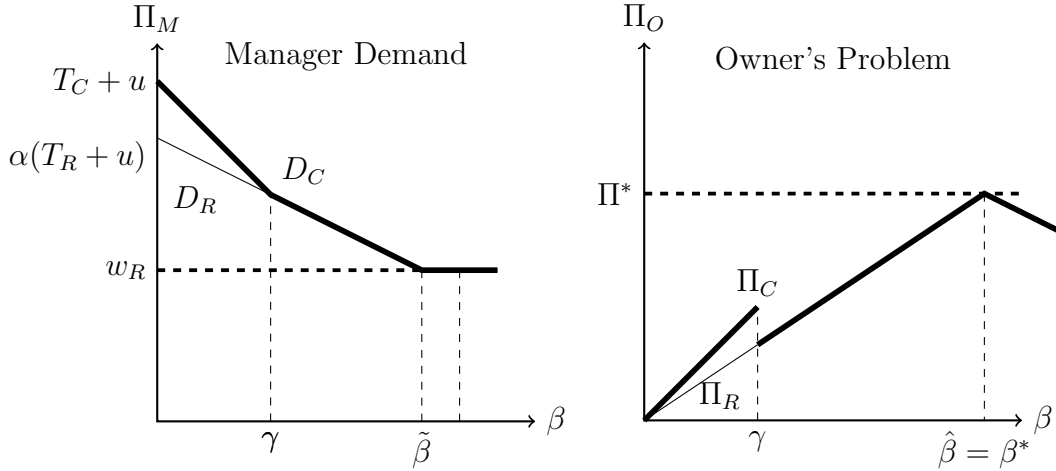


Styles used by Timothy Schweg00 i00  
test

## 1 Model

Consider a world where  $T, u$  are observed by all, and during the hiring process, a potential manager (either relative or contractor) suggests a function that gives profits as a function of wages. The Owner observes this, and after seeing the other manager's offer, hires a worker at a given wage level. Note that the profits given are the profits that are split between the manager and the owner (after stealing has occurred.) When there is a tie between the two managers, this tie is always resolved by the job given to the manager that is stealing more. The Owner believes that they have spunk and respects them for it.

Clearly the owner will accept the one that gives him the higher payoff. From this structure we can see that it will not be optimal for the related manager, who is less productive, to ever steal. As a contradiction, consider a possible equilibrium where the related manager is planning to steal (profit is less than  $T_R + U$ ), there is a profitable deviation for the contractor to offer this profit plus  $\epsilon$  more. The contractor will receive the job, although the



related manager could have offered more profit. So he will offer a higher level of profit than the contractor. This argument will continue in Bertrand Style until the profit offered is equal to the maximum profit that the related manager can offer. The more productive manager would then steal to this level, as the owner cannot do better. The contractor then receives the job by the tie-breaking rule, and there is an equilibrium.

When altruism is added to the manager's package the same idea occurs. Consider first the case where the relative is altruistic, but still prefers himself. Let *AM* denote the altruistic manager.

$$\Pi_{AM} = \alpha [(1 - \beta)(1 - L) + e(\beta - \gamma)] + (1 - \alpha) [\beta(1 - L - e)]$$

$$\frac{\partial \Pi_{AM}}{\partial \beta} = (L + e - 1)(2\alpha - 1) < 0$$

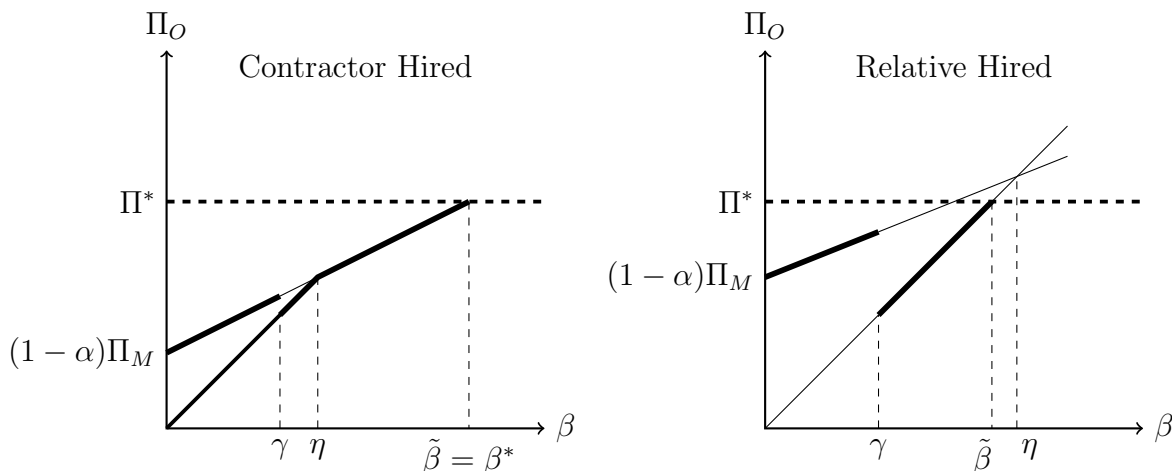
where  $L + e - 1$  is negative since it is  $e - (1 - L)$  which is the negative of the reported profit in the contract of related manager. Note that  $2\alpha - 1$  is positive as  $\alpha \in (\frac{1}{2}, 1)$ .

This means that he still always prefers being paid more money from the owner, but at less of a degree. There is still no equilibrium where he steals from the owner, as the owner only values his profits, and the same Bertrand-Style argument above applies. In any of these equilibria, the related manager does not receive the job, and thus him being altruistic does not change the problem at all.

When the owner is altruistic, the story changes slightly. The owner now values the well-being of his relative, and values his profit less. However when considering the contractor's offer, he values only his profit. The owner will require a higher profit of the contractor to be indifferent, as long as the relative is making less profit than he is, and a lower profit when his relative is making more than the owner. This means that there are equilibria where the son will steal from his altruistic dad.

When  $\beta < \gamma$  neither party wishes to steal. For some values of  $\beta$  the manager will always prefer to hire his son. The utility that is provided by the son working is positive when  $\beta = 0$  and zero for the contractor. However the slope of the line is smaller than one.

2 Is your answer to (b) different if the family is not altruistic, but the owner brought up his son to feel guilt, which you can interpret as a



$$\frac{\partial \Pi_{AO}}{\partial \beta} = (1-L)(2\alpha-1) < 1-L < 1$$

It is ambiguous whether or not this line intersects the profit line of the contractor before  $\beta = \gamma$ . If it intersects before, then the manager will hire the contractor after that level of  $\beta$ . After  $\beta = \gamma$ , the contractor will steal down to the utility produced by the relative manager working, and the relative will not steal by the above Bertrand Argument. This will continue to the point where the relative's demand profit equals the reservation wage, occurring at  $\tilde{\beta}$ .

Another case is when the intersection occurs after  $\beta = \gamma$ . For some  $\beta > \gamma$ , the relative provides higher utility than the contractor to the owner. The relative can then steal down until the owner is at the utility level of the contractor. The contractor is unable to steal by the preceding Bertrand argument. Let  $\eta$  be the intersection between the utility for the relative, and the profit from the contractor. If  $\tilde{\beta} < \eta$ , then the relative will be hired while stealing from the owner. If  $\tilde{\beta} > \eta$  then the contractor will be hired while stealing. When they are equal, neither will steal and the owner will be indifferent between hiring either.

This means that it does matter whether or not it is the owner or the son who is altruistic. When the owner is altruistic, he is willing to hire his relative under certain conditions. However when the relative is the altruistic one, he is never hired.

## 2 Is your answer to (b) different if the family is not altruistic, but the owner brought up his son to feel guilt, which you can interpret as a greater disutility of effort towards stealing

Now, allow for there to be two different values of  $\gamma$ . The relative has a higher value of  $\gamma$ . Note that since the family is not altruistic, the manager can give the owner higher utility than the relative can. This prevents the relative from ever stealing, due to the Bertrand argument that has prevented the lower productive member from stealing before. Therefore increasing the area where the relative finds it costly to steal has no binding affect on this model. The relative does not choose to steal, so preventing him from stealing has no affect on the outcomes.

### **3 Under what conditions does the owner prefer to hire his less talented son, rather than a more talented unrelated manager?**

The owner prefers to hire his less talented son only when he is altruistic. When the owner is altruistic, and sufficiently so such that the intersection between the utility of the owner and the profit of the contractor occurs after  $\tilde{\beta}$ , he chooses to hire his son.