# Participation and decision making in family firms[*]

Bonnie Nguyen and Andrew Wait[†]
University of Sydney

September 5, 2012

**Abstract**

Altruism drives many economic decisions. We explore the implications of altruistic preferences for the organization of family firms. Adapting Aghion and Tirole (1997), we compare the allocation of decision-making rights in family and non-family firms. The distinguishing feature of a family firm is that the principal is altruistic towards the blood-related agent. Taking participation of the agent as given, we characterize sufficient conditions for centralization in both non-family and family firms. We then consider the agent's choice of where to work. When the principal chooses the allocation of decision-making rights and the agent chooses where they work, centralization occurs in a broader range of circumstances in family firms than in non-family firms, consistent with empirical evidence. We also show that: an agent might choose to remain working at a decentralized family firm, even though they would prefer decision making to be centralized; and an agent might choose to remain in a centralized family firm, even when it does not undertake the type of work preferred by the agent. We relate our findings to the relative performance of family versus non-family firms, and to issues of succession.
*Key words*: decision-making rights, decentralization, family ownership, altruism.
*JEL classifications*: D23, L23, L29.

## 1    Introduction

Family-owned businesses are one of the most prevalent types of firm around the world (La Porta et al. (1999), Faccio and Lang (2002) and Anderson and Reeb (2003)). Given their importance, however, family firms are relatively understudied. The prevailing theme in the literature is that family firms are different. One stream of research focuses on agency issues in family firms; for example, Fama and Jensen (1983) suggest family ownership can help alleviate agency problems by avoiding the separation of ownership and control. In a similar vein, other authors suggest that family owners are less impatient, encouraging longer-term investment, and that family members can have a broader

---

range of methods by which they can transfer utility between each other, again creating an environment capable of supporting higher levels of investment than would be possible otherwise.[1] Some empirical studies focus on the relative performance of family firms, with some researchers arguing that: family firms perform better (Sraer and Thesmar, 2007); family-owned firms perform relatively poorly (Cucculelli and Micucci, 2008); or that, finally, there is no direct link between ownership type and performance (Miller et al., 2007). Another line of literature focuses on the potential problems relating to succession between generations in family-owned firms (Bennedsen et al., 2007 and Cucculelli and Micucci, 2008).[2]

We address two connected, but as yet unresolved issues, both related to the organizational structure of family firms. First, we consider the allocation of decision-making rights within a family firm. Empirical evidence, such as Bloom and Van Reenen (2010), suggests that decision making is more centralized in family firms than non-family owned firms. Similarly, Wait and Wright (2010) find that major decisions are more likely to be centralized in family-owned firms, as compared to their non-family counterparts. Decision making is a critical element in the operation of a firm, and their decision-making protocols are different, which could at least partially explain the observed differences between family and non-family firms.

Second, we endogenize the participation in family firms. The prevalence of family firms is due, in part, to children's (and spouses') willingness to work in the family business. This is a complementary question to the issue of succession addressed by Bennedsen et al. (2007) and Cucculelli and Micucci (2008). In many situations, the choice to participate in a family firm is a forerunner to any issues relating to succession.

To address these questions, we develop a project-selection model based on the formal- and real-authority framework of Aghion and Tirole (1997). In the model, outlined in Section 2, the principal first decides whether to retain or delegate to the agent the authority to choose which of several projects to implement. After the decision-making rights have been allocated, the decision maker can put in effort to become informed about the payoffs of the potential projects. Upon implementation, a project can benefit the principal, the agent, or both; however, there is a potential conflict of interest between the two parties about which project is best. While there are the usual potential differences in preferences, we augment the standard model to include one-way altruism from the parent principal towards the blood-related agent, typically their child. Parents (usually) care for their children, so it seems natural that a father or mother who is a principal in a family firm would care about the wellbeing (or payoff) of the child-agent. However,

---

[1] James (1999) suggests that by not separating ownership and control, family ownership has the advantage of lengthening the time horizon of investors. On the other hand, Schulze et al. (2002) argue that while family ties can overcome some agency problems, they also create other issues, particularly as the firm matures. In their empirical investigation, Anderson et al. (2012) found family-owned firms make less short-term investments and that family firms prefer physical capital investments as opposed to riskier R&D projects. Bandiera et al. (2009) find that family-owned firms use less sensitive managerial incentive contracts than their non-family counterparts.

[2] Survey evidence suggests that issues surrounding succession are one of the major concerns of family-business owners (Chua et al., 2003).

following Becker (1974), Schulze et al. (2002) and James (1999), amongst others, we assume that this altruism is not reciprocated by the agent. Hence in our model, the principal's utility depends in part upon the payoff to the agent, but not vice versa. In our model, this parental altruism is the key difference between non-family and family firms, and hence the driver of our predictions relating to the observed organizational structures in family businesses.

The results of the model are discussed in Sections 3 and 4. First, we consider the differing incentives to invest in information gathering in a family and non-family firm. In a centralized family firm, the effort of the principal is higher than in an equivalent non-family firm. This is because the principal has an additional benefit from effort due to their altruistic preferences towards the blood-related agent. However, an agent in a decentralized firm exerts the same amount of effort, whether they work in a family or non-family firm.

Second, we compare the principal's choice of decentralized decision-making structure under the different forms of ownership. To do so we initially consider an exogenous firm structure, in which participation in the firm by the principal and blood-relative agent is given. Exogenous participation might reflect strong expectations or cultural norms regarding a child's family responsibilities. With exogenous participation in the firm, we derive sufficient conditions for family firms to be more likely to be centralized than non-family firms; a higher rate of centralization in family firms requires that both the agent and the principal prefer centralization, and that the principal be sufficiently altruistic.

But why would anyone want to work with their parents? We next extend the Aghion and Tirole (1997) framework to allow for endogenous participation by the agent. In particular, we examine the case when the agent can choose where they work (that is, whether they elect to work in a family firm or elsewhere) and, following the employment match, the principal decides the allocation of decision-making rights. In this framework, a particular firm structure (family owned or otherwise) can only exist if it arises from the equilibrium choices of both the agent and the principal. With endogenous participation of the agent, we find that centralization of decision-making occurs for a broader range of parameters for family businesses than in non-family firms.

Our framework also leads to several somewhat perverse implications, which are consistent with empirical observations. We find that an agent could choose to remain in a family-owned firm, even when they do not like the way things are done (Section 4.2). Specifically, an agent might opt to stay in decentralized family firm, even when they would prefer decision making to be centralized. While staying in the family firm is still their best option, the agent could well complain about being given too much responsibility. We also consider the case when an agent is able to choose the type of work they do – that is, by choosing how closely aligned their interests are with those of the principal – if they go and work in a non-family firm. It is possible that an agent will remain in a centralized family firm that is not doing the type of work the agent prefers. The agent remains in the family firm to reap the benefits of the centralized decision making of their altruistic principal, rather than work in a non-family firm in an area that they like more. Again, the agent stays with the family business, but could complain about what the

3

family business actually does. From this insight, our model also suggests that succession between the generations in family firms can be problematic, given that an agent might be only willing to stay in a centralized family firm whose business they are not particularly interested because of the benefit they receive from decisions made by an altruistic principal. Our model also accords with the observation that the style of management in a family firm changes upon succession; while the first-generation of a family business is often 'paternalistic' and centralized, the second generation family businesses are often more professionally managed, as well as making greater use of outside managers (see Sonfield and Lussier, 2004 and Dyer Jr., 1988). Section 5 concludes the paper, noting the implications of our findings and possibilities for future research.

This paper draws on several streams of literature, not least the theoretical models of the optimal allocation of decision-making power in an organization. Some explanations for the allocation of decision-making authority include a means of avoiding costly communication Dessein (2002) and more effective information processing (Radner, 1993, Bolton and Dewatripont, 1994, Van Zandt, 1999 and Meagher, 2003). Our approach, following Aghion and Tirole (1997), considers the delegation of authority to involve a tradeoff between providing incentives to invest effort in obtaining essential information versus a loss of control. Other authors have adopted a similar approach, including Acemoglu et al. (2007), Zabojnik (2002) and Bester (2004). In this way, we focus on agency issues both within family and non-family organization; parental altruism potentially ameliorates but does not diminish agency. In addition, the empirical literature on family firms is the motivator for this study. As noted above, centralized decision making (Wait and Wright, 2010), poorer quality of management (Bloom et al., 2012) and issues of generational succession (Villalonga and Amit, 2006, Bennedsen et al., 2007 and Cucculelli and Micucci, 2008) are all associated with family-owned firms. Our model suggests that parental altruism could be a contributing factor to all three issues.

## 2   Theoretical framework

Following Aghion and Tirole (1997), we model a hierarchy consisting of a principal and an agent that can undertake one (or none) of $N \geq 3$ possible projects. Each project $n \in \{1, ..., N\}$, if chosen, yields a return of $x_{p,n}$ for the principal and a private benefit $x_{a,n}$ for the agent. The agent's preferred project (that is, the project that maximizes the agent's private benefit) yields $x_a$ for the agent and an expected return of $\alpha_p x_p$ for the principal; likewise, the principal's preferred project yields $x_p$ for the principal and an expected benefit of $\alpha_a x_a$ for the agent, where $\alpha_p, \alpha_a \in [0, 1]$.[3] If no project is chosen, the payoff for both the principal and the agent is zero. We assume that redistribution of ex post surplus between the parties is non-contractible.

---

[3] We refer to $\alpha_p$ and $\alpha_a$ as 'congruence parameters'. The congruence parameters can be interpreted in a number of ways, including as the probability that one party's preferred project also yields the maximum payoff for the other party (Aghion and Tirole, 1997) or as a measure of trust between the parties (Marin and Verdier, 2008). For now, we adopt the more general interpretation that $\alpha_p$ and $\alpha_a$ measure how closely the principal's interests are aligned with those of the agent, and vice versa.

At the outset, neither the principal nor the agent knows the payoffs associated with any of the potential projects. However, there is at least one project that yields a sufficiently negative return for both parties so that neither will select a project at random if uninformed.

*Sequence of events.*— In Period 1, the principal chooses the structure of the firm in that she either retains decision-making authority (centralization) or she delegates it to the agent (decentralization). In Period 2, the party with authority (party $i$, where $i \in \{p, a\}$) can search for information about the projects. Specifically, at private effort cost $c(e_i)$ party $i$ learns the payoffs of all projects with probability $e_i$, in which case they implement their preferred project. We assume the effort cost function is increasing and convex and that $c'(1) \to \infty$. Thus, party $i$'s net payoff is:

$$U_i = e_i x_i - c(e_i)$$

for $i \in \{p, a\}$. The payoff of the party without the decision-making authority is:

$$U_j = e_i \alpha_j x_j$$

for $j \in \{p, a\}$, $j \neq i$.

## 2.1 The non-family business

*Decentralization.*— If the firm is decentralized ($i = a$ and $j = p$), the payoffs for each party are:

$$U_p^D = e_a \alpha_p x_p \tag{1}$$

and

$$U_a^D = e_a x_a - c(e_a). \tag{2}$$

Given the allocation of decision-making authority, in the second period, the agent chooses $e_a$ so as to maximizes his expected payoff in (2). The first-order condition is $x_a = c'(e_a)$, which given our assumptions yields an interior solution $e_a^*$. Thus, the equilibrium payoffs to each party are:

$$U_p^D = e_a^* \alpha_p x_p \tag{3}$$

$$U_a^D = e_a^* x_a - c(e_a^*) \tag{4}$$

*Centralization.*— If decision-making power is centralized ($i = p$ and $j = a$), each party's payoff is:

$$U_p^C = e_p x_p - c(e_p); \tag{5}$$

and

$$U_a^C = e_p \alpha_a x_a. \tag{6}$$

The principal's first-order condition from (5) is $x_p = c'(e_p)$; let the solution be $e_p^*$. This yields anticipated payoffs from centralization of:

$$U_p^C = e_p^* x_p - c(e_p^*) \tag{7}$$

and

$$U_a^C = e_p^* \alpha_a x_a. \tag{8}$$

## 2.2 The family business

In contrast to other businesses, the family firm is typified by ties between its members that extend beyond a purely commercial relationship. According to Ward (1987), "the very nature of business often seems to contradict the nature of the family. Families tend to be emotional; businesses are objective. Families are protective of their members, businesses, much less so". In this spirit, and following the approach of Becker (1981) and Chami (2001), we model the difference between family and non-family firms as being the presence or absence of altruism between the parties. Specifically, we assume that family firms are characterized by asymmetric altruism, whereby the principal cares not only about her own payoff but also that of the agent (but not vice versa); thus, the principal's utility function now takes the form:

$$V_p^k = \frac{1}{1+\lambda}(U_p^k) + \frac{\lambda}{1+\lambda}(U_a^k)$$

where $k \in \{C, D\}$ and $\lambda \in (0, 1]$.

Because the agent is not altruistic towards the principal, his utility function remains unchanged:

$$V_a^k = U_a^k$$

where $k \in \{C, D\}$. This accords with rotten-kid model of Becker (1974), in which a parent (in our model the principal) cares for the wellbeing of their selfish child (the agent), but not vice versa. An alternative rationale for this one-sided altruism comes from the evolutionary literature; a person's altruistic preferences towards another individual depends on how related the two are. As children have more fertile years ahead of them, parents will display more altruism towards their children than vice versa.[4] As discussed further in Section 3.1, our one-sided altruism assumption can be seen as an approximation of the parent-principal being relatively more altruistic than their child-agent.

*Decentralization.*— As there is no change in the agent's utility function, his optimal effort under decentralization is still given by $e_a^*$, and his utility is unchanged from what it would be in a non-family firm. Given her altruism, the principal's utility is different. The expected payoff in a decentralized family firm to the principal and the agent, respectively, are

$$V_p^D = \frac{1}{1+\lambda}\left(e_a^* \alpha_p x_p\right) + \frac{\lambda}{1+\lambda}\left(e_a^* x_a - c(e_a^*)\right) \tag{9}$$

and

$$V_p^A = e_a^* x_a - c(e_a^*). \tag{10}$$

---

[4]See, for example, Hamilton (1964a) and Hamilton (1964b) for more details on what is often referred to as Hamilton's Rule.

*Centralization.*— In a centralized family firm, the principal's utility function is now given by:

$$\bar{V}_p^C \geq V_p^C = \frac{1}{1+\lambda}(e_p x_p - c(e_p)) + \frac{\lambda}{1+\lambda}(e_p \alpha_a x_a). \tag{11}$$

Note that, because the principal's utility now depends on both $x_{p,n}$ and $x_{a,n}$, the project that maximizes her utility is not necessarily the project that maximizes her private benefit, $x_{p,n}$. That is, it is possible that in the presence of altruism the principal will choose to implement a third project (other than the project that maximizes her private benefit or the project that maximizes the agent's private benefit). Furthermore, even though the redistribution of ex post surplus is non-contractible, it is possible that the principal will voluntarily make a (monetary) transfer to the agent if the increase in the agent's private benefit thereby increases the principal's utility overall.[5] For these reasons, it is possible that the principal's level of utility exceeds that level associated with $x_p$. Likewise, since the increase in the principal's utility depends on her altruism towards the agent, it follows that he must also benefit from the choice of alternative project or the redistribution of ex post surplus.

However, in the case where $x_p$ does maximize the principal's utility, (that is, where $\bar{V}_p^C = V_p^C$), her optimal level of effort is given by the first-order condition:

$$x_p + \lambda \alpha_a x_a = c'(e_p).$$

Again, we assume that there is an interior solution, $e_p^{**}$, which yields payoffs:

$$\bar{V}_p^C \geq V_p^C = \frac{1}{1+\lambda}\left(e_p^{**} x_p - c(e_p^{**})\right) + \frac{\lambda}{1+\lambda}(e_p^{**}\alpha_a x_a) \tag{12}$$

and

$$\bar{V}_a^C \geq V_a^C = e_p^{**}\alpha_a x_a. \tag{13}$$

Because the cost function is increasing and convex, the principal's choice of effort is higher in the presence of altruism ($e_p^{**} > e_p^*$); for this reason, the agent's expected private benefit is higher in a centralized family than a non-family firm with centralized decision making. Indeed, the optimal level of effort is increasing in $\lambda$, $\alpha_a$ and $x_a$, which implies that the principal's choice of effort is higher when she is more altruistic and/or when the agent derives greater benefit from the increased effort. On the other hand, due assumptions about the form of altruism, it is not clear whether a principal in a family firm is better off than a principal in a non-family firm if the firm is centralized. Result 1 summarizes this discussion.

**Result 1.** *While the agent's effort is the same in both a decentralized family and non-family firm, the principal's effort in a family firm is higher than the effort of a principal in a non-family firm. The effort of the principal in a family firm is increasing in her altruism and the expected benefit to the agent.*

---

[5]Clearly, this is not an issue if $x_p$ and $x_a$ are linear in income/wealth; however, in the more general case it is, in principle, possible that a principal may wish to centralize decision making and, following the choice of project, 'compensate' the agent with a transfer.

## 2.3 Empirical predictions

Several empirical predictions about the financial performance of family firms arise from this analysis. From Result 1, the principal of a centralized family firm exerts higher effort than her non-family firm counterpart. This increases the probability that she becomes informed and is able to implement a project, thus increasing expected returns $(e_p x_p)$. If costs of effort are borne privately and are not reflected in financial data, we would expect this to translate to an increase in reported financial returns and/or profitability. This possibly explains empirical findings of higher returns in family firms (Sraer and Thesmar, 2007).

On the other hand, we have also noted that project choice by an informed principal in a family firm is potentially skewed by the presence of altruism. This accords with findings that investment decisions in family firms differ from their non-family counterparts (Anderson et al., 2012). By selecting a different project, the principal elects to forgo some of her own private benefit in order to increase the agent's private benefit, in order to raise her utility overall. As discussed above, the principal may also make voluntary monetary transfers to the agent for the same reason. Such redistribution occurs at the expense of the principal's private benefit, which may translate to lower financial returns. This may explain the the empirical analyses of Cucculelli and Micucci (2008) and Bloom et al. (2012), who find that family firms are less profitable than non-family firms. In our model, the family-firm principal is more than compensated because she is altruistic towards the agent; however, the psychic utility of altruism is unlikely to be reflected in financial data.

To the extent that market returns are related to effort, however, our model suggests that a decentralized family-owned firm will have the same market return, and investment strategy, as a non-family firms. It is also possible that family firms differ in their observed financial performance because of their different choice of decision-making allocation (for example, choosing a centralized structure when a non-family firm would have decentralized decision-making rights). This discussion is summarized in the following empirical prediction.

**Prediction 1.** *Family firms can differ in their financial returns to non-family firms due to: a potentially different choice of decision-making allocation; and from altered effort and project choice by the principal when decision making is centralized.*

This empirical prediction provides a guide for future empirical research relating to the differences in financial returns in family and non-family firms, suggesting a nuanced relationship between differences in the internal organizational structure of firms and their observed financial performance.

# 3   To centralize or decentralize?

The allocation of decision-making rights is one of the key choices a firm has to make. In this section we consider the preferences of the principal and the agent regarding who

should be granted decision-making authority. While the decision maker has the distinct advantage that they get to choose their favorite project, along with authority comes the effort cost of trying to be informed. The added complication in our model is that the principal's altruism alters the relative advantage of being the decision maker for both parties.

## 3.1 Principal's choice of firm structure

Now suppose, in Period 1, it is the principal who decides whether decision making is centralized or decentralized. Thus, in a non-family firm, the principal will choose to centralize if and only if $U_p^C > U_p^D$, that is:

$$\alpha_p < \frac{e_p^* x_p - c(e_p^*)}{e_a^* x_p} \equiv \hat{\alpha}_p^{NF}.$$

By contrast, in a family firm, a sufficient but not necessary condition for centralization is $V_p^C > V_p^D$, which implies that:

$$\alpha_p < \frac{e_p^{**} x_p - c(e_p^{**}) + \lambda \left[ (e_p^{**} \alpha_a x_a) - (e_a^* x_a - c(e_a^*)) \right]}{e_a^* x_p} \equiv \hat{\alpha}_p^F.$$

Figure (1) depicts the principal's payoff under different organizational structures (family and non-family; centralized and decentralized) for values of $\alpha_p$. From the graph, the principal of a family or a non-family firm will prefer to decentralize when her interests are closely aligned with those of the agent ($\alpha_p$ is relatively high) and to centralize otherwise; when $\alpha_p$ is low the loss to the principal from allowing the agent to make decisions in his own interests is greater. It should be noted, however, that the necessary and sufficient condition for centralization in a family firm is $\bar{V}_p^C > V_p^D$. From equation (12), it is clear that the $\bar{V}_p^C$ curve lies at least as high as $V_p^C$. It is therefore possible that the threshold for decentralization in a family firm is even higher than $\hat{\alpha}_p^F$.

Centralization is the principal's optimal choice for a wider range of congruence parameter values in a family firm if $\hat{\alpha}_p^{NF} < \hat{\alpha}_p^F$, or if:

$$\lambda \left[ (e_p^{**} \alpha_a x_a) - (e_a^* x_a - c(e_a^*)) \right] > [e_p^* x_p - c(e_p^*)] - [e_p^{**} x_p - c(e_p^{**})]. \tag{14}$$

From this equation, it is possible to derive conditions for increased rates of centralization in family firms. The right-hand side of the equation represents the difference between the principal's private payoff in a non-family firm and in a family firm – in other words, the loss of private benefit arising from increased effort in the family firm. Note that the right-hand side must be positive as, by construction, $e_p^*$ maximizes $U_p^C = e_p x_p - c(e_p)$. On the left-hand side, the expression in the square brackets denotes the difference between the agent's payoff from centralization and from decentralization in a family firm – that is, it measures the agent's preference for centralization. Therefore, in order for equation (14) to be satisfied, it must be the case that: (a) the agent in the family firm prefers centralization over decentralization; and (b) the principal's level of altruism towards the
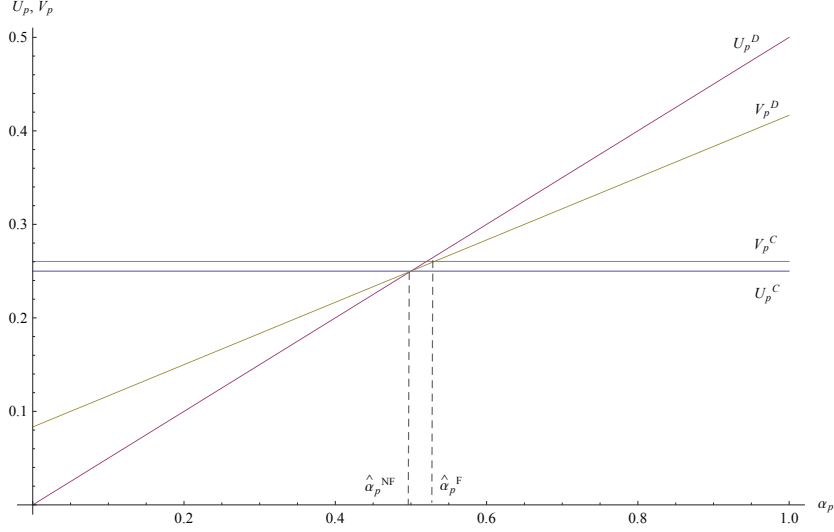
9

Figure 1: *Principal's payoff under different organizational structures for $x_p = x_a = 1$, $\alpha_a = 0.5$ and $\lambda = 0.5$.*

agent is sufficiently high, such that the utility derived via altruism outweighs the loss of private benefit incurred from increased effort. Result 2 summarizes this discussion.

**Result 2.** *With exogenous participation, centralized decision-making authority is more likely in a family-owned firm when the agent in a family firm prefers centralization and the principal is relatively altruistic.*

Finally, it is worth reconsidering our one-sided altruism assumption. One might anticipate that a child-agent in a family firm might be altruistic towards the parent-principal. These preferences would also encourage the agent to put in more effort with decentralization than otherwise. However, the choice of the allocation of decision-making authority will depend on the relative strength of the altruism of the principal as compared with the agent, as well as the other parameters in model. Provided the principal is relatively more altruistic than the agent, the principal's incentive to centralize decision making, and the agent's willingness to accept it, will continue to hold.

## 3.2 Agent's preference of firm structure

Noting that the principal's choice of firm structure depends in part on the agent's preferences, we now turn to the question as to when an agent will prefer centralization to decentralization. In a non-family firm, this will occur when $U_a^C > U_a^D$, or:

$$\alpha_a > \frac{e_a^* x_a - c(e_a^*)}{e_p^* x_a} \equiv \hat{\alpha}_a^{NF}. \tag{15}$$

In a family firm, a sufficient but not necessary condition for centralization is $V_a^C > V_a^D$,

10

which can be written as:

$$\alpha_a > \frac{e_a^* x_a - c(e_a^*)}{e_p^{**} x_a} \equiv \hat{\alpha}_a^F. \tag{16}$$

The agent's payoff under different organization structures is depicted in Figure (2). Now, it can be seen that the agent prefers centralization when her congruence parameter $(\alpha_a)$ is relatively high, and decentralization when it is relatively low. Again, this suggests that a party will prefer to hold the power to make decisions when their interest is not sufficiently aligned with that of the other party. Because $e_p^{**} > e_p^*$, it must be the case that $\hat{\alpha}_a^{NF} > \hat{\alpha}_a^F$, such that the agent prefers centralization for a wider range of parameter values in the family firm than in the non-family firm – an agent tolerates centralization for a greater range of $\alpha_a$ given the principal's altruism. This result is reinforced once it is recognized that, from (13), the $\bar{V}_a^C$ curve lies at least as high as $V_a^C$, making the threshold for centralization in a family firm possibly lower than $\hat{\alpha}_a^F$. This discussion is summarized in the result below.
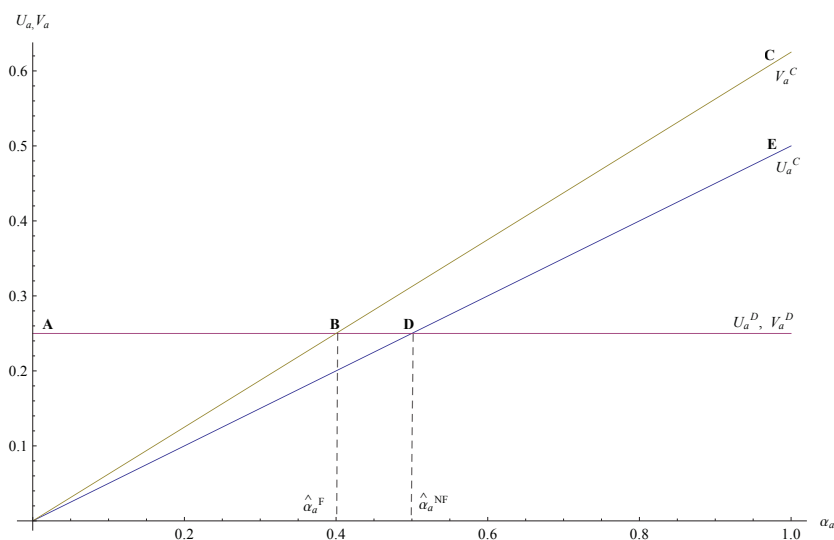


Figure 2: *Agent's payoff under different organizational structures for $x_p = x_a = 1$, $\alpha_p = 0.5$ and $\lambda = 0.5$.*

**Result 3.** *An agent in a family firm is more likely to prefer centralized decision making than an agent in a non-family firm.*

## 4 Participation in family firms

In practice, not all family members are involved in the family business. For this reason, we now turn to the question of whether or not an individual will choose to work in a family firm. In particular, we now suppose that an agent in a family firm has outside option of working in a non-family firm, and that an agent who is not working in a family firm can choose amongst a large number of firms (both centralized and decentralized).

Formally, let there now be a period prior to Period 1 (Period 0) in which the agent chooses an employer. We assume that, at this stage, the agent can perfectly observe the value of $\alpha_p$ associated with his matching with each prospective principal and can therefore anticipate the principal's decision in relation to centralization or decentralization in Period 1. For each agent, let there be a large number of firms differentiated by $\alpha_p$ and at most one family firm from which he can choose. To avoid issues of matching, we assume that the agent holds all the bargaining power in relation to the formation of an employment contract – that is to say, the agent can work for whomever he likes. For now, we assume that $\alpha_a$, $x_a$ and $x_p$ are constant between each of the agent's options, to exclude the possibility that the agent's choice is driven by a better alignment of his interest with the firm's or by differences in the parties' payoffs.[6]

Essentially, this translates to a mechanism by which an agent can leave one firm for another if the latter has (or, more precisely, will have) an organizational structure that is more beneficial to the agent. Importantly, the effect of $\alpha_p$ is binary, in the sense that if it is below the critical level the principal will choose to centralize and if it is above the critical level the principal will choose to decentralize; in most cases, small changes in $\alpha_p$ have no marginal effect on the utility of the agent. Therefore, the agent cares only about where $\alpha_p$ lies in relation to the critical threshold.

Thus, in Figure (2), an agent in a decentralized non-family firm will leave that business in Period 0 in favor of a centralized firm if $\alpha_a > \hat{\alpha}_a^{NF}$; conversely, he will leave a centralized non-family firm in favor of a decentralized non-family firm if $\alpha_a < \hat{\alpha}_a^{NF}$. Similarly, an agent in a family firm will leave the decentralized firm in favor of a centralized non-family firm if $\alpha_a > \hat{\alpha}_a^{NF}$; however, he will only leave a centralized family firm in favor of a decentralized non-family firm if $\alpha_a < \hat{\alpha}_a^{F}$. Because $\hat{\alpha}_a^{F} < \hat{\alpha}_a^{NF}$, it follows that agents will leave centralized firms for a smaller range of $\alpha_a$ in family firms than in non-family firms. Thus, the payoff of an agent initially in a centralized family firm now follows the curve $ABC$ for different levels of $\alpha_a$, whereas the payoff of an agent initially in a non-family or decentralized family firm follows $ADE$.

## 4.1   Centralization in family firms

We now consider the joint outcome of the agent's choice of where to work when he takes into account the principal's allocation of decision-making authority.

Figure (3) represents the preferences of the principal and the agent over different values of $\alpha_p$ and $\alpha_a$ for $x_p = x_a$.[7] In a non-family firm, the principal prefers to centralize in the region $FGHIJ$. As observed above, this preference depends only on her congruence parameter. By contrast, in a family firm, the principal preference for centralization depends in both parameters; the principal prefers centralization in $EGIJC$. From Figure (3), it is not clear whether the principal prefers centralization for a greater range of parameter values in the family or the non-family firm (i.e. whether $EC > FH$), in the absence of defining a specific cost function.

---

[6]This issue is addressed below in section 4.2.

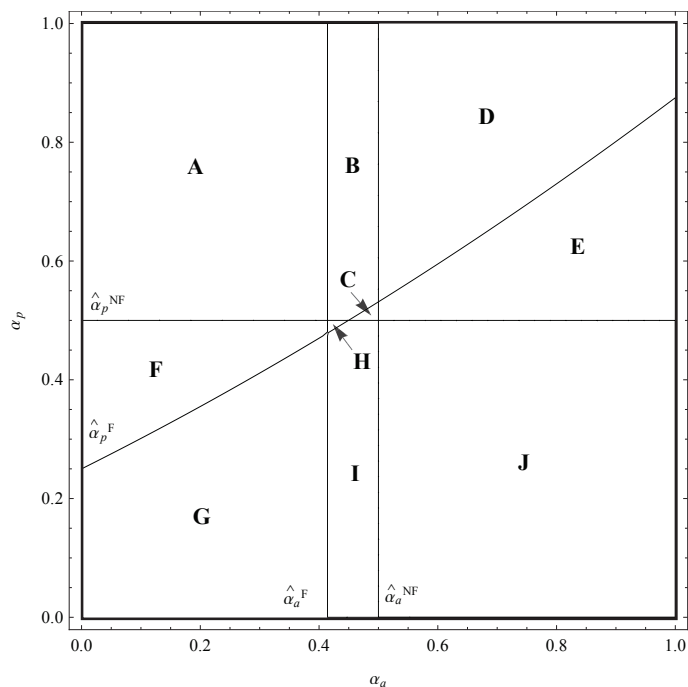[7]Setting $x_p = x_a$ excludes the possibility that preferences for certain organizational structures are

Figure 3: *Preferences of the principal and agent for $x_p = x_a$. The principal prefers decentralization above $\hat{\alpha}_p$, whereas the agent prefers decentralization to the left of $\hat{\alpha}_a$.*

However, because the agent always has the outside option of going to work for a decentralized non-family firm, centralized firms will not exist in some of the regions specified above. Indeed, a centralized firm will exist if and only if both parties prefer centralization. Thus, in a non-family firm, the agent will opt out if he finds himself in the region $FGHI$ (when the principal prefers centralization, but he does not), and will instead seek employment with a decentralized (non-family) firm in the region $ABC$.[8] Similarly, the agent will leave a centralized family firm in the region $G$ in favor of a decentralized non-family firm in the region $A$. Consequently, because firms require both employers and employees, centralized firms will only exist in the region $J$ and $CEIJ$ for non-family and family firms respectively; from this, it is clear that centralization be sustained by a greater range of parameter values in a family than in a non-family context. The discussion is summarized in the following proposition.

**Proposition 1.** *With endogenous participation by the agent and when the potential benefit of the project is the same to both parties, centralization is supported by a broader range of parameters in a family-owned firm than in a non-family firm.*

**Proof** See appendix. □

driven by differences in the parties' payoffs.

[8]Recall that, for a given value of $\alpha_a$, the agent is indifferent between all values of $\alpha_p$ in the region $ABC$, since any value of $\alpha_p$ in this region will induce the principal to choose decentralization.

13

## 4.2 Staying in the family business

We now further investigate the question of when a subordinate will choose to stay to remain in the family business. As discussed above, an agent will want to leave a centralized firm (to work in a decentralized non-family firm) for a lower range of parameter values in a family than an non-family firm ($\hat{\alpha}_a^F < \hat{\alpha}_a^{NF}$). Likewise, in a non-family firm, decentralization will exist if and only if both parties prefer it; thus, in Figure (3), the agent will leave a decentralized (non-family) firm in the region $DE$ in favor of a centralized (non-family) firm in $J$.

On the other hand, the parties need not agree about decentralization in a family firm. In Figure (2), between $\hat{\alpha}_a^F$ and $\hat{\alpha}_a^{NF}$, an agent in a family firm would prefer it if the firm were centralized. However, because he can only leave the firm and it is not within his power to decide the structure of the firm, no outside option yields a higher payoff for the agent. Thus, in Figure (3), an agent in region $BH$ will remain in the family firm even though he would prefer the firm to be centralized; he will only leave the decentralized family firm if $\alpha_a > \hat{\alpha}_a^{NF}$ — that is, in region $D$. This result is suggestive of several things. First, an agent in a family firm could remain working there even if they would prefer a different (centralized) decision-making allocation. While they remain working there, such an agent would prefer to principal to take more responsibility for decision making, allowing him to free ride on the principal's altruism. Hence our model demonstrates a greater tendency to 'stay put' in a family business than otherwise, which may help explain the relative prevalence of family firms and blood-relations participation in them. Even in the US, in which institutions protecting property-rights are well developed, approximately one third of all large publicly-owned firms are owned and controlled by founding families (Anderson and Reeb, 2003). This discussion is summarized in the result below.

**Result 4.** *An agent could choose to remain in a decentralized family-owned even when they would prefer decision making to be centralized.*

Second, taken together, the results discussed in Sections 4.1 and 4.2 suggest that family firms exist for a broader range of parameters than non-family firms. Centralized family firms exist in regions $CEIJ$ whereas centralized non-family firms exist only in $J$. Similarly, decentralized firms exist in regions $ABC$ and $ABFH$ for non-family and family firms, respectively. Again, altruism allows for greater diversity of interest to exist in equilibrium in family firms.

## 4.3 Choosing the type of work ($\alpha_a$)

A similar result can be obtained by allowing an agent's congruence parameter to vary between (non-family) firms. When this is possible, in Period 0, the level of $\alpha_a$ is a choice variable for the agent if he opts to work for a non-family firm, reflecting the fact that there are many non-family firms but at most one family firm for each agent. One interpretation of this is that an individual may find work in a particular field rewarding (say, economics) and will have a high congruence parameter if his employer allows him

14

to work in that field. If his family owns a business, that business may or may not allow him to work in that field, and an agent is unable to unilaterally change the nature of the family business. However, if he seeks employment elsewhere, an agent can choose amongst many firms in many different fields, each of which is associated with a different $\alpha_a$.

As noted above, the payoff of an agent initially in a non-family or decentralized family firm follows $ADE$ in Figure (2). Such an agent maximizes his payoff by choosing a non-family firm with $\alpha_a = 1$, which parallels the conventional wisdom that a person is better off working for an organization if he shares or agrees with the goals and the objectives of that organization. However, in Figure (4), an agent in a centralized family firm will be better off staying in that firm than leaving for a firm where he has a higher congruence parameter if $\alpha_a \geq \bar{\alpha}_a$. This may explain the stylized fact that individuals often stay in family businesses even if they are not that interested in the type of business that their family conducts. This is summarized in the following proposition.
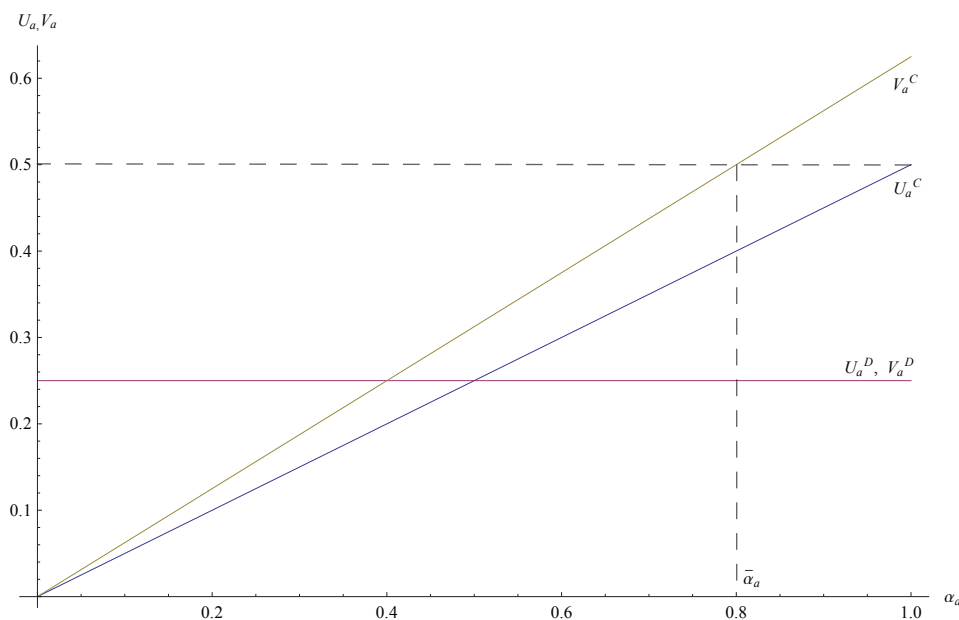


Figure 4: *Agent's payoff under different organizational structures for $x_p = x_a = 1$, $\alpha_p = 0.5$ and $\lambda = 0.5$. Above $\bar{\alpha}_a$, an agent can do no better than remaining in a centralized family firm.*

**Result 5.** *When an agent can choose to work for a (non-family) principal with similar interests, the agent may still choose to stay a centralized family firm.*

Both of these 'stay-and-complain' results have alternative empirical predictions. The first is that an agent in a decentralized family firm might complain about having to do too much (Result 4). However, an agent in centralized family firm – benefiting from the altruistic efforts of the principal – could well complain about the type of work that the family business does (Result 5). Moreover, this model also suggests that transition

between the generations in a family firm could be difficult. For instance, take the example above in which an agent remains in a family firm, despite being able to choose to move to a non-family firm doing work that is more interesting to them, here represented by their congruence parameter ($\alpha_a \geq \bar{\alpha}_a$). As shown in Figure (4), once the altruistic principal leaves the operation, the decision-making rights will be allocated to the successor agent. Thus, the payoff to the agent-cum-principal will be given by the $V_a^D$, which is equal to $U_a^D$ and less than $U_a^C$. The successor will thus have an incentive to leave the family firm. While our model deals with non-contractible payoffs, this is consistent with evidence of the problems that arise in succession, and how the probability of failure increases with a generational change in ownership. Our model suggests that without the benefits arising from their parent's altruistic (centralized) decision making, after succession the agent is left running a firm they have relatively little interest in. It is also consistent with the evidence of Bloom et al. (2012) that family-owned firms run by second-generation owners are more likely to be poorly managed. Moreover, to the extent that financial returns are correlated to private payoffs, our prediction is consistent with the empirical findings that family successions have a negative causal impact on firm performance (Bennedsen et al., 2007) and that while Japanese firms managed by founders trade at a premium, the performance of family firms both owned *and* managed by descendants of the founder is inferior to non-family firms (Saito, 2008). Furthermore, Saito (2008) found that family firms, following succession, benefit from a separation of ownership and control, in that financial performance is enhanced by employing an outside (non-family) professional manager. This is consistent with our model; without the altruistic parent, the family firm would benefit from using a decision maker with a greater interest in what the firm actually does. Finally, our model provides an empirical prediction that these issues of succession are more likely to arise when decision-making is initially centralized, where the agent has relatively little interest in the type of work the firm does.

**Prediction 2.** *Relatively lower returns and performance of family firms following succession are more likely when decision-making was centralized prior to succession.*

## 5 Concluding comments

We augment the model of Aghion & Tirole (1997) to include altruism between the principal/owner in a family firm and the blood-related subordinate. Our framework allows us to study the difference between decision-making structures in family and non-family organizations. In our model, the principal's altruism towards their blood-related agent drives their different choices of decision-making allocation, effort and choice of project. This suggests that further empirical investigation is required to tease out the nuanced relationships between family ownership, decision-making authority, incentives and profitability.

When the agent's participation in a firm is exogenous, the centralization of decision making is more likely if it is preferred by both the family-firm principal and agent. Again, this result is driven by the principal's altruism: these conditions require the principal

16

to be sufficiently altruistic towards the agent, such that the utility derived from the increase in the agent's surplus outweighs the greater effort cost to the principal.

We also endogenize the subordinate's participation in the firm, in that we allow the agent to be able to choose where they work. For simplicity we assume the agent has all the bargaining power and can choose their preferred employer, be it in the family firm or in an outside operation. However, once the agent has joined the firm, the principal can choose the decision-making structure. This is consistent with the idea that the principal cannot commit to a particular decision-making structure ex ante, so they make that their choice ex post, after observing the characteristics of the agent. In this setup, once equilibrium choices of both parties are taken into account, a wider range of parameters support the existence of centralized decision making in family firms. This result is consistent with the empirical findings of Bloom et al. (2010) and Wait and Wright (2010) that family-owned firms are more centralized than their non-family firm counterparts.

Two 'stay-and-complain' situations arise. An agent might choose to stay in a decentralized family firm, when they would prefer less authority – that is, they would prefer the altruistic principal to make the decisions. In this case, the agent remains in the family business, but might complain that they would prefer that things were done differently. On the other hand, we show that an agent might remain in a family firm, even when there are non-family firms that provide a better match for their interests. Again, it is the family principal's altruism that leads the agent to stay in with the family business. But this agent, despite benefiting from the principal's centralized decision making, might express dissatisfaction with the type of work the family business does. These issues crystallize when the issue of succession arises: without an altruistic principal to make decisions that favour the agent, the attractions of remaining in a business they have relatively interest in might become somewhat diminished. At this point, the agent-cum-principal may well choose to leave the family business in favour of non-family business whose work better is of greater interest to them.

# References

Daron Acemoglu, Philippe Aghion, Claire Lelarge, John Van Reenen, and Fabrizio Zilibotti. Technology, information, and the decentralization of the firm. *Quarterly Journal of Economics*, 122(4):1759–1799, November 2007.

Phillipe Aghion and Jean Tirole. Formal and real authority in organizations. *Journal of Political Economy*, 105(1):1–29, 1997.

Ronald C. Anderson and David M. Reeb. Founding-family ownership and firm performance: Evidence from the s&p 500. *Journal of Finance*, 58:13011328, 2003.

Ronald C. Anderson, Augustine Duru, and David M. Reeb. Investment policy in family controlled firms. *Journal of Banking and Finance*, 36(6):1744–1758, 2012.

Oriana Bandiera, Luigi Guiso, Andrea Prat, and Raffaella Sadun. Matching firms, managers, and incentives. *CEPR Discussion Paper No. DP7207*, March, 2009.

Gary Becker. A theory of social interactions. *Journal of Political Economy*, 82(6): 1063–1093, 1974.

Gary Becker. *A Treatise on the Family*. Harvard University Press, Cambridge, Massachusetts, 1981.

Morten Bennedsen, Kasper Meisner Nielsen, Francisco Perez-Gonzalez, and Daniel Wolfenzon. Inside the family firm: The role of families in succession decisions and performance. *Quarterly Journal of Economics*, 122(2):647–691, 2007.

Helmut Bester. Externalities and the allocation of decision rights in the theory of the firm. Discussion Papers 23, SFB/TR 15 Governance and the Efficiency of Economic Systems, Free University of Berlin, 2004.

Nicholas Bloom and John Van Reenen. Why do management practices differ across firms and countries. *Journal of Economic Perspectives*, 24(1):203–224, 2010.

Nicholas Bloom, Raffaella Sadun, and John Van Reenen. Does product market competition lead firms to decentralize? *American Economic Review*, 100(2):43438, 2010.

Nicholas Bloom, Christos Genakos, Raffaella Sadun, and John Van Reenen. Management practices across firms and countries. *NBER Working Paper Series*, w17850, 2012.

Patrick. Bolton and Mathias. Dewatripont. The firm as a communication network. *Quarterly Journal of Economics*, 109(4):809–839, 1994.

Ralph Chami. What is different about family businesses? *IMF Working Paper*, 2001. WP/01/07.

Jess Chua, James Chrisman, and Pramodita Sharma. Succession and nonsuccession concerns of family firms and agency relationship with nonfamily managers. *Family Business Review*, 16(2):89–107, 2003.

Marco Cucculelli and Giacinto Micucci. Family succession and firm performance: Evidence from italian family firms. *Journal of Corporate Finance*, 14(1):17–31, 2008.

Wouter Dessein. Authority and communication in organizations. *Review of Economic Studies*, 69:811–838, October 2002.

W. Gibb Dyer Jr. Culture and continuity in family firms. *Family Business Review*, 1 (1):37–50, 1988.

Mara Faccio and Larry Lang. The ultimate ownership if western european corporations. *Journal of Financial Economics*, 65:365395, 2002.

Eugene F. Fama and C. Jensen, Michael. Separation of ownership and control. *Journal of Law and Economics*, 26(2):301–325, 1983.

W.D. Hamilton. The genetical evolution of social behaviour. i. *Journal of Theoretical Biology*, 7(1):1–16, 1964a.

W.D Hamilton. The genetical evolution of social behaviour. ii. *Journal of Theoretical Biology*, 7(1):17–52, 1964b.

Harvey S. James. Owner as manager, extended horizons and the family firm. *International Journal of the Economics of Business*, 6(1):41–55, 1999.

Ratael La Porta, Florencio Lopez-de Silane, and Andre Schleifer. Corporate ownership around the world. *Journal of Finance*, 54(2):471–517, 1999.

Dalia Marin and Thierry Verdier. Power inside the firm and the market: A general equilibrium approach. *Journal of the European Economic Association*, 6(4):752–788, 2008.

Kieron Meagher. Generalizing incentives and loss of control in an optimal hierarchy: the role of information technology. *Economics Letters*, 78(2):273–280, 2003.

Danny Miller, Isabelle Le Breton-Miller, Richard H. Lester, and Alberta A. Jr Cannella. Are family firms really superior performers? *Journal of Corporate Finance*, 13(5): 829–858, 2007.

Roy Radner. The organization of decentralized information processing. *Econometrica*, 61(5):1109–1146, 1993.

Takuji Saito. Family firms and firm performance: Evidence from japan. *Journal of the Japanese and International Economices*, 22(4):620–646, 2008.

William S. Schulze, Michael H. Lubatkin, and Richard N. Dino. Altruism, agency, and the competitiveness of family firms. *Managerial and Decision Economics*, 23(4,5): 247–259, 2002.

Matthew Sonfield and Robert Lussier. First-, second-, and third-generation family firms: A comparison. *Family Business Review*, 17(3):189–202, 2004.

David Sraer and David Thesmar. Performance and behavior of family firms: Evidence from the french stock market. *Journal of the European Economic Association*, 5(4): 709–751, 2007.

Timothy Van Zandt. Real-time decentralized information processing as a model of organizations with boundedly rational agents. *Review of Economic Studies*, 66:633–658, 1999.

Belen Villalonga and Raphael Amit. How do family ownership, control and management affect firm value? *Journal of Financial Economics*, 80(2):385–417, 2006.

Andrew Wait and Jack Wright. Decisions, firms and families. *Australian Conference For Economists Proceedings*, 2010. July 2010.

Jan Zabojnik. Centralized and decentralized decision making in organizations. *Journal of Labor Economics*, 20(1):1–22, 2002.

# Appendix

*Proposition 1* With endogenous participation by the agent and when the potential benefit of the project is the same to both parties, centralization is supported by a broader range of parameters in a family-owned firm than in a non-family firm.

*Proof:*

1. Centralized firms exist for a wider range of parameter values in family firms than in non-family firms for sure if $\hat{\alpha}_p^F$ intersects $\hat{\alpha}_p^{NF}$ to the left of $\hat{\alpha}_a^{NF}$.

2. If $x_p = x_a = x$, then $e = e^*$ maximizes $U_p^C$ and $U_a^D$.

3. At $(\hat{\alpha}_a^{NF}, \hat{\alpha}_p^{NF})$, $U_p^C(e^*) = U_p^D(e^*) = U_a^C(e^*) = U_a^D(e^*)$.

4. If $U_p^C(e^*) = U_a^C(e^*)$, then:

$$V_p^C(e^*) = \frac{1}{1+\lambda}U_p^C(e^*) + \frac{\lambda}{1+\lambda}U_a^C(e^*) = U_p^C(e^*) = U_a^C(e^*)$$

5. If $U_p^D(e^*) = U_a^D(e^*)$, then:

$$V_p^D(e^*) = \frac{1}{1+\lambda}U_p^D(e^*) + \frac{\lambda}{1+\lambda}U_a^D(e^*) = U_p^D(e^*) = U_a^D(e^*)$$

6. Therefore, at $(\hat{\alpha}_a^{NF}, \hat{\alpha}_p^{NF})$, $V_p^C(e^*) = V_p^D(e^*)$.

7. But $e_p^{**}$ maximises $V_p^C$. Therefore, at $(\hat{\alpha}_a^{NF}, \hat{\alpha}_p^{NF})$, the principal must prefer centralization:

$$V_p^C(e^{**}) > V_p^C(e^*) = V_p^D(e^*)$$

$\square$