ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

Economics and Business Economics, major Economics of Markets and Organisations

Bachelor Thesis

The Effects of Morality and Risk Aversion on Moral Hazard between Lawyers and Clients

This research investigates the effects of morality and risk aversion on the principal-agent problem, more specific the problem of moral hazard, between lawyers and clients. The literature finds that most lawyers are risk averse and therefore avoid cases with high effort levels. This is partly because of the consequences their actions can have, which may have negative effects on the utility of the client and on the utility of the lawyer. This research confirms this outcome by modeling the classical principal-agent model with risk aversion. Adding morality to this classical model did not change the effect of the risk aversion, it still had a negative effect on the utilities of the client and the lawyer. As to the effect of morality on the principal-agent problem, previous studies showed that lawyers, partly because they are bound by ethical codes, have a sense of morality. However, how moral someone is and in how far they act upon it, is different for each lawyer. Lawyers with strong moral values may be positive for minimizing the principal-agent problem between clients and lawyers. This expectation has been confirmed in this research. The model points out that if the sense of morality of the lawyer increases, the utility of the client increases and may positively affect the utility of the lawyer. Regarding an increase in risk aversion, it is the exact opposite, it will decrease the client's utility and possibly decrease the utility of the lawyer.

Name student: Laura Muller

Student ID number: 543272

Supervisor: prof. Karamychev

Second assessor: prof. Delfgaauw

Date final version: 15 February 2023

Table of contents

1 Introduction

In almost all Western countries everyone has the right on legal counsel, no matter where they come from, who they are or how much money they have. The existence of many lawyers is not random. Only in the US there are already 1.3 million lawyers (Miki, 2022). However, the number of people and firms that need a lawyer is way higher. Because of this need for lawyers, it may be unclear for clients which lawyer is best for them and how much the lawyer will cost them. Besides that, most clients are not informed enough to have knowledge about a lawyer's reputation and their skills. It can feel like gambling. However, most clients do trust their lawyers to represent them in the best way possible, and invoice them reasonably. Because if you cannot even trust your lawyer, who can you trust?

However, researchers found that lawyers do not always act upon their client's best interests. In this research this problem will be investigated based on the principal-agent model. There will be investigated what the effect is of morality and of risk aversion. This leads to our primary research question: "*What are the effects of morality and risk aversion on the factors in the model of the principal-agent problem and the problem of moral hazard within a lawyer-client relationship?*" This will be answered by doing literature research about relevant subjects regarding the research question and by extending the basic principal-agent model.

The research is divided into several sections. First, I will be discussing the related literature to this research and explain the concepts of the principal-agent problem and the problem of moral hazard, and specify it to the lawyer-client relationship. Then I will research which factors motivate lawyers. Thereafter, the role of risk aversion in these problems, according to the literature, will be discussed. Why this paper is relevant is told in section 3, and section 4 shows the classic principal-agent model and our newly made model with the extension of morality, and interprets the results of this extension. Lastly, the limitations of the research will be discussed, a summary is given and references will be shown.

2 Related Literature

This research examines how to minimalize the principal-agent problem and the problem of moral hazard that exists between lawyers and their clients. Hereby, the morality and risk aversion of the lawyer will be considered. These problems, and how they relate to morality and other factors, will now be explained.

2.1 The Principal-Agent Problem and the Problem of Moral Hazard

The principal-agent problem arises when an individual (the principal) has someone (the agent) to perform service on her behalf and cannot fully observe the agent's actions (Brown et al., 2015). Within this problem we assume that the interests of the principal and the agent do not (fully) align, so the agent doesn't do exactly what the principal wants him to do. Since the principal cannot check whether the agent is doing what he is supposed to, this leads to asymmetric information. The principal needs to find a way to make the agent do what the principal wants him to do. To overcome this problem, they need to align their interests or the principal needs to gather more information on the actual activities of the agent. This may sound simple, but in practice the problem is not so easy to overcome.

On top of the principal-agent problem, we have the problem of moral hazard. The problem of moral hazard is the situation in which one party gets involved in a risky event knowing that it is protected against the risk, and the other party will incur the cost (The Economic Times, 2022). It is any situation in which one person makes the decision about how much risk to take, while someone else bears the cost if things go badly (Krugman, 2009). Therefore, moral hazard is commonly defined as excessive expenditure due to eligibility for insurance benefits (Marshall, 1976).

Combining these problems, we have the most basic case where a principal offers the agent a certain contract that compensates for the effort of the agent. When the compensation is high enough, the agent will take it. However, after accepting the offer, the agent prefers to shirk and provide less effort than they have agreed on (Stevens & Thevaranjan, 2010). Since we assumed that the principal cannot see the actual effort of the agent, moral hazard arises

(Atkinson, 1989). Moral hazard is the concept that individuals have incentives to alter their behavior when their risk or bad-decision making is borne by others (Pettinger, 2019).

Economists have known these problems for over a long time and discussed many possible solutions to the problem. The most known is introducing 'deductibles', so that the firstly made costs are beared by the agent which will make him shirk less. Other options are excluding particular groups, or setting a maximum amount of compensation.

2.2 Problems within the lawyer-client relationship

In this research we will focus on the principal-agent problem between lawyers and clients. A lawyer acts on behalf of its client, representing the client, with consequences that bind the client (DeMott, 1998). Naturally, the client wants the case to be handled fast with the best outcome possible without losing too much money. The lawyer (hopefully) also wants the best outcome for the client but may have different preferences about how long it takes to get to this outcome, how much effort should be put in and how much there will be paid for this effort. This is exactly what the principal-agent problem between lawyer and client holds. To which extent does the lawyer act in the best interests of the client? What is a lawyer's motivation to do what needs to be done? Do lawyers give the same professional advice while also take their own preferences into consideration? For what reasons do lawyers work?

Generally, the client hires a lawyer and they set up a contract which includes the expectations of the lawyer and how the lawyer will be paid by the client. Once the contract is set, the lawyer prefers to shirk and provides less effort than agreed-upon because of moral hazard. The best way to overcome these problems between lawyers and their clients is by making sure the interests of the lawyer and the client are fully aligned; if their interests are aligned there is no reason to shirk.

However, this will never be possible because both lawyers and clients will always do what is best for themselves. The actions that give them the highest utility, is the option they will act upon. In principle, everybody tends to be selfish (Frimer et al., 2014). Utility may be derived from many things besides money. Still, everybody would choose those actions that maximizes their own utilities, and not make choices just to grant the other player. We can try

to incentivize in such a way so that the outcomes and consequences of the actions of the agent (the lawyer) will be more in line with the actions and outcomes as expected by the principal (the client) while signing the contract. Besides that, we may also win more information about the lawyer's actual effort. However, getting more information is costly, and when for example hiring an external party, it also may introduce a new principal-agent problem (Friis & Nielsen, 2010). But the literature did discuss several factors that motivate lawyers that may be important for our model. They will now be discussed.

2.3 Motivational factors

Lawyers appear to respond to economic incentives in the course of their work. Thus, client resources and fee structures influence lawyers' approach to representation (Mather, 2003). Private attorneys usually get paid way more than public defenders. But according to Hartley et al. (2010) there is just little difference in the 'quality' of legal defense provided to defendants by private attorneys and the 'quality' provided by public defenders. So, what are the real effects of money on the performances of lawyers, and what other factors will motivate their hard work?

Lawyers are people, and people are affected by money (Markovich, 1993). Naturally, there are more factors than money that motivates people. According to Smith (2000), motivational factors are divided into two groups, internal and external factors. Internal motivation includes job nature, training and promotion opportunities, and external motivation are salary, superior support, and relationships. Specific factors for lawyers may also be their reputation, or the fact that they are controlled by their law firm or limited by the rules of the bar. Thus, money is not the only thing lawyers care about. There are multiple factors affecting their behavior. The existence of many non-profits is another proof that people care about more than just about money. The most important factors that may influence a lawyer's utility and will be discussed now are bonuses and the sense of morality.

2.3.1 Bonuses

The effect of bonuses is widely discussed in the literature. Academics are very divided about the effectiveness of bonuses. Some are enthusiast about the positive effects while others only mention the negative side. An argument against lump-sum bonuses is that once

someone made extra effort with the goal to reach a certain performance to get that lump-sum bonus, but the effort did not lead to the result it was expected to, which results in no bonus, this person may not make any effort next time, since "it doesn't pay out anyway" (Holmstrom & Milgrom, 1987). On the other hand, once the bonus is earned there is less reason left to keep performing on that effort level (Lal & Srinivasan, 1993). So, the motivational effects of lump-sum bonuses disappear (Steenburgh, 2008). Also, receiving a bonus for a certain performance, may make you focus only on that particular performance and makes other activities insignificant, which is bad for the principal.

However, academics who are positive about bonuses point out that providing them encourages individuals to reach for certain goals that they otherwise might not attain (Darmon, 1997). Even though both arguments are well founded, Steenburgh (2008) concludes that lump-sum bonuses primarily motivate people to work harder and thus have a positive effect. This research builds upon that conclusion. Bonuses are used in the basic principal-agent and also will be implemented into our new model.

2.3.2 Morality

As discussed above, the problem of moral hazard in the context of the principal-agent problem is that the principal shirks after the agreement is made. The principal will not put in the effort he said he would. However, everybody has a sense of morality, the only difference is how strong they experience this sense of morality (Kohlberg, 1971). Arrow (1984) suggests that ethics may be important to understand how agents can be motivated to honor contractual agreements with their principals. Morality may have significant effect on the relationship between the principal and the agent because of the effect on trust and cooperation between them. If the agent has strong moral values and acts in the best interest of the agent, the principal is more likely to trust and rely on the agent, which may lead to a more effective and efficient working relationship (Bersoff & Koeppl, 1993). Considering the morality of an agent may be good because people do not only strive for a good wage and lots of money, but they also care about honesty. According to Murphy et al. (2020) people experience utility from being honest.

However, if the agent lacks moral integrity, the agent is less trustworthy, and the principal is more likely to monitor the agent's actions. Monitoring is the regular observation and recording of activities taking place (Bartle, 2007). It involves the principal checking upon its agent and shrinking the difference of availability of information about the actual effort of the agent. This is very costly since you must gain more information which costs time and money, and even at that point there still is information asymmetry. Therefore, these costs don't make it necessarily profitable to monitor (Murphy et al., 2020). Kirby and Davis (1998) found that monitoring deterred agents from pursuing risky choices. However, since implementing monitoring is only useful when using it the right way, and since it is very costly, monitoring may lead to a less effective and less efficient working relationship. Therefore, we won't implement monitoring into our model later in this research. At the end, most important is that if the agent has strong moral values, it can help to build trust between the agent and the principal and motivate cooperation between them, which may lead to better outcomes for both.

Lawyers, like all individuals, have their own personal sense of morality. However, as professionals, lawyers are also bound by codes of ethics and professional responsibility that dictate the standards of moral behavior expected of them in their professional capacity (Postema, 1980). These codes of ethics and professional responsibility typically include provisions related to integrity, honesty, fairness, and the duty to represent their client's interests (Zacharias, 1993). Doing so they are also expected upholding the rule of law and the administration of justice (Uitz, 2019).

While a lawyer's personal sense of morality may affect their behavior in the practice of law, they are also bound by the specific rules and guidelines set by their jurisdiction (Abbott et al., 2020). This may be more restrictive than their personal morality. The representatives of the bar agree with the public that lawyers should never feel free to prefer personal gain above moral constraints (Bok, 1989). This makes considering the sense of morality in our model even more important.

Thus, lawyers have a sense of morality as do all individuals, but as professionals they are also bound to the recorded laws and a professional code of conduct, which may or may not align with their personal morality. Acting moral may have direct positive effect on the lawyer's utility, which also will be considered into the model later in this research.

2.4 Risk aversion

People are risk averse (Kimball, 1993). This is mostly because of loss aversion, which is the concept that people prefer avoiding potential losses rather than acquiring potential gains (Schmidt & Zank, 2005). Additionally, people are risk averse due to other factors as lack of information and fear of the unknown. Within the principal-agent relationship both players can be risk averse.

If the principal is risk averse, they may be less likely to invest in high-risk, high-reward opportunities with possible low returns (Basov & Yin, 2010). The principal would prefer choosing activities that minimize risk, such as investing in low-risk assets only. A risk averse principal may also impose more constraints on the agent's decision-making which could limit the agent's ability to make the decisions that are most profitable. The principal's risk aversion may also affect the agent's choices such that the agent is also less incentivized to take risks. Even though risk averseness of the principal may have significant impact on the outcome, for simplicity we assume in this research that the principal is risk neutral.

The agent's risk aversion can also have a significant impact on the behavior and outcomes of the relationship. If the agent is risk averse, it will be less incentivized to take risks on behalf of the principal and the agent would like to minimize engaging in activities with risk, even if they would have potential higher returns (Jullien et al., 1999). Overall, risk averseness is an important factor affecting the outcomes and will be considered into our model.

Lawyers in their legal profession are often considered to be risk averse because of the amount of responsibility they carry. Since their decisions can have huge consequences for their clients, lawyers are trained to consider all outcomes and minimize risk whenever possible (Fortune & O'Roark, 1993).

Consequences of lawyers being risk-averse may be:

1) Risk averse lawyers may be less willing to accept the uncertainty and volatility of big cases taking a lot of its time, instead of multiple smaller cases (He et al., 2014)

2) The higher the risk aversion of the lawyer, the higher it needs to be compensated for certain risks (Haubrich, 1994).

3) Risk-averse lawyers may be more cautious making decisions or carry tasks that take a high degree of risk (Shukaitis, 1987).

4) When the lawyer's risk aversion increases, it may become more focused on protecting their own interests rather than the interests of its clients.

However, with every principal-agent model the consequences of risk aversion is not straightforward and depends on the many assumptions and the context of the model.

3 Relevance

Minimalizing the principal-agent problem and the problem of moral hazard between lawyers and clients while considering morality and risk aversion is relevant because it is not well-established in the literature yet. However, it is generally believed that a higher level of morality on the part of the agent may lead to less moral hazard. Besides that, this study is relevant in all countries despite the exact regulation within a country because the research is independent from any law or regulation and focuses on the economic side of the problem only. In some cases, lawyers are getting paid by the government, which makes them to be the principal. Reducing the principal-agent problem with the problem of moral hazard will then also reduce the costs of the government. This money can be used for many other things which will be good for society. Of course, no client wants to pay too much, including the government.

Until now, there have been studies about the lawyer-client relationship and how the principal-agent problem and the problem of moral hazard affects this relationship. However, most of those studies focus on different details. For example, if clients get what they are paying for, or what the differences are between private and public lawyers. This study distinguishes itself because the goal is minimizing the principal-agent problem and the problem of moral hazard by using the factors that may increase the lawyer's utility: bonuses and morality, while considering risk aversion and keeping the model simple and realistic. Other studies are also mostly focused on the employee-employer relationship, like Stevens and Thevaranjan (2010). They study the interplay between moral sensitivity and firm productivity in determining the optimal salary contract. However, as told they focus on the employer-employee relationship which has many different characteristics than the lawyer-client relationship. Also, they mostly focus on the disutility of morality. In the literature there are many ways to implement morality. Stowe (2009) incorporates morale into a standard principal-agent model. In their paper they added morality as something that reduces effort costs. However, in our model morality will be implemented as extra utility from acting moral.

The relevant literature studied, and the conclusions and assumptions on important factors regarding the principal-agent problem within the lawyer-client relationship, will now be considered into the model.

4 Morality and the Classical Principal-Agent Model

4.1 The classical principal-agent model

The basis of the model in this paper is, of course, the classical principal-agent model. This paper will build upon the results found concerning this basic model. The basic model involves the principal (client) and the agent (lawyer) as rational utility maximizers. The client offers a contract, wage w, partly based on the output y to the lawyer, whereas the lawyer chooses the unobservable amount of effort e he wants to deliver. The effort e, but also the random error term ε will affect the output y, such that $y = e + \varepsilon$ and where $\varepsilon \sim N(0, v)$.

The lawyer has an outside option $\bar{U}$, is risk averse, and maximizes its own expected utility of $E[UL] = E[w - c(e) - \frac{1}{2}R \, var(w - c(e))]$ where $c(e)$ is the cost of effort for the lawyer which will be $c(e) = \frac{1}{2}e^2$. While considering the lawyer's behavior the client will maximize its own utility of $E[Uc] = E[y - w]$. Moreover, wage is a function of fixed salary α, and bonus β depending on output y; $w = \alpha + \beta y$. The client is risk neutral. We will maximize using the Lagrange-function:

$$L = U_C + \lambda \, (U_L - \bar{U}) + \mu \frac{\partial UL}{\partial e} \tag{1}$$

$$L = e - \alpha - \beta e + \lambda(\alpha + \beta e - \frac{1}{2}e^2 - \frac{RV}{2}\beta^2 - \bar{U}) + \mu(\beta - e)$$

$$\frac{\partial L}{\partial \alpha} = 1 - \lambda = 0$$

$$\lambda = 1$$

Because $\lambda = 1$, the participation constraint $U_L = \bar{U}$ holds.

$$L = e - \frac{1}{2}e^2 - \frac{RV}{2}\beta^2 + \mu(\beta - e) \tag{2}$$

$$\frac{\partial L}{\partial \beta} = -RV\beta + \mu = 0$$

$$\mu = RV\beta$$

$$\frac{\partial L}{\partial e} = 1 - e - \mu = 0$$

$$1 - e - RV\beta = 0$$

We know that e = β, so:

$$\beta^* = \frac{1}{1+RV} \qquad\qquad (3)$$

$$e^* = \frac{1}{1+RV} \qquad\qquad (4)$$

In equations (3) and (4) we can see the result that in the classical principal-agent model, risk aversion has a negative effect on β and on e. If the risk aversion increases, the denominator increases so β and e decreases. This can also be seen in practice: if agents are risk averse, they may prefer a contract where the bonus is relatively low. This is because when their contract has a lower potential payout it also has a lower risk of not receiving any payout at all. This could take the form of a smaller bonus for meeting a lower threshold of performance. It is also common that bonus β and fixed fee α are negatively correlated, which would mean that a lower risky bonus leads to a higher fixed fee.

As discussed before, the consequence of the agent's risk aversion is that they may put in less effort. This can be seen in the equation: the higher the risk aversion, the lower the optimal effort level. This can be explained because of the four reasons discussed in the related literature, in particular because agents relate assignments with high effort levels to assignments with a lot of uncertainty and volatility, which makes them tend to choose lower effort levels. The discussed literature suggested that the principal may need to offer the agent a higher level of compensation to compensate for the increased risk. However, this would contradict with the fact that the agent's risk aversion reduces the bonus, unless the compensation of the increased risk is through the fixed fee.

4.2 Introducing morality

Now, we will consider the morality of the agent by extending the basic model. As discussed before, the agent (lawyer) experiences extra utility from acting moral. In this research, morality will be seen as the concept of how strong the moral values of lawyers are, and in how

far those morals contribute to act in the interests of the client. Therefore, we introduce morality γ that affects the lawyer's utility depending on y.

However, before maximizing using Lagrange we first need to consider if this new term γy will also be included in the variance term. Including the variance in the model makes it possible to capture the trade-off between expected utility and the risk of risk-averse agents (Hayes, 2022). By incorporating the trade-off between expected utility and risk, the model can help to design contracts that incentivize the agent to make decisions that are both in their own interests and those of the principal (Dohmen et al., 2021). In general, including more terms in the variance term increases the accuracy of the model since more uncertainty is considered. If the extra term includes risk, associated with the lawyer's behavior, then increasing the terms in the variance term may lead to more risk-averse outcomes since the model considers more uncertain sources associated with the lawyer's behavior. On the other hand, if the extra term includes terms that positively correlate with the outcome, then adding those may result in less risk-averse outcomes since more uncertain sources that may result in positive outcomes are considered. Since we expect morality to affect the lawyer's choice, but also the outcome, and adding important terms in the model may help with accuracy and designing contracts, γy will be included in the variance. Now, $E[UL] = E[w - c(e) + \gamma y - \frac{1}{2} R\, var(w - c(e) + \gamma y)]$.

Again, we will maximize using Lagrange:

$$L = U_C + \lambda\,(U_A - \bar{U}) + \mu\,\frac{\partial UL}{\partial e}$$

$$L = e - \alpha - \beta e + \lambda(\alpha + \beta e - \frac{1}{2}e^2 + \gamma e - -\frac{RV}{2}(\beta + \gamma)^2 - \bar{U}) + \mu(\beta + \gamma - e)$$

Again, the participation constraint $U_L = \bar{U}$ holds now that:

$$\frac{\partial L}{\partial \alpha} = 1 - \lambda = 0$$

$$\lambda = 1$$

We have:

$$L = e - \frac{1}{2}e^2 + \gamma e - \frac{RV}{2}(\beta + \gamma)^2 + \mu(\beta + \gamma - e) \tag{5}$$

$$\frac{\partial L}{\partial \beta} = -RV(\beta + \gamma) + \mu = 0$$

$$\mu = RV(\beta + \gamma)$$

$$\frac{\partial L}{\partial e} = 1 - e + \gamma - \mu = 0$$

$$1 - e + \gamma - RV(\beta + \gamma) = 0$$

We know that:

$$e = \beta + \gamma$$

So:

$$\beta^* = \frac{1 - RV\gamma}{1 + RV} \tag{6}$$

$$e^* = \frac{1 + \gamma}{1 + RV} \tag{7}$$

As we can see in equation (6) and (7) the morality of the lawyer has effect on both the optimal bonus and the optimal effort. Introducing morality into the model also changes the effect of the lawyer's risk aversion on the bonus now that risk aversion is in both the numerator as the denominator instead of just in the denominator.

Looking at bonus β, its value decreases as γ increases, now that the nominator decreases. In words, if the morality of the lawyer increases, it will be needing less of a bonus to participate in the contract. Since the lawyer is getting relatively more utility from acting moral, he won't need a relatively high bonus to make up for its costs of effort.

However, the effect of risk aversion on the bonus is different. As risk aversion increases, the numerator decreases and the denominator increases, which results in the overall value of bonus β decreasing. In practice, the principal (client) sets the terms of the contract, including the bonus, to align the interests of the lawyer with its own. As the lawyer's

risk aversion increases, the client wants to decrease the bonus to compensate for the objectively good actions that may not be taken by the lawyer because of its risk aversion.

If the risk aversion of lawyers increases, they prefer contracts where bonuses are relatively low since contracts with lower potential payout also have a lower risk of not receiving any payout at all. There is a trade-off between risk aversion of the lawyer and the optimal bonus the client wants to pay the lawyer. Determining the optimal bonus is hard for the client since if the client sets the bonus to high, it may lead to the lawyer taking more risk than optimal for the client, for example continuing proceeding instead of taking an objectively good deal. However, if in the contract the bonus is set to low, the lawyer may not want to take the risk for the extra bonus it gets, which also would not lead to optimal outcomes.

As we can see in equation (6), morality has a negative effect on the bonus. This makes sense since the utility derived from acting moral compensates for the utility derived from the bonus. If the lawyer's risk aversion goes to zero, the optimal bonus would go to $\beta = 1 - \gamma$. This would mean that the bonus only depends on the sense of morality the lawyer feels. The higher the morality, the lower the bonus. If the lawyer's risk aversion goes to zero while morality is that high that it goes to one, the client would not need to pay the lawyer any bonus, since doing what is moral already gives the lawyer enough utility to do its job. On the other hand, when the lawyer does not have any sense of morality such that morality goes to zero while the lawyer is also not risk averse, the bonus goes to $\beta = 1$, which means that the agent would receive all the output. If in that case α is negative it would look like a franchise: paying a fixed fee to participate and then receive all output. However, in the case of the lawyer-client relationship such an extreme case does not happen that often. Then, a lawyer would pay its client to get permission to, for example, go to court for them. Situations where this might happen is with cases that would be so good for the lawyer's reputation, that afterwards the lawyer would never have to work again. This also may happen in situations where lawyers are personally involved that they care so much they want to pay for reaching a certain goal. As expected, those cases rarely occur, but it is not impossible. Another notable outcome for the bonus is when risk aversion goes to one. Now, the bonus still depends on the sense of the

morality of the lawyer. However, in comparison with risk aversion going to zero, the bonus will now be exactly divided by two: $\beta* = \frac{1-\gamma}{2}$ which of course is a big difference.

The effect of morality and risk aversion on effort is different. As morality γ increases, the value of e increases. This is because as γ increases, the numerator of the equation increases while the denominator stays the same, which results in the overall value of e increasing. In practice, this effect also can be explained well. As the morality of the agent increases, the agent cares more about the output. Therefore, he will put in more effort since that will have a direct positive effect on the output.

As regards to the effect of risk aversion on the effort level, it is the exact opposite. As risk aversion increases, the denominator of the equation increases while the numerator stays the same, which results in the overall value of e decreasing. This result is as expected since in the principal-agent model, the agent's effort level is a key determinant of the outcome of the contract. Before, we discussed the possible consequences of lawyers being risk averse. These consequences can be explained regarding the lawyer's choice to decrease its effort level to maximize its own utility:

1) Risk-averse lawyers prefer choosing to deliver a lower effort that is more predictable and stable.
2) When the client is not willing to pay the amount that the lawyer 'needs' to be compensated for its risk, the lawyer will reduce its effort level.
3) Risk-averse lawyers are not willing to take tasks with high risks and therefore choose a lower effort level.
4) Risk averse lawyers may become more selfish and care more about their own interests rather than their client's interest, which would lead to delivering less effort.

Extreme levels of effort would be if the lawyer would not be risk averse, thus when the risk goes to zero. In that case the lawyer would put in a minimum effort of one, which will increase with the sense of morality: $e = 1 + \gamma$. However, if the lawyer's risk aversion would go to one, this equation would be divided by two for the optimal effort level. Another extreme

level of effort would be if the lawyer could not care less about morality such that morality goes to zero. In that case the effort level will only have a maximum effort of one and decrease even more with an increasing risk aversion of the agent. As long as the sense of morality of the lawyer is higher than its risk aversion, the numerator is greater than the denominator so that the optimal effort level will be positively affected.

We have seen the effects of morality and risk aversion on the optimal effort level and the optimal bonus, but now we will discuss the effects on the utilities of the client and the lawyer.

The expected utility of the client is:

$$U_c = y - w$$
$$U_c = \frac{(1+\gamma)^2}{2(1+RV)} \tag{8}$$

The value of the utility of the client is positively related to the lawyer's morality and negatively related to its risk aversion. This means that if morality of the lawyer increases, the utility of the client also increases. But if the risk aversion of the lawyer increases, the utility of the client decreases. This can be explained since this is the same effect as morality and risk aversion have on the optimal effort level, which directly affects output. So, even though the client does not get direct positive utility through the moral feeling of the lawyer, it does get an indirect positive utility since this morality gets the lawyer to put in more effort, which causes a higher optimal effort level, which will lead to a higher output and finally induces higher utility for the client. For the risk aversion, the exact opposite is the case. Risk aversion is negatively correlated with the optimal effort level. Thus, an increase in risk aversion, decreases the effort level and therefore decreases the utility of the client.

The expected utility of the lawyer is:

$$U_L = w - c(e) + \gamma y - \frac{1}{2}Rvar(w - c(e) + \gamma y) \tag{9}$$

However, we know that the participation constraint holds so that actually $U_L = \bar{U}$. Even though this participation constraint holds we can analyze how morality and risk aversion affect each of the terms in equation (9).

Starting with the first term, wage, which is a positive term for the lawyer's expected utility. Wage is $w = \alpha + \beta y$ but since $y = e + \varepsilon$ and $\varepsilon \sim N(0, v)$ this equation of the wage can be written as $w = \alpha + \beta e$. The salary α is fixed and not affected by morality or risk aversion. After rewriting the equation we can say something about the effect of morality and risk aversion on the wage, since we know their effect on the optimal effort level. Since the effort level has a positive effect on wage, the effect of morality and risk aversion on effort level will be the same as on the wage. Thus, morality will have a positive effect on the wage while risk aversion will have a negative effect.

The second term, the costs of effort, is $c(e) = \frac{1}{2}e^2$. The costs of effort have, of course, a negative effect on the lawyer's expected utility. Therefore, morality and risk aversion will have the exact opposite effect on the costs of effort than it does on effort. When morality increases, the effort level increases which also increases the costs of effort. This increase affects the lawyer's utility negatively now this cost term is a negative term. When risk aversion increases, the effort level and thus the costs of effort will decrease, which will positively affect the lawyer's utility.

The next term involves morality depending on the outcome, γy. As discussed above this can be rewritten as γe. The effect of morality on the optimal effort level is already positive, but now the positive effect of morality on the lawyer's utility will be extra strong since the effort level will be multiplied with morality. The effect of risk aversion on the effort level is still negative, so that an increase in risk aversion of the lawyer will decrease its utility.

Lastly, we have the variance term $\frac{1}{2}R\,var(w - c(e) + \gamma y)$. Within the variance term we have all the terms discussed above. As discussed at the beginning of paragraph 4.2, adding the variance into the model makes it possible to capture the trade-off between expected utility and the risk of risk-averse lawyers. Adding terms to the variance term increases accuracy since

more uncertainty is considered. We said that if the extra term includes risk, associated with the lawyer's behavior, it will lead to more risk-averse outcomes. However, if the extra term includes terms that are positively correlated with the outcome, it may result to less risk-averse outcomes. Since wage is not an uncertain term and positively affects the outcome, this term may make the outcome less risk averse. However, the costs of effort have a negative effect on the outcome, which may make the outcome more risk averse. Lastly, morality is a more uncertain term which may lead to more risk-averse outcomes. On the other hand, morality has a positive effect on the outcome which may lead to less risk-averse outcomes. The effect of morality on the variance on how risk-averse the outcome will be is doubtful and depends on the exact variables. This makes the effect of the variance on the lawyer's utility also ambiguous.

As we discussed in the beginning of the research, the lawyer derives utility from acting moral through the output, so it makes sense that in the end morality has a positive effect on its utility. As regards to risk aversion, when the lawyer's risk aversion increases, its utility decreases. This can be explained by the fact that risk aversion decreases both the optimal bonus and the optimal effort level, which induces the decrease of the lawyer's utility. It can also be seen in practice: when a lawyer is risk averse it prefers low risk cases with lower payouts, which of course leads to a lower utility. But, after all the lawyer's utility will be equal to the outside option since the participation constraint holds.

5 Discussion

The limitation of this paper will now be discussed. First, I assumed for this paper that we have one client who hires one lawyer that isn't attached to any law firm. However, in practice, a lawyer represents many clients at the same time, while sometimes also being an employee at a law firm. For those cases this research may be less relevant since the lawyer's sense of morality does not have such a direct effect on the effort level and the utilities as it has in the discussed case in this research. However, this research can be used for an extension where law firms will be another player in the model. For example, a model where the client is still the principal, and the lawyer is still the agent. But now the law firm will be in between and would act as an agent with respect to the client and as a principal with respect to the lawyer. It could be interesting to research what the effect of morality will be on the utility functions of all players. Will the effect of morality be less because the lawyer will get paid anyhow by the firm and only cares about looking like the best employee while doing as little as possible, or will the effect of morality will be even higher because their wage depends less on their effort and therefore will choose more cases they are really passionate about and therefore have a stronger sense of morality?

Another assumption we made for this model which limits the application of the interpretation is that we assumed, for simplicity of the model, that the client is risk neutral. As discussed in the related literature it is not uncommon that the client is also risk averse. Therefore, it would be a great extension to this model to also include the client's risk aversion and see what the effects would be.

Lastly, this paper is also limited because the most important factor in the model, morality, is hard to measure objectively. In this research morality is defined as the concept of how strong the moral values of the lawyer are and how far those morals contribute to the lawyer acting upon the interests of its client. But how do you determine how moral someone is? It may be possible to use relative comparison between lawyers and put them on a scale. But still, who is objectively enough to determine where someone belongs on the scale, and what determinants are used to come to that conclusion? Does someone really have a sense of morality, or does it only want to appear moral? Besides that, morality may be affected by

different factors such as culture, personal beliefs and personal background which makes it even harder to measure objectively. These factors may already be in the error term and therefore the model may not be so clear as we thought.

6 Conclusion

To summarize this research, I will discuss each of the effects separately, starting with the effect of risk aversion on the relevant factors and on the final utilities of the client and the lawyer. Literature on this topic stated that most people are risk averse since they prefer avoiding potential losses over acquiring potential gains. A risk averse agent prefers to minimize its engagement in high-risk and high-effort activities. They tend to avoid putting in a lot of effort. Lawyers in their profession are often considered risk averse because of their responsibility and the consequences of actions on their clients. In combination with avoiding putting in effort, this may have a negative effect on the optimal effort and therefore on the optimal utility levels. However, consequences of risk aversion depend on many assumptions and the context of the model. These statements contributed to the expectation that this research would show that risk aversion has a negative effect on all relevant factors, namely the bonus, the effort, the utility of the client and the utility of the lawyer itself. Indeed, the results of our model shows that risk aversion has a negative effect on those factors. In the optimal bonus, we saw that risk aversion of the lawyer has a significant negative effect. Also, the optimal effort level decreases when risk aversion of the lawyer would increase. Since the utility of the client is directly depended on the optimal effort level, it is obvious that risk aversion also has a negative effect on its utility. The lawyer is also affected if its risk aversion increases, namely through the separate terms in its utility equation. When its risk aversion increases, it will decrease the lawyer's utility through a decrease in wage and morality, but it will increase its utility through the decrease of the costs. The effect of risk-aversion on the variance term depends on the exact variables, which makes the effect of the variance term on the utility of the lawyer also ambiguous. However, the lawyer's utility will always be equal to the outside option now that the participation constraint holds. The effects of risk aversion in this extended model are in the end the same as shown in the basic model, which means that morality didn't change the effect of risk aversion on those factors.

Second, I will discuss the effect of morality on the relevant factors. People experience utility from being honest (Murphy et al., 2020). If an agent has strong moral values and acts in the best interest of the agent, the principal is more likely to trust and rely on the agent, which

may lead to a more effective and efficient working relationship (Bersoff & Koeppl, 1993). So, if the agent has strong values, it may build trust and motivates cooperation between them which will lead to better outcomes for both. Besides that, lawyers in their profession are bound by ethical codes which may give them an extra feeling of morality, which can positively affect the utilities. This literature research is confirmed in our model. Morality positively affects the utility of the lawyer and the utility of the client. Morality also had a positive effect on the optimal effort and output level, which makes sense now the extra utility derived from morality depended on the output. Since the optimal effort level directly affects the output level, morality and the effort level are positively correlated. The only factor not positively correlated with morality is the optimal bonus. However, this can be explained. A higher sense of morality for the lawyer means higher utility from acting moral. Therefore, the lawyer needs to be compensated less through the optimal bonus. Thus, since the lawyer gets utility from acting moral, it will be needing a smaller bonus to be compensated for its costs of effort. The effect of morality on the utility of the client is positive. The morality of the lawyer does not have direct effect on the client's utility, but since morality has a positive effect on the optimal effort, the output will increase and therefore the utility of the client will also be higher. The effect of morality on the utility of the lawyer is positive through the wage and through experiencing direct positive utility from having strong moral values and acting upon them. An increase in morality also increases the costs of effort which decreases the lawyer's utility, which may make the positive effect less strict. But, as told before, the lawyer's utility will be equal to the outside option now the participation constraint holds.

7 References

Abbott, K. W., Keohane, R. O., Moravcsik, A., Slaughter, A. M., & Snidal, D. (2000). The concept of legalization. *International organization*, *54*(3), 401-419.

Arrow, K. J. (1984). *The economics of agency*. Stanford univ ca inst for mathematical studies in the social sciences.

Atkinson, A. A. (1989). *Advanced management accounting*. Prentice-Hall Inc.

Bartle, P. (2007). *The nature of monitoring and evaluation*. CEC. https://cec.vcn.bc.ca/cmp/modules/mon-wht.htm

Basov, S., & Yin, X. (2010). Optimal screening by risk-averse principals. *The BE Journal of Theoretical Economics, 10*(1).

Bersoff, D. N., & Koeppl, P. M. (1993). The relation between ethical codes and moral principles. *Ethics & behavior*, *3*(3-4), 345-357.

Bok, S. (1989). Can Lawyers Be Trusted. *U. Pa. L. Rev., 138*, 913.

Brown, G. W., McLean, I. & McMillan, A. (2015). principal-agent problem [Online]. In *The Concise Oxford Dictionary of Politics and International Relations* (4th edition). Oxford University. https://doi.org/10.1093/acref/9780199670840.001.0001

Darmon, R. (1997). Selecting appropriate sales quota plan structures and quota-setting procedures. *Journal of Personal Selling and Sales Management, XVII*(1), 1–16.

DeMott, D. A. (1998). The lawyer as agent. *Fordham L. Rev., 67*, 301.

Dohmen, T., Non, A., & Stolp, T. (2021). Reference points and the tradeoff between risk and incentives. *Journal of Economic Behavior & Organization, 192*, 813-831.

Fortune, W. H., & O'Roark, D. (1993). Risk Management for Lawyers. *SCL Rev., 45*, 617.

Friis, O., & Nielsen, M. (2010). *Audit fees and IFRS accounting: Is information costly*? (Vol. 3). Institut for Virksomhedsledelse og Økonomi, Syddansk Universitet.

Frimer, J. A., Schaefer, N. K., & Oakes, H. (2014). Moral actor, selfish agent. *Journal of personality and social psychology, 106(5),* 790.

Hartley, R. D., Miller, H. V., & Spohn, C. (2010). Do you get what you pay for? Type of counsel and its effect on criminal court outcomes. *Journal of Criminal Justice, 38(5*), 1063-1070.

Haubrich, J. G. (1994). Risk aversion, performance pay, and the principal-agent problem. *Journal of Political Economy, 102*(2), 258-276.

Hayes, A. (2022, 6 July). *What is Variance in Statistics? Definition, Formula, and Example.* Investopedia. https://www.investopedia.com/terms/v/variance.asp

He, Z., Li, S., Wei, B., & Yu, J. (2014). Uncertainty, risk, and incentives: theory and evidence. *Management Science, 60*(1), 206-226.

Holmstrom, B., & Milgrom, P. (1987). Aggregation and linearity in the provision of intertemporal incentives. *Econometrica, LV*, 303–328 (March).

How Does Specialization Help Companies Achieve Economies of Scale? (2021, 3 may). Investopedia. https://www.investopedia.com/ask/answers/051115/how-does-specialization-help-companies-achieve-economies-scale.asp

Jullien, B., Salanie, B., & Salanie, F. (1999). Should more risk-averse agents exert more effort?. *The Geneva Papers on Risk and Insurance Theory, 24*(1), 19-28.

Kimball, M. S. (1993). Standard risk aversion. *Econometrica: Journal of the Econometric Society*, 589-611.

Kirby, S. L., & Davis, M. A. (1998). A study of escalating commitment in principal–agent relationships: Effects of monitoring and personal responsibility. *Journal of Applied Psychology, 83*(2), 206.

Kohlberg, L. (1971). Stages of moral development. *Moral education, 1*(51), 23-92.

Krugman, Paul (2009). *The Return of Depression Economics and the Crisis of 2008.* W.W. Norton Company Limited. ISBN 978-0-393-07101-6.

Lal, R., & Srinivasan, V. (1993). Compensation plans for single-and multi-product sales forces: an application of the Holmstrom-Milgrom Model. *Management Science*, XXXIX(7), 777–793.

Litan, R. E., & Salop, S. C. (1993). Reforming the Lawyer-Client Relationship Through Alternative Billing Methods. *Judicature, 77*, 191.

Markovich, M. (1993). *Does Money Motivate?* Accessed at 24 September 2022, from https://journals-sagepub-com.eur.idm.oclc.org/doi/pdf/10.1177/088636879402600112

Marshall, J. M. (1976). Moral hazard. *The American Economic Review, 66*(5), 880-890.

Mather, L. (2003). What do clients want-What do Lawyers do. *Emory LJ, 52*, 1065.

Murphy, P. R., Wynes, M., Hahn, T. A., & Devine, P. G. (2020). Why are people honest? Internal and external motivations to report honestly. *Contemporary Accounting Research, 37(2)*, 945-981.

Pettinger, T. (2019). *Moral Hazard*. Economics help. https://www.economicshelp.org/blog/105/economics/what-is-moral-hazard/

Postema, G. J. (1980). Moral responsibility in professional ethics. *NYUL Rev.*, *55*, 63.

Ross, W. G. (1998). The Ethics of Time Based Billing by Attorneys. In *Prof. Law. Symp. Issues*.

Schmidt, U., & Zank, H. (2005). What is loss aversion? *Journal of risk and uncertainty, 30*(2), 157-167.

Shukaitis, M. J. (1987). A market in personal injury tort claims. *The Journal of Legal Studies, 16*(2), 329-349.

Smith, M. (2000). Getting Value from Exit Interviews. *Association Management, 52(4),* 22-39.

Steenburgh, T. J. (2008). Effort or timing: The effect of lump-sum bonuses. *QME, 6*(3), 235-256.

Stevens, D. E., & Thevaranjan, A. (2010). A moral solution to the moral hazard problem. *Accounting, Organizations and Society, 35*(1), 125-139.

Stowe, C. J. (2009). Incorporating morale into a classical agency model: implications for incentives, effort, and organization. *Economics of governance, 10*(2), 147-164.

The Economic Times. (2022, 15 october). What is "Moral Hazard". *The Economic Times*. https://economictimes.indiatimes.com/definition/moral-hazard

Uitz, R. (2019). The perils of defending the rule of law through dialogue. *European Constitutional Law Review*, *15*(1), 1-16.

Zacharias, F. C. (1993). Specificity in Professional Responsibility Codes: Theory, Practice, and the Paradigm of Prosecutorial Ethics. *Notre dame L. Rev., 69,* 223.