

PRIVATE EQUITY & PETS

**A STUDY ON THE EFFECTS OF PRIVATE EQUITY ENTRY ON
THE SWEDISH VETERINARY CARE MARKET FOR
COMPANION ANIMALS**

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Private Equity & Pets: A study on the effects of private equity entrance on the Swedish veterinary care market for companion animals

Abstract:

Investigating changes in veterinary care prices in Sweden resulting from the entry of private equity owned clinics and market consolidation. The study uses panel data between 2005 and mid-2016 on veterinary charges for insured dogs to measure the extent to which the growth in price on veterinary services have changed on a per *episode* basis, meaning the collective series of treatments, for a specific diagnosis of a dog. Using research on the fee-for-service healthcare model, monopolization, the utility of longer life and private equity ownership we deduct the hypothesis that prices should grow at a faster rate after the entrance of private equity compared to before. With three different models of estimations: t-tests on monthly aggregated data, OLS regressions and fixed effects regressions with individual fixed effects on the insurance holder level the hypothesis was rejected, finding no indication that the average price has increased at a faster rate during the time of private equity ownership. Instead, the results suggest an unchanged level of growth. However, the data found a strong positive relationship between the insurance level of the pet owner and the price charged per episode. The implications of our findings were then elaborated upon by help of interviews with various, highly invested stakeholders.

Keywords:

Private Equity, Veterinary Care, Market consolidation, Supplier Induced Demand, Moral Hazard

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1. Introduction

The Swedish Venture Capitalists: A tale about power, money and secrets is the title of the cynical 2014 depiction of Sweden's largest private equity firms, their investments and the individuals in charge of them. The book is written by Caroline Neurath and Jan Almgren, two of the country's most publicised economics journalists. Interestingly, one chapter is filled with disheartening statements on how the veterinary care industry has changed as a result of private equity firms entering and consolidating the market. Marjaana Alaviuhkola, veterinarian and owner of Hallands Djursjukhus, voice her concern about veterinarians “losing control to economists” and that “increasing profits will precede what is in the best interest of the animals”. Her concern echo with pet owners’ belief that bills will skyrocket as a result of opportunistic behaviour from private equity firms.

The Swedish veterinary market is highly developed and Sweden has the highest rate of insured companion animals in Europe (Konkurrensverket, 2018). Historically, the market has been characterised by stand-alone clinics run in sole proprietorship, with only a few larger animal hospitals having the capacity to perform more advanced treatments. In 2011, the landscape drastically changed with the entry of the veterinary groups Evidensia and Djursjukhusgruppen (now Anicura) that rapidly consolidated the market by acquiring clinics all over Sweden (Konkurrensverket, 2018). Anicura and Evidensia were founded by the private equity firms Fidelio Capital and Valedo respectively, in mid-2014 the ownership of the veterinary groups was handed over to the two larger and more well funded private equity firms EQT and Nordic Capital.

On the 5th of February 2015, Hans Bolander published an article in Dagens Industri titled: *Folksam rasar mot vinsterna i djurvården* (Bolander, 2015a). In the article Jens Henriksson, the CEO of Folksam, Sweden’s second-largest pet insurer, expressed his fury toward a sudden surge in prices on veterinary care, as a result from the entry of Evidensia and Anicura. 3 days later, on February 8th, there was a backlash. Hans Bolander published another article in Dagens Industri titled: *Veterinärerna rasar mot Folksams kritik* (Bolander, 2015b), where the association for Swedish Animals (Svensk Djursjukvård) denounced Folksams “attempt on regulating a free market” arguing that the change in prices were due to significant development and improvement in the quality of veterinary care that had taken place over a long period of time and was certainly not a result of the entrance of Anicura and Evidensia. The private equity entry is proving to be a chasmic divider of opinion but still, little-to-no publicised research has been done revealing how the veterinary care picture has actually developed.

The Swedish veterinary industry is assessed by the Swedish competition authority (Konkurrensverket) in a report from 2018. The report serves as certain proof that the veterinary market has changed structurally. Critics argue that this change has led to an abrupt

surge in prices and a systematic “over-treatment” of pets. Supporters, on the other hand claim that prices have continuously increased at a steady rate, unchanged by the entry of Evidensia and Anicura. Them being a natural progression of the increased quality and improved standards of veterinary care.

This study aims to provide clarity on the extent to which prices on veterinary care has been affected by the market entry of private equity owned clinics. With no previous in-field studies this paper will, as a theoretical starting point, use studies on the fee-for-service¹ structure of the US healthcare market that existed prior to Managed Care. Focus will be on the physician-patient relationship as well as the related information asymmetry and agency problem. It will also utilise monopolistic theory on price-effects associated with market consolidation as well as studies on the effects of private equity ownership on firm incentives within other industries. Collectively, these theories are predictive of the change in prices on veterinary treatments for diseases, resulting from the private equity intrusion.

We have used a dataset provided by the insurance company Folksam on veterinary treatments of insured dogs for an 11-year period between 2005 and early 2016, we test the hypothesis that prices of veterinary treatments on a disease (or injury) have increase at a faster rate after the introduction of private equity, compared to before the introduction of private equity. The tests encompass three methods of estimation: T-tests, OLS-regressions and Fixed Effects regressions. In short, our hypothesis is rejected by all estimations, with no indication of an increase in the growth-rate of price on treatments for a disease (or injury) in any of the two private equity time-periods compared to the pre-private equity time-period.

The thesis is organised into different parts with subsections. Part 2 provides a more thorough analysis of the background of the veterinary care industry and how it has developed over time, Part 3 provide an overview of the literature used in forming our hypothesis, while Part 4 provides a more in-depth examination of this literature. Part 5 describes the methodological approach used, with the first section covering the econometrical approach and secondly the qualitative approach, Part 6 presents the findings from the estimations and part 7 discuss these findings as well as limitations to the approach, in turn suggesting improvements that could be used for future in-field studies, part 8 contain our conclusive remarks.

¹ A model where healthcare providers receive a fee for each service they provide. This creates a potential conflict of interest as it incentivises physicians to recommend more or more expensive treatments than necessary.

2. Background

This segment introduces the current state of the veterinary care industry in Sweden, putting it in a historical context and highlighting recent structural changes connected to private equity ownership of veterinary care providers. It discusses pet owner's relationship to their pets and how it has changed over time. Lastly, it accentuates how the structural changes together with the incentive structure has led to a state of the market that might be dysfunctional seen from an optimal care perspective.

2.1. The Veterinary Care Industry

An overview of the development of the Swedish veterinary care industry focused on the structural changes that has formed today's market.

2.1.1. The veterinary care industry today

The veterinary care industry in Sweden was assessed in 2018 by the Swedish Competition Authority who categorised the different entities of veterinary care providers into larger animal hospitals and smaller veterinary clinics. The smaller clinics provide a limited range of services that are comparable to primary care within healthcare, while the larger hospitals typically have abilities to carry out advanced treatments.

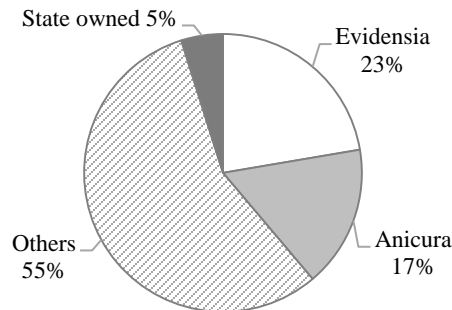
- There are currently 1614 companies providing veterinary care services in Sweden.
- Half of them are run in sole proprietorship and roughly 700 as Limited Companies (Sv. Aktiebolag)
- There are 5000 licensed veterinarians in Sweden out of which approximately 1900 are actively employed (FVE, 2015). Survey data provided by the Federation of Veterinarians in Europe with 290 participating Swedish veterinarians suggest that most veterinarians work in a small-hospital/large-clinic setting employing 11 to 30 people (21%). The rest work either in sole proprietorship, mid-sized clinics or in a large animal hospital setting.

2.1.2. Changes to the veterinary care landscape

The structural shifts within the veterinary care industry over the last 10 years are made evident by the rapidly increasing number of veterinary clinics formed as Limited Companies (Sv. Aktiebolag) (Konkurrensverket, 2018). This change, is to a large extent driven by the creation and rapid expansion of the veterinary care groups Anicura, previously Djursjukhusgruppen, founded in 2011 and Evidensia, founded in 2012 (Valedo, 2019), that transform acquired veterinary clinics to Limited Companies.

In 2016, the total market for veterinary care in Sweden generated an accumulated turnover of SEK 4.4 billion (Konkurrensverket, 2018), where the two most dominant market players, Anicura and Evidensia, together owned 40%. Evidensia is the largest actor, standing for 23% (SEK 1.1 billion) of total net-revenues and Anicura for 17% (SEK 775 million).

Figure 1. Market shares of veterinary care providers measured in revenue

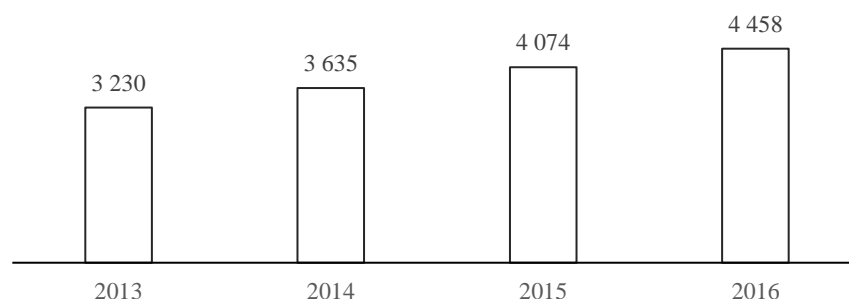


Source Figure 1: Konkurrensverket, 2018

Collectively, the two groups also own a majority share of the veterinary care facilities in Sweden: 32 clinics/13 hospitals and 38 clinics/14 hospitals respectively (Konkurrensverket, 2018).

Earnings data on privately held veterinary care providers show a net-revenue increase of 38% between 2013 and 2016 (Konkurrensverket, 2018), which would translate to a 12% YoY (year-over-year) growth. With Evidensia and Anicura comprising an increasingly large part of the segment, the rapid increase in net-revenues hint on the financial successes of the two franchises. This market study suggests that since the introduction of private equity, the veterinary market has become more centralised, with private veterinary care net-revenues increasing at a staggering rate.

Figure 2. Turnover of private veterinary clinics in Sweden
(million SEK)



Source Figure 2: Konkurrensverket, 2018

2.2. The Changing Pet-Owner Relationship

Companion animals in Sweden are increasingly seen as full-worthy members of the family and every fourth family have either a cat or a dog in their household. This growing sentiment drives higher spending on companion animals, more frequent visits to the veterinarian and other investments to ensure a happy, long and healthy life for the beloved animals. All of this is reflected in higher insurance rates. The total expenses paid by pet owners for their companion animals have risen accordingly: with veterinary costs included, the pet owners in 2014 paid 160% more for their companion animals than they did in 2000 (Konkurrensverket, 2018). Veterinary expenses are the fastest rising costs and now comprise nearly 1/3 of the total expenses for companion animals.

There is no government contribution for pet care so the owners have to pay for the veterinary care themselves or through insurance. However, the high intrinsic value pet owners place on their companion animals make them “price-insensitive” according to veterinarians (Anonymous vet., 2019). Yet, they are slightly more price sensitive for services that are not covered by their insurance (Hoffmann, Lokrantz, Lagerkvist, Hagberg Gustavsson, & Ström Holst, 2017). But since there is no fixed pricing (pricelist), at least none that is shown to the customer, there is little-to no ability to compare prices. This implies that for a specific treatment, the price-picture can be completely unknown to the pet owner, which applies to specialist- as well as more standardised treatments.

2.3. Incentive Structure

The Swedish veterinary market is similar to the US healthcare market, in the period while they were using the fee-for-service model, in several ways. Primarily in the dynamics between physicians and patient, between patient and Insurance Company as well as how the incentives for the different market participants are structured.

Viewing the industry in terms of stakeholders they can be divided into; veterinarians, pet owners and insurance companies. The interactions between these three groups are mostly through the pet owners, while they all interact with each other in one way or another.

The interaction between pet owner and veterinarian has some issues due to the information advantage (elaborated on in section 4.1.) that the physician/veterinarian possess in most cases. This entails that the patient/pet owner is less informed and need to trust that the recommendation given by the physician/veterinarian is the most favourable for them considering their situation. However, there is ample evidence that doctors are inclined to repeat similar decisions and are exquisitely sensitive to the incentives they face (Loewenstein, Volpp, & Asch, 2012). Physicians tend to recommend the tests and treatments they will financially benefit from. For example, it has been observed that physicians that are

paid a bonus for specific procedures tend to recommend more of those procedures, on average, than those paid on a capitated basis (Shafrin, 2010).

This fact leads to the conclusion that there is a tendency to over treat² i.e.: More treatment is better, default to the most expensive option, seen from the veterinarians' perspective. And based upon the fact that there are no standard prices and a fee-for-service structure there is money to be made in billing for anything and everything.

In the other end, the interaction between pet owner and insurance company also has issues. Around 90% of all dogs in Sweden are insured and many of them have expensive and very extensive insurances (Agria, 2017). This fact leads to a principal-agent problem (elaborated on in section 4.1.) and a case of *moral hazard*, where the pet owners (agent) take advantage of their insurance provided by the insurance companies (principals). The fact that pet owners does not, in most cases, pay for the whole treatment cost but rather a small fee³, the so called insurance deductible, makes them willing to consume more care for their pet than what they would have if they were to pay the whole cost. In other words, they will have a tendency to over treat their pets and might therefore not act in the interest of the insurance company. Due to the increasing costs of veterinary care, the insurance companies have raised their insurance fees and altered insurance terms. The implications are that increases in care costs, which are paid mostly by insurance companies, are passed on to care consumers in the form of higher insurance fees and worse insurance agreements (Gaynor & Town, 2012).

The interactions between the veterinarians and the insurance companies are less frequent but the two are dependent on each other. If the insurance companies would not supply insurance for companion animals, less people would be able to afford veterinary care and this would most probably lead to a less developed and less accessible veterinary care. If the veterinarians did not exist there would be no need for pet owners to get any insurance except for life insurance.

To conclude, all parts are equally important for the industry to function and continue to develop as a whole. However, the veterinarians have no incentives today to lower their prices. Since there is no cap for billing and as long as there is demand from pet owners, they rather have incentives for the opposite. In return to increased costs paid by insurance companies, they will have to raise insurance premiums or adjust insurance terms (Folksam, 2018).

Taking these considerations into account, we assume that treatment costs and treatment volumes could be expected to have risen above optimal levels, driven by both pet owners and the veterinary care suppliers.

² Consume more or overly advanced care than what is optimal seen in terms of cost vs. effect

³ Depending on what type of insurance the pet has it can differ how the cost is structured for the owner

3. Literature Review

Understanding how market consolidation and inflow of private equity capital can affect markets is essential since it can help to (i.) explain certain events and changes in market dynamics as well as (ii.) help governments with legislation to mitigate unsolicited changes.

This paper will add to the body knowledge by considering the incentive structure in the veterinary market and how it can lead to supplier induced demand (Labelle et al., 1994), how higher market concentration can support higher pricing (Kaiser, 2015) and how these theories together with the financial orientation of private equity firms (Kaplan & Stromberg, 2009) can help to explain the development of the Swedish veterinary market over the last decade.

There is close to no published studies or literature on the veterinary market for companion animals in Sweden, or in any country for that matter. Consequently, we will utilize, to a great extent, research and observations from the healthcare market, in particular the US healthcare market before Managed Care, in this paper as a standpoint. The reason is that there are several clear similarities between the two markets in terms of dynamics. Firstly, the relationship between the patient/pet owner and the physician/veterinarian are similar in the way that the physician/veterinarian has an information advantage and the pet owner has to trust that the advice they get is the best for their particular situation. Secondly, because the incentive structure that come with the fee-for-service payment model are very similar. Lastly, the relationship between patient/pet owner and insurance company are similar in the way that the patient/pet owner will have a tendency to over treat themselves/their animals because a sizeable amount of the costs are covered by insurance.

Supplier induced demand is derived from information asymmetry and an agency issue and it is a widely researched phenomena in healthcare economics (Labelle, Stoddart, & Rice, 1994). The theory implies that physicians, due to financial incentives, use the information asymmetry to their advantage and sell an abundant amount of care to the patient.

Monopoly pricing refers to the theory of how a firm set prices when they lack any viable competition in the market (Miller, 1982). There are no true monopolies in the healthcare nor the veterinary market. However, since Evidensia and Anicura have made several horizontal acquisitions over the course of their existence they are the two biggest pet care providers in Sweden and have close to a geographical monopoly in some areas (Konkurrensverket, 2018). Similar development has been seen in certain states across the US and several econometric studies have revisited the relationship between price and hospital concentration; their findings have been that increases in hospital market concentration lead to increases in the price of hospital care (Gaynor & Town, 2012). This fact is assumed to hold true for the veterinary market as well.

In this paper, we also assume that the quantity of treatment is not only affected by demand induced by suppliers but also by the fact that prolonged life and improved life quality for companion animals have a high marginal utility at all times. This along with the high insurance rate and a low price sensitivity (Robert E Hall and Charles I Jones, 2007) will contribute to quantities staying the same or increasing over time.

Private equity firms refer to closed-end investment funds⁴, generally, arranged as limited partnerships that acquire and restructure private companies. To be able to buy large stakes, enough to control a company, in several companies the private equity firms use substantial amount of debt, for leverage, which is collateralized by the target company's operations and assets, as financing in what is referred to as a Leveraged Buyout (Segal, 2019). Private equity firms are considered to be more financially oriented compared to the average company (Jensen, 1997). This statement is derived from their use of stronger financial incentives in their companies compared to other, publicly traded, companies (Leslie & Oyer, 2008) as well as the fact that the goal of a private equity fund is to generate high Return on Investment to their investors (Kaplan Stromberg, 2009). This could partly explain why prices would increase and why veterinarians would exploit their information advantage, to increase treatment volumes, to a greater extent when their clinics are acquired by a private equity firm.

3.1. Research Question

How does the increasing level of private equity ownership and market consolidation affect veterinary treatments of insured companion animals in Sweden in terms of price and volume per *episode*? The study encompasses treatments by Swedish veterinary practices on dogs insured by Folksam, with dogs serving as proxy for companion animals in general. We limit ourselves to the time period 2005-2016 with particular focus on the changes in price and volume of service provided per episode. Volume refer to both the number of visits in an episode as well as specific treatments performed during one of these visits. There is no possibility for us to disentangle the price from the volume in the data as changes in both will show as a change in price per episode.

These changes are observed in relation to the entry of private equity ownership in 2011 as well as the entry of more capital-abundant private equity in 2014.

Definition of an *episode*: an *episode* is the series of veterinary treatments for a diagnosis on the disease or injury of a dog⁵. Further detailed in section 5.1.2.

⁴ Closed-end funds refer to the fact that investors cannot withdraw their money until the fund is terminated

⁵ Since we do not have unique identifiers for each dog we use insurance holder (dog owner) as a proxy

3.2. Hypotheses

Our perception of the Swedish veterinary market for companion animals in general and for dogs in particular is conceptualized by the entrance of private equity and increased market concentration. Based on the theories and examples emphasized above we expect to see an increased growth in price for veterinary services. All treatments linked to a specific disease or injury goes under term episode, explained in detail under *Methodology* (section 5.1.3).

We are aware of the effects on the quality of treatments that may have come as a result from the same, changing market dynamics that we are examining. But due to the very subjective determination of quality we exclude it from the model, leaving it instead as a point of discussion. For the thesis we deduce the following hypothesis:

H1: The price will **increase at a faster rate** in the time-period following the market entry of Evidensia and Anicura (prev. Djursjukhusgruppen). The increase in price development will be even greater in the ensuing time-period, after the change in ownership of Evidensia and Anicura to the more well funded private equity firms EQT and Nordic Capital.

4. Theoretical Framework

4.1. Private Equity Firms

Our research question stem from the entry of private equity firms onto the Swedish veterinary care market. In this section we clarify what a private equity firms is, how they differ from other companies and why they would be likely to drive the stated change in veterinary prices per episode.

4.1.1. What is a Private Equity firm?

Private equity firms (referred to as PE firms) emerged in the 1980s and are closed-end investment funds that purchase and restructure/improve companies in what is referred to as a *Leveraged Buyout* (referred to as LBO). In a LBO the PE firms use a relatively small portion of equity and a substantial amount of debt, which is collateralized by the target company's operations and assets, as financing (Segal, 2019). The equity used as financing mainly come from high net-worth individuals, companies, pension funds and other institutional investors.

A PE fund has a fixed life-span of 10-13 years. Generally, the PE firm have up to 5 years to invest the capital in companies of their choice and then an additional 5 years, which can be extended three years, to return the money to the investors (Kaplan & Stromberg, 2009).

PE firms are financially oriented and their main goal is to generate high Return on Investment to their investors – and that benefit the PE professionals as well (Kaplan & Stromberg, 2009). Jensen (1997) projected that the PE-model would become the superior organizational form. He argued that PE firms combined a lean organization, concentrated ownership and ambitious incentives for the PE professionals. The PE firm applied performance-based managerial compensation to create incentives, highly levered capital structures, and active corporate governance. This organizational form was, according to Jensen, superior to the ones of the usual public corporation.

4.1.2. Compensation structure

The PE firm's compensation is made up from three components: i. A management fee as a percentage of the total committed capital, usually around 2 %. ii. A share of the funds profits, called carried interest, that exceed the funds specified hurdle rate⁶, usually 20% . iii. Some

⁶ The hurdle rate is the specified level of return that the PE firm perceive as reasonable for the fund and it acts as a minimum for what the investors can expect

PE firms charge deal and monitoring fees to the companies in which they invest. (Kaplan & Stromberg, 2009)

4.1.3. How do they create value?

There exist separated opinions about what PE firms do in order to improve the companies in which they invest and how they create value for themselves and their investors. There are critics that claim PE firms do not create any operational nor economic value but instead take advantage of tax benefits and use their superior information to transfer value between stakeholders. Some even claim that PE firms depend solely on market timing and mispricing between debt and equity markets. Supporters on the other hand argue the opposite, that PE firms implement several actions and thereby improve the operations and the level of efficiency to create economic value.

Kaplan & Strömberg (2009) proposes that there are three categories that the value-creating actions used by PE firms can be divided into; *Governance-*, *Financial-* and *Operational engineering*.

Governance engineering refers to the fact that PE firms commonly gives the top management financial incentives through a large equity upside consisting from stock and options. Today this is normal in non PE-owned companies as well but the incentives are generally stronger in PE-owned companies (Leslie & Oyer, 2008). It is also typical for PE firms to require their management to invest a substantial amount in the company so that they have a significant upside but also a significant downside (Kaplan, 1989a, 1989b; Jensen, 1997). This theory claims that management possesses the skills and information on how to improve firm performance but lack incentives to implement them, and that PE firms know how to take advantage of this (Acharya, Gottschalg, Hahn, & Kehoe, 2012). Furthermore, PE firms are more actively involved in governance work and have more frequently meetings than comparable public boards (Gertner & Kaplan, 1996).

Financial engineering refers to the increased leverage that the acquired company takes on in the LBO. This increased leverage puts pressure on management not to waste money on unprofitable investments and projects by increasing the debt payments and hence decreasing the available amount of cash (Jensen, 1997). In addition, increased leverage creates possible tax deductions through larger tax shields and that in turn can increase firms a value.

Operational Engineering refers to industry and operational expertise that PE firms possess and apply to their investments in order to add value. A trend seen during the last decades have been for PE firms to employ former operating professionals that possess industry specific and valuable knowledge about the industries the PE firm invests in. That knowledge is then used to find attractive investments, to create value adding plans and to implement those plans in the acquired companies. Such plans might include cutting costs,

hiking prices, repositioning of the company, productivity improvements, acquisition opportunities or changes in management. (Gadiesh & MacArthur, 2008)

4.1.4. Conclusion

To conclude, PE firms are more active in corporate governance, have the ability to incentivize management to a higher degree while they also possess the same or better operational skills than industry peers. Taking all that into consideration this paper argue that PE firms are more financially driven and that they, in a better way than the veterinarians themselves, would be able to capitalize on a dysfunctional market such as the Swedish veterinary market. But if that is done by increasing prices and over-selling expensive treatments or just by meeting an already existing/growing demand is unclear.

4.2. Supplier Induced Demand

When building our hypotheses, we find an academic foothold in the literature on Supplier induced demand (SID) (Labelle et al., 1994). The concept has been introduced in health economics as a description of the theory that physicians exploit information asymmetry and their agency position in the physician-patient relationship to make patients consume an abundant amount of care. This is present when the physician has financial incentives to sell more treatments, e.g. in a fee-for-service payment structure.

Information asymmetry is the result of corrupting the basic microeconomic assumption that all market participants are fully informed meaning that the consumer knows as much as the seller about a given product. Nobel laureate George Akerlof (1970) is commonly credited with introducing the idea of asymmetric information through the Lemons problem in the used car market. His findings are valuable to the SID discussion not only because it highlights the prevalence of asymmetric information and how it can be used to create market inefficiencies, where the seller knows more about the true value of the car than the buyer, but also because his findings intertwine information asymmetry with the agency issue.

Agency is when the principal (i.e. the consumer of a service) delegates the decision-making authority to the agent (i.e. provider of a service) because the principal is relatively uninformed in a specific matter and resolves this deficiency by trusting the informed agent to make the right decision for them.

Returning to the notion of SID, it is argued that by having a higher degree of information, physicians have an opportunity to shift the patients demand curve to the right, i.e. consume a greater amount of the physicians' services compared to if the patient would have the same information as the physician. In other words, SID concretize the agency

problem that the Physician (agent) does not act as a perfect agent for the patient (principal) (Folland, Goodman, & Stano, 2007).

In this thesis we assume that the similarities between the veterinarian-pet owner relationship compared to the physician-patient relationship are sufficiently strong to say that SID is prevalent in the veterinary market as well. This assumption is based on the increasingly high levels of emotional investment pet owners have in their animals (Hoffmann et al., 2017), the information asymmetry and the agency situation where the pet owner (principal) is dependent on the veterinarian (agent) to make the right decision and provide the right kind as well as the right amount of care. Furthermore, we believe that the current fee-for-service payment structure strongly incentivize the veterinarians to induce demand.

Our assumption is that the financially oriented PE firms, being the owners, will exploit this moral hazard to a greater extent than what the veterinarians themselves previously did.

4.3. Marginal Utility of Longer Life

A classic assumption in economics is that an individual's choices regarding their consumption in a period of their life are made in order to maximise their lifetime utility. Lifetime utility are assumed to depend on consumption, where more consumption is always better (Jones, 2014a).

Another assumption in the model is that consumption, independent of when it occurs, exhibits decreasing marginal utility (Jones, 2014a). This assumption implies that each additional unit of consumption raises utility by less and less. This assumption is rather intuitive, for example; eating at a nice restaurant once a week is a nice treat but after 10 days in a row another night of eating at a fancy restaurant seems much less desirable.

An exception to the assumption of diminishing returns of consumption has shown to be healthcare. This is due to the fact that healthcare, or veterinary care in our case, could possibly lead to a longer lifespan for the patient/pet. Research indicates that longer life become more valuable as we become older (remaining life expectancy decreases) and/or richer (Robert E Hall and Charles I Jones, 2007), explicitly implying that such consumption does not show the same diminishing returns as other objects or services.

The above mentioned statement suggests that health-/veterinary care spending, as a share of total spending, should increase over time as people/pets get older and accumulated wealth increase over time (Robert E Hall and Charles I Jones, 2007). It also suggest that consumer price sensitivity when it comes to health-/veterinary care should be relatively lower compared to other goods and services. The price sensitivity for veterinary services is also affected by the fact that around 90% of all dogs have insurance so the pet owners does not pay the entire treatment cost themselves. The lower price sensitivity, together with the

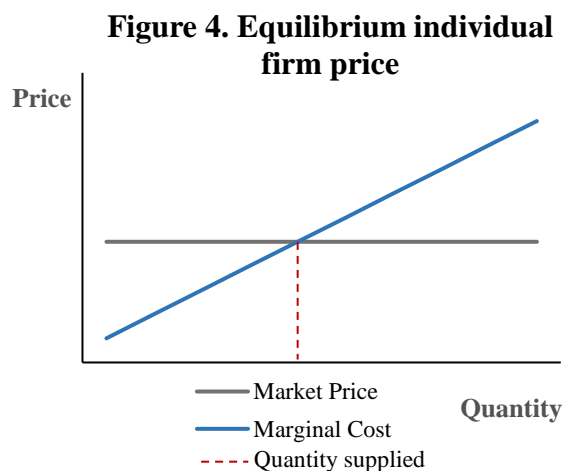
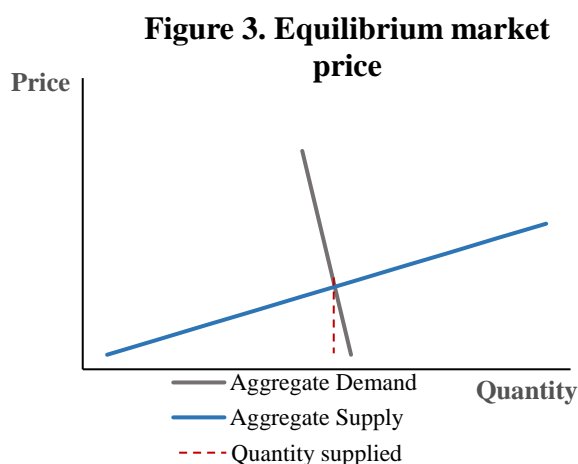
theories of supplier induced demand, is crucial to comprehend how the quantity of veterinary care has evolved over time and how it react to changes in price.

4.4. Monopoly Pricing

4.4.1. Perfect competition

Robinson (1934) describe perfect competition as a theoretical market form in which there are a large number of buyers and sellers that buy and sell homogenous products. Because the number of participants are large no individual buyer or seller has any influence over the price, they are all price takers. Also, all market partakers have perfect information to compare prices and utility gained from each good (Robinson, 1934).

In perfect competition, the price of a product or service is set to where the market supply meets the market demand, in equilibrium – the market is the price maker. The individual firm becomes a price taker because its chosen price come from the industry. That price is equal to the marginal cost of producing that product or service and is the price that will maximise profits, or in other words, put it at zero (Jones, 2014b). This assumption indicates that no returns to scale can exist.



4.4.2. Veterinary market – increased monopolistic powers

It is widely known that perfect competition is a theoretically constructed market form that does not exist in real life. Therefore it is no surprise that the prices in the veterinary industry, or any industry for that matter, deviates from the marginal cost of producing them.

In our situation however, serial acquisitions and takeovers of other veterinary clinics by big players such as Evidensia and Anicura have led to geographical monopolies (Konkurrensverket, 2018). This increased market concentration have led to increased

monopolistic powers. Economic theory states that increased market concentration and monopolistic power will result in a price increase (Perry & Porter, 1985) and studies from the US healthcare market have shown the same results (Rosenthal, 2018). This is because the individual firm is no longer a price taker. The increased market power has made them price makers, implying that a profit above zero can be made.

This theory tells us to expect to see an increase in prices for a treatment after the entry of Evidensia and Anicura and the consolidation of the market. Other cases suggest higher price should lead to a reduced quantity demanded, but considering the Supplier Induced Demand and the low price sensitivity this will most likely not be the result in our case.

4.5. Contribution to Existing Research

Little research has been made on how ownership- and structural changes have affected the veterinary market in Sweden, and no previous research have done so by employing theories from healthcare economics or by using theories on monopolistic- effects. The thesis will be the first of its kind to detail how private equity intrusion and market consolidation has affected veterinary market prices.

5. Method

Our method to test if there is support for the hypothesis that there has been a price growth-increase on a price per episode basis constitutes of two parts: Part 1 being quantitative and Part 2 qualitative. The qualitative Part 2 will primarily serve as guidance and complement to the empirical findings in Part 1.

5.1. Part 1: Quantitative

This section describes the study design. First, it offers an in-depth description of the data structure as well as our interpretation and definition of key variables. Second, it presents the thesis' framework of analysis, built around three separate models - Model 1, Model 2 and Model 3 – that use different econometrical estimations. It then highlights considerations and limitations in interpreting the results.

5.1.1. Dataset

The dataset was provided by the second-to-largest companion animal insurer in Sweden, Folksam. To get the most consistent and best documented effects, we limit ourselves to only use dogs as a proxy for companion animals. This gives us observations of veterinary treatments on dogs between 2005 and 2019. Over the studied period, Folksam transitioned between two data-handling systems. The effort to merge the systems was fruitless due to a too different underlying structure, ultimately leading us to abandon the data from March 2016 onward. The studied time periods are still well covered using only the one data-system, with a total number of observations of 622 245. When excluding uninterpretable insurance specifications, 486 035 observations remain. Observations are synonymous to episodes in this thesis.

The data supplied by Folksam is representative of insured, veterinary treated dogs in Sweden. This specification is important to make, since it is likely that veterinary prices may differentiate quite distinctly over time between insured and uninsured dogs. This is due to the higher price sensitivity of the owners of uninsured dogs, as well as a moral hazard (Akerlof, 1970) between dog owners and insurance companies. Hence, the study results do not necessarily reflect veterinary price changes for uninsured dogs.

5.1.2. Explaining Episode and defining Vetcharge

The definition used for an episode is the series of treatments over a 125-day time-span, with the same diagnostic verdict, bound to a date of injury and the insurance license holder.

This definition is unruly but more sensible when explained: an episode captures all treatments made on a specific injury over the course of 125 days from the date of injury. The treatments are connected to the injury if, and only if, they are identified as treatments on the by-veterinarian set diagnosis at the date of the first treatment. Such diagnoses can, for example, be claw fractures, pruritus, or other.

A consequence of this interpretation is that if a dog is treated for an injury resulting in multiple diagnoses, for example claw fracture and pruritus, then the treatments will be encoded into different episodes: either the treatments will be for the episode treating pruritus or for the episode treating the claw fracture.

Normally, date of injury is encoded as the first day of veterinary treatments in an episode. We consider 125 days to be a sufficient period of time to cover the duration of a series of treatments linked to the same injury, but still short enough to reduce the risk of capturing two separate injuries with the same diagnosis for the same insurance holder, which would cause two episodes to be encoded as one. The MATLAB code used to group the different treatments into episodes may be provided upon request.

Using this definition of an episode, we aggregate the associated flow of payments. These payments have either been made by the insurance holder (through and indispensable or a deductible) or the insurance company. This gives us all charges made by veterinarians on treatments over the course of the episode, and hence the total price for the specific episode. The total price for the episode is aptly named Vetcharges, an abbreviation of veterinary charges. The deflated value of Vetcharges is the independent variable used in all estimations.

5.1.3. Time-periods

The time-periods under consideration are: time period 0, 2005-2010, being the pre-private equity time period; time-period 1, 2011-June 2014, when Anicura and Evidensia were founded and private equity ownership was first introduced to the market through Valedo and Fidelio Capital; and lastly time-period 2, July 2014-2016, marking the entry of the more capital-abundant private equity firms EQT and Nordic capital.

5.1.4. T-tests

Model 1 are a series of t-tests that aim to capture if there has been a change in price development on episodes between the different time-periods by aggregating the episodes on a monthly level. This approach avoids issues with correlation of the error terms associated to performing the succeeding OLS estimation on time series data. We have conducted three Means of Independent Samples t-test where each sample correspond to one time-period;

comparing the mean-development⁷ rate in period 0 vs. period 1; period 1 vs period 2 and period 0 vs. period 2. The t-test are constructed to see if there is a significant difference in price development between the periods.

5.1.5. OLS Regressions

Model 2 comprise the OLS regressions to measure the effect of the private equity intrusion on price per episode. This method closest resembles that of a time series analysis, regressing veterinary price per episode on a series of controlling variables:

$$Vetcharges_{it} = \beta_0 + \beta_1 time_t + \beta_2(entry1_t * time_t) + \beta_3(entry2_t * time_t) + \beta_4 High_Insurance_{it} + X_{it} + \varepsilon_{it}$$

Vetcharges represent the deflated price charged by a veterinarian on a per episode basis; time represent the baseline growth level over time (being period 0); entry1 is a dummy variable that take on the value 1 with the market-entry of private capital in 2011; entry2 is a dummy variable that take on the value 1 with period 2 and the entry of capital-abundant private equity institutions in July 2014. Hence β_2 and β_3 capture the difference in how price per episode develops in period 1 and period 2 relative to period 0. β_4 capture the effect of having a high level of insurance, which is incorporated as a dummy variable, High_Insurance, that take on the value 1 if the insurance coverage is SEK 50 000 or higher. By having Vetcharges on a per-episode basis it allows us to control the results by type of diagnosis, X_{it} . ε_{it} is the error term.

5.1.6. Fixed Effects Regressions

To measure the time-period effects on price per episode while controlling for unobservable individual-specific heterogeneity that may or may not influence the independent variables we add a fixed effects variable in the regressions. Therefore, if the “unobserved variable does not change over time, then any changes in the dependent variable must be due to influences other than these fixed effects” (Stock and Watson, 2003, p.289-290).

Due to the data structure, the fixed effects regressions can only be employed on a subset panel of episodes that have a uniquely defined date-to-insurance holder combination.

The total number of observations in these regressions are 334 647, studying roughly 142 000 Insurance holders (independent clusters):

$$Vetcharge_{it} = \beta_0 + \beta_1 time_t + \beta_2(entry1_t * time_t) + \beta_3(entry2_t * time_t) + High_insurance_{it} + \delta_i + X_{it} + \varepsilon_{it}$$

⁷ The mean development rate is calculated as a percentage difference in total monthly prices on episodes (MPoE) relative to the previous month:

$$\frac{MPoE_t - MPoE_{t-1}}{MPoE_{t-1}}$$

Again, as in the OLS regression β_2 and β_3 capture the difference in how price per episode develops in period 1 and period 2 relative to period 0. The control variables are the same as in the preceding OLS regressions. δ_i capture individual fixed effects. ε_{it} is the error term.

5.1.7. Econometrical considerations

5.1.7.1. Data structure

The dataset has a panel data structure, meaning that one individual dog can appear at multiple occasions over time in the dataset. However, treating the data strictly as panel data when performing estimations poses challenges due to variable definitions:

- i) The dataset consists of multiple observations defined as episodes that are not unique to the individual identifier “insurance holder” and the date of injury. To make it possible to perform panel data regressions correctly we chose to stochastically drop duplicate episodes with the same insurance holder and date of injury. This slightly reduce sample representativeness and ability to make inferences about the population.
- ii) Since the individual identifier, being insurance number, is not dog-specific (the insurance number is reflective of an insurance holder, commonly the dog owner) we cannot assume it is the same dog that re-appears in the dataset. This makes panel data estimations slightly imprecise and questions the quality of fixed effects estimation. Not controlling for the “re-appearing” dog on the other hand leads to autocorrelation between the observations, underestimation of standard errors and exaggerated significance levels.

The solution for the data structure issue revolves around performing the three-model analysis above. The t-tests on monthly aggregated data, the OLS regressions treating the data as a time-series and the fixed effects regression performed on a unique “day-to-insurance holder” panel data subset of observations. Due to the different, model-specific ways of estimation, the interpretive limitations are also model-specific. Hence, consistency in findings across models are more statistically robust than what they would have been independently.

5.1.7.2. Non-stationary dependent variable

With the dependent variable being non-stationary, meaning it is likely to be subject to chocks over time, resulting in a shifting of the distribution of the mean and variance over time, autocorrelation and heteroscedasticity are potential issues. To be able to control for both autocorrelation and heteroscedasticity we opt to use Newey-West standard errors without

time-lags in the OLS regressions. In the fixed effects model, we use Stata's xtreg package, with clustering at the individual level.

The potential corruption of basic MLR assumptions above are definite issues to the statistical process in the OLS regressions and as such we need to interpret the significance of our findings very carefully. Still, these points are not central to the research question at hand. The main interest lies in the size of the beta coefficients of the returns to time interactions.

5.1.7.3. Statistics programs

Statistical analysis is conducted using Stata 15.0.

5.2. Part 2: Qualitative

This section discusses the purpose and structure of the qualitative information used in the thesis.

5.2.1. Qualitative methodology introduction

The second part of our methodology covers the approach used to shed light on empirical findings and see how they reflect on the perceived reality by various stakeholders. Part 2 is both supportive and inductive since it attempts to answer some of the questions imposed by our empirical findings as well as open up the possibility for new questions. The approach is to conduct interviews, in favour of other qualitative methods, as they allow exploration of the individual perspective and stakeholder heterogeneity; an in-depth perspective of the perceived changes private equity firms have imposed on the Swedish veterinary care industry.

5.2.2. Interview structure

The interviews are flexible, conversational and only semi-structured to allow for a shift in focus from being on providing validity and reliability to gaining more in-depth, personal and experiential data from the respondents (Bryman, 2008). We believe that conducting our interviews in this way gives the most dynamic relationship to our empirical data from part 1. However, the confirmatory nature of the underlying questions as guided by the empirical findings still force us to adopt a more structured approach than if the qualitative research was exclusively inductive (Silverman, 2000). Therefore, the interviews follow certain thematic topics: "if, and if so how private equity firms influence veterinarians without having oversight of the daily operations", "what probable reasons there are for the development in prices on veterinary services" and "is there a possibility to adjust our findings on price increases to the quality development of veterinary care".

5.2.3. Conducting the interviews

Based on the incentive structure within the veterinary care industry, different stakeholders are interviewed to try and capture an as wide picture as possible. The interviewees are selected on the premise of representing conflicting incentives and should accordingly pursue widely different agendas. We expect that their responses to our thematic questions shift accordingly. The interviewees are: The group communications manager at Anicura, An anonymous experienced veterinarian who is running a mid-sized clinic acquired by Evidensia, The former Chairman of Evidensia and The pet business area manager at Agria.

Through all interviews, we cover the thematic topics detailed in Interview structure (section 5.2.2.).

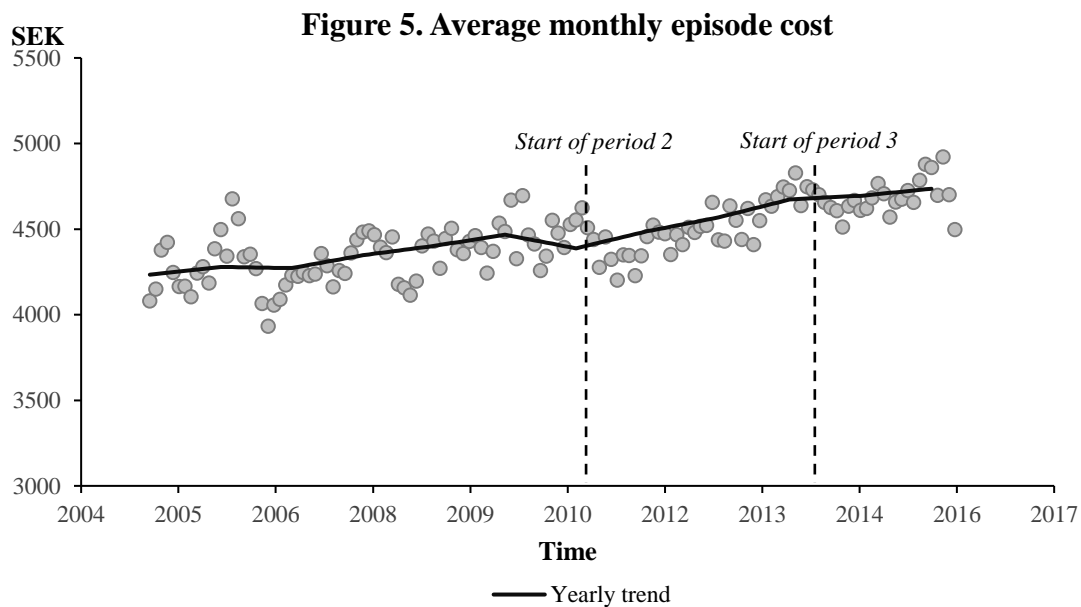
6. Results

This section presents the results from the study, including a commentary on the significance of our findings in relation to stated hypothesis and highlights additional findings.

6.1. Figures and Visual Results

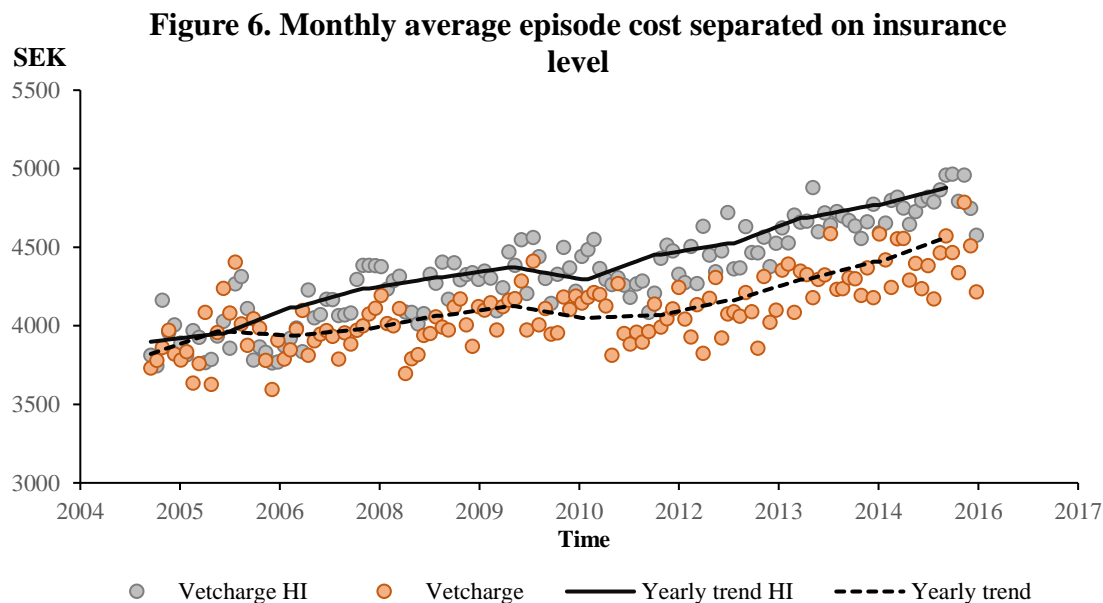
A preliminary, graphical illustration of the data is presented to swiftly get an idea of how the prices per episode have developed, on a monthly aggregated level, over time. The registration for the cost of an episode is the start date of the entire episode, i.e. treatment episodes that run over several months registers under the first date of the episode. All costs have been adjusted for inflation.

Figure 5. depict how the monthly average cost per episode have developed over time:



When aggregating the data on a monthly level there are no striking changes in growth pattern between the different time-periods. However, the visible results may be misleading so, to be certain, a series of t-test are run on the data presented above. The data is then disaggregated to introduce more variables and provide a basis for more rigorous testing.

To examine the moral hazard between pet owner and insurance company we analysed the average price per episode between individuals with high insurance (*Vetcharge HI*) and individuals with lower insurance by plotting the monthly average cost per episode and separated out the episodes that had high insurance (>SEK 50 000):



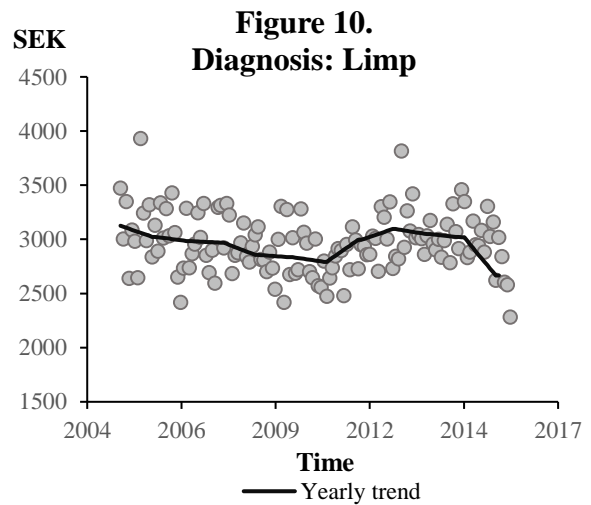
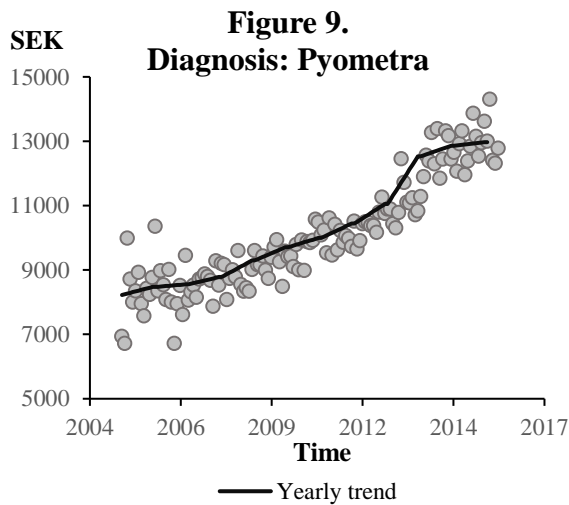
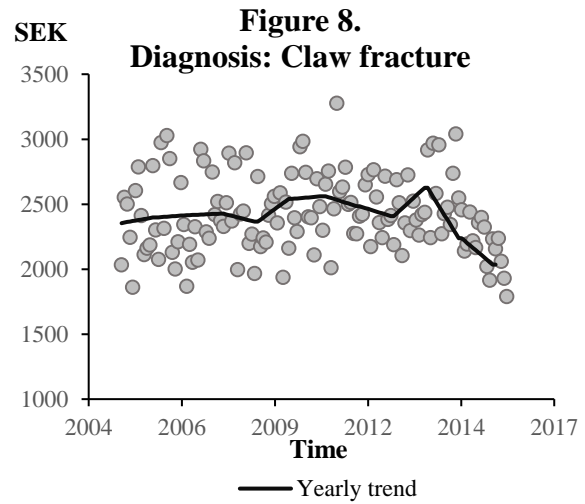
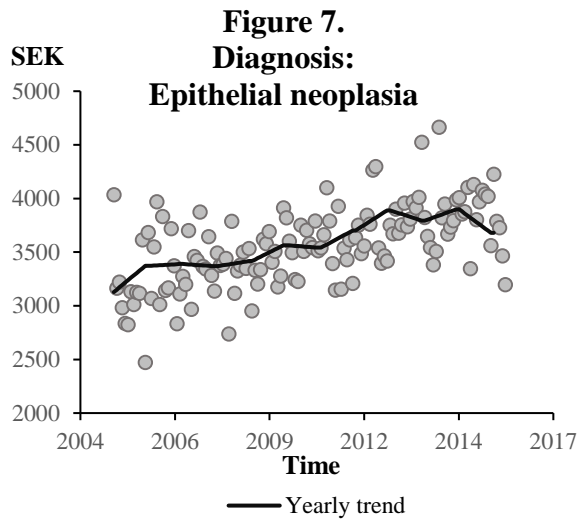
From *figure 6* we can see that no visible increase in per episode price growth can be identified and that the two groups follow parallel growth trends over time. But from 2006 onwards individuals with high insurance have a mean cost per episode that is approximately SEK 300 above individuals with lower insurance.

This indicates that the moral hazard between insurance holder and insurance company is present and that individuals with higher insurance have a tendency to treat their pets more or use more expensive treatments. All the same, it could be because veterinarians induce demand to a greater extent when a pet owner have a high insurance.

To see if there is a difference between diagnoses we selected the four most frequent diagnoses and graphed the monthly mean for their per episode cost. The diagnoses are: (i.) Epithelial neoplasia⁸, (ii.) Claw fracture, (iii.) Pyometra⁹ and (iv.) Limp.

⁸ Neoplasia is the term for various types of abnormal growths.

⁹ Pyometra is defined as an infection in the uterus. Pyometra is considered a serious and life threatening condition that must be treated quickly



From *figures 7-10* above it is clear that the development in price have been different between diagnoses. The mean episode price for Pyometra has increased considerably over the periods while both Claw fracture and Limp have experienced a diminishing development in mean price per episode.

This difference between diagnoses tells us that there is not a development in per episode price that is applicable for all diagnoses. However, the data does not let us analyse the underlying components of this variance. But it do point out that the perceived price development in the industry could be dependent on what diagnoses that have been analysed.

6.2. Model 1: T-tests

Figure 5 in section 6.1., does not visually show any significant increase in price per episode growth over the time-periods. But to be certain that there is no difference between the three periods we conducted independent t-tests at the 5% significance-level with the null hypothesis (H0) that the samples are equal on average in terms monthly price increase:

Table 1.
Independent Two-Sample t-test on mean Price per Episode
monthly growth for Period 0 relative to Period 1

Mean values				
	Period 0	Period 1	Difference	n
Price/Episode Development (%)	.0019402	.0012112	.000729	113
Std. error	(.0037)	(.0254)	(.0057)	
p-values	Pr(T < t) = 0.5510	Pr(T > t) = 0.8979	Pr(T > t) = 0.4490	

*p<0.05, two-sided test

Table 1 shows the test for difference in monthly mean growth rate between period 1 $\approx 0.19\%$ (2.28% yearly) and period 2 $\approx 0.12\%$ (1.44% yearly). With a significance level of $p < 0.8979$ it is impossible to discern any difference in growth in price per episode between the periods. Hence, we cannot reject the null hypothesis that there is no difference in price growth between period 1 and period 2.

Table 2.
Independent Two-Sample t-test on mean Price per Episode
monthly growth for Period 1 relative to Period 2

Mean values				
	Period 1	Period 2	Difference	n
Price/Episode Development (%)	.0012112	-.0016576	.0001961	65
Std. error	(.0039)	(.0049)	(.0031)	
p-values	Pr(T < t) = 0.6717	Pr(T > t) = 0.6566	Pr(T > t) = 0.3283	

*p<0.05, two-sided test

Table 2 tests a similar hypothesis as in Table 1 with the difference that the mean monthly growth rate in price per episode for Period 1 $\approx 0.12\%$ (1.44% yearly) is compared against the

mean growth rate for Period 2 \approx - 0.17% (-2.04% yearly). With a significance level of $p < 0.6566$ we cannot reject the null hypothesis that there is not any difference in growth in price per episode between period 0 and period 2.

Table 3.
Independent Two-Sample t-test on mean Price per Episode
monthly growth for Period 0 relative to Period 2

	Mean values			
	Period 0	Period 2	Difference	n
Price/Episode Development (%)	.0019402	-.0016576	.0028688	94
Std. error	(.0037)	(.0049)	(.0064)	
p-values	Pr(T < t) = 0.6941	Pr(T > t) = 0.6117	Pr(T > t) = 0.3059	

* $p < 0.05$, two-sided test

The final t-test presented in Table 3 tests the mean monthly price per episode development for period 0 \approx 0.19 % (2.28% yearly) and for Period 2 \approx - 0.17 % (-2.04% yearly). With a significance level of $p < 0.6117$ we cannot reject the null hypothesis that there is no difference in growth in price per episode between period 0 and period 2.

6.2.1. Implications for the thesis hypothesis

Contradicting H1. The t-tests implies no significant increase in per episode price growth between the time-periods. In fact, looking more closely, the opposite seems more likely but cannot be stated with certainty. The results shows that the entrance of private equity firms on the market in 2011, as well as the entry of more capital-abundant private equity firms in 2014, have not led to the expected price development. The average price has increased over time but there is no indication that this price growth would have been amplified by the entrance of private equity firms and the following market consolidation.

However, the results provided are on an aggregated level and may be overlooking many, potentially crucial aspects. That is why we include Model 2 and Model 3 in the data analysis.

6.3. Model 2: OLS Regression

Table 2
OLS Regression estimates on Veterinary price per episode over time

	(1)	(2)	(3)
	Vetcharge	Vetcharge	Vetcharge
Time in years	80.629*** (2.165)	96.443*** (5.350)	83.891*** (5.166)
Rettime1		-0.078*** (0.014)	-0.041** (-0.013)
Rettime2		-0.051* (-0.020)	-0.001 (-0.020)
High Insurance			413.5*** (12.760)
<i>N</i>	486035	486035	486035
<i>R</i> ²	0.003	0.003	0.099
adj. <i>R</i> ²	0.003	0.003	0.099

t statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
std. errors in parentheses
Controlling for veterinary diagnosis (omitted from output)

The results from our regressions on how veterinary prices have developed over time are tabulated above. Regression (1), show a SEK 81 per year increase in Vetcharges on the $p < 0.001$ Significance level. When including the variables “Rettime1” and “Rettime2” in regression (2) the estimated price growth over time increase to SEK 96 per year (significant at the $p < 0.001$ level). In regression (3), when also controlling for the level of insurance and the different diagnoses, the growth drops to SEK 87 per year. The time series regression analysis on how the veterinary price per episode has developed over time suggest a steady increase slightly above inflation.

Rettime1 illustrates the difference in how Vetcharges develops in period 1 (the private equity entry time-period) compared to the pre-private equity period (period 0). Rettime2 illustrate the change in how Vetcharges develops in period 2 with the entry of more capital-abundant private equity) compared to the pre-private equity period.

The hypotheses predict a measurable increase in the growth-rate of per episode price for time-period 1 and 2 respectively, which is not matched by the data. Regressions (2) and (3) suggest a slightly diminishing growth for period 1. In regression (2), when not controlling for the covariates insurance level and diagnosis, the growth rate is decreasing by SEK -0.078, significant at the $p < 0.001$ level. In regression (3), when controlling for the covariates, the growth rate in period 1 is decreasing by 0.041 significant at the $p < 0.01$. The results for

period 2 are more ambiguous, with a suggested decrease in the growth-rate of per episode price of 0.051 significant at the $p < 0.05$ level, when not controlling for the covariates.

Rettime1 and Rettime2 are too small to be indicative of industry change. We find the small size but high level of significance very surprising and suggestive of time series correlation of variables.

Using this time-series estimation we cannot reject the null hypothesis that there is not a positive relationship between the entry of private equity on the veterinary market, nor capital-abundant private equity, and the price charged per episode. Interpretations of why the relationship is significantly negative will be discussed in section 7.

The insurance level, on the other hand, has a positive intercept of SEK 413.5 significant at the $p < 0.001$ level. Having an insurance level of above SEK 50 000 is, according to the model, estimated lead to a higher predicted price per episode. Which goes well in hand with our preexisting notion on the matter. Why a high level of insurance is correlated to higher prices per episode is elaborated on in section 7.

6.4. Model 3: Fixed Effects Regression

Table 5
Fixed Effects regression estimates on veterinary price per episode over time

	(1)	(2)	(3)
	Vetcharge	Vetcharge	Vetcharge
Time in Years	90.763*** (3.396)	117.803*** (8.201)	109.640*** (8.210)
Rettime1		-0.081*** (0.020)	-0.081** (-0.019)
Rettime2		-0.106*** (-0.031)	-0.030** (-0.029)
High Insurance			155.973*** (0.14)
<i>N</i>	334647	334647	334647
<i>R</i> ²	0.003	0.003	0.102
adj. <i>R</i> ²	0.003	0.003	0.102

t statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

std. errors in parentheses

Controlling for identity "insurance holder" fixed effects

Controlling for veterinary diagnosis (omitted from output)

The individual fixed effects estimation shows a yearly increase in price per episode at the $p < 0.001$ significance level of SEK 91, SEK 120 and SEK 110 in regression (1), (2) and (3) respectively. Rettime1 take on SEK -0.081 independently of controlling for the additional covariates but is less significant when controlling for them. Rettime2 is adjusted from -0.106 at the $p < 0.001$ level to -0.030 at the $p < 0.01$ level when controlling for additional covariates.

As with the OLS regression, we stress the potential issue of autocorrelation, why we choose to not extend our research deeper into the statistical significance of Rettime1 and Rettime2.

The results from the fixed effects regression are consistent with results from the OLS regression. Again, we find a positive, statistically significant relationship between the price per episode and the insurance level. This finding serves as strong proof that the insurance is correlated to higher prices per episode, as the fixed effect only uses within-variation, meaning the variation from individuals shifting between insurance-levels, which we expect to be limited, in asserting the relationship.

6.5. Conclusive Remarks on Empirical Results

The results from each of the three different statistical approaches (Model 1, Model 2 and Model 3) suggest a growth rate of veterinary prices above GDP growth. The hypothesis of increasing growth-rate in prices on a per episode basis for the private equity time periods compared to the before private equity period, are severely contradicted in the estimations above.

7. Discussion

7.1. Challenged Assumptions and Model Limitations

7.1.1. Model: 1 T-tests

One of the underlying assumptions to all the tests is that all changes in price per episode between the different periods are related to the entry of private equity as well as capital-intensive private equity. A change assumed to influence the results, that could be different between the periods and that are not covered for in the t-tests are changes in diagnosis. If dogs are subject to different diseases, that are either more expensive or less expensive to treat, between the periods then that will create a change in the growth of price in between periods, and hence bias the results. Another factor that will, if different between periods, be estimated to bias the results is the overall level of insurance. These specified corruptive issues are however met in the OLS- and the fixed effect regressions.

With the t-test aggregated on a monthly level they own only a limited number of observations, needing to be subject to greater differences between periods to ascertain a statistically significant relationship.

7.1.2. Model 2: OLS Regressions

Critique toward the t-tests still remain, to some extent, with the OLS-regression. It is difficult to imply causality given correlation since unobserved factors could potentially bias the results. The difference being that by disaggregating the data we can control the results for type of diagnosis and the insurance-level in a single, more dynamic model. Also, the higher number observations, can find stronger, statistically significant relationships. The OLS estimator has a drawback linked to unobservable heterogeneity: it does not control for the recurring dog, resulting in exaggerated significance levels (section 5.1.7.2.). A unique date to identifier relationship is difficult to find given the data-structure, however it was imposed onto a subset of observations. This resulted in the fixed effects model.

7.1.3. Model 3: Fixed Effects Regressions

The fixed effects regressions are similar to the OLS regressions but different in that it controls for unobserved, identity-fixed heterogeneity on the insurance holder level. Unfortunately, controlling for individual heterogeneity does not imply that other unobservable and time dependent changes affecting all identities in the sample are controlled for. Just as in previous estimations, correlation does not imply causality and structural changes other than the intrusion of private equity could potentially bias the result.

As stated in section 5.1.7. it is important to have in mind that the individual identifier in the fixed effects regression is not dog-specific, but merely an identification of a specific insurance relationship that the insurance holder (typically the dog owner) has with the insurance company (Folksam). Hence, one dog can reappear in the panel data under different identities (implying a different insurance but the same dog) as well as multiple dogs with the same identity (multiple dogs with the same owner). The latter results in duplicate panels of observations, i.e. observations that needs to be dropped in order to proceed with the fixed effects regression. In the unlikely case that this drop is correlated with the error term, in essence that $E(\text{obs.drop}|\varepsilon_{it}) = E(\varepsilon_{it}) = 0$ does not hold, then the drop is a source of bias and the estimation less powerful.

7.2. Comments on The Results

With model limitations in mind we proceed in interpreting the results, in light of the subjective body of literature from the interviews.

7.2.1. Interpreting the findings

How the veterinary industry has developed over time is surprising and in stark contrast to the hypotheses deducted from the theoretical framework. The growth rate in price per episode, is instead deemed healthy and consistent over the studied period of time.

A blunt interpretation of the statistically significant decline in growth rate captured by *Rettime1* and *Rettime2* could be claimed indicative of the market reaching a climactic state of saturation. Such a claim should, however, be met with large portion of cynicism, as both the OLS- and the fixed effects regressions, in discussed ways, potentially suffer from correlation between observations over time. Since the effects captured by *Rettime1* and *Rettime2* are so small, this paper will not make any inferences based on them, even though they are statistically significant. The conclusive remark is instead that the development of the price per episode has remained “more or less the same” across the time-periods.

The statement of a consistent level of growth between periods on prices per episode is not only reflected in the t-tests, but also in the interviews with various stakeholders in the industry. The interviewees converge on the belief that the increase has sprung from long term professionalization of veterinary services by “mimicking what is provided in human healthcare” (M. Tullberg, phone interview, March 8, 2019). Even as clinics are acquired, the collective perception from stakeholders is that the “head on the clinic” remains largely in control of the daily operations (U.Mattson, phone interview, May 5, 2019; Anonymous veterinarian, phone interview, April 15, 2019), leaving very little room for Evidensia or Anicura to affect the selection of treatments provided. The interviewees align on the statement that the rise in veterinary prices have been growing symbiotically with the

increased demand from pet owners (Anonymous veterinarian, 2019; P.Olsson, phone interview, May 7, 2019) which is also reflected in the overall insurance rates (Olsson, 2019).

Still, a fundamental question has yet to be resolved: how come the revenues have increased so drastically for the privately held veterinary care providers, if neither price on treatments for diseases nor the volume of services connected to these treatments have changed dramatically? One strand of reasoning argues that pet owners today are visiting veterinary clinics more frequently compared to what they have in the past (Olsson, 2019). The net increase in revenue would then be a result of volume consumed by the pet owners in separate disease episodes. Such an increase in volume would not be captured in the current framework of analysis, being the three models, and might therefore be an explanation. The idea that increased revenues would be a result of the total number of different companion animals treated was not embraced by the interviewees. They claimed to not have experienced any radical change in the total number of companion animals i.e. the consumer base, but rather a consistent growth rate over time.

It is worthwhile to comment on the relationship between insurance-level and veterinary price charged per episode. As predicted, the findings underscore the positive relationship and a higher insurance coverage has on the price per episode relative to a lower insurance coverage. This effect is well-acknowledged in the veterinary profession and referred to as “the two pricelists” (Anonymous veterinarian, 2019). In the pejorative conceptualization the veterinarian adjusts the episode by adding unnecessary treatments, exploiting the highly-insured pet owners’ lower cost-aversion to reap profits. However, in reality it might not be this simple, as diagnoses can be set to a varying degree of certainty. The point is best made in form of an example: say that a diagnosis can be certain (to a 99 % degree) by including a few additional tests that are priced at SEK X amount extra, if choosing not to take these additional tests, the diagnosis can be stated only at a 85 % level of certainty. If the expenses for additional tests are completely or largely covered by the insurance, the answer is a no-brainer. If not, the answer is not as straightforward... No matter the interpretation of the findings, they go well in hand with the large body of behavioral economics’ literature on moral hazard. Adding yet another application to the findings.

With this study, theory from the physician-patient relationship in the US healthcare market being supplier induced demand, monopolistic effects and incentive structures were collectively presented in a new setting, the veterinary market. However, the results from the analysis are far from what was predicted by theory. An important difference that could explain the misalignment of the results is if people value a companion animals welfare lower relative to a human life to such an extent that it outweighs the presumed increase in information asymmetry in the veterinary-pet owner relative to the physician-patient relationship. This in turn, makes it harder for veterinarians than what it would be for physicians to induce demand. The consensual upon which most players within different parts

of the incentive structure agree upon is that the development in price on a per episode basis have, in fact, not been altered to any extent by the intrusion of private equity. Instead, the long-term growth in price per episode can be treated as a progressive change in level of veterinary care demanded by pet owners. Arguably a result from the increased value we place on them as members of the family.

7.2.2. Future research

Future extensions would benefit from being able to discern volume from price of treatments, so as to isolate the effects from the two, which would provide clarity in interpreting the results given the theoretical framework- and be able to deduce more definite conclusions. Adding additional species of companion animals to the data, finding way to isolate a specific animal in the observations as well as finding a way to control for prices on different types of clinics may also improve the existing study. On the other end, the effects of Private Equity on the veterinary market in terms of service and treatment quality remains unclear and an interesting topic. This aspect could be captured by adding more in-depth analysis and possibly case-studies of private equity owned- compared to privately owned clinics.

Adding these further parts would possibly contribute to give a clearer picture of the development that private equity has had on the Swedish veterinary market.

8. Conclusion

This paper has analysed the entrance of private equity owned veterinary care providers and to what extent they have affected the development of veterinary care prices.

Our findings are inconsistent with the hypothesis that the entrance of private equity in 2011 and more capital-abundant private equity in 2014 and the market consolidation would lead to increased growth in prices on a per episode basis. Instead, they suggest that prices have increased at a commensurate rate across time-periods. Interviews conducted with stakeholders within the incentive structure concur with the results, suggesting that the revenue increases are instead driven by a progressive increase in value placed by pet owners on their companion animals, resulting in pet owners today more frequently seek veterinary treatment, an increase which is not captured by our methods of estimation since it is not covered by the definition of an episode. How the frequency of visits for separate diseases have developed might capture essential dynamics and is therefore a suggested area for further research.

A secondary finding in the study is the effect that insurance level has had on the veterinary price per episode, where an insurance level of SEK 50 000 or above results in more expensive episodes. Again, the data is matched by observations from the field, where interviewees mention “the two pricelists” depending on the insurance-level of the pet. The findings serve as yet another application of moral hazard and an addition to the already extensive literature on the matter.

Complications to the analysis are that we have not been able to disentangle volumes of treatments from the price on treatments in the separate episodes, nor have we been able to explicitly trace individual identities (i.e dogs) which would have allowed for more rigorous analysis. Hence, to be able to give a clearer, disentangled and more in-depth description of the effects private equity intrusion has had on the Swedish veterinary market in terms of price, volume and quality, a more thorough analysis is required.

9. References

- Acharya, V. V., Gottschalg, O. F., Hahn, M., & Kehoe, C. (2012). Corporate governance and value creation: Evidence from private equity. *The Review of Financial Studies*, 26(2), 368-402.
- Akerlof, G. (1970). The market for 'Lemons': Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488-500.
- Anonymous veterinarian. (2019, April 15). Phone Interview.
- Bolander, H. (2015a, February 05). Folksam rasar mot vinster i djurvården. DI Digital, <https://www.di.se/di/artiklar/2015/2/6/folksam-rasar-mot-vinster-i-djurvarden/>
- Bolander, H. (2015b, February 08). Veterinärerna rasar mot Folksams kritik. DI Digital, <https://www.di.se/di/artiklar/2015/2/9/veterinarerna-rasar-mot-folksams-kritik/>
- Bryman, A. (2008). Why do researchers integrate/combine/mesh/blend/mix/merge/fuse quantitative and qualitative research. *Advances in Mixed Methods Research*, , 87-100.
- EQT. (2014). *EQT VI acquires evidensia djursjukvård AB*. Retrieved April 11, 2019, from <https://www.eqtpartners.com/news/Press-Releases/2014/EQT-VI-acquires-Evidensia-Djursjukvard-AB/>
- Folksam. (2018). Veterinärvårdskostnaden fortsätter att stiga No. S4710 17-11). <https://www.folksam.se/forsakringar/djurforsakring/veterinarvardrabatt>: Folksam.
- Folland, S., Goodman, A. C., & Stano, M. (2007). *The economics of health and health care* Pearson Prentice Hall Upper Saddle River, NJ.
- FVE. (2015). *FVE survey of the veterinary profession in europe*. Avenue de Tervueren 12 - 1040 Bruxelles: Federation of Veterinarians Europe.
- Gadiesh, O., & MacArthur, H. (2008). Lessons from private equity any company can use, *Harvard Business Press*.
- Gaynor, M., & Town, R. (2012). The impact of hospital consolidation—update. *The Synthesis Project*. Robert Wood Johnson Foundation. http://www.rwjf.org/Content/Dam/Farm/Reports/Issue_briefs/2012/rwjf73261,
- Gertner, R., & Kaplan, S. (1996). The value-maximizing board. *working paper*, University of Chicago.

- Hoffmann, R., Lokrantz, M., Lagerkvist, C., Hagberg Gustavsson, M., & Ström Holst, B. (2017). *Värdet av hundar och katter i sverige*.
- Jensen, M. C. (1997). Eclipse of the public corporation. *Harvard Business Review* (Sept.-Oct.1989), Revised,
- Jones, C. I. (2014a). The neoclassical consumption model. In J. Repcheck (Ed.), *Macroeconomics* (Third Edition ed., pp. 441-443). United States of America: Norton & Company, Inc.
- Jones, C. I. (2014b). Problems with pure competition. In J. Repcheck (Ed.), *Macroeconomics* (Third Edition ed., pp. 140). United States of America: Norton & Company, Inc.
- Kaiser, L. R. (2015). Market consolidation and alignment. *The transformation of academic health centers* (pp. 239-249) Elsevier.
- Kaplan, S. (1989). Management buyouts: Evidence on taxes as a source of value. *The Journal of Finance*, 44(3), 611-632.
- Kaplan, S. (1989). The effects of management buyouts on operating performance and value. *Journal of Financial Economics*, 24(2), 217-254.
- Kaplan, S. N., & Stromberg, P. (2009). Leveraged buyouts and private equity. *Journal of Economic Perspectives*, 23(1), 121-146.
- Konkurrensverket. (2018). Djursjukvårdsmarkaden. *Konkurrensen i sverige 2018* (1st ed., pp. 194-200). Sweden: Konkurrensverket.
- Labelle, R., Stoddart, G., & Rice, T. (1994). A re-examination of the meaning and importance of supplier-induced demand. *Journal of Health Economics*, 13(3), 347-368.
- Leslie, P., & Oyer, P. (2008). Managerial incentives and value creation: Evidence from private equity (No. w14331). *National Bureau of Economic Research*.
- Loewenstein, G., Volpp, K. G., & Asch, D. A. (2012). Incentives in health: Different prescriptions for physicians and patients. *Jama*, 307(13), 1375-1376.
- Mattson U. (2019, May 5). Phone interview.
- Miller, R. L. (1982). *Intermediate microeconomics: Theory, issues, applications* McGraw-Hill Companies.
- Olsson P. (2019, May 7). Phone interview.

Perry, M. K., & Porter, R. H. (1985). Oligopoly and the incentive for horizontal merger. *The American Economic Review*, 75(1), 219-227.

Robert E Hall and Charles I Jones. (2007). The value of life and the rise in health spending. *Quarterly Journal of Economics*, (February), 39-72.

Robinson, J. (1934). What is perfect competition? *The Quarterly Journal of Economics*, 49(1), 104-120.

Rosenthal, E. (2018). An american sickness: How health care became big business and how you can take it back. *Missouri Medicine*, 115(2), 128.

Segal, T. (2019). *What is private equity?* Retrieved 04/11, 2019, from <https://www.investopedia.com/articles/financial-careers/09/private-equity.asp>

Shafrin, J. (2010). Operating on commission: Analyzing how physician financial incentives affect surgery rates. *Health Economics*, 19(5), 562-580.

Silverman, D. (2000). Analyzing talk and text. *Handbook of Qualitative Research*, 2(0), 821-834.

Tullberg M. (2019, March 8). Phone interview.

Valedo. (2019). *Creation of the largest and quality leading pet care group in northern europe*. Retrieved April 11, 2019, from <http://www.valedopartners.com/en/evidencia/>

10. Appendix 1 – List of Variables

Name	Definition	Unit
Time	Time variable	Days
Timem	Time variable aggregated to months	Months
Vetcharge	The aggregated costs over a 125-day period related to the same injury/diagnose	SEK*
Rettime1	Captures the difference in price development when PE firms enter the market (period 1) compared to the pre-private equity period (period 0)	SEK*/ Month
Rettime2	Captures the difference in price development when more capital-abundant PE firms enter the market (period 2) compared to the pre-private equity period (period 0)	SEK*/ Month
High_insurance	Dummy variable to control for individuals with high insurance levels i.e. if the insurance level is above 50 000 SEK	0 or 1
entry1	Dummy variable that marks the market entry of PE firms in 2011	0 or 1
entry2	Dummy variable that marks the market entry of more capital-abundant PE firms in July 2014	0 or 1
dia_n	Set of variables that control for each diagnosis that occur in >100 observations over the examined period	
baseline	Diagnoses with occur in <100 observations over the examined period	##
kundNr	Unique number for every insurance holder	##
sdates	Date that that marks the beginning of an episode	Date

*Adjusted for inflation

11. Appendix 2 – Interviews

The interviews below are presented in first-person from the perspective of the interviewee. The recollections have remained largely intact but, when needed, been slightly conformed so as to help the reader fit in the context and purpose of the statements.

Maria Tullberg, Head of Communications at Anicura

Account from a phone interview conducted on March 8, 2019

- Veterinary care has improved significantly over the last couple of years. The equipment is becoming more advanced to today being similar to what is used in human care. Along with this development the treatments are becoming more advanced; today treatments are provided for diseases that were previously euthanasia.
- The increased revenue over time, as seen in Konkurrensverkets report (2018), are driven by the more advanced equipment and the demand for more advanced treatments.
- Anicura's veterinarians spend more time per patient to set a more accurate diagnosis and this have led to a higher average charge per customer (around 9% increase, 2012-2017).
- Anicura look to acquire only the best clinics and they have a quality program that each of the acquired clinics must go through. They have some standardised procedures on for example how to clean instruments or how to care for the animals when they are in the clinics. However, a lot of the decisions on a treatment level is left to the veterinarians themselves and their judgement.
- The day to day operations, including price setting, what services to provide etc, is left to the head of the clinic.

Anonymous veterinarian, head of mid-sized clinic owned by Evidensia.

Account from a phone interview conducted on April 15, 2019

- The downside of the entrance of Evidensia and Anicura is the decreased competition and the creation of large dominant parts that can, in some sense, change the market structure in the way they want. The changed ownership has also increased the time spent on some of the administrative assignments in the profession.
- The upside is the increased professionalism that come from a common strategy, the scale effect on training and the sharing of best practice. All of this have contributed to higher quality on treatments. It is also positive that the clinics are now run more as a business and less as an avocation.

- I find more issue in the presence of Distriktsveterinärerna on this otherwise free market as they receive a significant amount in subsidies from the government, making competition unfair.
- Evidensia is not too involved in the daily operations but they have suggestions on how to perform certain procedures. They have no involvement in pricing: Each clinic operates as a separate unit.
- The demand for more advanced and expensive treatments has increased. Naturally, insurances have progressed to become more extensive and expensive.
- Pet owners visit the veterinarian more often than what they used to, partly because many consider their insurance to be expensive and want value for their money.
- The treatments have become more extensive over time and today more separate actions are performed during each visit; in that sense the quantity have gone up.
- The compensation structure when working for Evidensia varies between provision-based and a fixed salary, depending on what you, as a veterinarian, choose to agree upon. The compensation is fairly similar to what it is when owning your own clinic.

Ulf Mattson, Industrial advisor for EQT and former Chairman of the Board of Evidensia (2014-2017).

Account from a phone interview conducted on May 5, 2019

- The entrance of Anicura and Evidensia have led to an increase in professionalism driven by scale effects from the quality systems that facilitate leadership, corporate governance, internal training, etc... They (Evidensia and Anicura) have also employed a more skilled management team that improve the overall quality by letting the clinics and veterinarians focus on their areas of expertise.
- The price increase in the veterinary market that has happened over time due to increased quality, more advanced treatments etc. It is doubtful that the entrance of private equity and the creation of Evidensia and Anicura have had any noticeable effect on this growth.
- The increased professionalism has, in the long-run, led to an increased quality of the care provided, in terms of more advanced treatments and higher accuracy in diagnosis.
- In the short-run it has led to an increase of quality in terms of less variation between results of treatments. They have implemented standardised and quality assured procedures for several treatments to decrease the variation of results. The standardised

procedures also lead to increased specialization and expertise for the veterinarians that get to do the same procedure in the same way several times.

- The control systems let them improve standards for numerous treatments in all their clinics by sharing best practice within their organisation. And by doing that they can have a noticeable effect on the whole market.
- Much of the clinic's day-to-day operations are left to the Head of the clinic except for the sharing of best practice and some processes that have been centralised e.g. purchasing and some organisational assignments.
- When Evidensia acquire a new clinic, their goal is to facilitate for that clinic to improve by following up on certain procedures, sharing knowledge etc. Their governance systems help improve quality of leadership which they consider is vital to improve overall quality.
- The increase in cost of veterinary care as seen in Konkurrenterapportens report (2018) was possibly enabled by the entrance of, but certainly not driven, by private equity. EQT saw a trend that people spend more on their companion animals and that there was a demand for more advanced care. Through their addition of capital and the creation of economies/efficiencies of scale they enabled the supply to meet this demand.
- Companion animals have become an increasingly important part of the family and pet owners will consume more advanced care when it is made available and this have helped to drive price.

Patrik Olsson, Business Area Manager at Pet (Agria Animal Insurance)

Account from a phone interview conducted on May 7, 2019

- Since the entry of Evidensia and Anicura, it being around 7 years ago, we noticed a price increase on veterinary care. However, the demand on advanced animal care increased symbiotically. Also, there are still cheaper options available on veterinary care. From our perspective the demand for expensive, qualitative veterinary care was and is driven by pet owners, with Evidensia and Anicura being the suppliers of it.
- Our insurances have adjusted according to this development. The insurances we offer today have a completely different compensation plan than those we had just a few years ago. We need to adjust for treatments that simply didn't exist before. For dogs these types of treatments include pacemakers, hip replacements and cancer treatments.
- Our experience is that total costs have risen for veterinary care and that it is linked to the private equity intrusion.

- We currently cannot see any negative effects directly related to the private equity intrusion on veterinary care. Sure, we need to have a continuous healthy dialogue with veterinarians to regulate price levels, but the discussion is much easier to have in a centralised market with two main providers than in a scattered market with many providers.
- Evidensia and Anicura are responsible for approx. 50 % of the veterinary care provided to companion animals in Sweden (on basis of treatment volume).
- A central problem for us is the way pet owners purchases veterinary care, which is currently not done very cost-effectively. Pet owners regularly tend to select the larger, technically advanced and in essence more expensive treatment options provided at animal hospitals in favour of simpler treatments provided at small clinics.
- Our current estimation on the presence of government-owned Distriktsveterinärerna is that they are responsible for 10 to 12 % of services provided in the market and that their share of the market is increasing over time.
- The prices are also reflective of the increasing “insurance awareness” of pet owners in Sweden.
- We are indeed experiencing that there are pricelists for pet owners to choose from depending on their level of insurance. It is quite probable that there are some veterinarians that exploit the system and provide extra, slightly unnecessary care simply because of the fact that pet owners are highly insured and therefore less price-sensitive. However, in most cases, there is an opportunity for the veterinarian to provide a more definite diagnosis using more tests, which results in a heftier price-tag. This alternative is something which highly-insured pet owners are keener on taking compared to less- & uninsured pet owners.
- Our findings show similar results to the ones presented by you (alluding to thesis results presentation made by authors over phone) with regards to price level. We can’t find evidence of a rising development in relation to the entry of private equity, although we found a slight price increase in 2013. I’m certain that the revenue increase (referring to the increase in privately held veterinary clinics since 2013) is a result of higher frequency of veterinary visits per pet.
- Our perspective is that Evidensia and Anicura have also increased the nationwide dispersion and hence availability of veterinary care.