Chapter 4
Economic Evaluation of Japanese Attorney Fees

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4.1 Introduction

The Japanese judicial system does not differ greatly from those of most other civil law countries (Ota 2001). Especially in terms of allocating litigation costs between plaintiffs and defendants, Japanese rules of cost allocation in litigation resemble the American rules. The American rules hold that each party is responsible for paying their own attorney fees. In contrast, there is an allocation rule of costs between a client and one's own attorney can be used. That is mainly a contingent fee contractual arrangement, which is very common in the United States, especially for tort litigation. Under a contingent fee, a client is charged for an attorney's services only if the lawsuit is successful. That is, a client pays a percentage (usually one-third) of the recovery to the attorney.[1] However, as for allocating costs between a defendant and an attorney, the Japanese legal system differs from the American system. It is a reverse contingent fee. The reverse contingent fee is one by which a defense attorney's compensation depends in part on how much money his attorney saves the defendant: the lower the judgment given, the higher the attorney's fee (Garner 2009). Actually, reverse contingent fees are prohibited or substantially restricted in many other common law and civil law legal systems (Rubinfeld and Scotchmer 1998). In Japan, however, deregulation of attorney's fees began in 2004

[1] See Miceli (2004) and Kakalik and Pace (1986) reported a US survey showing that 96% of individual plaintiff attorneys in tort litigation paid their attorneys on a contingency basis, but almost all the defendants' attorneys were paid according to an hourly rate.

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by the Judicial Reform of Japan. Therefore, reverse contingent fees are not banned under the Japanese legal system (Japan Federation of Bar Association 2008).

Earlier reports of the literature describe no study of models in which both clients hire their own attorneys on a contingent fee basis, except for one report by Baik (2008). Baik (2008) models a situation in which each litigant (a plaintiff and defendant) hires an attorney under fixed and contingent fees. In his article, all players are risk neutral and attorney abilities are equal. The model includes two legal systems with a nonnegative fixed fee constraint and with the contingent fee cap. Results show that the system with the nonnegative fixed fee gives rent to the attorneys, but the system with the contingent fee cap leaves the rent to the client (plaintiff and defendant).

This article attempts to analyze actual Japanese attorney's fee system theoretically. We model each client (plaintiff and defendant) as offering compensation to its own attorney (agent) on a contingent fee basis. In this article, different from Baik (2008), we model each litigant as hiring its own attorney without those constraints. In addition, attorney abilities are not equal.

We organize this article as follows. Section 4.2 presents the civil litigation model. Section 4.3 shows the determination of attorney fees. Section 4.4 presents a model of fixed and contingent fees with risk attitude. Finally, we present concluding remarks.

4.2 The Model

Our model has one plaintiff with her attorney (p-attorney) and one defendant with his attorney (d-attorney). Attorneys make effort for the respective litigants in context in civil litigation, under the fee rule by which each party is responsible for paying its own attorney's fees.

The plaintiff hires the p-attorney to receive compensation for her own damages, filing a suit against the defendant. The defendant hires the d-attorney to defend against the plaintiff's lawsuit. Damages from the plaintiff claims are denoted by V (> 0) and are observable to all players. The effort level of the p-attorney is represented as x_p (≥ 0) and is observable only to the p-attorney herself; that of the d-attorney is x_d (≥ 0) observable only to the d-attorney himself. The marginal cost of the efforts are, respectively, c_p (≥ 0) for the p-attorney and c_d (≥ 0) for the d-attorney. Each marginal cost stands for each attorney's ability.

We assume that civil litigation under the adversarial system is adopted at the trial.[2] The adversarial system is a procedural system where the process is party controlled. Then, the probability of prevailing for the plaintiff (of losing for the defendant) is defined as follows:

[2]See Tullock (1975, 1980), Parisi (2002), and Baik (2008).

$$p(x_p, x_d) = \begin{cases} \dfrac{x_p}{x_p + x_d} & \text{if } x_p + x_d > 0 \\ \\ \dfrac{1}{2} & \text{if } x_p + x_d = 0 \end{cases} \tag{4.1}$$

When each effort level is zero, the default degree is a half. Regarding the plaintiff side, we can describe the contingent fees by which a portion of the expected judgments pV is received by the p-attorney. On the part of the defendant side, we explain it as a portion to the d-attorney of the difference between damages claimed by the plaintiff and the expected judgments (values correspond to the degree of contribution to the d-attorney's defense). The portion of the contingent fees assigned to the p-attorney is denoted as $\beta_p \in [0, 1]$. The portion of the contingent fees assigned to the d-attorney is denoted as $\beta_d \in [0, 1]$.

We show the timing of the model. In period 0, the plaintiff and the defendant, respectively, hire attorneys simultaneously. By this timing, each attorney's ability is determined as the marginal cost of effort by each attorney. We assume the switching cost of changing the hired attorney as very high. Then, both litigants continue to hire attorneys. In period 1, the plaintiff makes a take-it-or-leave-it offer of an arrangement of a contingent fee (β_p) to the p-attorney. The defendant also makes a take-it-or-leave-it offer of (β_d) to the d-attorney simultaneously. If the offer is accepted, then the game proceeds to the next stage. Otherwise, the litigant must make an effort by itself, causing inefficiency. We assume the reservation payoff of each attorney as zero. In period 2, each attorney chooses the effort level simultaneously. Each effort level is observable only to each own attorney. Then, the court passes judgment that is observable to all players. Each attorney accepts fees according to the attorney's fee arrangement. Expected payoffs for the plaintiff and the p-attorney are denoted, respectively, as Π_p and π_p. Because the contingent fee to the p-attorney is the portion of the expected gains, we describe the expected payoff for the plaintiff as follows:

$$\Pi_p = p(1 - \beta_p)V. \tag{4.2}$$

The expected payoff for the p-attorney is

$$\pi_p = p\beta_p V - c_p x_p. \tag{4.3}$$

We also, respectively, describe expected payoffs for the defendant and the d-attorney as Π_d and π_d. The defendant's expected stake is the difference between pV, the saved values produced by the d-attorney, and the payments V in no defense.[3] Then, because the defendant's expected stake is $V - pV$ and the defendant attorney's share is $(1 - p)\beta_d V$, the defendant's expected payoff is the following:

$$\Pi_d = (1 - p)(1 - \beta_d)V\ . \tag{4.4}$$

[3]We assume that the defendant pays V because he has no defense if defendant does not hire an attorney and assume payment pV if he hires an attorney.

The expected payoff for the d-attorney is:

$$\pi_d = (1-p)\beta_d V - c_d x_d \ . \tag{4.5}$$

Following the setting above, we use backward induction to solve the game. In period 2, each attorney expends some effort simultaneously, given that each contract of attorney's fees (β_p, β_d) is determined. First, anticipating the level of the d-attorney's effort, the maximization problem of the p-attorney's expected payoff is the following:

$$\max_{x_p} \ \pi_p = \left(\frac{x_p}{x_p + x_d}\right)\beta_p V - c_p x_p. \tag{4.6}$$

We obtain the reaction function of the p-attorney by the first-order condition as follows:

$$x_p = -\,x_d + \sqrt{\frac{\beta_p V x_d}{c_p}}. \tag{4.7}$$

This reaction function includes the strategic complemental part and the strategic substitutive part. Next, the maximization problem of the d-attorney's expected payoff, anticipating the level of the p-attorney's effort, is the following:

$$\max_{x_d} \ \pi_d = \left(\frac{x_d}{x_p + x_d}\right)\beta_d V - c_d x_d. \tag{4.8}$$

Then, the reaction function of the d-attorney is obtained by first-order conditions as follows:

$$x_d = -\,x_p + \sqrt{\frac{\beta_d V x_p}{c_d}}. \tag{4.9}$$

Therefore, we find the following Nash equilibrium (x_p^*, x_d^*) by solving simultaneous Eqs. (4.7) and (4.9):

$$(x_p^*,\ x_d^*) = \left(\frac{\beta_p^2\ \beta_d\ c_d V}{(\beta_p c_d + \beta_d c_p)^2},\ \frac{\beta_p\ \beta_d^2\ c_p V}{(\beta_p c_d + \beta_d c_p)^2}\right). \tag{4.10}$$

We examine the comparative statics of this equilibrium (4.10):

$$\frac{\partial x_p^*}{\partial V} > 0\ ,\ \frac{\partial x_d^*}{\partial V} > 0\ ,\ \frac{\partial x_p^*}{\partial \beta_p} > 0\ ,\ \frac{\partial x_d^*}{\partial \beta_d} > 0 \tag{4.11}$$

We denote the expression (4.11) as Lemma 4.1:

Lemma 4.1 *Greater damages mean that each attorney makes a greater effort. Furthermore, the higher the fraction of a contingent fee for an attorney becomes, the greater the effort expended by him.*

4.3 Determination of Attorney Fees

By anticipating the equilibrium effort level of each attorney in the second stage, each of the plaintiff and the defendant solves the expected payoff maximizing problem simultaneously in the first stage. We examine the probability of prevailing for the plaintiff and the expected payoff for the respective attorneys at the equilibrium of the second stage. Beforehand, we present a comparison of the p-attorney's and the d-attorney's marginal cost by the ratios $c_p/c_d = h$ and $c_d/c_p = k$. These ratios reflect the relative abilities of the respective attorneys. Now, substituting each equilibrium effort (4.10) in the second stage for the expression (4.1), we obtain the plaintiff's probability of prevailing in the case in equilibrium as:

$$p^*(x_p^*, x_d^*) = \frac{\beta_p}{\beta_p + h\,\beta_d}. \tag{4.12}$$

We check the comparative statics of this equilibrium as:

$$\frac{\partial p^*}{\partial \beta_p} \geq 0 \ , \ \frac{\partial p^*}{\partial \beta_d} \leq 0 \ , \ \frac{\partial p^*}{\partial h} \leq 0. \tag{4.13}$$

Therefore, in equilibrium, the higher the d-attorney's fee becomes, the more the plaintiffs' probability of prevailing falls. In contrast, the higher the p-attorney's fee becomes, the more the plaintiffs' probability of prevailing increases. Lower p-attorney ability reduces the plaintiff's probability of prevailing.

Next we examine each attorney's expected payoff. First, substituting expression (4.10) for the p-attorney's payoff (4.3), we can obtain the following form:

$$\pi_p^* = \frac{V\beta_p^3}{(\beta_p + h\beta_d)^2} \ . \tag{4.14}$$

Therefore, we obtain the following for comparative statics:

$$\frac{\partial \pi_p^*}{\partial \beta_p} > 0\,,\ \frac{\partial \pi_p^*}{\partial \beta_d} < 0\,,\ \frac{\partial \pi_p^*}{\partial V} > 0\,,\ \frac{\partial \pi_p^*}{\partial h} < 0 \tag{4.15}$$

Secondly, in similar manner to that shown above, we obtain the d-attorney's expected payoff in equilibrium:

$$\pi_d^* = \frac{V\beta_d^3}{(k\beta_p + \beta_d)^2} \quad . \tag{4.16}$$

The comparative statics is then derived as:

$$\frac{\partial \pi_d^*}{\partial \beta_d} > 0 \ , \ \frac{\partial \pi_d^*}{\partial \beta_p} < 0 \ , \ \frac{\partial \pi_d^*}{\partial V} > 0 \ , \ \frac{\partial \pi_d^*}{\partial k} < 0 \ . \tag{4.17}$$

We summarize this interpretation as the following lemma:

Lemma 4.2 *In equilibrium, the greater the damages, the greater the expected payoff for each attorney becomes. The higher own attorney's fees become, the greater the expected payoff for each attorney becomes. The higher the opponent attorney's fees become, the lower the expected payoff for each attorney becomes. Furthermore, in equilibrium, the higher an attorney's ability is, the greater the payoff from the attorney becomes.*

We show the first-stage solution. We consider that the contracts of the plaintiff and the defendant are satisfied with each attorney's participating constraint. First, we examine the contract of the plaintiff side. Substituting the expression (4.10) for the plaintiff's expected payoff (4.2), and assuming the reservation payoff as zero for simplicity, we obtain the maximizing problem for the plaintiff using Eq. (4.12) as shown below:

$$\max_{\beta_p} \ \Pi_p = \left(\frac{\beta_p}{\beta_p + h\beta_d} \right) (1 - \beta_p) V, \tag{4.18}$$

$$s.t. \ \ \pi_p^* = \frac{V\beta_p^3}{(\beta_p + h\beta_d)^2} \geq 0 \tag{4.19}$$

The constraint condition (4.19) is satisfied. Therefore, we can calculate the first-order condition of Eq. (4.18), throwing the condition (4.19) away. We obtain the first-order condition[4] as $\beta_p^2 + 2\beta_p\beta_d - h\beta_d = 0$. Therefore, we obtain the plaintiff's reaction function as:

$$\beta_p = -h\beta_d + \sqrt{h^2\beta_d^2 + h\beta_d}. \tag{4.20}$$

Next we examine the plaintiff's reaction function shape. Then differentiating β_p with β_d of the Eq. (4.20), we obtain the following form without difficulty: $\partial\beta_p/\partial\beta_d > 0, \ \partial^2\beta_p/\partial^2\beta_d^2 < 0$.

[4]The second-order condition can be confirmed easily.

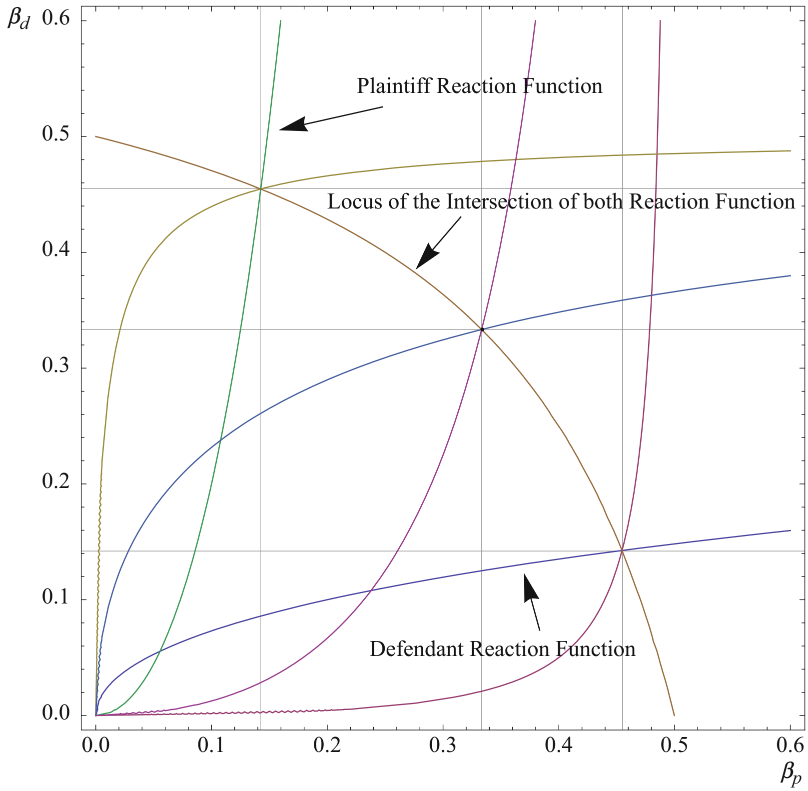

Fig. 4.1 Locus of the equilibrium

We examine the effect of parameter h on the plaintiff's reaction function:

$$\frac{\partial \beta_p}{\partial h} = \frac{2\beta_d^2 + \beta_d - 2\beta_d\sqrt{h^2\beta_d^2 + h\beta_d}}{2\sqrt{h^2\beta_d^2 + h\beta_d}} > 0 \tag{4.21}$$

The positive sign of the numerator can be confirmed without difficulty. These graphs of the plaintiff's reaction functions are presented in Fig. 4.1.

Secondly, we specifically examine the fee contract of the defendant side. We formalize the defendant's maximization problem as shown below:

$$\max_{\beta_d} \ \Pi_d = \left(\frac{\beta_d}{k\beta_p + \beta_d}\right)(1 - \beta_d)V, \tag{4.22}$$

$$s.t. \ \ \pi_d^* = \frac{V\beta_d^3}{(k\beta_p + \beta_d)^2} \geq 0 \tag{4.23}$$

Similarly to the method used for the plaintiff side, we obtain the defendant's reaction function in the following form:

$$\beta_d = -k\beta_p + \sqrt{k^2\beta_p^2 + k\beta_p}\ . \tag{4.24}$$

We examine the shape of the defendant's reaction function using a similar method to that presented above: β_d increases as β_p rises; marginal β_d with respect to β_p decreases because $\partial\beta_d/\partial\beta_p > 0$, $\partial^2\beta_d/\partial^2\beta_p^2 < 0$. The effect of parameter k to the defendant's reaction function is derived as follows in a similar way as that for the plaintiff's side:

$$\frac{\partial\beta_d}{\partial k} = \frac{2\beta_p^2 + \beta_p - 2\beta_p\sqrt{k^2\beta_p^2 + k\beta_p}}{2\sqrt{k^2\beta_p^2 + h\beta_p}} > 0 \tag{4.25}$$

We present these graphs of the defendant's reaction function in Fig. 4.1.

Now we should solve the Nash equilibrium for respective attorney's fees in all games. We derive the intersection of the plaintiff reaction function and the defendant reaction function. Consequently, we can obtain the locus of the intersection of both reaction functions, solving the Eqs. (4.20) and (4.24) with respect to h as follows:

$$\beta_d = \frac{2\beta_p - 1}{2\beta_p - 2} \tag{4.26}$$

This locus is presented in Fig. 4.1. We can specify the parameters now. If $h = k = 1$, i.e., $c_p = c_d$, then this case means that the p-attorney's ability is equal to that of the d-attorney. In this case, we represent $((\beta_p{}^*,\ \beta_d{}^*) = (1/3,\ 1/3))$ as the equilibrium. The locus in northwest implies that the p-attorney is superior to the d-attorney in ability. The locus in the southeast signifies the opposite. Therefore, we can understand the following properties by the comparative parameters.

$$\frac{\partial\beta_p{}^*}{\partial h} > 0,\quad \frac{\partial\beta_d{}^*}{\partial h} < 0,\quad \frac{\partial\beta_d{}^*}{\partial k} > 0,\quad \frac{\partial\beta_p{}^*}{\partial k} < 0 \tag{4.27}$$

We summarize these results as the following proposition:

Proposition 4.1 *In equilibrium, the greater the superiority of the opponent attorney, the more likely a client is to make a fee contract with his attorney to raise attorney fees. In contrast, the more inferior the opponent attorney, the more likely a client is to make a fee contract to decrease attorney fees.*

4.4 Fixed and Contingent Fee with Risk Attitude

In this section, we introduce fixed fees (t_p for the plaintiff's side and t_d for the defendant's side) and the degree of attorney attitude with risk aversion. Then we use parameter $\theta_p \in (0, 1]$ for the p-attorney and $\theta_d \in (0, 1]$ for the d-attorney as the degree of it. These parameters being close to zero signify that the attorney is moderately risk averse. In contrast, we assume that the plaintiff and the defendant are risk neutral. Then, we solve this problem using backward induction.

We formulate the expected p-attorney payoff with risk-averse (π_p^r) as shown below:

$$\pi_p^r = \left(\frac{x_p}{x_p + x_d}\right)(\beta_p V)^{\theta_p} - c_p x_p + t_p \tag{4.28}$$

We can obtain the first-order condition as the following equation:

$$x_p = -x_d + \sqrt{\frac{x_d(\beta_p V)^{\theta_p}}{c_p}} \tag{4.29}$$

Next, the expected payoff of d-attorney with risk-averse (π_d^r) is:

$$\pi_d^r = \left(\frac{x_d}{x_p + x_d}\right)(\beta_d V)^{\theta_d} - c_d x_d + t_d. \tag{4.30}$$

The first-order condition is obtained as the following equation:

$$x_d = -x_p + \sqrt{\frac{x_p(\beta_d V)^{\theta_d}}{c_d}} \tag{4.31}$$

These reaction functions have almost identical shape to those of the previous section. We solve the Nash equilibrium in the second stage simultaneously. Then we can obtain the equilibrium effort of each attorney as $\{x_p^r, x_d^r\}$:

$$\{x_p^r, x_d^r\} = \left\{\frac{c_d(\beta_p V)^{2\theta_p}(\beta_d V)^{\theta_d}}{(c_d(\beta_p V)^{\theta_p} + c_p(\beta_d V)^{\theta_d})^2}, \frac{c_p(\beta_p V)^{\theta_p}(\beta_d V)^{2\theta_d}}{(c_d(\beta_p V)^{\theta_p} + c_p(\beta_d V)^{\theta_d})^2}\right\} \tag{4.32}$$

We can ascertain the plaintiff's winning probability (p^r), the p-attorney's expected payoff (π_p^r), and the d-attorney's expected payoff (π_d^r) by anticipating the second-stage solution as shown below:

$$p^r = \frac{x_p^r}{x_p^r + x_d^r} = \frac{(\beta_p V)^{\theta_p}}{(\beta_p V)^{\theta_p} + h(\beta_d V)^{\theta_d}} \tag{4.33}$$

$$\pi_p^r = p^r(\beta_p V)^{\theta_p} - c_p x_p^r + t_p = \frac{(\beta_p V)^{3\theta_p}}{((\beta_p V)^{\theta_p} + h(\beta_d V)^{\theta_d})^2} + t_p \tag{4.34}$$

$$\pi_d^r = (1 - p^r)(\beta_d V)^{\theta_d} - c_d x_d^r + t_d = \frac{(\beta_d V)^{3\theta_d}}{((\frac{1}{h})(\beta_p V)^{\theta_p} + (\beta_d V)^{\theta_d})^2} + t_d \tag{4.35}$$

Therefore, we can formulate the plaintiff payoff maximization problem as follows, where $\hat{\pi}_p^r$ (constant) is the reservation payoff for the p-attorney:

$$\max_{\beta_p} \ \Pi_p = \left(\frac{(\beta_p V)^{\theta_p}}{(\beta_p V)^{\theta_p} + h(\beta_d V)^{\theta_d}} \right) (1 - \beta_p)V - t_p \tag{4.36}$$

$$s.t. \ \ \pi_p^r = \frac{(\beta_p V)^{3\theta_p}}{((\beta_p V)^{\theta_p} + h(\beta_d V)^{\theta_d})^2} + t_p \geq \hat{\pi}_p^r \tag{4.37}$$

Then, binding the constraint condition to equality, we obtain the fixed fee as shown below:

$$t_p = \hat{\pi}_p^r - \frac{(\beta_p V)^{3\theta_p}}{((\beta_p V)^{\theta_p} + h(\beta_d V)^{\theta_d})^2} \tag{4.38}$$

We substitute Eq. (4.38) into the plaintiff's payoff function (4.36). Therefore, the plaintiff's payoff maximization problem is the following:

$$\max_{\beta_p} \Pi_p = \frac{(\beta_p V)^{\theta_p}}{(\beta_p V)^{\theta_p} + h(\beta_d V)^{\theta_d}} (1 - \beta_p)V - \hat{\pi}_p^r + \frac{(\beta_p V)^{3\theta_p}}{((\beta_p V)^{\theta_p} + h(\beta_d V)^{\theta_d})^2} \tag{4.39}$$

Next, we can obtain the defendant's payoff maximization problem similarly to the process used for the plaintiff, where $\hat{\pi}_d^r$ (constant) is the reservation payoff for the d-attorney:

$$\max_{\beta_d} \ \Pi_d = \left(\frac{(\beta_d V)^{\theta_d}}{k(\beta_p V)^{\theta_p} + (\beta_d V)^{\theta_d}} \right) (1 - \beta_d)V - t_d \tag{4.40}$$

$$s.t. \ \ \pi_d^r = \frac{(\beta_d V)^{3\theta_d}}{\left(k(\beta_p V)^{\theta_p} + (\beta_d V)^{\theta_d}\right)^2} + t_d \geq \hat{\pi}_d^r \tag{4.41}$$

Similarly to the plaintiff case, we bind the constraint condition to equality. Thereby, we obtain the fixed fee for the defendant in the following form:

$$t_d = \hat{\pi}_d^r - \frac{(\beta_d V)^{3\theta_d}}{\left(k(\beta_p V)^{\theta_p} + (\beta_d V)^{\theta_d}\right)^2} \tag{4.42}$$

We substitute Eq. (4.42) into the defendant's payoff function (4.40). Therefore, the defendant's payoff maximization problem is the following:

$$\max_{\beta_d} \Pi_d = \frac{(\beta_d V)^{\theta_d}}{k(\beta_p V)^{\theta_p} + (\beta_d V)^{\theta_d}}(1-\beta_d)V - \hat{\pi}_d^r + \frac{(\beta_d V)^{3\theta_d}}{\left(k(\beta_p V)^{\theta_p} + (\beta_d V)^{\theta_d}\right)^2} \quad (4.43)$$

It is necessary to derive the equilibrium in the first stage. However, in general, it would be difficult to seek them analytically unless some parameters were specified. Let us choose some specific parameters in advance as $h = 1$ $(k = 1)$, $\theta_p = \theta_d = \theta$ $(\theta \in (0, 1])$, which set each attorney's ability as equal and each attorney's risk attitude as equivalent. We then compare moderate risk aversion with slight risk aversion.

We can examine an example of two cases for attorney risk attitude: $\theta = \{\underline{\theta}, \bar{\theta}\}$ $(\underline{\theta} < \bar{\theta})$. Specifically, $\underline{\theta} = 0.5$, $\bar{\theta} = 0.75$. Taking numerical examples, one can obtain equilibrium points $(\beta_p^r, \beta_d^r) \doteqdot (0.2057,\ 0.2057)$ if $\underline{\theta} = 0.5$ and $(\beta_p^r, \beta_d^r) \doteqdot (0.3133,\ 0.3133)$ if $\bar{\theta} = 0.75$. Therefore, we understand that an inner solution is obtainable if the attorney is risk averse. Figure 4.2 shows reaction functions of the plaintiff and the defendant and two intersections of both symmetric reaction functions. The reaction functions of both the plaintiff and the defendant are strategic complements, which means that the greater the opponent's contingent fee, the greater the increase of a contingent fee on one's own side becomes under the best response. To highlight that comparison, it is apparent that the southwest symmetric point is the one by which both attorneys are moderately risk averse. Therefore, we can infer that, as θ decreases, both $(\beta_p^r,\ \beta_d^r)$ decrease, i.e., the greater the risk aversion of both attorneys becomes, the more likely the equilibrium contingent fee is to decrease.

We must address fixed fee situations. Assuming the two cases of θ above, we can compare fixed fees for attorneys' risk attitudes. In the symmetric setting presented above, we shall rewrite the equation of the fixed fee, (4.38) or (4.42) as:

$$t(\underline{\theta}) = \hat{\pi} - \frac{1}{4}\left(\underline{\beta}^r V\right)^{\underline{\theta}} \ \ \textit{if} \ \ \theta = \underline{\theta}\,, \quad t(\bar{\theta}) = \hat{\pi} - \frac{1}{4}\left(\bar{\beta}^r V\right)^{\bar{\theta}} \ \ \textit{if} \ \ \theta = \bar{\theta}. \quad (4.44)$$

where, $\beta = \underline{\beta}$ for $\underline{\theta}$, $\beta = \bar{\beta}$ for $\bar{\theta}$. Because $(\underline{\beta} V)^{\underline{\theta}} < (\bar{\beta} V)^{\bar{\theta}}$ holds if and only if $\beta V > 1$, we understand that $t(\underline{\theta})$ is greater than $t(\bar{\theta})$ if $t(\cdot)$ is positive. Therefore, in a system of the nonnegative fixed fees, the equilibrium contingent fee is lower, and the equilibrium fixed fee is higher when the attorney is moderately risk averse.

We summarize these results as the following proposition:

Proposition 4.2 *In equilibrium, when the attorney is moderately risk averse, the contingent fee is lower, and the fixed fee is higher under the condition of moderately highly reservation payoff of the attorney.*

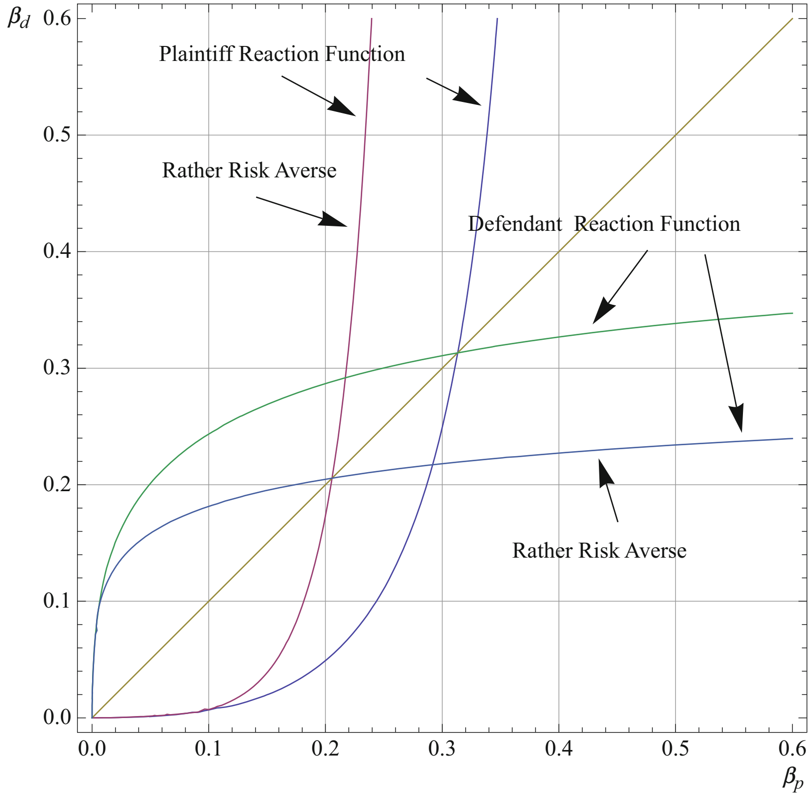

Fig. 4.2 Reaction functions with various risk attitudes

4.5 Concluding Remarks

As described herein, we have presented some examination of the Japanese attorney's fee system since deregulation of attorney's fees began in Japan in 2004. Under the Japanese attorney fee system, a plaintiff is able to use a contingent fee. A defendant is free to use a reverse contingent fee. These are features that are unique to Japan. We have produced a model in which each plaintiff and defendant offers a combination of a fixed fee and a contingent fee to an attorney without a cap and nonnegative constraint. We also have explicitly introduced attorney capabilities into the model. Results show that if the opponent attorney is superior to one's own, the client is likely to make a fee contract to raise his own attorney's fees. When the attorney is moderately risk averse, the contingent fee is likely to be lower, and the fixed fee is likely to be higher under conditions of a moderately high reservation payoff of the attorney. Further extension of the model to address settlement issues and asymmetric player situations is expected to be crucially important for our future research.

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