

Ticket scalping: The winners and the losers

Does the primary market in concert tickets, benefit from the existence of an legal secondary market?



Name: Kimberly Wagemans-Hallink

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Supervisor: Anne Gielen

Master: Policy Economics

University: Erasmus University Rotterdam

Abstract:

This research investigates whether a legal secondary concert ticket market, affects the prices on the primary market. Theory suggests that the prices in the primary market are higher when a legal secondary market exists. This research used a law change in Belgium in 2011, to check whether this was true. It does that by comparing the Belgium with the Dutch market, which did not have a law change. The outcome is interesting: the opposite seems true. When the secondary market is absent or illegal, the prices are not lower, but higher in the primary market.

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Section I: Introduction

Since the beginning of ticket sales for events, the practice of ticket scalping exists. Ticket scalping is the process in which one buys tickets with the sole purpose of reselling them for a profit (Williams, 1994). Before the upcoming of public internet access, this process took place outside the event venues, where people waved around with last-minute tickets for sale, obviously for a much higher than the original price. Since a lot of fraud with false or double tickets took place, many countries have anti-scalping laws, that prohibit people to stand outside the venues to buy and sell tickets (Schroeder et al, 2012).

With the upcoming and the broad public access to internet these days, scalping became much easier. A whole new market of secondary bureaus erected and ticket scalping became a real profession. Most of these bureaus do not commit any fraud, since naming and shaming on the internet is a big deal these days. When you try to deceit people they will complain on the internet, where everybody can read it. This might give you high profits in the short run, but in the long run you most probably will not sell anything anymore.

Nevertheless, people still have the feeling that ticket reselling is a shadowy business. There are several arguments for this. First of all, in the secondary ticketing market the artists do not share in the profits. They only get a percentage of the price in the primary market. Secondly, The secondary bureaus do not add any value to the ticket, but do sell it at a much higher price (usually also with a high mark-up for service fees). This way it is said that they distort the market for events, since people that pay a high ticket price, have less money to go to other events. Moreover, they also have less budget to spend at the location to merchandise and catering. The public opinion states that secondary ticketing on the internet should not be accepted so easily, since they only cause harm for all the actors involved in the market (Lee, 2015).

However, economic theory suggests otherwise. The secondary market is a market of supply and demand and nobody is obligated to buy tickets at this market (Kirbe 2014). In many countries, the only real market failure exists in the primary market, where Live Nation has a monopoly. Live Nation is the monopolist or has at least 90% market share in 33 countries at this moment (Davis, 2010). Live Nation cannot set the monopoly price though, since they make arrangements with the artists on the price and have to stick to that. This gives rise to the possibility for a secondary market, if demand for certain tickets is way higher than supply. More on the economics behind the ticket market and the historical background of this market is provided in section II.

Nevertheless, there still remains a lot of public debate considering concert ticket sales, especially for the major events. As suggested above, both the primary and secondary ticket market cause a lot of complaints from consumers. Therefore, it is interesting to dug deeper in these markets and see the relationship they have with each other and the outside world. The monopoly of Live Nation does not necessarily mean that they abuse their power (especially since artists do not let them sell for top prices). However without empirical research on the market nothing can be said for sure. Although economics theory does exist on the market of tickets, there is very limited empirical research done. In the USA some studies compared different states with different laws on scalping with each other, but empirical research on the European market is missing. Since the research papers of the USA are not all done properly (as will be discussed in the literature section) and are rather scarce, it is hard to extrapolate their findings to the European market one on one. Therefore, it makes sense to do such a research in Europe as well.

A legal secondary market also has influences on the prices in the primary market. Some economic models (Courty, 2003 & Atkinson, 2004) suggest that a legal secondary market also raises

the price in the primary market. This is a good development for the artists, since in the primary market they do get profits from higher ticket prices. Moreover, Alan Krueger has also devoted an entire paper on the subject, called *Rockonomics* (2005). The literature on these models will be discussed in section IIIA.

In the USA, some empirics on the subject is provided, mainly on sports events. On the concert ticket market there is very marginal empirical literature to be found. Therefore, the literature on the sports events is addressed in this paper, to have some kind of comparison. These papers and more empirical research will be discussed in the literature review in section IIIB.

This paper will test whether a legal secondary market influences the prices at the primary market. In 2011, Belgium enforced a law that stated that ticket resale with a profit is prohibited (Kruize, 2013). Tickets can only be resold by individuals that could not make it to the event anymore and they were not allowed to ask a price above the face value of the ticket. In the Netherlands, such a law does not exist. Before the law was enforced in Belgium, the situation was the same as in the Netherlands. This provides us with a nice natural experiment to investigate whether a legal secondary market has an influence on the primary ticket prices. To check this assumption, data from 1993 to 2016 on concert prices is selected for both Belgium and the Netherlands. The approach which will be used in this paper is the difference in difference (DiD) approach. When Belgium and the Netherlands have a common trend on concert prices before the enforcement of the law in Belgium, one can assume that this trend would hold when nothing had changed in the Belgium market (the common trend assumption). Therefore, any differences in the primary ticket price trends after the law enforcement can be devoted to the law enforcement itself. More on the Data and methodology of this paper can be found in section IV.

The main question that this paper addresses is, therefore:

What are the effects of a legal secondary ticket market on the primary ticket prices?

What we found is that after 2011 the prices in Belgium actually got more expensive compared to the Netherlands, instead of less expensive. This is contradictive to the theoretical papers and, therefore, might be interesting to investigate further in the future.

Furthermore, in section V the results are discussed and section VI provides a conclusion. Finally, Section VII will give several suggestions for future research, with discussion and limitations of the research.

Section II: The institutional setting

This section provides an overview of the institutional setting in both the Netherlands and Belgium, before and after the enforcement of the Belgium law on secondary tickets in 2011. Only the market since 2000 is discussed, since the years before are less relevant for this paper. Since 2000, internet was the primary source to buy tickets. All the relevant players active in the market are taken into account. Furthermore, possible market failures and reasons why the secondary market exists in general are mentioned. Finally, other factors that can influence the ticket market from the outside (like the financial crisis of 2009) are discussed.

The Netherlands

In the Netherlands, two major players are active on the primary market from 2000 onwards: Mojo and Ticketmaster. Mojo is a subsidiary of the bigger international company Live Nation. Ticketmaster

and Mojo used to be each others competitors and other players of relevance were absent (Fygi, 2009). In 2009, Live Nation merged with Ticketmaster in all the countries where both entertainment companies were active (Fygi, 2009). This meant that all 19 Ticketmaster companies were acquired by Live Nation. For the Netherlands, this means that Live Nation now has a monopoly on the primary ticket market. Some venues do sell their tickets by themselves, but the amount of tickets that is not sold by Live Nation or one of its subsidiaries is small.

Some of the tickets that are sold at the primary market, will be up for sale on the secondary market. This is done for several reasons. First of all, consumers that want to resell their ticket because they cannot make it to the event anymore, use sites as 'Marktplaats' (the Dutch Ebay) to resell their ticket. For popular events, consumers understand they can ask more than the primary price, or face value of the ticket. Secondly, secondary ticketing bureaus try to buy as many tickets as possible on the primary market and put them up for sale after the event sold out at the primary market, usually with a high mark-up for very popular events. Thirdly, some platforms just offer a safe spot for buyers and sellers to meet each other. These platforms arrange the payments and sending of the tickets from seller to buyer. They charge both the seller and the buyer with service fees, which is mainly a percentage of the selling price. These fees are the profits for these platforms. One of the biggest platforms that uses this business model is Seatwave (Competition and markets authority, 2015).

Primary ticketing bureaus and especially Mojo, supported a legislative proposal to prohibit the extra profit in the secondary market. This law was proposed in 2010, until today no decision on this law is made yet for the Netherlands. However, in 2014, Live Nation also acquired Seatwave. The idea behind this was: "if you cannot beat them, join them", which was referring to the ever ongoing battle between primary and secondary ticket sellers. Because Live Nation now possesses a secondary bureau themselves, Mojo was forced to withdraw its support for the aforementioned law (Vrieze & Sewuster, 2015). In figure 1, the market as it is right now with all the important players is shown.

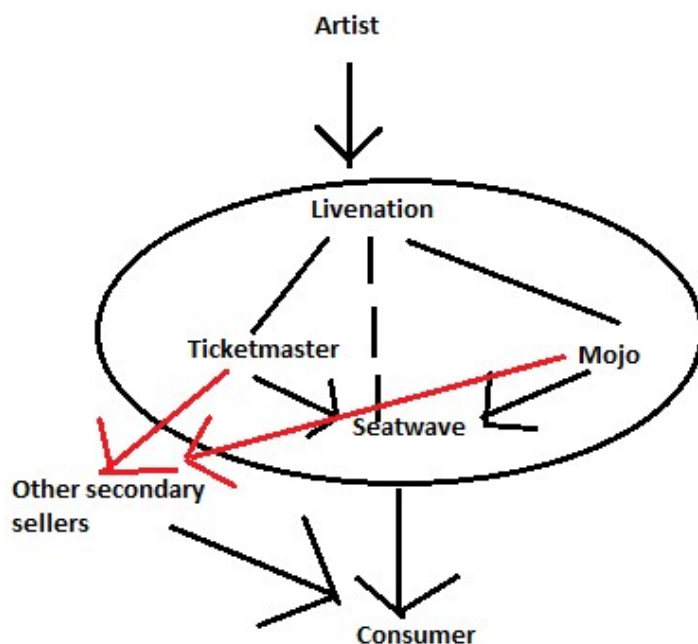


Figure 1: Image of the Dutch ticketing markets. Arrows mean the movements of tickets. A straight line is the connection between the parent company and the subsidiary

Apart from Seatwave, there are many other secondary ticketing bureaus active in the Netherlands. All of them have a very small market share in the ticketing branch, so in the secondary market the laws of supply and demand are present. Nevertheless, secondary tickets for major events are usually way more expensive than the tickets at the primary market. This is counterintuitively since the primary market has a monopoly power and the secondary does not. Why the prices differ so much anyway is discussed further below.

Belgium

Live Nation is with Ticketmaster also active on the Belgium ticketing market. Until 2011, Seatwave was active on this market as well, but under the new law Seatwave is not allowed to operate with its business model in Belgium any longer. In Belgium, Live Nation does have a large competitor, called “Tele Ticket Service” which is the market leader there. The market in Belgium can, therefore, be described as an oligopoly instead of a monopoly.

Although we see a different institutional setting in Belgium, it does not have to harm the results of this paper. We compare the secondary and primary market with each other and for this comparison, it is more important that the secondary market was the same before the implementation of the law. This is because we want to see the effect of the secondary market on primary sold tickets and not the other way around. As long as the common trend assumption (see methodology section) holds before 2011, it does not really matter that the primary market is not exactly similar.

The situation with primary and secondary sellers was the same for Belgium and the Netherlands until 2011. Afterwards, the secondary selling platforms that sold above face value were not allowed anymore in Belgium (Kruize, 2013). However, tickets for major events are still sold on the secondary market from other EU countries (Ginneken, 2016). The main website of Seatwave (seatwave.com) does sell tickets for the Belgium market. However, they are difficult to find and seatwave only sells tickets for the real major events in Belgium. Therefore, the percentage of Belgium tickets that are sold on seatwave is below 1%. Although the Belgium government tries to do something about this, it turns out to be extremely difficult since selling secondary tickets is not illegal in other countries.

For this paper, it does not matter that secondary selling is still possible for the Belgium market, from outside the country. There are two main reasons that this does not provide huge problems for this research. First of all, we are looking at the effects of a legal secondary market on the primary ticket price. The secondary market in Belgium is illegal, so there might be a difference with the Netherlands anyway, even when there still exist some secondary selling from outside Belgium. Secondly, the illegal resale of tickets is only for a few really major events. Most of the concerts do not have any problems with ticketing fraud at all in Belgium. Therefore, the problem is too small to give major problems for this paper.

Ticket prices – Primary market

The face value of a ticket is established at the primary market. The primary market normally has a lot of scarcity, especially for major concerts of popular artist. The demand for the tickets is very high and the supply is limited due to the amount of places available at the venue where the artist performs. Nevertheless, the prices in the primary market are usually below market clearing level, so called ‘underpricing’ (Krueger, 2005). There are several reasons why this is the case.

First of all, the artist decides together with the ticketing company what to charge for a

performance. The artist does not only maximize profit, but is also considering the importance of selling out the entire venue. The ambiance is better when it is sold out and the popularity of the artist is higher when concerts are sold out, because this gives the perception that the event is really important. Moreover, artists claim that they think it is important that also poorer people are able to buy tickets for the events (Courty, 2003).

Secondly, because of uncertainty of demand, ticket sellers do not want to set too high prices. Although very popular artists will most probably sell out anyway, for the majority of acts it is rather uncertain what the market clearing price will be (Courty, 2003).

Thirdly, consumers perceive it as unfair when high prices are asked. Barbra Streisand, for example, once tried to sell tickets for a concert in Rome for up to 1000 euros herself. Consumers were very angry because of this and in the end the concert was cancelled (BBC 2007).

Fourthly, primary ticket sellers and artists usually also get money from catering at the venues and from merchandise. By asking a low price for the ticket, people have more money to buy drinks and t-shirts for example. Moreover, a low price heightens the chance that the venue is sold out, which means more people that make use of these amenities (Krueger, 2005).

Fifthly, dynamic pricing models do not work in the primary market. People perceive it as unfair if they paid more for the same ticket as the person next to them. Although the primary market tries to find solutions (e.g. auctions), until this day it is hard to use price discrimination as a tool to get as much profit out of the tickets as possible. The price which was stated at the beginning together with the artist is fixed. Even when the venue is not sold out entirely at the day of the event, the price does not change (Courty 2002).

Finally, cultural events are usually subsidized, since the government thinks it is important that everybody has the chance to attend these events. This means that the tickets can be sold at a cheaper rate, since part of the profit already is paid by the government (Atkinson 2004).

Since demand exceeds supply with a large number and the primary market cannot solve this by asking a market clearing price, the secondary market arises.

Ticket prices – Secondary market

On the secondary market, numerous ticket sellers are active. Therefore, in this market the law of supply and demand is in charge. However, supply is extremely limited. Only those tickets that were bought with the purpose of reselling and the tickets from persons that cannot make it to the event anymore, are available in this market. While the primary ticket market already has a limited supply, on the secondary ticket market the supply is reduced even further. On the secondary market, all the underlying reasons for underpricing stated above do not count anymore. The secondary market has no connections with the artists themselves and they have no reason to ask low prices. Therefore, they simply ask the highest price for which they can sell their tickets (Leslie & Sorensen, 2013). In the extreme cases, this can be up to 5000% of the original ticket price (Kammer, 2015). In 2015 in the Netherlands this happened with Adele. The concerts of Adele in the Ziggo Dome (17.000 places available per evening, she played for 3 evenings) were sold out in minutes and immediately afterwards were offered at the secondary market for very high prices.

Secondary ticketing bureaus can also adjust prices. When the date of the event comes closer, prices tend to drop to make sure they are sold out. They might even be sold with a loss if necessary. Although the major events are always very profitable, not all events turn into huge profits for the secondary ticketing companies.

People are never obligated to buy tickets, therefore, it is important to mention that they are apparently willing to pay a high price for certain events. Usually they only start complaining about

these prices when they receive the tickets at home and discover that the face value of the ticket was much lower as what they eventually paid (Based on the majority of complaints on Dutch consumer sites, like consumentenbond.nl, radar.nl and consuwijzer.nl). Nevertheless, the secondary ticketing bureaus are completely legal in the Netherlands. In 2011, the authority of consumers and markets (ACM) gave a fine to those companies that did not make very clear on their websites that they were a secondary seller (Kassa, 2010). Since then, all companies do make this clear and none of them is using obvious fraudulent practices to sell tickets.

Market failure

The main market failure is the monopoly position of Live Nation in the primary market. A monopolist usually sets prices above marginal costs, to maximize its own profit, since there are no competitors that can set lower prices (Frank & Cartwright, 2013). However, in the ticket market, some extra conditions make it hard to set real high prices (Krueger, 2005). First of all, the negotiation with the artists is important. Artists want to sell out their venue and want consumers to be happy with the prices. Therefore, these artists tend to negotiate lower prices as the market clearing price, especially when they are very popular.

Secondly, there is uncertainty in the market, which makes setting the market clearing price difficult, especially when Live Nation is not sure whether a concert sells out. A model for a monopolist in a market with uncertainty of demand is provided in section III.

Nevertheless, monopolistic market power probably has some influence on the price. Especially now Live Nation has acquired Seatwave. At Seatwave, Live Nation gets a percentage for every ticket sold (above service fees of 18%). Since the ticket price in the secondary market can be much higher (1500 euro for an Adele ticket of 100 euro was no exception) there might be a reason to sell tickets at a low price in the primary market, because Live Nation knows this will increase the price in the secondary market. When Live Nation gives barriers to other secondary ticketing bureaus and most secondary trade is done at Seatwave, this is an example of abuse of market power. Although Live Nation does not prohibit other secondary sellers to resell their tickets, the market share of Seatwave in the secondary market is quite high. For major events that market share can count up to 60% (Competition and markets authority, 2015).

Consumers typically argue that another problem in this market is the fact that secondary ticket sellers buy tickets out of the primary market is unfair, since this reduces the opportunities for people that actually want to attend the event. This argument can easily be countered by the understanding of the law of supply and demand. The secondary market only asks higher prices if the demand for a certain event is (much) higher as the supply. Therefore, the people that value the tickets the most and are willing to pay the highest price, will in the end attend the event. Again, the main problem here is not the top-prices in the secondary market, but the underpricing in the primary market.

Other influences from outside the ticket market

To make sure that the Belgium and Dutch ticket markets are the same in absence of the Belgium law, it is important to check whether other forces influence both markets in a different way. Before 2011, the common trend assumption can be checked. However, after 2011 it can be that other influences affect the Belgium market differently from the Dutch market apart from the law. The most important factor is potentially the financial crisis which started in 2009. When Belgium is affected by this crisis differently than the Netherlands this might mean potential bias in the analysis of the market prices on concert tickets. Therefore, some important economic variables are compared in the graphs below.



Figure 2: GDP growth in the Netherlands and Belgium, 2000-2014. Source: Worldbank

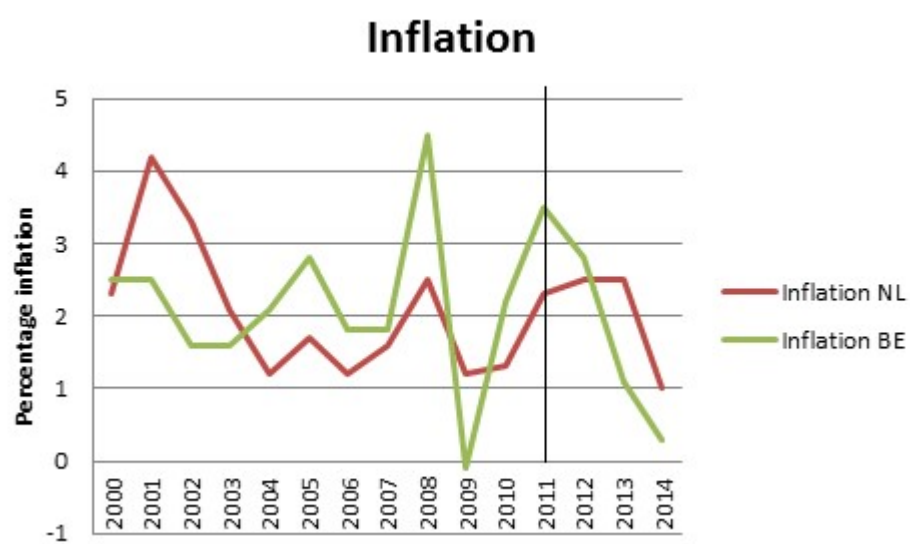


Figure 3: Inflation rate in the Netherlands and Belgium, 2000-2014. Source: Worldbank

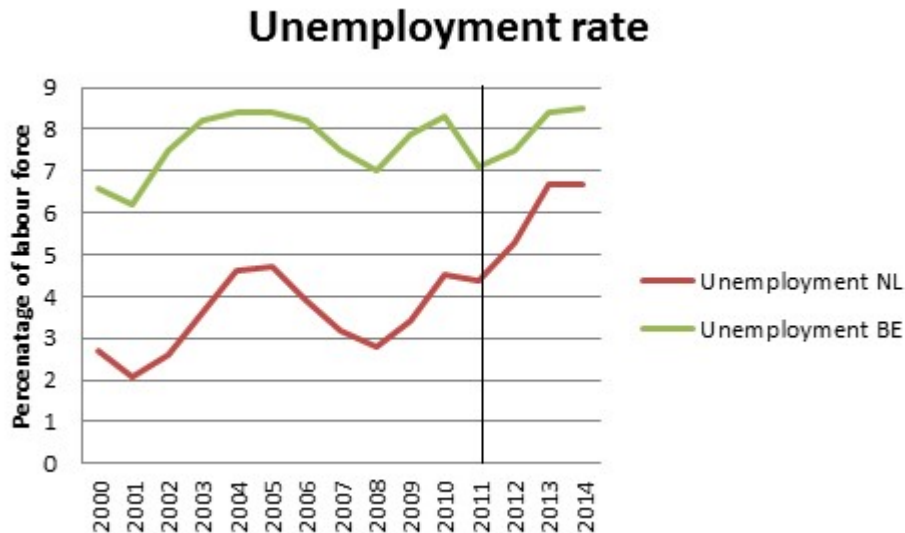


Figure 4: Unemployment rate in the Netherlands and Belgium, 2000-2014. Source: Worldbank

As can be seen from the figures above, the unemployment rate and growth rate roughly follow the same trend. Most important: Since the crisis they are fairly similar. The inflation rate does differ a bit, however, the years that are taken into consideration since the new law, we see that the inflation rate of both countries tends to move towards each other. Altogether, there is no evidence that the crisis struck Belgium in a different way as it did for the Netherlands.

Section IIIA: Literature, theoretical models

In this section, the theoretical literature about the economics behind the concert ticket market is discussed. Most of this section draws heavily on the papers of Jimmy Atkinson (2004) and Pascal Courty (2002, 2003). As discussed in section II, the tickets in the primary market are set at an artificially low price. However, some economic theory suggest that in the absence of a legal secondary market the prices at the primary market would be even lower. The idea behind this is as follows (Atkinson, 2004): The supply of tickets is fixed at a certain amount (Namely, the number of places available at a certain event). As can be seen in figure 5, when there would not have been a legal secondary market, all tickets in the primary market sell for P_L , because at that price supply meets the marginal value curve. However, secondary sellers also buy tickets at the primary market. Therefore, demand rises from the marginal value curve up to the demand curve D_j . The price in the primary market rises from P_L to P_M . However, it might be possible that P_L was already an artificially low level. The quantity $Q_l - Q_1$ goes to the secondary market and these tickets are then sold at the price P_H . Therefore, both the primary and the secondary markets benefit from each other. The secondary market rises demand in the primary market, which increases the price. Furthermore, the secondary seller itself can ask a market clearing price for their tickets.

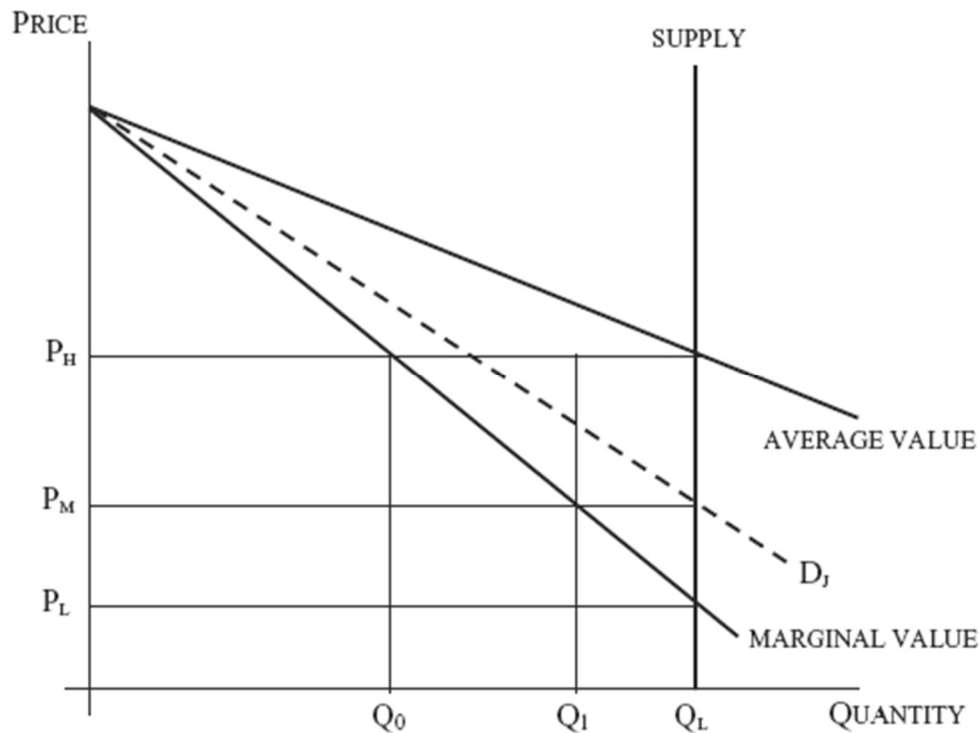


Figure 5: The primary market (monopolist) benefits from the secondary market and vice versa. The secondary market drives up the marginal value curve towards the demand (D_j) curve. Source: Atkinson (2004).

Moreover, the secondary market helps the primary market to learn about the demand curve from consumers. For the current event, this does not matter much, since the primary market is usually not able to change prices along the way (as mentioned in section II). However, for future comparable events (same festival/artist/sports team etc.) the price can be set closer to the actual demand curve, since the primary market can see the prices for which tickets sell at the secondary market ex-post. Even when the secondary market is reluctant to share this information, the primary market can find this by looking up websites of secondary sellers and see what people are willing to pay for tickets. Moreover, in the case of Seatwave and Livenation, the secondary and primary seller are in the same company. This way, learning is even easier.

Alan Krueger (2005) wrote a handbook chapter, called rockonomics. Here he describes some of the economics on how the market for great concerts work. A few of his points are relevant for this paper. First of all, concerts, as an economic good, are distinguished by five characteristics:

- High fixed costs and low marginal costs
- They are an experience good, people only know the true value afterwards
- Value of a tickets goes to zero after a concert took place
- Seats vary in quality
- Bands sell complementary products (like merchandise and records)

The theory expects that price discrimination will take place because of the above stated facts. This is, however, rarely seen. In this case, underpricing of certain seats occurs, and scalping takes place.

The two most important theories on why underpricing takes place are (to Kruegers opinion):

- Value for consumers is higher when more people attend (higher ambience), so selling out is positive for the value which is attached to the performance

- Market clearing prices might seem unfair for people that do not have much money

Pascal Courty has dedicated much of his work to understanding the pricing mechanisms in ticket markets. He developed a model for demand uncertainty both by the monopolist and the consumer (Courty, 2002). This model gives valuable insight and understanding of pricing mechanisms that would otherwise not make much sense. Although this model does not explain much about the secondary ticket market, it does give an overview on the primary prices (and these give space to rising secondary markets). This model is worth briefly discussing here because one of the main reasons that Live Nation does not act as a full monopolist (with setting prices that equal marginal costs to marginal revenues) will be explained by this model.

In the model of Courty, the monopolist has the opportunity to sell tickets early (far away from the concert), or late (near the concert date). By rationing the amount of tickets that can be sold early (the so-called early bird tickets), the monopolist raises prices of these tickets. For consumers, it is valuable to buy these higher priced tickets, since this way they can be sure that they have tickets for the event. When they wait for a later (and cheaper) date, the tickets might be sold out, or sell out quickly.

The monopolist can choose to sell all the tickets at the early date. However, in this case he cannot set a market clearing price easily. It is hard to determine what consumers are willing to pay for the event to sell out. Moreover, we already discussed quite a few points why price discrimination and selling for too high prices is damaging the ticket seller as well as the artist. Therefore, the only way for price discrimination are the early bird tickets.

Because of the demand uncertainty (the ticket seller does not know the exact market clearing price), the ticket seller cannot behave as a monopolist in a pure form. This is where the secondary market comes in. The monopolist, in his turn, can learn from this secondary market, for future reference. If the primary ticket seller sees for certain artists that a lot of tickets are sold on the secondary market, for much higher prices, he can anticipate on that when this artist returns. Therefore, it is interesting to follow certain artists in time.

Section IIIB: Literature, empirical research

The main empirical literature all stems from the USA. In the USA, there are differences between states in the laws that regulate ticket scalping. Therefore, natural experiments are possible that compare states with each other. Most of the literature is focusing on sports events, especially in baseball, basketball and American football, since these are very popular in the USA. As far as we know, there is no empirical evidence on concert tickets. The market for sporting tickets is rather similar as the one for concert tickets, but there are some noteworthy differences. First of all, sport teams usually sell passes for the entire season. This gives fans the opportunity to come to all the games they like for one price. Most of these fans will not attend 100% of all matches, which means that empty chairs are a possibility for these tickets. Furthermore, this creates extra scarcity on tickets for one game only, since the seasonal places are already sold. Secondly, sports venues for the major sports events are usually much larger as concert venues. Although some concerts are given in sporting arenas, most of them are in locations which are made especially for concerts and they provide less seats. This means that for sporting events, there is a larger supply for tickets. Furthermore, sport teams play more often as artists in the same venue (since they have a home based place), so the chance to see ones favourite team is larger as the chance to see ones favourite artist.

Nevertheless, the empirical evidence on secondary ticketing in the sports market cannot be unmentioned in this research. First of all, it provides an insight in the way researchers make regression models to check for the effect of anti-scalping laws. Secondly, there are a lot of similarities between concerts and sports, since the same ticket sellers and resellers operate in both markets. Finally, it is interesting to see whether the theories discussed above hold for the ticket market for sporting events in the USA.

The paper of Depken (2006) looks at the effects of anti-scalping regulation on baseball and American football. He compared several states with each other using a dummy whether there was some kind of anti-scalping law in place. He controlled for several factors that possibly explained other differences between states. He found that ticket prices were usually between \$2 and \$10 higher in the primary market when there was anti-scalping regulation. This does not support the theory that a legal secondary market rises the prices in the primary market. However, it should be mentioned that the differences between states and the free internal market between states can be an important factor in this finding. It is still possible that secondary selling of football and baseball games is provided through other states, since it is not forbidden to buy secondary tickets there. Since the sport teams themselves do not control on the identity of the buyer, it is not easy to check whether someone uses a primary or secondary ticket to go to a match.

Drayer (2011) looked at the enforcement of ticket laws in the United States. He found that due to all the differences between state laws and the ease to avoid prosecution (e.g. by reselling from states where it is not prohibited to do so), the anti-scalping laws were ineffective. Moreover, the laws only made it more difficult to trade tickets that would have been traded anyway, so there probably is even a loss of welfare stemming from these laws. Especially since most tickets nowadays are traded via the internet, it is not hard for ticketing bureaus to settle themselves in states where reselling is not prohibited and then sell their tickets throughout the entire USA. Since buying secondary ticketing is hardly anywhere illegal (only selling is) and controlling whether someone has a primary or secondary ticket is nearly impossible, it is hard to really measure the effect of anti-scalping laws on ticket prices.

Drayer himself understates the fact that there is limited research done in this field. The two papers mentioned above are the only two really doing empirical research in the last 20 years. There is one paper left, from Williams (1994), that does suggest that the economic theory that secondary markets increase the prices in primary markets. However, this research is done before the time where internet was the primary source to buy tickets and the world changed a lot since then. Therefore, more research is needed to really be able to see something about the relationship between the primary and secondary ticketing markets.

The research that this paper conducts differs from the above. In Belgium, the law is enforced more as it is in the USA. There are sample ID checks at concerts to see whether someone is coming with a primary ticket. However, this is not always possible, since selling at face value is not prohibited (for those consumers that cannot make it to the event anymore). Moreover, tickets that are known to be sold from outside Belgium, are made invalid. Nevertheless, fraud is still conducted for the very popular events. This fraud drives back to the Netherlands and France, which are the neighbour countries of Belgium. This is one of the major drawbacks of a free internal market in the EU. However, this mainly happened for a few very large events. Most of the events do not have any problems with secondary ticketing bureaus any more in Belgium. The most important secondary bureaus (Seatwave, Viagogo, GetMeIn) are not to be found in Belgium since 2011, so in that sense the law seems to work better as it does in the United States. Therefore, it is interesting to see what this law does to ticket prices in the primary market.

Section IV: Data and Methodology

A: Data

The data in this research consists of 600 concerts that took place in the Netherlands and Belgium, between 1993 and 2016. The bulk of the data is taken from the years 2009-2016, since the switch point of the Belgium law was in this period. From each concert, the price including service costs is known. These costs are included, since it is interesting to know the differences between the complete prices that consumers have to pay.

Since the exact dates on which the concerts took place is known, we can control for seasonal effects. This might be important, since it is quite possible that people tend to go to concerts more in the summer for instance, since the weather is better and quite a lot of the concerts took place outside.

Roughly one quarter of the data comes from an investigation of Sargasso (Okhuijsen, 2013). This is a journalists platform that researches a lot of different subjects. For this investigation, this platform asked people to send in their old concert tickets. Because we think the results might be a bit biased, we decided to only take a quarter of their data and collected the rest from other sources. The reason for the bias is that only people that follow Sargasso probably handed in their tickets. This means that not all music preferences are represented in this data.

The rest of the data comes from all kind of different sources, varying from fan pages to official ticketing websites. We only used a concert if we good get the original price that was printed on the specific ticket, to make sure that we only follow tickets from the primary market. To make sure that the results of this data are not biased, we used historical data of concert agendas of all major ticketing websites. For the recent years, this means concert agendas from Livenation, which sells in both countries most of the tickets in the primary market. For Belgium, also the website of Teleticket-service is scanned. For the years before 2011, we first looked for information on the major players in both countries. In all cases, Livenation was active for the entire period, which makes it easier to say something about the data of all years. To make sure not all the data come from major events, we took a variety of venues and artist as long as we could find enough information on them.

Finally, we scanned some fan pages of the artists that we found throughout the entire period. It is important to mention that these artists usually are quite big artists (but not solemnly, less popular bands can exist for 23 years as well), since they have the biggest fan databases with the most information.

We used this approach to collect as many divers concerts as we could, but it is hard to find out if we have a completely random sample of the music industry this way. However, we think for the investigation itself it might not be a big issue, since the less popular concerts do not usually appear on the secondary market anyway. Therefore, the less popular concerts are less affected by the Belgium law.

However, we do understand that some kind of bias is hard to tackle, since the way we started searching from data already forms the complete data search. By including part of the Sargasso database, we hoped we have decreased this bias, since in the Sargasso database we see artists that we never have heard of and it helped us looking for more different music styles.

In this dataset, all prices are including service costs. We did want to take the service costs apart, also as a certain control variable. However, in Belgium the service costs are always included. In the Netherlands they should be displayed apart but in Belgium this is not necessary. Therefore, we

choose to include the service costs in all prices.

Moreover, in this dataset the prices for different ranks are not taken into account. When there were different ranks in concerts and we have information on different prices, we took the average price for this concert. This is done because a lot of concerts took place outside without ranks and from other concerts there was no real clear distinction between ranks.

Finally, the prices are all corrected for inflation and are displayed in 2012 euros. We took 2012 euros since the investigation from Sargasso was in 2012 euros, so it was easier to start from that.

In the table below, some descriptive statistics on both the Dutch and the Belgium concerts are given.

	Prices all years	Prices 2006-2010	Prices 2010 2012
<i>Netherlands:</i>			
Average	39,68	45,10	53,48
Standard deviation	19.64103	20,91706	22,63979
Min	7	13	18
Max	155	155	106
N	345	93	123
<i>Belgium:</i>			
Average	45,17	54,42	60,35
Standard Deviation	18,83374	14,98402	18,15878
Min	14	28	32
Max	105	79	105
N	256	78	101
<i>Total:</i>			
Average	41,26	47,25	56,16
Standard Deviation	19,57092	20,09421	21,27381
Min	7	13	18
Max	155	155	106
N	601	171	224

Table 1: Descriptive statistics for both Belgium and the Netherlands, divided in periods. Prices are in 2012 euros

	treatment	Country
Average	0.21	0,29
Standard Deviation	0.0410	0,4531
Min	0	0
Max	1	1
N	601	601

Table 2: Descriptive statistics for the control variables. Treatment is given the value '1' if the data is after 1-1-2011. Country is given the value '1' if the data is from the Netherlands

As can be seen, the differences between the cheapest and most expensive concerts are huge and this makes the standard deviation large as well. Since these values are taken for all concerts between

1993 and 2016, it does not provide much information about the real average. However, it gives a nice view of how the concert ticket prices changed over time.

Moreover, even when dates that are closer towards each other are taken, the differences are still huge. This might be addressed to certain outliers, since there are a few concerts above 100 euro.

Furthermore, it is interesting to see that Belgium is always more expensive than the Netherlands on average. However, the outliers are usually in the Netherlands. One explanation that Belgium is more expensive, is the fact that we see in the data that artists tend to visit the Netherlands more often. Usually, they do not come to the Netherlands for only one day, while they do visit Belgium only one day. Moreover, we see some artists performing in the Netherlands in more years than in Belgium. This means that supply is more scarce in the Belgium market. Demand might be more scarce as well (Belgium is smaller than the Netherlands). However, it seems that supply has an bigger impact on the price than demand in this case.

Finally, we put together the prices and dates for both the Netherlands and Belgium in one graph. This way, one can easily see that both trends are upward sloping. However, the line for Belgium has a steeper slope than the line for the Netherlands. It seems that concerts in Belgium used to be cheaper than in the Netherlands, but because of the steeper slope, Belgium became more expensive. On the eye, the law in 2011 did not stop this trend. However, to be sure there are no effects for this law, in the next section the difference in difference model is introduced.

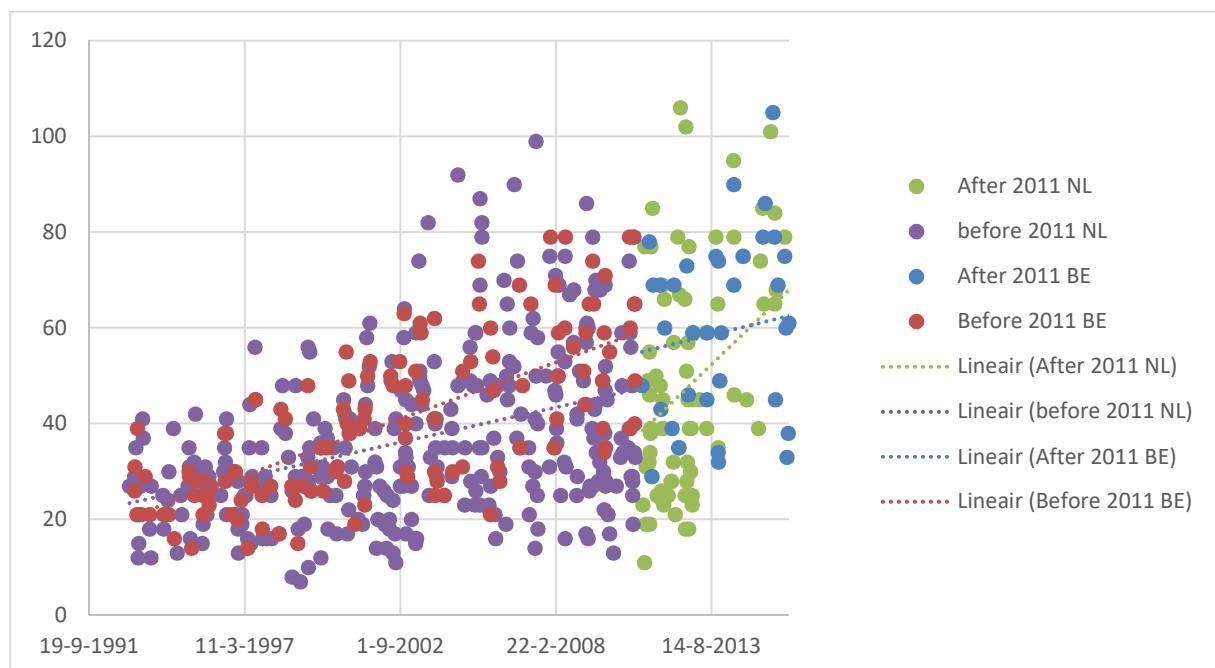


Figure 6: trend lines for concert ticket prices for both the Netherlands and Belgium, before 2011 and after 2011.

B: Methodology

To investigate whether the Belgium law that forbids ticket scalping actually lowered the prices on the primary ticket market, a Difference-in-difference-model (DiD) is used. This model looks at the data at two different points: Before the change of the law and after the change. To make a difference in difference model work properly, it is crucial that before the change in the Belgium law, we observe a common trend between the Netherlands and Belgium. That does not mean that it is necessary that

the prices before 2011 are exactly the same, but they should move in the same direction. For example, if the Netherlands was confronted with a price change of 50% (upwards) between 1993 and 2011, Belgium should also roughly experienced a 50% price change. If the trends do not move in the same direction or follow the same patterns before 2011, we cannot say conclusively whether any changes after the law change follow solely from this change. In the data section, we could already see that it seems that the trends do move in the same direction.

Moreover, we also have to make sure that nothing else happened exactly in the same period, which might influence both countries in a different way. Unfortunately, in the same period we had a major economic crisis in the EU. We tried to tackle this issue in section II, by looking at several economic variables. It is hard to be for 100% sure that the crisis affected Belgium in exactly the same way as it did in the Netherlands. However, the two countries are fairly similar and with investigating these particular variables, we ruled as many options of difference as possible out.

In the data, we see a lot of artists that have been active the entire period of investigation. This is valuable, since this way we can follow the same artist over time. This makes a good check to see whether those artists actually followed the same trend in both countries before the law change. After that, we can check what happens after 2011.

Formally, the difference-in-difference model looks as follows:

$$Y_{it} = \beta'X_{it} + \delta.T + \gamma.C + \lambda.T.C + \varepsilon_t$$

In this equation, T stands for the treatment, equal to 1 for the years we are interested in are 2011-2016. C is a dummy variable for the country, indicating 1 for Belgium and 0 for the Netherlands. The variable of interest here is λ , which indicates whether there is any link between the treatment status and the country.

If the theory explained in the theoretical literature section is correct, we should see a lower price for concert tickets in the Belgium market after the law was implemented, while the Dutch prices should not follow a different trend compared to before 2011. This is, because theory suggests that a legal secondary market, benefits the monopolist in the primary market, so that this monopolist can heighten its prices. The next section will look into the results of this difference in difference regression.

Section V: Results

	Coefficient	Robust coefficient
Constant	37,207 (0.9966)**	35,459 (0,9696)**
Treatment	12,440 (2,2363)**	12,062 (1,8547)**
Country	2,9946 (1,9064)	3,9090 (1,8547)**
Treatment*Country	7,1084 (3,9224)*	7,8490 (3,8162)**

Table 3: Difference in difference estimation on concert ticket prices. The second column is the regression outcome itself, the second column provides a robust regression, where outliers are deleted. The N is 601, the controls are treatment and country, where country is 1 when the data is from Belgium and treatment is 1 when the data is taken after 1-1-2011. The data consists of all concerts between 1993 and 2016 in both countries. The interaction effect (treatment*country) is the effect of concerts that took place in Belgium after 1-1-2011. * means a significance of 10%, ** means a significance of 5%

As can be seen, the estimator of interest, DiD, is not significant at the critical level of 5%. However, it is significant at 10%, so we are able to interpret it a bit, although we should be cautious. If we

interpret the estimator DiD and consider it true, it means that after treatment took place, the concert ticket prices in Belgium went up with roughly €7 on average. This contradicts the theory, which states that the absence of a legal ticket market should result into lower prices.

However, this result is to be doubted. First of all, like we said, the significance level of 5% is not reached. Moreover, if we look at the standard error, we can state that roughly 95% of all concert tickets will sell with a difference from the original price of -€0,59 and €14,8. This is quite a large range, which comes partly from the low significance. Therefore, it is hard to conclude completely from this estimation.

Moreover, we do have some outliers in the data. One of them is an concert that costed €150 per ticket, while most concerts are concentrated around €50 per ticket. Figure 7 below shows this nicely. To control for outliers, we let Stata perform a robust regression as well.

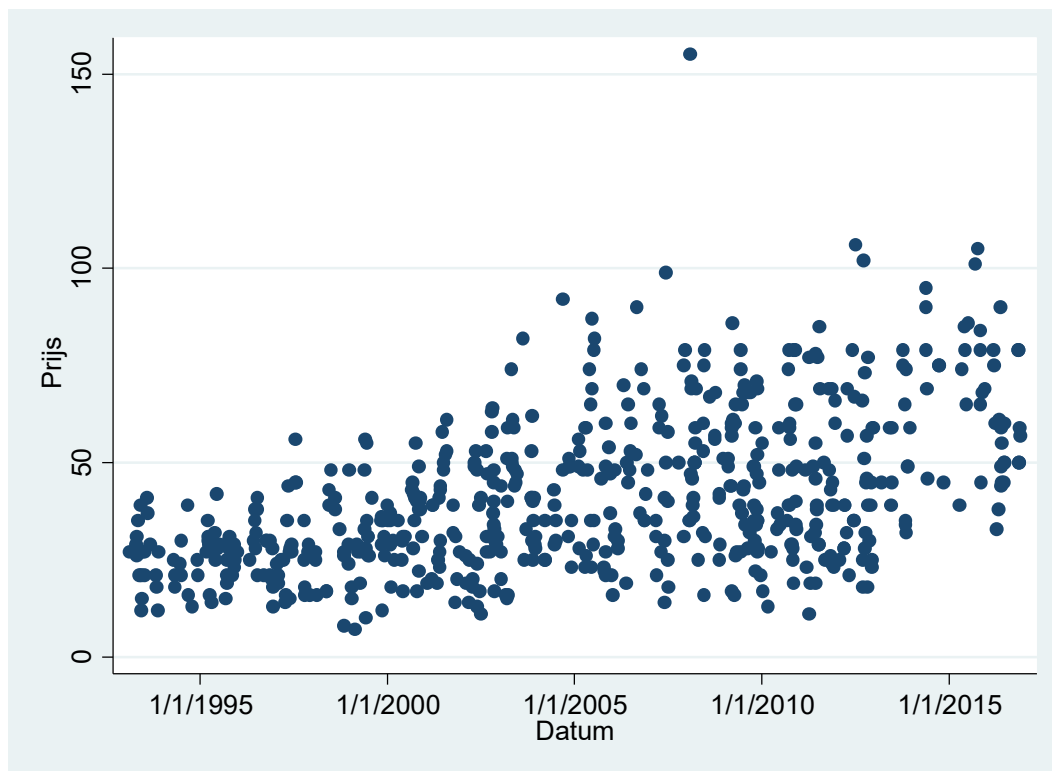


Figure 7: Prices over time in both countries, including outliers

As can be seen, the output of the regression does not differ much when outliers are deleted. However, the significance of the difference in difference estimator is now significant at the critical value of 5%, which is an improvement. This way, we can be a little more sure that the outcome of this experiment is true. That means that we are a bit more confident that this experiment contradicts the theory as suggested by the literature.

Section VII: Limitations and suggestions for future research

This research was a first attempt to investigate the theory on the concert ticket market with an natural experiment. During this research, it was extremely hard to get the sufficient data. Ticket sellers and venues are very reluctant to share information with the outside world over past ticket prices. This meant that we had to collect data by screening the internet for fan pages and music

websites. For 2015-2016 this was not so hard, since these concerts still had to take part. However, the older the concerts were, the less reliable data was available. Moreover, we were not able to collect as many data as we would like. We only wanted to take the data that was absolutely reliable and this meant we had to skip many observations. If one could have a look into the history of the websites of the ticket sellers, one could get way more concert prices than we were able to collect.

Although we took great effort in collecting as much and diverse data as possible, the data will still be a bit biased. Smaller artists are under-represented since less people are interested in them. This way, there is less information on them to be found on the internet. Therefore, it might be a challenge for the future to find more data on a more diverse group of musicians, to redo this experiment.

Moreover, we do not have many control variables. One can think of taking different ranks as a control, the venue where the concert was given, the number of visitors etc. However, since collecting the data was so difficult, we could not find enough controls. It might be interesting to redo this research with many more controls, to check whether the difference in difference estimator stays the same as it is right now.

One can think of comparing artists that come back many times to the two countries with artists that only performed once. It might be that those artists are more expensive. One can also compare large with small concerts and check if theory does hold with one of these subgroups. Another interesting way of checking the theory is by selecting on concerts that are sold out or not. When a concert is sold out, it seems to be very popular. If there are still tickets available on the primary website for a concert, it is way less interesting for a secondary seller to sell tickets for this concert. Unfortunately, we were not able to find for many concerts if they were sold out or not, so this check could not be done.

Moreover, it might be interesting to check for the other players that set ticket variables, like artists and venues. It might well be that a certain artist just prohibits reselling (and want a control on the tickets at the venue, by ID-card for example), or an artist just does not want prices to go above a certain mark.

We tried to check whether something else changed between Belgium and the Netherlands during the law-change. However, we could only look for observable features of both countries. It might still be that there is some hidden difference that affects one of the countries more than the other. Moreover, since we live in an open economy, it could also be that more people from Belgium would go to the Netherlands or vice versa after the law change. We have no clues that these effects actually took place, but we cannot be entirely sure.

Finally, in an ideal world, you would want to check two completely closed countries with each other,. If we can be absolutely sure that a secondary market cannot operate in Belgium, because it is prohibited, strongly regulated and tickets cannot be sold from other countries, we can be more sure of the correctness of the outcomes of the research.

All of the above suggests that more research can be done on this topic. This is only a first attempt to check the theory, since empirical evidence is nearly absent. We do not pretend that theory is completely wrong, more research is needed to check for this assumption.

Section VI: Conclusion

This paper used a natural experimental setting to see whether the change in a law that affects the concert market, affects this market in a way theory suggested. When a concert market in a country has both a legal primary as a legal secondary market, we expect higher prices on the primary market, because of learning effects of the players on the primary market.

By using a difference in difference estimation whereby the Dutch (without a law change) and Belgium market (with a law change) are compared before and after the law change, we could make an effort to have the first empirical research on the concert market in Europe that checks this assumption. Our research suggests that theory is wrong and that the prices on the primary market actually go up when the secondary market is forbidden.

A few explanations could be possible for this phenomenon. First of all, since the secondary ticket market can already sell tickets prior to the primary market for real big events, they can steal some of the demand from the primary market, driving prices downwards. They can sell these tickets early, because they expect a certain amount when the primary market opens. They sort of gamble if they can deliver these tickets, which they usually can.

Second, the learning curve for the primary market might be absent or not strong enough. Every concert is unique, so it might be that the primary market does not learn for future concerts that the ticket prices could be higher. Moreover, since the primary market has a lot of bargaining to do with venues and artists for example, they might not be able to use the learning they did on previous concerts for setting higher prices.

Thirdly, maybe the distinction between a legal and illegal secondary market is not so bright as theory suggests. The secondary market might still be more active than can be seen from the outside on the Belgium market. This is because of the aforementioned EU open market on which Belgium operates as well.

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