

http://dx.doi.org/10.14195/2183-203X_39_236
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The Silence at the Stands: Agony in the Portuguese Market for Taxis

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resumo

résumé / abstract

Os táxis não podem ser baratos. Decorre de ser conduzido por um profissional com toda a flexibilidade dos carros, menos vários inconvenientes. E, no entanto, ... por que não? Os Taxistas reclamam sobre o preço proibitivo do gasóleo, que não cobre tarifas medíocres. A raiz e a verdade da questão encontram-se no serviço: clientes, quilómetros ... e na falta deles.

O mercado pode ser descrito como um cartel de entrada livre – gerido por associações do setor, toleradas pelo regulador – capturado, onde nem a entrada nem a saída fazem mover o preço. Para os consumidores, é péssimo. Enquanto isso, lucros de monopólio são desperdiçados entre o máximo de remediados, que mal conseguem sobreviver.

Melhor seria se a regulação evoluísse da captura por organizações dos motoristas para um conjunto de licenças e preços definidos de acordo com os níveis de tráfego, após um choque de preço negativo, que apressaria a eliminação do excesso de oferta.

Será que isso importa? Os táxis podem ser preciosos para fazer a ponte entre os transportes públicos e o ambientalmente frágil e caro transporte de carro.

JEL Classification: L13; L44; L59; L91

Les Taxis ne peuvent pas être bon marché. On est conduit par un professionnel avec toute la souplesse des voitures, sans leurs plusieurs inconvénients. Et pourtant ... pourquoi ne sont-ils pas? Les chauffeurs de taxi se plaignent sur les prix prohibitifs du gazole, qui ne couvrent pas les tarifs médiocres. L'essentiel de la question réside dans le service: les clients, les kilomètres ... et la manque d'eux.

Le marché correspond à une description d'un cartel de libre entrée géré par les associations, toléré par un régulateur capturé, où ni l'entrée ni la sortie bouge les prix. Pour les consommateurs, ça craint. Cependant, les profits monopolistiques sont gaspillés entre le maximum de misérables, qui survivent à peine.

Le meilleur serait l'évolution de la régulation, de la capture par les organisations de chauffeurs, pour un ensemble de prix et licences fixées en fonction des niveaux de trafic – positivement après un choc négatif sur les prix, qui hâterait l'élimination de l'excès de l'offre.

Est-ce que ceci est important? Les taxis peuvent être précieux pour combler le fossé entre les transports publics efficaces et l'écologiquement malsain et cher automobile.

Taxis cannot come cheap. You are driven by a professional with all the flexibility of cars minus several inconveniences. And yet ... why aren't they? Drivers will grumble about prohibitive gas prices not covering lousy fares. The root, and truth, of the matter lies in service: clients, miles... and the dearth of them.

The market fits a description of a free-entry cartel, run by associations, tolerated by a captured regulator, where neither entry nor exit budge price. For consumers, it is a raw deal. Meanwhile, monopoly profits are squandered among the maximum of deadbeats, who barely get by.

Better if regulation evolved from the capture by the drivers' organizations, towards price and licenses set according to traffic levels, after a clearing negative price shock.

Does it matter? Taxis can be precious in bridging the gap between the shunned efficient public transports and environmentally unsound and pricey motoring.

1. Introduction



Taxi is a unique transport medium, overshadowed in land transportation by both the car leadership and the mass public transportations bus/coach and metro/train. Nonetheless, it can play a pivotal role in an efficient transportation system, bridging gaps between various modes, including the aerial and maritime, mostly as a complement but also, at times, as a substitute or, again, as a complement to walking.

Taxis naturally form a market, in terms of distance to related services, geographically dominated by the urban component with a residual, dwindling regional element. And yet, their market identity notwithstanding, the demand ought to be sensitive to the quality of other public transportations – such as the metro or dedicated lane express buses – their reach, working hours, frequency, comfort, and ... cost. Clients should bear in mind the costs of motoring which, even if most drivers narrowly define as the everyday operating costs, still encompass fuel – a hot commodity, nowadays – and parking. Also, being a somewhat premium solution to most urban transport needs, business surely varies with general living conditions, in terms of real wages and unemployment.

Historically, and to a great extent to the present day, bar a few deregulation experiences scattered around the world, it has been a business of rents. Naturally, protected, regulated rents. They have generally stood on two pillars: a fixed, limited supply of licenses – often a tradable valuable rent, on occasion a source of auctioning income for municipalities; and a regulated level of fares. These usually comprise a fixed part that allows for the first x meters to be covered, and a variable part, charging y for each additional z meters. Extras for luggage or special cases are common¹. Nightly duty can have either a higher parallel fare structure, as it has in Portugal, or involve a fixed extra. Henceforth, the fare structure will be referred, in spite of the simplification involved, simply as the price.

How the source of the rents is divided between the two restrictions – price and quantity – depends on the individual markets around the world: New York is (also) famous for having less permits now than in the 1930s, suggesting busy drivers earning their companies dollars essentially by quantity control², whereas in other cities/countries, like Portugal the rides are expensive, relative to both purchasing power and alternatives, and the rent rests more on the price than quantity.

Literature and experience on deregulation address these two restrictions: the first by freeing entry, (the lack of) which hurts consumers and excluded professionals, the second by deregulating – freeing – price, intending to benefit consumers. Before mixed results stemming from these actions are presented, a summary of the issues involved. The first one (entry) poses problems in being set and the second one (price) creates costs/distortions of its own. Essentially, freeing entry removes the rent from its owners, which should give way to compensation. There is usually no appetite for that, both by the scarcity of public funds and for using today's or tomorrow's taxpayers' money to giveaways to renters. Freeing price, although financially positive to the consumer in terms of tumbling prices, can cause problems in loss of clarity and transparency, giving way to bargaining. In a market well loaded with casual and uninformed customers³, the end user can often be the loser. Absent of social consent for "shopping around" practices for the best rate, a collapse in an arranged and well publicized fare structure can be bad for the consumer.

Any one of those two deregulations, hurting profits and attracting new players can also endanger safety, comfort and quality of service, further downgrading the pool of drivers modest enough to put up with less pay, but these concerns can be dealt with by direct regulation of standards.

1 Airport service, transporting disabled people, luggage or pets.

2 The same holds for Boston or London, Paris, Milan and other big or rich western cities.

3 Visitors or tourists, for example.



Several factors, some more unique to the country than others, contrive to put the Portuguese market for Taxis in a terrible situation. Explaining it, and placing it within the context of other developments elsewhere in the World, as well as examining possible clues for improvement, will form the core of this paper. First, a brief revision on literature beckons.

2. Revision of literature

Notwithstanding major references in Industrial Organization, which will help formalize some of the subsequent description of the Portuguese situation, three surveys of different focus and date will be referred and discussed, as they will provide a framework and arguments on the performance and regulation of the Taxi Industry.

Starting with the most recent, Aquilina (2011) covers ten case studies in England, following the Office for Fair Trading's (OFT) 2003 recommendation to Licensing Authorities that they should lift quantity restrictions on Taxi licenses. The studies cover cities where the restrictions were lifted and others where they were not. In all cases there were two periods of observation⁴; data were collected on waiting times, both of customers and drivers; fares, number of vehicles and a survey of customers' perception of service quality. Crucially, in both periods of observation fares were always regulated⁵, and were generally raised during the time of the study. Furthermore, the biggest city where de-regulation of licenses took place was affected by major construction work. These mishaps dampen the conclusions. They amount to the finding that the cities which de-regulated were the ones where waiting times were longer, and thus where those were cut the most; there, too, was where the fleets increased in biggest numbers.

A much feared loss of quality in service, in association with license de-regulation, was not reported by the relevant survey in either of the sub-group towns. The author downplays such fear, noting that standards of quality can be imposed by a regulator, instead of letting high fares deliver such an outcome. Anyway, in this study fares remained regulated and rose.

The similar performance by the cities that did not de-regulate led to the conclusion that such a move is not necessary to achieve a good performance by the industry, but can, nonetheless, act as a substitute, when the regulator cannot find the adequate balance in terms of licenses.

The background for Taxi regulation consists of the prerogative of Licensing Authorities to refuse new licenses if they are satisfied about the absence of unmet demand (1985), and the widespread power of Licensing Authorities to set maximum fares, which they generally use. In a typically British succinct fashion, vehicle and driver quality are those that assure they are 'fit for purpose'. The above mentioned Office_of_Fair_Trading 2003 report, besides endorsing license reform, linking reduced availability to reduced quality, stresses the importance of quality and safety regulations and, critically, sanctions fare regulation (in a market where maximum fares are always adopted by drivers) since they protect vulnerable customers, or those found in vulnerable situations, from overcharging. Vulnerability is detailed to encompass lack of price competition stemming from inability (or costliness) to shop around for prices, both on the street – hailing – or at Taxi stands (if, as often is the case, it is not socially established); also, tourists lacking skills and/or information to negotiate a fare, or disabled people lacking alternatives.

Aquilina (2011) focuses on the street and rank hiring segment⁶ to state that people hire randomly, either hailing or through the 'first in, first out' custom. So hiring is done in absence of competition, with consumers forming their expectations on the basis of the market as a whole. This provides drivers with monopoly power, which may lead to monopoly pricing, in spite of multiple suppliers – a very important point in the subsequent description of the Portuguese market. Drivers, goes the author on to say, would not gain from lowering fares or investing in improving quality, since the

4 In one case there were three.

5 Whether there was quantity de-regulation or not.

6 As opposed to the smaller, and rather different, phone or internet hired segment.



customer considers the market as a whole, and the driver would not capture either market share or loyalty, through any of those actions. The observed reality of Taxi markets, including the adherence to maximum fares, seems to bear these statements out.

The work by Liston-Heyes and Heyes (2005), also cited by Aquilina (2011), seeks to provide economic background to the debate and momentum around de-regulating the Taxi industry. They trace the foundations and rationale for regulation on market failure, agreeing with established consensus of the optimal performance [in economic Welfare] of competitive markets.

This market's failures, from textbook perfectly competitive ideals, start with the inherently interdependent supply and demand schedules – a parametric increase in supply decreases waiting times thereby increasing demand in a price quantity framework – a feature Beesly and Glaister (1983) note, citing Harold Demsetz: “[...] effective regulation depends on [...] suitable information. In markets in which demand cannot be kept analytically separate from supply, this is not easy.”

Then there is the above mentioned lack of price competition. Diamond (1971) has established that monopoly pricing can prevail even with numerous suppliers, due to search costs. Here, these costs comprise lost time, the gamble in turning a sure offer down and the lack of information/ability from infrequent/non local customers, aggravated in cases of disability, heavy luggage, odd hours or odd destinations. Often, there is also the strong social convention of taking the first car of the rank, or shyness towards price comparisons – Liston-Heyes and Heyes (2005). The prevalence of frequent customers, and of booking rides can curtail these information asymmetries, but predicting the market outcome, and its performance on Welfare, is very difficult.

The authors proceed with describing waiting times and excess capacity [to keep them acceptably low] as public goods, going back to the interdependency of supply/demand, and noting a competitive environment [in the classic assumptions] will under-provide such a [public] service. Important models, like that of Chamberlin (1933), while anticipating excess capacity, fail to appraise its value to customers.

Liston-Heyes and Heyes (2005) mention economies of scale and the prospect of excess entry due to replication of fixed costs, but argue they are low. This is a point of central importance in the present predicaments of the Portuguese market, which will be discussed later. Anyhow, nobody suggests fixed costs are absent from this market. Some, like Fingleton et al. (1997), accept the evidence of their small size to recommend free entry.

Regarding quality of service⁷ beyond waiting times, Liston-Heyes and Heyes (2005) find, again in agreement with Aquilina (2011), that direct regulation is the way to go.

In cataloging regulatory instruments, they start with price controls, usually under a fare formula based on distance and time, plus some fixed cost, calculated by meters⁸. Then, there is entry regulation, with evidence of low fixed costs and the interdependency of service quality and demand (through waiting times) both arguing for de-regulation. That same oddity is referred by Arnott (1996), to push for subsidizing Taxi travel – to correct under-supply of vacant capacity. Such an instrument – subsidy – is also plausible if outcomes in related markets, for instance, congestion reduction in personal transportation, by car, are to be sought.

In a further insight to the Portuguese market, Liston-Heyes and Heyes (2005) say the Taxi market is prone to regulatory capture⁹. Taxi consumers – visitors, businessmen on paid accounts, low income people without car, or your regular person in an unusual situation – typically will not be the ones lobbying for lower fares to the municipalities that set them. Taxi associations, on the other hand, generally will engage in canny lobbying, both for higher fares and stagnant licensing. Optimal independent regulation would be difficult and require much more information than the regulator will normally have.

7 Safety and cleanness of taxis, road competence and geographical knowledge of drivers.

8 Such as the above mentioned for Portugal.

9 Defined as occurring when a regulator prioritises the interests of the regulated industry [those on the ‘supply’ side] over general Welfare.



The authors conclude arguing for transparency in policy objectives, accepting there is low risk of excess entry, and some instances of the contrary; they find the case for fare regulation ambiguous, its balance depending on characteristics of the [individual] local market¹⁰.

Finally, in terms of main foreign references centered on the Taxi market, the work by Cairns and Liston-Heyes (1996), somewhat older, ploughs away against deregulation of fares and entry.

It starts with the demonstration that the very existence of equilibrium depends on the regulation of fares. The (by now, oft cited) interdependence of supply/demand is presented here as a negative externality – one man's ride, increases another's wait. Under their assumptions, a socially optimal price – equal to the cost of adding capacity – will yield negative profits. Attaining zero profits will result in a zero value for the license. The price that achieves them, if waiting is very costly for intra-marginal consumers, can be higher than the [freely optimized] monopoly price.

With high search costs, examples of which have been mentioned before, and risk averse customers, they themselves may prefer a somewhat higher price to bargaining. On a full stand, a choosing, and choosy, customer may have the advantage, and drive the price down, in a Bertrand-like fashion. In such a case, drivers would prefer a fixed fare to bargaining with a 'bad hand'. In periods of high demand, a regulated fare will protect the client; in the opposite times, both he and the driver may have high search costs for another Taxi/customer, and bargaining will be difficult – an established fare is also better.

Once price is regulated, according to the authors, the market will become like an open-access resource – a commons – where too much entry can take place, hence where constraining it can increase Welfare. Optimum Welfare is, thus, compatible with positive profits and resulting valuable medallions¹¹. Such a valuable – as opposed to worthless – license can also be seen as a bond of its holder, driver or Taxi owner, towards the (municipal) authority, the stripping of which can prevent morally hazardous behavior, such as deliberate choice of longer/congested routes, or fare-gouging.

The paper concludes restating price regulation is necessary for equilibrium to occur. Since the intensity of use may be difficult to monitor, a regulator can improve Welfare by limiting the number of Taxis as well. Humbly, they stress that regulatory capture can clearly take place, that no system of regulation is universally superior, and that their effectiveness is a matter for empirical judgment.

3. The Portuguese market for Taxis: An overview

Portugal is now commemorating 40 years of democracy. Remnants from both the long lasting preceding political system of Fascist inspired authoritarian rule (1920s to 1974), and the turbulent short communist leaning revolutionary period (1974-1976) linger to this day in the economy. However, it is the first corporatist, pre-democratic economic environment that helps characterize the market for Taxis, up until the late eighties. Government competition policies were designed to hinder competition, instead requiring for each new establishment a permit – which could be refused – as well as for any expansion of economic activity on the part of existing firms. Although watered down amidst a liberalization phase of the regime, this law and environment produced a culture of coziness that fitted perfectly with the classical way of functioning and regulating the Taxi industry – regulated fares and entry.

This long, idyllic phase, delivered what is expected and observed in most markets for Taxis thus regulated: modest profits, which attract enough people and capital; stable, transparent and dependable prices – published and metered; enough quality of service, absence of price competition, bidding and other pressures or risks to the consumer. Quantity, in this quiet, almost secretive industry, and with so much time gone by, is for no-one to measure. Price, from which quantity can be qualitatively inferred – for the sake of comment – real relative price, would have

¹⁰ More necessary with more infrequent, foreign customers, less booking, less scope for reputation.

¹¹ license; literally, it refers to the 'stamp' exhibited on the vehicle.

to take into account a very poor peasant-turning-urban society, where walking and cycling were mass transportation 'systems' and the public ones were limited, in scope and performance, and otherwise privilege only of the biggest cities. Taxis were there for the few – few richer civil servants, few tourists and very few occasions.

Next, is the second phase, and its cutoff point from the one just described. To place it a quarter of a century ago, in the late eighties, has nothing to do with a concrete shock. Following the entrance in the European Union (E.U.), Portugal experienced rapid growth in per capita income, in itself a good thing for Taxis, but even quicker, steeper growth in car ownership. The general access to a car – your own, a close relative's, your neighbour's – forever altered the prospects for Taxis.

Table 1 – Car Ownership (per 1,000 inhabitants)

	1991	1993	1995	1997	1999	2001	2002	...	2011	2012
E.U.	334	360	375	388	412	437	444			
Portugal	183	225	261	300	342	540	560		447	406

Source: Eurostat and INE (National Bureau of Statistics).

Of course, this is nothing new to the rich industrialized world, but decisively changed the landscape for professional drivers. The car, which in Portugal as elsewhere in Europe or America is credited with a 90% share of personal land based transportation, hurts the alternative transport mediums. All public transportation – urban, regional and long range which, in Portugal, is typically under 500 kilometers or just over 300 miles – struggled to cope with the ascent of the car on Portuguese choices. (For a description of the Portuguese transport system, see Murta, 2010.)

Other negative shocks for the Taxi industry have since occurred:

- The capital's underground system, has undergone continuous development, with new lines, connection to the main national railway line (1998) and, most recently, much more interconnectedness between lines, improving accessibility; less than two years ago, a long awaited connection to the (very central) airport was opened; to convey a sense of the importance of Lisbon, the Metro and the airport, it is enough to say greater Lisbon houses 4 million people out of 10 million Portuguese; the airport, besides being the country's biggest, is the capital's only such structure for civil flights;
- The second city – Oporto – has, since 2003, a brand new mixed light rail/underground system, fully connected to its only, rather busy, airport;
- A stagnant economy, with stagnant personal disposable incomes and high personal indebtedness, with real growth this century zero or negative in five of thirteen years, and at or over 2% only twice (Table 2);

Table 2 – Real GDP Growth Rate

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
2.0	0.8	-0.9	1.6	0.8	1.4	2.4	0.0	-2.9	1.9	-1.3 ^{po}	-3.2 ^{pe}	-1.4 ^{pe}

Notes: Chain linked volume data; reference year: 2006. Po (Pe) denotes provisional (preliminary) data.
Source: INE.

- In 2012, under pressure from the Troika¹², the Health Ministry clamped down very hard on transport of sick people or people attending exams [specially from outside major cities], most

¹² The three institutions overseeing and accompanying the 2011 financial assistance program: the I.M.F., the E.C.B. and the European Commission.





severely on those it contracted with Taxis¹³; industry sources assuredly say that prices contracted in bulk, of €0,30 per Km or less, in some cases, were considerably lower than those practiced by Fire Department related firms which, although also hit by cuts in transportation, were not as drastically affected; this development has brought demonstrations of Taxi drivers to the streets and, sources say, has caused hundreds of professionals to leave the industry.

In light of the two described phases – a steady one, before the late eighties, and a declining one, until the present – how did the market use to work, and how does it now?

The sector produces very little data, and is dominated by individually owned one Taxi firms. It has a strong, but incomplete membership of two drivers' associations – Antral and FPT¹⁴. Small firms employing drivers are to be found in the two major cities, in the Algarve tourist hub, and marginally in Coimbra. Five years ago, both claimed there were around 30.000 drivers, between their associates and the rest.

Price is regulated by conventions, which are signed between the biggest association, or the two main associations, and the relevant Ministry. The last one, which is in place, was signed in December of 2012, to run until the end of 2014, between the two associations and a branch from the Ministry for the Economy and Employment¹⁵, now only consisting of Ministry for the Economy. Portugal, in this respect, follows many countries and cities and what many authors (e.g. Cairns and Liston-Heyes, 1996) recommend in having a regulated price, to which drivers fully commit.

However, if one analyses the various conventions and the projected length of their being in effect, one notices several gaps, in different years. Asked about these aspects, sources in the Associations say when drivers fail to see the point in raising fares, they do not press for a new convention, leaving the last one to stand in force. This candid truth, thus exposed, allows two major aspects of the market to be ascertained:

- There is regulatory capture, as all cited authors say the sector is prone to have, whereby prices are set in accordance to the drivers' interests;
- The economics of the sector, namely, its contracting demand relative to its existing supply, contrive to make nominal price hikes unattractive to the drivers, with them settling for real price decline instead.

This practice of keeping prices still, at times, is rather recent, and could not happen in the inflation plagued decades of the seventies and eighties. Before, either because of inflation or also in view of less dire conditions on the demand side, the associations complained about the need to raise prices. One can interpret this as evidence that the regulatory capture was less complete in those days – it is true that government, while fighting inflation, tried to delay price hikes in which it had a say. Or, it can be noted that complaints are not as strong as actions, and the whole scheme of signing conventions with the government, thereby splitting the blame for higher prices, is very nice for the industry.

Anyhow, whereas formerly drivers could be heard complaining about prices and perhaps taxes, the last decade has seen a consensual claim emerge: slow business, bankrupting, nerve racking and slow business; and anecdotic evidence of drivers over four hours into their shift without a single customer.

The number of licenses for Taxis has always been regulated, in as much as Municipalities are responsible for them, and auction new ones, which drivers then validate with the IMT institute¹⁶, from the Ministry for the Economy. Lately, there have not been any new licenses distributed¹⁷.

13 It also contracted with firms related to Fire Departments.

14 Antral is the acronym for 'Associação Nacional dos Transportadores Rodoviários em Automóveis Ligeiros'. It is bigger and much older than FPT, that stands for 'Federação Portuguesa do Taxi', created in 2003. They are reckoned to split a 90% and 10% share of the associated drivers' numbers.

15 Direção Geral das Atividades Económicas, Ministério da Economia e Emprego.

16 IMT stands for Instituto da Mobilidade e dos Transportes Terrestres, I.P., and regulates transportation.

17 Confirmed by the responsible from Coimbra Municipality.

Industry sources are certain that there are too many Taxis everywhere, including in Lisbon, and have evidence of licenses being dropped, given away or sold for symbolic amounts.

This fact – it will be taken as such, since it makes sense, is reported by entities whose interest is contrary to it, and there is no evidence against it – has huge implications for the market – in effect, it turns regulated entry, with positively valued medallions, into free entry, in terms of ceasing to be an active/costly constraint.

To grasp the consequences on equilibrium of free entry, with monopoly prices, a curious example is evoked. Lipsey et al. (1990), in their economics textbook, tell a story about price fixing and profits¹⁸. If barbers in a town, unhappy with their miserly earnings, teamed up and set a price, whilst allowing for free entry, such a price would indeed be higher, and revenues would go up, for a time. Afterwards, either they would raise costs to try and gain market share (pusher service) and/or entry would take place until profits were wiped out. Even in the presence of monopoly pricing.

As noted above, Aquilina (2011) states that monopoly pricing is compatible with multiple suppliers, since one driver would be unable to gain meaningful market share from a unilateral cut on price.



4. The Portuguese market for Taxis: Modelling equilibrium

To present the market equilibria as they seem to be developing, the classical framework found, for example in (Martin 2002), will be followed.

$$P = a - bQ \quad (1)$$

is the standard linear demand. Linear costs with small, but non zero, fixed costs are given by

$$C(q) = cq + F, \quad (2)$$

yielding the benchmark competitive total quantity

$$S = \frac{a-c}{b} \quad (3)$$

and the freely optimized monopoly price, in which optimal quantity is half of the competitive one:

$$P_{mon} = \frac{a+c}{2} \quad ; \quad Q_{mon} = \frac{a-c}{2b} = \frac{S}{2} \quad (4)$$

The number of firms, which stop entering or leaving when variable profits equal fixed costs is given by

$$\pi_i^{var} = (P - c)q_i = (P - c)\frac{Q}{n} = \frac{a-c}{2} \frac{S}{2n} = \frac{bS^2}{4n} = F \quad (5)$$

$$N_{P_{mon}}^{free E} = \frac{(a-c)^2}{4bF} = \frac{bS^2}{4F} \quad (6)$$

¹⁸ Box 13-2, Chapter 13, Part 4, pp. 256-257.



Finally, welfare from this zero profit equilibrium:

$$W_{P_{mon}}^{free E} = CS + 0 = \frac{(a-P)}{2} Q = \frac{1}{2} \frac{(a-c)S}{2} = \frac{bS^2}{8} \quad (7)$$

This is, naturally, a far cry from an ideal omnipresent sole Taxi, incurring in F losses, and charging $P = c$:

$$W_{1;P=c}^* = CS + \pi = \frac{1}{2}(a-P)Q - F = \frac{1}{2}(a-c)S - F = \frac{bS^2}{2} - F \quad (8)$$

Notice that, apart from the value of one fixed cost, a stylized market of a firm charging the competitive price would yield four times more Welfare; the largest part of the difference – fully two thirds of it – lies not on the smaller quantity – half – that the (regulatory captured) monopoly pricing envisions, but on the squandering of monopoly profits on the replication of fixed costs, by a large, excessively large, number of firms, as shown by the following expression:

$$W_{1;P_{mon}}^* = CS + \pi_{mon} = \frac{bS^2}{8} + \frac{bS^2}{4} - F = \frac{3}{8}bS^2 - F \quad (9)$$

The market arrives to this clearly underperforming equilibrium through a doubly convoluted path:

- It is the experience of exit, and worthlessness of licenses that demonstrates there is non-constrained free entry, for practical purposes;
- It is not raising prices – letting price conventions ‘expire’, or be left to outlast their set period – that points to prices being already ‘captured’ at a level drivers don’t want to raise, the hallmark of ‘monopoly’ pricing.

A glance at other developments abroad, before turning attention to possible improvements on this sorry state of affairs. Europe has seen a fair share of Taxi drivers’ demonstrations, from the most recent in France, against unregulated entry by allegedly less qualified competitors (February, 2014), to others in Athens (September, 2011); Rome (July, 2006) and Milan (January, 2003) all contrary to licensing reforms. In Portugal, they cannot demonstrate against themselves, or against a number that bad economic fundamentals, rather than a reform minded government, has turned excessive.

New York, is a case apart. A city of millions, a Mecca for tourism¹⁹, is notorious for its tight grip on drivers’ licenses, especially its meager number, and has just auctioned several more for prices that exceeded \$1 M USD, per Taxi (November, 2013)! In New York, there are no demonstrations to be seen. The drivers are employees of investors who have the capital to spend on such a ‘license to rent’, and they are mostly quiet foreigners²⁰. Customers of a possibly steeply fared service are not organized, and come a lot from out of town.

Does it matter? Is there a better way to run a city Taxi market? Well, going back to the beginning, Taxis can play a pivotal role in an efficient transportation system, and if they stray too much from a competitive solution, efficiency is bound to suffer. Such a high value for a license highlights the nature of rent seeking market even Cairns and Liston-Heyes (1996), acknowledge. Any change on this equilibrium is bound to affect the economic value of those rents, implied in the values they

19 Ranked 5th by MasterCard in international overnight visitors.

20 According to the New York City Taxi and Limousine Commission, 82% of the drivers are foreign born. Source: <http://www.statisticbrain.com/taxi-cab-statistics>.

fetch at the auctions. If New York collects that money, it stands in an awkward position to 'take it away'. That is a reason for not rushing into issuing many licenses, as it is also for not pressing for fare reductions.



5. The Portuguese market for Taxis: Moving forward

From a regulator's perspective, it is humble to start thinking about improvements on *status quo*, by recalling the Hippocrates oath's first commandment: 'first do no harm'. It is common to mistake this for doing nothing, but that's surely a good way to start.

If nothing is done, the market will continue to bleed some drivers, with the remaining struggling to get by on the lowest revenues that cover their expenses; consumers will not flock to the stands, as the price is rather heavy on their lean wallets.

A word on price sensitivity. Given the high prevalence of casual/rare travel, aggravated with the demise of Health related contracted transportation, demand is not elastic. From most of the studies covered above, one infers there is some price sensitivity, not so much as it would tempt drivers into a price war. A thorough study on demand, out of the scope of this text, would be most welcome, and the author would be glad to participate.

Acting on the number of licenses, when they are worthless is pointless or tricky – expanding is pointless; reducing enough for them to become valuable is tricky, because it would create random winners, giving a plausible claim for compensation on the part of the numerous losers, who saw their license 'confiscated'. With high public debt, who would accept the State spending money on people who, to some extent, overcharge customers?

That leaves price as the instrument of change. It seems a one-off sizable reduction on prices, say a third on global fares, keeping the way they are calculated and transparently shown to the customers, would achieve a lot on the short run, and could have a proper follow-up later on. It would speed up the (already existing) exit from the market by drivers who wouldn't be able to earn enough to cover costs.

Fixed costs are not high, but they do exist:

- there is the opportunity cost on the vehicle;
- insurance;
- the renewal of the Taxi's license;
- some aspects of its maintenance²¹;
- safety inspections;
- social charges for the driver;
- a fixed tax take on revenues, which can be later partially recovered, if there aren't enough profits;
- the renewal of the driver's license;
- etc.

Therefore, a cut on price, when variable profits barely cover fixed cost – zero profits, negative for those who leave – would force the departure of more drivers. It would also favor every consumer, and bring a few extra ones, dampening the exodus of motorists. The remaining Taxis would be busier, charging less, which is tantamount to a better deal on efficiency, or Welfare, in microeconomic sense.

This is the static result. The dynamic implications depend on whether this one-off gesture was the 'single bullet'. If it was, it would 'scar' the market, deterring investment for fear of another round of

²¹ Part of maintenance service is pure consumables, which would rank as variable costs, like oil and tyres.



price cuts and, in general, a perception of utter lack of sympathy for drivers and obsession with the consumer.

A more coherent and balanced approach, inspired on the, much commended and practiced, forward guidance by central bankers, would be to offer a path to future regulation, both in terms of fares and licenses. The price cut would have to be put into a context of returning the market to growth, and adding value for the economic activity of Taxi driving. Bringing extra customers, and getting drivers busier. During the painful process to get there, some pledges should be made:

- Once licensed driver or Taxi numbers stabilized to a given degree, for example a variation in number under 5%, a 5 year stay on new licenses would ensue;

- Some agreed measure(s) of traffic, like 'average number of trips per shift', that the Nevada Taxi Cab Authority collects for Las Vegas, or 'average number of miles driven per shift', that the New York City Taxi and Limousine Commission collects²², would be good proxies to base a discussion either on fare increases, along with data on inflation, of course, or (new) license issuance.

The balance to be found would keep the transparency on prices, as de-regulation throws actors into opportunistic prone bidding. It would seek to return to regulated entry – now, it is in effect free. Keep an eye on prices on behalf of the consumer, but gladly welcome profits for Taxi drivers, who cannot remember having them.

6. Conclusion

Taxis have never been cheap, nor can they be. High petrol prices, and a protracted economic crisis in Portugal, have left them as expensive as ever. Further, public transport has improved, a lot in the two major cities. Taxis have lost their piggy-bank, in the form of Health related transportation, paid by taxpayers.

Fares and entry have always been regulated, and pricing does conform to drivers' wishes. But the permanent sharp contraction of demand has left them too many, dividing among themselves just enough trips to cover cost, many of them not making it and leaving.

This free entry, monopoly priced market delivers a poor result in Welfare, both for consumers and drivers.

In the short run, a big price cut, demanded by the regulator, would deliver speedier exit, more work for those staying, growth, and better prices for customers.

In the long run, it should be placed within a framework measuring traffic, freezing license issuance and prices until demand and growth allowed, evenly, both to rise. Profits and inherent positive value for licenses would be welcomed. Consumers would remain protected stakeholders, but not more.

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²² Source for both informations: <http://www.statisticbrain.com/taxi-cab-statistics>.

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