocks are slow. After all, we have already seen that the market can be a slow coordination mechanism in times of war (Galbraith 1980).

Another consequence of uncertainty created by the state of emergency is panic buying, which can reduce the allocative efficiency of resources and lead to deadweight loss (Chua *et al.* 2020, 1). Can this phenomenon justify regulation, and if so – of what type? This primarily depends on identifying the causes of panic buying. Regarding potential causes, Yuen *et al.* (2020, 6) provide a detailed literature review covering the 2009–2020 period. After classifying the papers, they identified four possible causes of panic buying: (1) perception, (2) fear of the unknown, (3) coping behaviour, and (4) social psychological factors.

Chua *et al.* (2020) start from the Health Belief Model that was formerly used to link health behaviour with undergoing medical examinations. In the context of panic buying, it is relevant because it studies the protection motivation behaviour of consumers when faced with the threat of a disease outbreak. This model is combined with theories of perceived scarcity and anticipated regret to give a more comprehensive interpretation of the causes of this phenomenon. Finally, the state may "contribute" to panic buying through adopted practices of announcing movement restriction measures for citizens. Accordingly, Prentice *et al.* (2020) emphasises the connection between the timing of the announcement of government measures for combating the pandemic and panic buying.

Given that economists are interested in presenting panic buying as the product of rational choice, one could make the analogy to the bank run model (Diamond, Dybvig 1983). It implies a possibility of multiple equilibria—a good one in which there is no bank run and a bad one in which bank run occurs. Similarly, panic buying can be presented as a coordination game where panic buying represents an unfavourable Nash equilibrium. As Awaya

and Krishna (2020, 5) argue, the key difference between a bank run model and their consumer panic model is that there is no analogue for market-clearing via prices in the former. We will discuss this model in more detail below.

Standard cases imply that panic buying is a response to a shock of supply or demand (Noda, Teramoto 2020, 7). It is interesting, however, that there doesn't have to be a change in supply or demand at all, which is a situation where classical theory is useless. For example, "classical market theory does not apply well to the paper product market because the pandemic caused neither a supply disruption nor a surge in need for consumption of the paper products" (Noda, Teramoto 2020, 7). Noda and Teramoto (2020) work with the idea of non-pecuniary costs associated with shopping activities (shopping costs) as a fundamental driving force behind panic buying. Thus, panic buying results from rational behaviour in the absence of misinformation.<sup>13</sup> They rely on a recent empirical study by Keane and Neal (2021), which finds that announcements of movement restrictions played an essential part in triggering panic buying. In terms of recommendations, the authors consider the role of taxes, direct allocations of necessities and the introduction of quotas on purchases. In their simulations, under certain assumptions, taxes can have drastically different consequences depending on the timing, direct distribution generally improves social welfare, while the introduction of quotas produces unequivocally positive effects in terms of preventing panic buying. The question remains to what extent rationing (quotas) can be implemented in practice.

The consumer panic model by Awaya and Krishna (2020, 2) starts from the assumption that consumer decisions on when to buy are *strategic complements* so that the more people buy during the panic, the more it pays for the individual to do the same.<sup>14</sup> On the other hand, the price mechanism (increasing prices) should prevent such purchases. In a model without supply uncertainty (sufficient supply), there is an equilibrium with fixed prices that is (weakly) better for consumers than any equilibrium with flexible prices. Since the supply is satisfactory, there is no need for rationing. However, if there is a possibility of reselling (speculative motive), the solution is to impose some form of rationing. If supply is uncertain, there are two states of nature, high state (sufficient supply) and low state (insufficient supply). Rumours of a shortage arise regardless of the state and are completely

 $<sup>^{13}</sup>$  As opposed to some models that study misinformation-driven panic buying (Noda, Teramoto 2020, 8).

<sup>&</sup>lt;sup>14</sup> The "infection" argument is familiar from (Rubinstein 1989). See: Awaya, Krishna (2021, 1–2).

uninformative. Hence the focus shifts to the corrective messages (counterrumours saying that there is no shortage) that appear only in the case of high state. Although such a message is credible, consumers do not know how many other consumers received the message, which may cause panic buying. A comparison of the two mechanisms in the case of uncertain supply provides specific arguments for regulation, but the results depend on many parameters. Interestingly, the market mechanism fails for minor shortages but may work for significant ones, due to a lack of complementarity between the consumers' choices of when to buy and the state (high or low).

Contrary to the arguments presented in Njegovan et al. (2020) and those presented in this paper (related to the allocative efficiency and signalling function of prices), a particular type of regulation can be effective if shortages of goods prevent positive externalities or if panic buying ensues. Depending on the conditions, fixed prices are not always better (Awaya, Krishna 2021, 23–25). Therefore, regulation may include price ceilings, rationing (introduction of purchase quotas), or accompanying non-economic policies, to ensure optimism and avoid an undesirable equilibrium. Furthermore, we have seen that panic buying could occur even when all consumers are entirely rational, and there is no misinformation nor disruptions in demand or supply, i.e. due to anticipated/expected rise in shopping costs, which causes a surge in demand. Since anticipated shopping-cost shocks produce more severe panic buying than unanticipated ones, the government could implement immediate movement restrictions or announce them well in advance. Furthermore, a temporary sales tax increase could discourage stockpiling behaviour and prevent panic buying if it is implemented in a timely manner (Noda, Teramoto 2020, 45-46).

#### 4. COMPETITION LAW AND PRICE GOUGING

Jurisdiction of competition policy for price gouging exists in the case of exploitative abuse of a dominant position, for example, under Article 102 (a) (TFEU) or in Serbia, under Article 16 of the LPC. It can be implemented if there is market power that can be used to exploit consumers. In this section, we will try to point out the general inexpediency of this approach. Generally speaking, barriers to enforcing competition law to excessive prices also relate to price gouging. However, specific differences exist, and they further complicate the application of competition policy in this case. Generally, we distinguish two groups of arguments for the (non)application of competition law to price gouging. The first directly derives from the discussion about the role of competition law in cases of excessive prices, and the second highlights

the short-term character of price gouging. The fact that competition law activities were largely absent, with a few rare exceptions, further supports the presented view.

We start with the assumption that competition law applies to cases of excessive prices if it is consistent with the established goal of protecting competition. In the European context, the goal is to maximise consumer welfare in a dynamic setting (Bishop, Walker 2002, 26). If the goal is the same for all principal pillars of competition law, excessive prices and price gouging must be treated like an exploitative abuse of a dominant position. This is the only rationale for applying competition law to price gouging. The question is whether the firms involved can be considered dominant if their market power has suddenly increased amid a state of emergency. An affirmative answer would undoubtedly imply a deviation from the standard definition of dominant position. We would have to employ some very narrow relevant market, which would provide windfall market power.

Conventional competition law views market power as a long-term structural feature. It refers to changes in the market that result in higher long-term margins, not temporary price increases. The mere observation of price increases under the given conditions does not offer any evidence of market power. Moreover, as we pointed out earlier (Njegovan *et al.* 2021), the identification of short-term market power with the inevitable costs of the competitive process hinges on several premises: focusing on the market process as opposed to the equilibrium approach and comparative statics; viewing competition as a discovery procedure; reference to the second welfare economics theorem, which stipulates the separation of the allocative and distributive function of prices; recognising that market interaction is not a single-stage game, i.e. the importance of reputation.

Can we nonetheless speak of short-term market power abuse? Considering market power brings us to the issue of the relevant market. Looking back at the standard approach, Boshoff (2021) notes that a narrower market definition should be employed if we are to identify windfall market power in states of emergency. In that case, even tiny businesses can gain significant market power. Consequently, it is necessary to determine which structural changes caused by the pandemic led to a sudden increase in market power. Of course, this means focusing on particular products. <sup>15</sup> Below, we consider some general hypotheses about the potential causes of windfall market

 $<sup>^{15}\,</sup>$  Porter's Five Forces Analysis could be helpful in such an endeavour (Porter 1979).

power and refer to several examples. We note that some of the arguments for applying competition law to price gouging cases are based on these hypotheses.

# 4.1. Hypotheses and Arguments for Competition Law Enforcement

As in Boshoff (2021), the first hypothesis could concern increased transaction costs and search costs during a state of emergency. Since the availability of substitutes is an essential factor of market power, because it affects the elasticity of firm demand (Porter 1979, 138), increasing costs could reduce the availability of substitutes for certain products and thus increase market power. Namely, the consumers' mobility and willingness to respond to price increases may be impeded, as well as their willingness to search for substitutes for health reasons.

The first hypothesis could be considered in the context of a specific product or market. For example, in the case of disinfectants, initially, there were many substitutes for 70% alcohol: Asepsol, some other lower percentage alcohol-based disinfectants or even alcoholic beverages. In the case of face masks, it can be easy to sew a cotton mask or just to put a cloth or a scarf over one's face. However, as knowledge about the coronavirus progressed, the list of substitutes was narrowed down. The advancement of knowledge has led to a change in the population's beliefs regarding the effectiveness of certain health-protection goods. However, in the case of face masks, the set of substitutes is still not negligible, as Andrejko *et al.* (2021) and Tanisali *et al.* (2021) point out. When it comes to the availability of substitutes, it is often argued that high prices epitomise the creative function of the market—the search for new ways to meet the consumers' needs. It should be noted that this argument has somewhat less value in the short run.

Secondly, barriers to entry are one of the main arguments for intervention, and the question arises whether they represent a significant factor in ensuring windfall market power. Let us proceed with the specific example of face masks. As suggested in OECD (2020a), identifying bottlenecks involves value chain analysis. In terms of inputs, oil and metal are the primary raw materials for manufacturing non-wovens, metal strips and earloops (and sometimes other textile materials, such as cotton). Additionally, paper pulp is required for cardboard and packaging. Metal is only needed for nose strips, and various metals can be used. The main bottleneck in the value chain (in terms of inputs) is the non-woven fabric made of polypropylene. Since it is used in the production of baby diapers, cosmetics and handkerchiefs, automotive and construction industries, and its production requires a

significant initial investment in heavy machinery, specific barriers to entry apply in this case. On the other hand, the problems with transport and logistics and the export restrictions that are in force in some countries represent a severe problem for distribution, which is undoubtedly another bottleneck in the value chain of face masks. These factors can significantly affect short-term market power.

Finally, by considering the previous hypothesis, it seems that the crown argument *for* competition law implementation is that raising prices manifests the application of market power and directly reduces consumer welfare, which competition law seeks to protect. Undoubtedly, increasing prices in a state of emergency affect consumer welfare. The problem, however, is that the time frame should also be considered. Excessive pricing does not pertain to short-term price disturbances. Competition law should indeed maximise consumer surplus, but this should be in a dynamic context, dealing with competitive constraints.

## 4.2. Arguments Against

On the other hand, the list of critical arguments *against* competition law enforcement in cases of excessive prices is somewhat longer. First, it is believed that the prohibition of excessive prices can reduce the incentives for firms to invest and innovate, which applies to firms that may come under the scrutiny of competition law and their potential competitors. Clearly, in this way, a restriction is imposed on the pricing policy of dominant companies, which creates uncertainty as to which manifestations of market power can be characterised as exploitative. The fact that the standard orientation of the competition law is towards exclusionary abuses also contributes to that uncertainty from a different angle, which in a way limits the practice of lowering prices. Thus, both directions in conducting the pricing policy in the hands of market participants become limited.

Second, there are practical difficulties in identifying the "excessiveness" that requires intervention. The main question that arises here is: when does a specific price level indicate exploitative abuse? Hence, defining a competitive benchmark for comparison purposes is crucial. As Gilo and Spiegel (2018) point out, "[a] main obstacle to effective implementation of the prohibition of excessive pricing is the lack of a commonly agreed upon definition of

Motta, De Streel (2007) and Ezrachi, Gilo (2009) elaborate the "for and against" arguments.

what constitutes an 'excessive price' or how to measure it". Mainly, there are two approaches for identifying "excessiveness" that requires action. The first approach involves comparing the prices of different firms (comparative benchmarking). The prices under scrutiny are compared to those charged by direct competitors or similar companies from other markets at the time of observation. The second approach focuses on intertemporal price comparisons of the same company—the one under scrutiny (intertemporal benchmarking).

Boshoff (2021) argues why the intertemporal comparison is a better option for detecting price gouging, which is also the official choice of South Africa's competition authority.<sup>17</sup> Generally, the need to link such price increases to changes in competitive conditions, caused by the state of emergency, imposes the prices of the same firm in different periods (during and prior to the state of emergency) as the least biased option. In addition, this seems to be the most efficient approach due to the urgency of the intervention and the fact that we can hardly find similar firms from other markets and comparable rivals from the same market in such a short time frame.

If the price deviates significantly from the chosen benchmark, it is considered an excessive price. However, what does "significant deviation" mean in this context? For example, in the case of South Africa, the threshold of 20% is considered a safe harbour for companies, while the intertemporal comparison of prices also considers the change in costs (Boshoff 2021).<sup>18</sup>

Indeed, the determination of "excessiveness" in this context must be sensitive to changes in the input prices and the firm's average costs. It is not uncommon for costs to rise in a state of emergency (increased transport costs, higher margins for inputs, and sometimes complete disruption of supply chains during a limited period of time<sup>19</sup>). In other words, if the sharp rise in prices stems from a sharp rise in input costs, the need for intervention

<sup>&</sup>lt;sup>17</sup> See, for example, Gilo, Spiegel (2018), who use formal models of quantity and price competition to examine the competitive implications of applying different benchmarks in banning excessive prices.

<sup>&</sup>lt;sup>18</sup> However, it should be noted that distributions of the probability of regulatory errors (types I and II) can be sensitive to the choice of a competitive benchmark and the price increase threshold. For more on type I and type II errors in the context of excessive pricing, see Evans, Padilla (2005).

Lately, in addition to the coronavirus disease pandemic, the war in Ukraine has provided a most striking example of the devastating consequences of supply chain disruptions.

of this kind is harmful and, therefore, superfluous. Price-gouging regulations typically treat any demand-based price increase as "unfair". Hence, according to Boshoff (2021), price gouging exists if:

$$p_{t}-p_{t-1}>c_{t}-c_{t-1}+\varepsilon$$

where p is the price, c denotes costs, and  $\varepsilon$  is a parameter that reflects the burden of proof, which eliminates the prosecution of intertemporal profit differences of an appropriately small degree. Related to the mentioned Decision of the Government of the Republic of Serbia, t –1 could refer to 5 March 2020 (certainly sometime before the official introduction of the state of emergency) and t to the period of the declared emergency.

Third, any regulation of excessive prices is considered redundant because free entry will eventually neutralise them, i.e. excessive prices are self-correcting. Ezrachi and Gilo's (2009) influential work represents an attempt to challenge this argument, thus directing the reasoning against intervention to the first two points. They show that excessive prices are not self-correcting, regardless of how low entry barriers into the market are and whether or not potential entrants are informed about the incumbent's relative efficiency in the time frame characteristic for excessive pricing considerations. Furthermore, if we narrow down the relevant time frame, new entries that are motivated by high prices become less likely.

#### 4.3. Decision Criteria

If we assume that competition policy can deal with the consequences of windfall market power, the application of competition law to price gouging must face the same arguments that accompany its application in the domain of excessive prices. Evans and Padilla (2005) argue that a legal standard based on maximising consumer welfare in a dynamic context should not include ex-post intervention on price the decisions of dominant firms. However, this general statement does not apply to specific cases that meet the established criteria. In other words, only special cases of consumer exploitation deserve treatment under the competition law. These criteria are based on the above-discussed pros and cons of applying competition law to price increases. Evans, Padilla (2005) proposes a list of such criteria below:

 $<sup>^{20}</sup>$  Although the logic presented is intuitive, Boshoff (2021) does not raise the issue of arbitrariness in determining the parameter  $\epsilon$ . Some objective criteria would be needed in this context.

- A) The firm enjoys a (near) monopoly position in the market, which is not the result of past investments or innovations, and which is protected by insurmountable legal barriers to entry;
- B) The prices charged by the firm widely exceed its average total costs;
- C) There is a risk that these prices may prevent the emergence of new goods and services in adjacent markets.

Meeting these criteria would suggest relevant cases of excessive prices to be considered by competition law, i.e. reasonable "unfairly high prices" candidates.

Competition law should be applied if the case meets all three criteria. Even though these standards refer to excessive prices in the context of Article 102 (a) (TFEU), they can also refer to the phenomenon of price gouging. In both cases, the prices can be characterised as unfairly high. In a way, price gouging satisfies criterion B) if unfairly "high implies" that the price "widely" exceeds the average total costs of production. Undoubtedly, if the retail price is 20 times higher than the one suggested by the manufacturer, as in the mentioned case involving traders on Amazon, "widely", in the sense of Evans, Padilla (2005), may sound justified. The same cannot be said for criteria A) and C).

Namely, in most cases, the "(near) monopoly" position would be consistent with very narrow—almost micro—definitions of the relevant geographic market. Absurdly, some corner shops might feel like ones with significant market power due to panic or movement restrictions. Accordingly, competition authorities may identify "situational monopolies", where a firm holds considerable market power during a limited period (OECD 2020b) on some narrowly defined relevant markets. Competition law should not apply to short term (near) monopoly positions, time-framed by the duration of a panic or a state of emergency. With the first sign of returning to customary conditions, every (near) monopoly from this context will vanish. Likewise, "insurmountable legal barriers to entry" cannot be expected to protect such short-term positions in narrowly-defined markets. Finally, the emergence of new products and services in adjacent markets is unlikely in the short run. Therefore, the mere satisfaction of criterion B) is not sufficient for the intervention in terms of exploitative abuse of a dominant position.

Assessing the mentioned criteria as too restrictive, Motta and De Streel (2007) offer their own somewhat relaxed list. We summarise it, following Fung, Roberts (2021):

- a) The firm holds a dominant position in a defined market;
- b) The firm's position is not the result of, or is only partially the result of, the firm's investment and innovation;
- c) There are substantial barriers to entry, and a lack of other means for the market to correct itself:
- d) No sector-specific regulator has jurisdiction to resolve the matter.

Specialised sectoral regulators operate only in specific markets, so criterion d) is satisfied in most cases. The same can be asserted for b) since a firm's position cannot be attributed to investments and innovation but to the surge in demand along the almost vertical supply curve and other obstacles to consumers during a state of emergency. As opposed to the previous, a) and c) could be satisfied only under some strong assumptions that would lead to windfall market power—a narrowly defined relevant geographic market in a concise time frame. That dominant position supported by significant entry barriers will not last long, and the same could be said for the durability of windfall market power. These assumptions virtually reduce competition policy to the static context, typically just a few days. The ultimate goal of maximising consumer welfare in a dynamic context would not be met in this way. Hence, it seems that criteria limiting the application of competition policy in the case of exploitative abuse of a dominant position prevent its application in the event of price gouging even more effectively-windfall market power cannot be durable enough.<sup>21</sup>

However, even if price gouging meets all the previous criteria, we will try to explore how reasonable it could be to apply *ex-post* intervention to the needs caused by this short-term phenomenon. Application of Article 102 (a) (TFEU) takes time, especially with judicial review. In some cases, it can take years.

If the public expects a quick reaction, the ex-post nature of competition policy regarding the abuse of dominant position will fail to meet such expectations. Satisfaction, if any, would come late when the state of emergency is long over. That is why we should not expect competition law

<sup>&</sup>lt;sup>21</sup> Accordingly, in Case C-177/16 par. 56 the EU Court of Justice clarified, "for the rates concerned to be regarded as 'abusive' [...] that difference must persist for a certain length of time and must not be temporary or episodic". By indicating the change in prices as the manifestation of abusive behaviour, this statement demonstrates that episodic images of market power cannot cause exploitative abuse related to Article 102 (TFEU). See: <a href="https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62016CJ0177&from=en">https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62016CJ0177&from=en</a> (last visited 23 May, 2022).

to solve the problem of externalities. Furthermore, competition authorities have limited resources. This observation seems especially significant because the need for intervention exists only during a state of emergency, and the affected markets may be too many, e.g. as many as 36 products were included in the mentioned Decision proclaimed by the Government of the Republic of Serbia.

To what extent is price gouging short-lived? It lasts at least until the supply meets the market's needs or the panic buying ends. A survey conducted in 54 countries between January and April 2020 suggests that panic bursts typically last about 7–10 days (Taylor 2021). If this is true, we should expect that the effects of a sharp increase in demand would be contained promptly. In any case, competition law should not address the problems caused by increased demand due to panic buying. However, panic shopping was not the only cause of price increases during the pandemic. Some goods became mandatory during the pandemic, such as face masks, indicating a more permanent increase in demand. Even in such circumstances, we have witnessed that after the first wave of lockdowns, the price of comparable protective masks stabilised at the pre-pandemic level. The supply met demand, and new types of face masks appeared on the market, which increased the variety of choices.

Finally, even if we challenge the need of employing ex-post policy for prompt achievements, it remains possible to argue that competition policy may produce a deterrent effect. Knowing that they can come under the scrutiny of competition authority due to excessive prices, market participants will avoid raising prices excessively, especially in a state of emergency. The deterrence effect might be more effective in the case of market participants with previous experience, or at least with some awareness of the restrictions that competition policy may impose. Consequently, it may be effective only for large companies, particularly those with a dominant market position. Therefore, it is not uncommon for sizeable electronic trading platforms and distributors of necessary goods and services to become the subject of interest of competition authorities in connection with price gouging, e.g. Amazon and eBay in Italy, Amazon, Bol.com, Marktplaats in the Netherlands, distributors of face masks in Poland, and even the market participants in the funeral services sector in Spain.<sup>22</sup>

However, one should keep in mind that any small business beyond the scope of competition policy could acquire windfall market power. So, the deterrence argument only partially makes sense—it applies "mostly" to

<sup>&</sup>lt;sup>22</sup> See Cary et al. (2020).

large companies. As we have argued earlier, in the case of small businesses. applying competition policy would require a narrower definition of markets. which could capture the notion of short-term market power. There may be too many such cases. The costs of pursuing the firms would undoubtedly outweigh the potential benefits. Hence, even if we limit activity to large companies, one question still arises: to what extent are such companies willing to sacrifice their reputation for a short-term profit increase? In the mentioned case involving N95 masks amid the pandemic, the manufacturer did not raise the price; moreover, it sued the downstream companies for using windfall market power to exploit the buyers. As we have already stated, since it is not a one-shot game, reputation can substantially limit market power. Cabral, Xu (2021) shows that reputation can be an adequate substitute for regulation in the case of large companies.<sup>23</sup> They propose a measure that would restrict price increases above the prevailing level just for newcomers in the state of emergency. The weakness of this measure is, as they point out, that it rests on the assumption of initial competitive conditions. Of course, reputation is not important in the case of new participants driven by speculative motives. Since this measure is related to newcomers, notice the terminology difference: the definition of price gouging is about "setting the price" and not about "raising the price".

In some countries, rare experiences with states of emergency may weaken the "deterrent effect" argument. However, it may be relevant for countries that often face such troublesome situations, e.g. the United States. Nevertheless, in the US, the protection of competition is not initiated in the case of price gouging, not even for regular excessive pricing. Therefore, employing this *ex-post* policy for prompt achievements could be misleading.

## 5. CONCLUDING REMARKS

Numerous catastrophic events, such as the last pandemic and the war in Ukraine, have resulted in regional and systemic instabilities, which revived the need to define clear rules that would apply to price gouging. There seems to be a lack of legal certainty regarding this phenomenon. This is likely due to its short-termness and unpredictability, similar to that expressed in windfall market power. Hence, the need to reconsider the necessity of the intervention, its eventual scope and means. Contrary to the

Noda, Teramoto (2020, 6) cite authors who show that US retailers were hesitant to raise prices even to the extent not prohibited by anti-price-gouging laws, emphasizing that reputable retailers maintained their prices in times of emergency.

arguments *for* the market that we discussed earlier (Njegovan *et al.* 2021), we have considered justifications for applying regulation and competition policy in this paper. Economic regulation would include price ceilings and accompanying measures to prevent shortages of necessary goods. At the same time, competition policy would contribute to "measures" against exploitative abuse of a dominant position. In particular, the paper aimed to argue why regulation may be necessary—but not competition law enforcement.

First, the problem with externalities is evident when price gouging of necessary goods occurs, indicating the need for regulation. However, the question of the scope remains crucial. While price ceilings seem necessary, accompanying policies depend on specific conditions, e.g. the presence of supply or demand shocks. Similar conclusions follow in the case of panic buying, except that fixed prices are not always superior. Additionally, we have indicated the results that speak of the effectiveness of rationing, export restrictions, temporary sales taxes and other non-economic policies aimed at ensuring optimism. A sudden price increase in a state of emergency may be a reason to believe that price gouging is at work. However, not every short-term price increase is excessive if we consider the changes in costs. If necessary, the intervention should be strictly targeted and not more comprehensive than required.

Competition authorities could play a role in directing regulation towards the markets where price gouging has been observed. However, we do not expect competition authorities to become regulators but rather to be the governments' consultants in adopting price gouging measures. The fact is that there are no jurisdictions that have a permanently employed regulatory body for this mostly short-term phenomenon. At the same time, the competition authorities still possess superior knowledge of the particularities of various markets. Following these facts, the paper points to examples of jurisdictions that have engaged their competition authorities on the occasion of pandemic price gouging—but outside the standard pillars of competition law. In some rare cases, such as in South Africa, competition law has been applied to price gouging. The paper argues why this last example most likely illustrates a wrong approach. The analogy of applying competition policy in the case of excessive prices under normal conditions is illustrative. We also considered additional arguments specific to price gouging, but not to excessive prices.

Through this discussion on price gouging, based on the relevant literature, we hoped to draw attention to the necessity of providing an appropriate legal framework and specific arguments for concrete measures, pointing out the danger of their automatic application. Once again, it turns out that close cooperation of law and economics can be vital in achieving suitably defined welfare-enhancing outcomes.

**REFERENCES** 

[1] Andrejko, Kristin L., Jake M. Pry, Jennifer F. Myers, Nozomi Fukui, Jennifer L. DeGuzman, John Openshaw, James P. Watt, Joseph A. Lewnard, Seema Jain. 2022. Effectiveness of Face Mask or Respirator Use in Indoor Public Settings for Prevention of SARS-CoV-2 Infection—California, February–December 2021. Morbidity and Mortality Weekly Report (MMWR). (CDC) 71: 212–216.

- [2] Awaya, Yu, Vijay Krishna. 2021. Panics and Prices. SSRN Working Papers.
- [3] Bishop, Simon, Mike Walker. 2002. *The Economics of EC Competition Law: Concepts, Application and Measurement.* London: Sweet & Maxwell.
- [4] Boshoff, Willem H. 2020. South African Competition Policy on Excessive Pricing and Its Relation to Price Gouging During the COVID-19 Disaster Period. *South African Journal of Economics*: 1–29.
- [5] Cabral, Luís, Lei Xu. 3/2021. Seller reputation and price gouging: Evidence from the COVID-19 pandemic. *Economic Inquiry* 59: 867–879.
- [6] Cary, George S., Maurits J. F. M. Dolmans, Bruce Hoffman, Thomas Graf, Leah Brannon, Richard Pepper, Henry Mostyn, Alexis R. B. Lazda, Kristi Georgieva, Jan Przerwa. 2020. Exploitative abuses, price gouging & COVID-19: The cases pursued by EU and national competition authorities. *e-Competitions: Competition Law & COVID-19*.
- [7] Chua, Grace, Kum Fai Yuen, Xueqin Wang, Yiik Diew Wong. 6/2021. The Determinants of Panic Buying During COVID-19. *International Journal of Environmental Research and Public Health* 18: 1–28.
- [8] Department of Justice. 2020. Justice Department Cautions Business Community Against Violating Antitrust Laws in the Manufacturing, Distribution, and Sale of Public Health Products. <a href="https://www.justice.gov/opa/pr/justice-department-cautions-business-community-against-violating-antitrust-laws-manufacturing/">https://www.justice.gov/opa/pr/justice-department-cautions-business-community-against-violating-antitrust-laws-manufacturing/</a> (last visited 22 May, 2022).
- [9] Diamond, Douglas W., Philip H. Dybvig. 3/1983. Bank Runs, Deposit Insurance, and Liquidity. *Journal of Political Economy* 91: 401–19.
- [10] Evans, David S., Jorge Padilla. 1/2005. Excessive Prices: Using Economics to Define Administrable Legal Rules. *Journal of Competition Law & Economics* 1: 97–122.
- [11] Ezrachi, Ariel, David Gilo. 2/2009. Are Excessive Prices Really Self-Correcting? *Journal of Competition Law & Economics* 5: 249–268.

- [12] Fung, San Sau, Simon Roberts. 2021. The Economics of Potential Price Gouging during Covid-19 and the Application to Complaints Received by the CMA. CCP Working Paper 21-02, Centre for Competition Policy (CCP), University of East Anglia, 1–32.
- [13] Galbraith, John Kenneth. 1980. *A Theory of Price Control*. Cambridge: Harvard University Press.
- [14] Gilo, David, Yossi Spiegel. 2018. The Antitrust Prohibition of Excessive Pricing. *International Journal of Industrial Organization* 61: 503–541.
- [15] Initiative on Global Markets. 2012. Price Gouging. https://www.igmchicago.org/surveys/price-gouging/ (last visited 25 May, 2022).
- [16] Keane, Michael, Timothy Neal. 1/2021. Consumer panic in the COVID-19 pandemic. *Journal of Econometrics* 220: 86–105.
- [17] Motta, Massimo. 2004. *Competition Policy: Theory and Practice*. Cambridge: Cambridge University Press.
- [18] Motta, Massimo, Alexandre De Streel. 2007. Excessive Pricing in Competition Law: Never say Never? 14–46 in *The Pros and Cons of High Prices*, edited by Niklas Strand, Arvid Fredenberg. Kalmar: Konkurrensverket, Swedish Competition Authority.
- [19] Njegovan, Nikola, Ristić Bojan, Trifunović Dejan. 2021. Ekonomska analiza naglog porasta cena u vanrednim okolnostima. 59–66 in *Ekonomska politika u Srbiji i svetu u 2021. u susret globalnim šokovima i rastućoj neizvesnosti*, edited by Miodrag Zec, Milojko Arsić, Ognjen Radonjić. Beograd: Ekonomski fakultet u Beogradu.
- [20] Noda, Shunya, Kazuhiro Teramoto. 2020. A Dynamic Model of Rational 'Panic Buying'. SSRN Working papers.
- [21] OECD. 2020a. The face mask global value chain in the COVID-19 outbreak: Evidence and policy lessons. https://read.oecd-ilibrary.org/view/?ref=132\_132616-l4i0j8ci1q&title=The-Face-Mask-Global-Value-Chain-in-the-COVID-19-Outbreak-Evidence-and-Policy-Lessons (last visited 24 March, 2022).
- [22] OECD. 2020b. Exploitative pricing in the time of COVID-19. https://www.oecd.org/competition/Exploitative-pricing-in-the-time-of-COVID-19.pdf (last visited 24 March, 2022).
- [23] Porter, Michael E. 2/1979. How Competitive Forces Shape Strategy. *Harvard Business Review* 57: 137–145.
- [24] Prentice, Catherine, Jinyan Chen, Bela Stantic. 2020. Timed intervention in COVID-19 and panic buying. *Journal of Retailing and Consumer Services* 57: 1–11.

\_\_\_

- [25] Rakić, Ivana. 2/2020. Competition Law in the Age of COVID-19. *Anali Pravnog fakulteta u Beogradu* 68: 25–61.
- [26] Rubinstein, Ariel. 1989. The Electronic Mail Game: Strategic Behavior under Almost Common Knowledge. *American Economic Review* 79: 385–391.
- [27] Snyder, Jeremy. 2/2009a. Efficiency, Equity, and Price Gouging: A Response to Zwolinski. *Business Ethics Quarterly* 19: 303–306.
- [28] Snyder, Jeremy. 2/2009b. What's the Matter with Price Gouging? *Business Ethics Quarterly* 19: 275–93.
- [29] Tanisali, Gokhan, Ahmet Sozak, Abdul Samet Bulut, Tolga Ziya Sander, Ozlem Dogan, Çağdaş Dağ, Mehmet Gönen, Fusun Can, Hasan DeMirci, Onder Ergonul. 2021. Effectiveness of different types of mask in aerosol dispersion in SARS-CoV-2 infection. *International Journal of Infectious Diseases* 109: 310–314.
- [30] Taylor, Steven. 2021. Understanding and managing pandemic-related panic buying. *Journal of Anxiety Disorders* 78: 1–8.
- [31] Vlaović, G. 2020. Maska skoro deset puta skuplja iako je vanredno stanje. *Danas*, 17. mart. *https://www.danas.rs/vesti/ekonomija/maska-skoro-deset-puta-skuplja-iako-je-vanredno-stanje/* (last visited 10 March, 2022).
- [32] Yuen, Kum Fai, Xueqin Wang, Fei Ma, Kevin X. Li. 6/2020. The Psychological Causes of Panic Buying Following a Health Crisis. *International journal of environmental research and public health* 18: 1–14.
- [33] Zwolinski, Matt. 3/2008. The Ethics of Price Gouging. *Business Ethics Quarterly* 18: 347–378.
- [34] Zwolinski, Matt. 2/2009. Dialogue on Price Gouging: Price Gouging, Non-Worseness, and Distributive Justice. *Business Ethics Quarterly* 19: 295–303.
- [35] Zwolinski, Matt. 2010. Price Gouging and Market Failure. *New Essays on Philosophy, Politics & Economic: Integration and Common Research Projects*, edited by Gerald Gaus, Julian Lamont, Christi Favor. Stanford: Stanford University Press.

Article history: Received: 12. 3. 2022. Accepted: 27. 5. 2022.