



Are anticompetitive behaviours rampant in global retail energy markets? A study of price elasticity, asymmetric price adjustment and rent-seeking

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ARTICLE INFO

JEL Classification:

Q43
D40
L42
C22
L40

Keywords:

Rockets and feathers effect
Rent-seeking
Price elasticity
Nonlinear ARDL model
Antitrust policy

ABSTRACT

This study investigated the role of price elasticity in the asymmetric adjustment of global retail energy prices and in the rent-seeking behavior of retail energy firms. Overall, 58 nonlinear ARDL models were estimated for the period 2004:M12 – 2016:M8 using data for gasoline, automotive diesel, domestic heating oil, industrial fuel oil and crude oil markets. The results indicate that global retail energy markets are still pervasively fraught with the problems of rockets and feathers effect and the likelihood of retailers manipulating the tax system to hide rent-seeking behaviors. The results also indicate that there is more likelihood of rent-seeking activities in the markets for road fuels whose demand is relatively more price-inelastic than in the markets for non-road fuels whose demand is relatively more price-elastic, thereby suggesting that differences in market structure could offer a possible explanation for rent-seeking and asymmetric price adjustment in global retail energy markets. These results have far-reaching antitrust and consumer welfare implications, which require regulators and policy makers to interminably monitor the global retail energy markets, especially during periods of economic crisis like the ongoing COVID-19 pandemic, in order to safeguard the overall social welfare.

1. Introduction

One of the sad realities of modern economies is the concept of rent-seeking. Black [1] explained this concept as the act of using the resources of an individual or firm (directly or indirectly) to obtain benefits from others. This benefit can be monetary or economic and it usually goes without giving anything in return to the society or the individuals through wealth creation. For example, the concept of rent-seeking has been pertinently used to describe the behavior of some retailers in the petroleum industry who obtain a subsidy¹ from the government on every litre of petroleum product they sell to the consumers, whereas they sell the subsidized products to consumers at prices that are far higher than the government approved prices [2]. Such retailers are known as rent-seekers and their price manipulation activities pose serious antitrust and consumer welfare challenges². These challenges

arise because the rent-seekers neither create new wealth nor contribute towards an improved overall social welfare. They always and everywhere render the society as a whole worse off.

The concept of rent-seeking has a long economic history dating back to the seminal work of Tullock [3], which painstakingly studied the welfare cost of tariffs, monopolies, subsidies and theft. Following this initial work, many economists have stressed the pervasiveness of this phenomenon across the global economy. For instance, in the study of the political economy of the rent-seeking society, Krueger [4] explained that government restrictions upon economic activity are pervasive facts of life in most market economies. However, such restrictions give rise to various forms of rent, which economic agents usually compete for; and such rent-seeking could take various forms like bribery, corruption, smuggling, and black markets, among others. Buchanan et al. [5] specifically identified entry restrictions as the main factor underlining the

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¹ In the European Union, Teichmann et al. [7] provides recent evidence of subsidy abuse by economic agents.

² Sometimes, firms use illegal strategies against competition or collude to obtain monopoly power and charge higher prices. During such times, government intervention helps to protect competition and avoid abuse of dominant market position or other forms of market failure. Hence, antitrust policy refers to government attempts to encourage competition in the marketplace and prevent the acquisition and exercise of monopoly power to the detriment of the society. Such policies ensure that fair competition exists in the marketplace and that consumers are protected from predatory business practices.

problem of rent-seeking; and therefore explained that rent-seeking is primarily used to depict the effects of attempts by individuals or groups to achieve profits through government restrictions on entry. Calderón and Chong [6] investigated the role of democratic regimes in the rent-seeking behaviours of economic agents. In the main, the study established that democratic regimes are negatively linked with rent-seeking actions. In other words, the longer the duration of democracy, the less rent-seeking in a society. The study further demonstrated that legislation enacted more transparently is negatively correlated with rent-seeking behavior. Clearly, enormous efforts have been made towards a more comprehensive understanding of the various ramifications of the phenomenon of rent-seeking. In the financial markets, Khwaja and Mian [8] established that rent-seeking involves both state and non-state actors. For instance, the study identified bureaucrats, politicians, banks and investors as some of the key players. Quite recently, Ogbuabor et al. [2] studied South African and selected Eurozone road fuel markets for the prevalence of rent-seeking behavior by retailers. This study established that while the Eurozone markets are fraught with this problem, the South African markets did not exhibit the problem. However, the most important contribution of this study is the submission that the government regulatory activities present a critical factor in explaining the prevalence or otherwise of rent-seeking behaviour by retailers. Other studies that have examined this phenomenon include Pasour Jr. [9], Collier and Goderis [10], Sachs and Warner [11,12], and the references therein.

Presently, there are concerns that retail prices of petroleum products in the global economy may likely be responding in an asymmetric manner to changes in crude oil costs. This could be as a result of the rent-seeking activities of retailers in the petroleum downstream sector. These concerns arose from the realization that the recent but persistent tumbling in international oil prices is not being felt by consumers of retail petroleum products at pump. Since crude oil is the main raw material or input in the production of different petroleum products, the economic expectation is that such products as gasoline, domestic heating oil, industrial fuel oil, and automotive diesel should have their retail or pump prices responding symmetrically to changes in crude oil costs. Unfortunately, the contrary appears to be the case. For instance, the International Energy Agency (IEA) monthly oil price statistics³ indicate that the average end-user price for regular unleaded gasoline was \$0.94 per litre in the United States of America (USA) when the price of imported crude oil averaged at \$103.14 per barrel in August 2013. However, while the cost of crude oil declined to \$96.01 per barrel in April 2014, the price of gasoline rose to \$0.97 per litre. Such pattern of price adjustment is clearly asymmetric and reveals what may be considered as rent-seeking behavior in such markets.

The pattern of price transmission from crude oil markets to retail energy markets which may be termed asymmetric is not peculiar to the USA. Indeed, it has become a major feature of the global retail energy sector. For example, in the United Kingdom (UK), the average cost of imported crude oil declined massively from \$128.14 per barrel in March 2012 to \$51.61 per barrel in January 2015, while the retail price of gasoline only declined marginally from £1.39 per litre to £1.10 per litre respectively. In the Eurozone, the IEA statistics also capture asymmetric patterns that are similar to those of the USA and the UK. For example, the average cost of imported crude oil in France declined drastically from \$133.35 per barrel in July 2008 to \$42.97 per barrel in January 2009, while the average retail price of gasoline only declined marginally from €1.47 per litre to €1.10 per litre, respectively. This asymmetric pattern of response to changes in crude oil costs is also prevalent in other retail energy markets such as the automotive diesel markets. It is also an

issue of great concern in other Eurozone economies like Italy, Germany, and Spain. Indeed, the IEA statistics indicate that following the COVID-19 pandemic, the average cost of imported crude oil in Italy, Germany, and Spain declined drastically by 69.81%, 68.85%, and 65.59% between December 2019 and April 2020, while the average retail price of automotive diesel declined slightly by 11.37%, 14.60%, and 16.63%, respectively. This particular statistics suggest that asymmetric adjustment of retail energy prices could be an important policy issue, especially during periods of crisis.

Numerous empirical studies have examined the asymmetric price transmission to different retail energy markets from crude oil market using different methodologies. Some of these studies established evidence in support of the presumed asymmetry [13–27], while others found no statistically significant evidence of the supposed asymmetry [28–37]. Reports of the three main investigations of the gasoline markets show that when faced with increasing input costs, sellers do swift upward adjustment of prices. However, when faced with decreasing costs, price adjustment is usually done sluggishly downwards. These studies were conducted by the Monopolies and Mergers Commission (MMC), UK, between 1965 and 1990. The MMC called this adjustment pattern of prices ‘rockets and feathers’. Thus, the rockets and feathers effect is said to occur in retail energy markets when the adjustment speed of retail prices to cost changes is more rapid when costs rise (i.e. “retail prices go up like rockets”) than when they fall (i.e. “retail prices go down like feathers”). However, they used descriptive and graphical analysis of weekly company administrative records to argue their position without establishing it through econometric work [38–40].

In other studies, various econometric procedures were adopted by Grasso and Manera [41] and Greenwood-Nimmo and Shin [21], among others, to empirically analyse the issue of rockets and feathers effect in the UK. Greenwood-Nimmo and Shin [21] found that firms that are into retail business may be hiding rent-seeking behavior by influencing the tax system. This is evident because according to the paper, asymmetry is mainly obscured at pump where prices account for both tax and duty. For the retail energy markets in the USA, some studies found evidence in support of the presumed asymmetry and also of the rockets and feathers effect. Such studies like Borenstein et al. [14], Karrenbrock [28], Borenstein and Shepard [15], and Murry and Zhu [42] also attributed the observed asymmetric patterns to market power of some retailers and adjustment lags in production/inventory. In other related studies done for the Canadian and Swedish retail energy markets, Chacra [43] and Asplund et al. [44] respectively found that asymmetric price adjustment is evident in those economies. Grasso and Manera [41] and Ogbuabor et al. [45] have also made global documentation of empirical evidence of asymmetric price adjustment in retail gasoline markets. For retail energy markets in Europe, Ogbuabor et al. [25] recently found widespread evidence in favour of the hypothesized asymmetry. Contrary to these empirical evidences, some other papers, while studying the retail energy markets, did not find any evidence in support of either the rockets and feathers effect or the presumed asymmetry. Such studies include Bachmeier and Griffin [32] and Kristoufek and Lunackova [37], among others. Other studies that have remarkably contributed towards a broad understanding of asymmetric price adjustment in global retail energy markets are Johnson [46], Lewis [47] and Perdiguero-Garcia [48]. While Johnson [46] and Lewis [47] attribute the hypothesized asymmetry to consumer search effort, Perdiguero-Garcia [48] documents a survey of 48 empirical studies on asymmetric price adjustment for gasoline markets across the globe.

From the foregoing studies of retail energy markets, it is easily seen that the growing literature on the asymmetric adjustment of prices and rent-seeking has very little theoretical or empirical papers that have identified the relevant market features responsible for these phenomena. Specifically, the above paragraphs indicate that possible explanations for these phenomena include oligopolistic pricing behavior or market power of some retailers [14,49], consumer search effort [46,47], inventory/production capacities and costs [15], and lack of regulation

³ The IEA publishes its monthly oil price statistics at <http://www.iea.org/statistics/topics/pricesandtaxes/>. The eight countries covered in the publications include: France, Germany, Italy, Spain, UK, Japan, Canada, and USA.