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Incentives and the Sorting of Altruistic Agents into Street-Level Bureaucracies

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Incentives and the Sorting of Altruistic Agents into Street-Level Bureaucracies*

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Abstract

Many street-level bureaucrats (such as caseworkers) have the dual task of helping some clients, while sanctioning others. We develop a model of such a street-level bureaucracy and study the implications of its personnel policy on the self-selection and allocation decisions of agents who differ in altruism towards clients. When bureaucrats are paid flat wages, they do not sanction, and the most altruistic types sort into bureaucracy. Pay-for-performance induces some bureaucrats to sanction, but necessitates an increase in expected wage compensation, which can result in sorting from both the top and bottom of the altruism distribution. We also show how client composition affects sorting and why street-level bureaucrats often experience an overload of clients.

Keywords: street-level bureaucracy, sorting, altruism, personnel policy, pay-for-performance. **JEL-codes:** J3, J4, L3, M5

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1 Introduction

Street-level bureaucrats often have the dual task of helping some clients while disciplining others. Caseworkers are a case in point. On the one hand, their job is to allocate employment services and give job search assistance to clients who are willing but unable to find a job. On the other hand, they are supposed to sanction clients who rather live on a benefit than work from 9 to 5.[1]

The dual nature of the job implies that it is not straightforward what kind of people should optimally be hired by such street-level bureaucracies. While the helping aspect of the job makes altruistic or client-oriented people the ideal candidates, these people are likely to take clients' interests too much into account when encountering clients who should be sanctioned. In addition to this normative issue of what would be optimal candidates, the positive issue of what kind of people find a career in a street-level bureaucracy actually worthwhile is perhaps even more important. While assessment centers and talented HR managers may give agencies a glimpse of job applicants' motivations, their true motivations often remain hidden, implying that agencies should use other, more implicit instruments to promote self-selection of the most desired types of workers. These may include paying low base salaries and offering bonuses for good performance.

This paper studies these issues by developing a model of a street-level bureaucracy that serves different types of clients, some of which are in need of help (willing but unable clients) and others who should be sanctioned (non-willing clients). In addition, there exists a group of clients who should neither be helped nor sanctioned (willing and able clients). The agency hires bureaucrats whose task is to meet clients, assess their type, and allocate either help, no help, or a sanction. Bureaucrats are hired from a pool of potential job applicants who differ in their altruism towards clients they meet, ranging from complete indifference to highly

[1] Other examples of street-level bureaucrats with such dual tasks easily come to mind. For instance, teachers' main task is to help students learn, but from time to time their job also involves expelling disruptive students from the classroom. Soldiers taking part in peacekeeping missions often engage in both humanitarian activities and combat. And police officers both help and sanction people.

altruistic. The agency cannot observe job applicants' types. However, it can affect the sorting of job applicants by its personnel policy. We study two different settings which are often observed in practice: 1) the bureaucracy pays a base salary only; 2) on top of the base salary, the bureaucracy offers agents bonus pay or nonpecuniary rewards for good performance (or, equivalently, gives penalties for bad performance). We obtain the following results.

First, when bureaucrats' compensation consists of a base salary only, the bureaucrats' decisions are in line with the agency's preferences, except for the allocations to non-willing clients. Thus, willing and unable clients receive help while willing and able clients get no help. However, as bureaucrats are (weakly) altruistic towards clients, bureaucrats do not sanction non-willing clients, but allocate no help instead. The most altruistic types among the potential job applicants self-select into the bureaucracy. Besides the base salary, the attractiveness of the job depends on the composition of the client population. In particular, the job becomes more attractive, and hence the base salary can be lower, when there are more clients in need of help. If the agency has monopsony power, we show that it can be optimal to hire fewer agents than necessary to serve all clients, so as to reduce salary costs. Our model thus offers an explanation for why street-level bureaucracies are often plagued by limited resources and an overload of clients, as observed by e.g. Lipsky (1980).

Second, bonus pay (or nonpecuniary rewards) for good performance induces the least altruistic among the hired bureaucrats to sanction non-willing clients. Generally, it is optimal for the agency to set bonus pay such that it induces only part of the bureaucrats to sanction: Some bureaucrats care so much about the feelings of non-willing clients that it is too costly to induce those bureaucrats to impose sanctions. Besides affecting bureaucrats' decisions, we show that bonus pay can be used by the agency to extract rents from the most altruistic bureaucrats. Since these bureaucrats do not sanction, a rise in bonus pay increases their income by less than the income of bureaucrats who do sanction. Optimal bonus pay is therefore higher than the value of sanctioning for the agency.

Third, the effect of pay-for-performance on the sorting of agents into bureaucracy crucially depends on whether the expected joys of helping

the willing and unable clients exceed the expected sorrows of sanctioning non-willing clients. If the client population consists mainly of people in need of help, and the willing clients' benefit from help is high relative to the unwilling clients' pain of sanctions, there is still self-selection of the most altruistic types into the job. If this condition does not hold, the only way through which the agency can make sure that at least some of its agents sanction non-willing clients is by offering a combination of base salary and bonus pay that is more generous than the agents' outside option. As a result (and in line with Francois 2007 and Prendergast 2007), there is sorting from both the top and the bottom of the altruism distribution, with highly altruistic agents choosing no sanction for the non-willing clients and earning low income and agents with a low level of altruism imposing sanctions and earning high bonus pay. When the bureaucracy values sanctions for non-willing clients sufficiently, the bureaucracy optimally sets personnel policy such that it only hires agents from the bottom of the altruism distribution. We thus show that bonus pay can have a profound impact on the type of workers self-selecting into street-level bureaucracies.

We proceed as follows. The next section briefly describes how our paper relates to the literature and discusses some stylized facts about the motivation of caseworkers, which we take as the leading example in our paper. Section 3 describes the model. Section 4 analyzes the simple case where bureaucracies pay flat wages. Next, section 5 studies the implications of pay-for-performance. Section 6 summarizes some robustness results. Section 7 concludes.

2 Related literature and some stylized facts

Our paper contributes to a recent literature in economics on incentives and workers' motivation in the public sector (Francois, 2000 and 2007, Dixit, 2002, Glazer, 2004, Besley and Ghatak, 2005, Prendergast, 2007, Delfgaauw and Dur, 2008 and 2009, Vlassopoulos 2008, and Brekke and Nyborg 2010). Francois and Vlassopoulos (2008) provide a survey of this literature. Closest to our paper is Prendergast (2007) who studies sorting of purely altruistic agents into a street-level bureaucracy and shows that,

generally, both the most and least desired types self-select into bureaucracy (see also Francois 2007). There are four key differences between his paper and ours. First, we focus on jobs which involve a *dual* task of helping some clients and sanctioning others. Second, Prendergast (2007) focuses on effort provision of the agents, assuming that agents cannot lie about the client's type. In contrast, we assume that agent's information about client's type does not involve effort cost and is soft, giving discretion to the agent in his allocation decision. Third, while in Prendergast (2007) bureaucrats earn flat wages, we allow bureaucracies to use incentives. Last, we assume that agents are impurely altruistic in the sense that they only care about clients they meet and we abstract from hostile agents. We discuss the implications of these last two assumptions along the way.

There is abundant evidence that a substantial part of people working in street-level bureaucracies are concerned about clients. Lipsky (1980: 72) observes that "Those who recruit themselves for public service work are attracted to some degree by the prospect that their lives will gain meaning through helping others." More recently, Le Grand (2003: 38) concludes that a part of public service employees (the 'act relevant knights' in his terms), are "motivated by the need to perform the helping acts themselves". Other recent empirical studies showing that public sector workers often have a strong intrinsic motivation to help clients include Edmonds et al. (2002), Frank and Lewis (2004), and Gregg et al. (2008).

Caseworkers are perhaps the clearest example of street-level bureaucrats with dual tasks (helping some clients while sanctioning others). There is a rich empirical literature studying the motives and client-orientation of caseworkers. Blau (1960: 347) studies the attitude towards clients of personnel in a public welfare agency and concludes that "Most persons who took a job in the welfare agency were partly motivated by an interest in working with and helping poor people. They tended to look forward to establishing a warm, although not intimate, relationship with deserving and grateful clients, and considered the case worker as the agent of society who extended a helping and trusting hand to its unfortunate members." Marston et al. (2005: 146) provide strong evidence for client-advocacy in a Danish employment project. They cite a bureaucrat as saying that:

"How am I supposed to activate people who are running around in the streets without a home– I can't (...) but I need to give them a temporary place to stay– or do something for them." Heckman et al. (1996: 2) find that caseworkers in a US job-training program have "a strong desire to aid the least well off." Lastly, Considine (2000: 290) finds that Australian caseworkers do not like to sanction clients: "They found it off-putting to subject job-seekers to the framing of highly legalistic agreements in their first weeks." They also "saw sanctioning as a last resort which implied a breakdown in their service and thus a loss of face for them and their agency."

However, not all street-level bureaucrats and caseworkers have such warm feelings towards clients. Hernandez et al. (2003: 15-16) interviewed participants to vocational rehabilitation programs. While 21% of the participants report having a counselor who is committed, 29% find their counselor unresponsive, "particularly when they failed to return telephone calls and follow through with specific tasks that were discussed during appointments (for example, offering but never providing job placement services)." Using Swiss survey data, Behncke et al. (2010: 69-70) also find striking differences between caseworkers' attitudes towards clients. In their sample, 52% of caseworkers state that "the wishes of the unemployed should be satisfied". However, 9% of caseworkers "assign placements in jobs and active labour market programmes independent of the wishes of the unemployed". Lastly, Blau (1960: 347) notices that a few of the caseworkers in his study were motivated by considerations such as a desire to dominate people.

3 The model

Our model revolves around a principal (the benefit administration or public employment service) with S clients (unemployed workers or people on social benefits). The principal hires an endogenous number of agents (case-managers or caseworkers) to serve these clients. The task of an agent is to meet clients and to allocate to each of them either an employment service, a sanction, or no help at all. Employment services can consist of schooling, job search assistance, assessments et cetera. A sanction can be

a pecuniary penalty, but also a non-pecuniary penalty, for instance workfare where the client is obliged to do production work. For convenience, we normalize the number of clients each agent meets to one.

In what follows, we describe the possible allocations and associated payoffs to the principal, agents, and clients, which are summarized in table 1.

Principal The principal's preferred allocation depends on the client's type. Clients differ in two respects: their motivation and their ability to find a job. For convenience, we assume that clients belong to either one of the following four types.[2] The first type of clients, denoted by l, is willing to work, but not able to find a job without help. They need assistance in the form of employment services to improve their labor skills or to increase the effectiveness of their job search effort. When a client of type l receives employment services, the principal's payoff U_p increases by $b - c > 0$, where b represents the gains from clients finding a job and leaving welfare with a higher probability, and c stands for the costs of the employment services. Without help, the willing but unable clients would not likely find a job, leaving the principal a payoff we normalize to zero. Giving them a sanction is considered to be unfair by the principal. The principal would receive some kind of payment z: the money collected from the penalty, the production value of the client under workfare, or possible positive effects of sanctions on the probability of leaving welfare and finding a job (see for instance Van den Berg et al., 2004). However, the principal loses x (well-being) from the wrongful treatment of the willing client. The principal's net payoff from this allocation is assumed to be negative, $z - x < 0$.

The second type of clients, denoted by m, is willing and able to find a job. The best decision for the principal would be *not* to help those clients resulting in a payoff we normalize to zero. Giving them employment services would entail costs, but does not help them to find a job faster, resulting in a payoff of $-c < 0$ for the principal. A sanction would be considered unfair, implying a payoff of $z - x < 0$, as is the case for the first type of clients.

[2] Our labelling of clients resembles the ones mentioned in e.g. Marston et al. (2005: 149), Schuck and Zeckhauser (2006), Sol et al. (2007: 21), and Bunt et al. (2008: 37).

The third type of clients is able to find a job, but not willing to do so. The fourth type of clients is neither willing, nor able to find a job. We label these last two types by their common denominator: the non-willing, n. According to the principal they should all receive a punitive sanction for misbehavior, resulting in a payoff $z > 0$.[3] Allocating them employment services is a waste of money, $-c < 0$.[4] Allocating no help to them leaves the principal a payoff normalized to zero.

The principal knows the distribution of clients' types, but does not know the type of each individual client. He needs agents to sort this out for him and allocate the right service to his clients. The principal has a monopoly in supplying allocations: Clients cannot choose who monitors their job search behavior. The principal pays each agent a base salary w, which lowers the principal's payoff. Further, the principal may use incentives which are discussed below. Hiring agents to make allocations is only optimal when the principal's utility from doing so is equal to or higher than the principal's reservation utility, that is allocating all clients the same treatment. We assume throughout that the principal always finds it worthwhile to hire a strictly positive number of agents. The principal hires agents from a pool of R heterogenous individuals which is sufficiently large ($R > S$) so that the principal is never supply-constrained. Further, the principal is a monopsonist in the labor market for agents. This assumption only plays a role in the subsections where we derive the number of agents the principal wants to hire. We shall also discuss what happens when the principal has no monopsony power; that is, competes with other bureaucracies for agents.

Clients Clients are fully informed about their own willingness and ability to find a job. The utility of a client, U_c, depends on his type and on the allocation made to him. Like the principal's payoff, we normalize clients' payoff to zero in case they receive no help. All clients dislike

[3] In addition to the monetary payoff of imposing a sanction, there could be some feelings of satisfaction or justification that a non-willing client gets punished. To save on notation, we ignore these potential benefits.

[4] Although this might seem a strong assumption, relaxing it does not change our results much as long as the non-willing clients dislike employment services or as long as a sanction should be allocated as well.

Table 1: Payoff to principal, client and agent of different allocations

Client's type	**Allocation**	**Payoff**		
		Principal	**Client**	**Agent**
Willing, unable l	Sanction	$z-x-w$	$-v$	$w-\theta_j v$
	No help	$-w$	0	w
	Employment services	$b-c-w$	k	$w+\theta_j k$
Willing, able m	Sanction	$z-x-w$	$-v$	$w-\theta_j v$
	No help	$-w$	0	w
	Employment services	$-c-w$	0	w
Non-willing n	Sanction	$z-w$	$-v$	$w-\theta_j v$
	No help	$-w$	0	w
	Employment services	$-c-w$	$-g$	$w-\theta_j g$

sanctions. These give them a negative payoff, $-v<0$. Because willing and unable clients like to have a job and need help to find it, they appreciate employment services. This gives them a positive payoff, $k>0$. Willing and able clients are indifferent between receiving employment services and no help.[5] Non-willing clients prefer receiving no help and enjoying their leisure time to participating in employment services, which gives them a negative payoff $-g$. Receiving employment services is, however, preferred to getting a sanction, $-v<-g<0$.

There are $L>0$ willing and unable clients, $M>0$ willing and able clients, and $N>0$ non-willing clients. The total number of allocations, denoted by Q, is endogenously determined by the principal (through his decision on the number of agents he wishes to hire), but cannot exceed the total number of clients, $Q\leq L+M+N=S$.

Agents As soon as an agent meets a client, he knows the client's type. Hence, investigating a client does not involve cost of effort and, when the agent allocates a service or sanction, he is always fully informed about the

[5] If the willing and able clients strictly prefer no help to participating in employment services, our results do not change. If they strictly prefer participating in employment services to receiving no help, there is an additional incentive problem, but our main arguments remain unaffected. In this case, the clients' and principal's preferences differ in two respects instead of one.

client's willingness and ability to work.[6] Agent's utility U_a depends first of all on his base salary w (see table 1). Second, the agent may be altruistic towards the client he meets. This is represented by $\theta_j U_c$, where θ_j measures agent j's altruism towards his client, and U_c is the utility of the client the agent meets. Since agents only have altruistic feelings towards clients they meet, they are impurely altruistic or have 'warm glow' preferences in the sense of Andreoni (1989, 1995). We assume that for any j, $0 \leq \theta_j \leq \overline{\theta} < 1$, and that in the population of potential agents the altruism parameter θ is distributed according to the cumulative distribution function $\int_0^{\theta} f(\theta)\, d\theta$. Importantly, an agent's altruism is private knowledge. Altruistic agents take into account how their allocation decisions affect clients' welfare. Without significant loss of generality, we assume that whenever the agent is indifferent between allocations, the agent gives priority to what the client prefers. When the client is also indifferent, the agent decides to allocate what the principal prefers. The agent will only accept the job as a caseworker when his expected utility from doing so is equal to or above his reservation utility, $\bar{A}$.

Incentives As we shall see, the principal's and agents' preferences are not always in line. Hence, the principal may want to use incentives. For simplicity, we shall restrict attention to the following simple incentive scheme: The principal pays the agent a bonus, denoted by π, for each correct allocation, and does not overrule wrong allocations. For instance, we can think of a bonus for job placements when correct decisions lead to maximum job placements. Overruling is not possible, because when the principal observes the outcome, time has passed and the allocation has already been put into effect. The same holds when agents are rewarded for not deviating too much from a benchmark. The bonus for the agents can take a pecuniary or non-pecuniary form; for convenience, we shall speak of pecuniary bonuses henceforth.[7]

[6] We thus abstract from the issue of how much effort an agent exerts to determine the correct allocation, which is a central issue in Prendergast (2007).

[7] It is straightforward to show that bonuses for correct decisions and penalties for wrong decisions (such as layoff in case of bad performance evaluations) yield equivalent results. In Section 6, we discuss the implications of several other incentive schemes.

Timing The principal offers a contract, describing the base salary and bonus. Each agent decides whether or not to take the job. Then, each agent who took the job meets a client and takes a decision about the allocation. Lastly, the clients', principal's, and agents' payoffs are realized.

4 Flat wages

We start by analyzing the case where the principal gives no incentives ($\pi = 0$) and just pays a base salary w.[8] We solve the game by backward induction and start by agents' decisions on allocations.

4.1 Which allocations do agents make?

The principal's and agents' preferences align when agents meet clients who are willing to work. When meeting a client who is willing but unable, agents allocate employment services, because this gives these agents a payoff of $w + \theta_j k$, which is higher than the payoff of allocating a sanction, $w - \theta_j v$, or allocating no help, w. When meeting a client who is willing and able, agents' payoff of allocating no help is w, which is equal to the payoff of giving employment services and higher than the payoff of sanctioning, $w - \theta_j v$. Whenever an agent is indifferent between allocations, he makes the allocation the client prefers. And if the client is indifferent too, the agent takes the decision the principal prefers. In this case: no help. However, when meeting a non-willing client, the principal would prefer that agents allocate a sanction, but the agents allocate no help instead, resulting in a payoff of w. This payoff is higher than when they impose a sanction, $w - \theta_j v$, or give employment services, $w - \theta_j g$, because these allocations harm non-willing clients. So, the agents' decisions are not fully in line with those desired by the principal: Agents are not willing to sanction the non-willing clients, as the agents want to avoid the negative feelings they get from imposing sanctions on clients. Instead, they allocate no help to

[8] A practical example of this is discussed by Riccuci and Lurie (2001: 34), who conclude that "there are neither 'carrots' nor 'sticks' to motivate the workers" in the social welfare offices in Texas, Michigan and Georgia. Even though these offices use performance measures, "workers said that all front-line welfare workers are likely to receive the same performance ratings" (Riccuci and Lurie, 2001: 35).

these clients.

4.2 Which agents take the job?

An agent takes the job when his expected utility from taking the job is higher than or equal to his outside option utility, $EU_a \geq \bar{A}$. Using our previous results on agents' allocation decisions, the expected utility for agent j from taking the job is

$$EU_a = w + \frac{Lk\theta_j}{L+M+N}. \tag{1}$$

That is, the agent enjoys his base salary and, with probability $\frac{L}{L+M+N}$, helps a willing and unable client, which raises his utility by $k\theta_j$. The agent derives no such additional utility when encountering a willing and able client or when encountering a non-willing client because, as we have seen, the agent will allocate these clients no help. Since $Lk > 0$, the participation constraint can be written as:

$$\theta_j \geq \widetilde{\theta} = \left(\bar{A} - w\right)\left[\frac{Lk}{L+M+N}\right]^{-1}. \tag{2}$$

We can distinguish three cases for the threshold level of agent's altruism $\widetilde{\theta}$. First, $\widetilde{\theta} > \overline{\theta}$. In this case, nobody is willing to take the job. Second, if $\widetilde{\theta} \leq 0$, then the whole labor force is willing to apply. In the third and most interesting case where $0 < \widetilde{\theta} \leq \overline{\theta}$, only agents with a sufficiently high level of altruism are willing to take the job. We focus on this third case.[9] Notice that this implies that $\bar{A} - w > 0$: The base salary does not make up for foregoing the outside option. The reason is that the job gives agents an opportunity to help willing but unable clients, which increases altruistic agents' utility.

The self-selection of the agents is affected by the composition of the client population, the quality of employment services and sanction policy, and the principal's personnel policy. We discuss the influence of these

[9] When we would allow for agents with $\theta_j < 0$ (hostile agents), we would get a result similar to Prendergast (2007). That is, agents from both ends of the spectrum, with very positive and very negative attitudes to clients, take the job. The latter would impose sanctions on all types of clients as they enjoy making people worse off.

aspects in turn.

Client population The higher the number of willing and unable clients, the more attractive the job becomes for altruistic agents, because there are a lot of clients needing employment services and thus a big chance of getting the warm feelings of helping them. So even for agents with a relatively low level of altruism θ_j, the job becomes interesting:

$$\frac{\partial \widetilde{\theta}}{\partial L} = \frac{-k\left(\bar{A} - w\right)(M+N)}{(Lk)^2} < 0.$$

The higher the number of willing and able clients, the less interesting the job becomes. These clients need no help. Thus there are lower expected benefits from helping clients to compensate for the low-paying job:

$$\frac{\partial \widetilde{\theta}}{\partial M} = \frac{\bar{A} - w}{Lk} > 0.$$

The same holds for the number of non-willing clients. Because the agents do not impose sanctions, the agents avoid the negative feelings this would evoke for the clients and thus themselves. But they do not get positive feelings of helping clients either. When there are more of these non-willing clients, less people are willing to take the job:

$$\frac{\partial \widetilde{\theta}}{\partial N} = \frac{\bar{A} - w}{Lk} > 0.$$

Employment services and sanction policy The employment services offered by the bureaucracy can be more or less attractive to clients. Clients, for example, often like employment services where they themselves can have a say. The more attractive the employment services for clients, the more interesting the job becomes for agents:

$$\frac{\partial \widetilde{\theta}}{\partial k} = \frac{-L\left(\bar{A} - w\right)(L+M+N)}{(Lk)^2} < 0.$$

Making the sanction policy more or less fierce has no effect in the flat-wage case, because agents do not impose sanctions anyway:

$$\frac{\partial \widetilde{\theta}}{\partial v} = 0.$$

Personnel policy The principal in this case has a simple personnel policy: He only offers a base salary, w. Raising this salary makes the job attractive to a larger number of agents:

$$\frac{\partial \widetilde{\theta}}{\partial w} = \frac{-(L+M+N)}{Lk} < 0. \tag{3}$$

4.3 Optimal personnel policy

We have seen that agents are willing to take the job when they are sufficiently altruistic; more precisely, when condition (2) holds. But how many agents does the principal want to hire? Recall that each agent makes one allocation. Using equation (2), the total number of allocations can be written as $Q = R\int_{\widetilde{\theta}}^{\overline{\theta}} f(\theta)\, d\theta$. Further, using our results on agents' allocation choices in section 4.1, the principal's expected payoff of hiring an agent is $\frac{L}{L+M+N}(b-c) - w$. Hiring an agent increases the number of employment services allocated to willing and unable clients, but comes at the cost of paying the base salary. The principal's optimization problem can thus be written as

$$\max_{w} \left[\frac{(b-c)L}{L+M+N} - w\right] R\int_{\widetilde{\theta}}^{\overline{\theta}} f(\theta)\, d\theta,$$

where $\widetilde{\theta}$ is described by equation (2). The first-order condition describing the optimal base salary is:

$$\frac{\partial EU_p}{\partial w} = \left[\frac{(b-c)L}{L+M+N} - w\right] Rf(\widetilde{\theta}) \left[\frac{Lk}{L+M+N}\right]^{-1} - R\int_{\widetilde{\theta}}^{\overline{\theta}} f(\theta) d\theta = 0. \tag{4}$$

The condition shows us that by raising the base salary the principal attracts a number of additional agents, $Rf(\widetilde{\theta})\left[\frac{Lk}{L+M+N}\right]^{-1}$. This raises the principal's expected payoff as these agents allocate employment services to the willing and unable clients, and lowers his payoff by the salary he has to pay them $\left[\frac{(b-c)L}{L+M+N} - w\right]$. Raising the base salary also implies that

the principal has to pay higher salaries to all agents he hires, which costs $-R\int_{\underline{\theta}}^{\overline{\theta}} f(\theta)\, d\theta$. In the optimum, the principal equates these marginal benefits and costs or, if the resulting number of potential allocations exceeds the number of clients, hires S agents. Importantly, the principal may optimally choose to hire too few agents to serve all clients. This stems from the principal's monopsony power: To attract more agents, he must increase all agents' base salary, which may not make up for the payoff resulting from an increase in allocations. Hence, insufficient staffing and an overload of clients may be an optimal choice. If the principal lacks monopsony power, either all or none of the clients would be served, depending on whether the market wage is lower or higher than the expected payoff of an allocation.

5 Pay-for-performance

As we have seen in the previous section the principal and agents' preferences are not always in line: Agents do not sanction non-willing clients. Can the principal change the behavior of the agents and at what cost? In this section we investigate what happens when the principal rewards agents with a bonus $\pi > 0$ for each correct allocation made, without overruling the agents' allocations when a wrong decision has been detected.[10] As discussed in section 3, an example of such an incentive scheme is making agent's pay dependent of his clients' labor market performances.[11]

5.1 Which allocations do agents make?

Agents' allocations to the willing and unable clients (employment services) and to the willing and able clients (no help) were already in line with the preferences of the principal in the flat-wage case studied above. Pay-for-performance does not change the agents' allocations to these clients; it only increases the payoff to the agents of making this allocation by

[10] We discuss the implications of several other incentive schemes in Section 6.

[11] Klerman et al. (2005: 129) observe such individual rewards for caseworkers in California, as does Weissman (1997: 37) in Los Angeles County and Burgess et al. (2004) in Jobcentre Plus in the UK. For example, caseworkers having more than 10 job placements in the preceding month got rewards such as free movie tickets or banners with their name on it.

π. However, when the agent meets a non-willing client, bonus pay may induce an agent to impose a sanction rather than to allocate no help. His payoff of sanctioning becomes $w+\pi-\theta_j v$, while the payoff of allocating no help remains w and the payoff of allocating employment services remains $w-\theta_j g$. Hence, if the bonus π is high enough, the payoff of sanctioning is higher than the payoff of allocating no help. More specifically, an agent will give non-willing clients a sanction when his level of altruism is lower than the threshold level:

$$\theta_j < \widehat{\theta} = \pi/v. \tag{5}$$

When $\theta_j \geq \widehat{\theta} = \pi/v$, the agent's decision is not affected by the bonus: He allocates no help to the non-willing clients, because the bonus does not compensate for the negative feelings the agent experiences when sanctioning a non-willing client.

5.2 Which agents take the job?

As before, an agent applies for the job when his expected utility from the job is higher than his outside option utility, $EU_a \geq \bar{A}$. We need to distinguish two groups of agents: Those that sanction non-willing clients and those that do not.

The agent does not sanction $\left(\theta_j \geq \widehat{\theta} = \pi/v\right)$ The agent's expected utility, equation (1), changes into:

$$EU_a = w + \frac{(L+M)\,\pi}{L+M+N} + \frac{L\theta_j k}{L+M+N} \geq \bar{A},$$

implying the following participation constraint:

$$\theta_j \geq \widetilde{\theta} = \left(\bar{A} - w - \frac{(L+M)\,\pi}{(L+M+N)}\right)\left[\frac{Lk}{L+M+N}\right]^{-1}. \tag{6}$$

Compared to the case of flat wages, the participation constraint has changed in only one way: The agent earns a bonus π for the allocations to willing clients $(L+M)$. All comparative statics have the same sign as in the absence of bonuses, except for the effect of a higher number of willing and

able clients:

$$\frac{\partial \widetilde{\theta}}{\partial M} = \frac{\bar{A} - w - \pi}{Lk} \gtreqless 0.$$

While, as before, a higher number of willing and able clients reduces the expected nonpecunairy payoffs from the job, pay-for-performance implies that it now increases the expected pecuniary payoffs. Hence, the number of agents willing to take the job may now increase or decrease with the number of willing and able clients. Further, note that an increase in the bonus makes the job more attractive:

$$\frac{\partial \widetilde{\theta}}{\partial \pi} = \frac{-(L+M)}{Lk} < 0.$$

This effect is smaller than that of raising the base salary (which is again given by (3)), because agents who do not sanction only receive the bonus when encountering willing clients. As we shall see, this has important implications for the optimal level of the bonus.

The agent sanctions $\left(\theta_j < \widehat{\theta} = \pi/v\right)$ Expected utility of agents who optimally decide to sanction non-willing clients reads:

$$EU_a = w + \pi + \frac{\theta_j (Lk - Nv)}{L + M + N} \geq \bar{A},$$

implying the following participation constraint:

$$\text{if } Lk - Nv > 0, \text{ then } \theta_j \geq \widetilde{\widetilde{\theta}} = \left(\bar{A} - w - \pi\right) \left[\frac{Lk - Nv}{(L + M + N)}\right]^{-1}; \quad (7)$$

$$\text{if } Lk - Nv < 0, \text{ then } \theta_j \leq \widetilde{\widetilde{\theta}} = \left(\bar{A} - w - \pi\right) \left[\frac{Lk - Nv}{(L + M + N)}\right]^{-1}. \quad (8)$$

First, consider the case where $Lk - Nv > 0$. That is, given that an agent sanctions non-willing clients, the job brings higher expected joys of helping the willing and unable clients than expected sorrows of sanctioning the non-willing clients. Then, as before, only agents with a sufficiently high level of altruism are willing to apply for the job, $\widetilde{\widetilde{\theta}} \leq \theta_j \leq \overline{\theta}$. Compared to agents who do not sanction, pecuniary payoffs are higher, because the agent gets a bonus for each allocation he makes. Non-pecuniary payoffs are lower, however, because the agent suffers a loss when sanctioning non-

willing clients. As before, the principal pays less than agent's outside option utility $\left(w+\pi<\bar{A}\right)$, for otherwise all agents in the economy would apply for the job.

Next, consider the case where $Lk-Nv<0$. It is easy to see that in this case, if the expected pecuniary payoffs are smaller than the outside option utility, $w+\pi<\bar{A}$, only agents with hostile feelings $\theta_j<\widetilde{\widetilde{\theta}}<0$ would be willing to apply (given that an agent sanctions). However, we have assumed $\theta_j\geq 0$ for any j, and so if the principal wants to attract agents who choose to sanction non-willing clients, he must offer $w+\pi\geq\bar{A}$. Agents interested in a job like this are the ones with low levels of altruism, those that do not care too much about the clients' feelings, $0\leq\theta_j\leq\widetilde{\widetilde{\theta}}$, as described by (8).

The comparative static results are similar to those derived above with two exceptions. First, raising the bonus has the same effect as raising the base salary, because agents who sanction receive bonuses for all allocations they make, rendering the base salary and bonus pay perfect substitutes:

$$\begin{aligned}
\text{if } Lk-Nv &> 0, \text{ then } \frac{\partial\widetilde{\widetilde{\theta}}}{\partial w}=\frac{\partial\widetilde{\widetilde{\theta}}}{\partial\pi}=\frac{-\left(L+M+N\right)}{Lk-Nv}<0;\\
\text{if } Lk-Nv &< 0, \text{ then } \frac{\partial\widetilde{\widetilde{\theta}}}{\partial w}=\frac{\partial\widetilde{\widetilde{\theta}}}{\partial\pi}=\frac{-\left(L+M+N\right)}{Lk-Nv}>0.
\end{aligned}$$

Although the signs are opposite in the two cases, the interpretation is the same: Raising the bonus or base salary attracts more agents, in the first case from the top and in the second case from the bottom of the altruism distribution (see (7) and (8)). Second, making the sanction policy more harsh (raising v) makes agents less willing to apply for the job:

$$\frac{\partial\widetilde{\widetilde{\theta}}}{\partial v}=\frac{N\left(\bar{A}-w-\pi\right)\left(L+M+N\right)}{\left(Lk-Nv\right)^2},$$

which is positive if $w+\pi<\bar{A}$ and negative if $w+\pi>\bar{A}$, both implying that fewer agents apply. In the first case, some agents from the top no longer apply, while in the second case some agents from the bottom are no longer interested in taking the job (see (7) and (8)).

5.3 Optimal personnel policy

By setting the base salary w and the bonus π, the principal determines the number of agents that will be hired as well as affects their allocation decisions. Following the analysis in the previous subsection, there are two cases that need to be distinguished: The case where the expected nonpecuniary payoffs of the job for agents willing to sanction are positive, $Lk - Nv > 0$, and the case where these are negative, $Lk - Nv < 0$.

Nonpecuniary payoffs positive when agents sanction ($Lk - Nv > 0$) In this case, the job is mainly a job of helping needy people getting a better chance on the labor market, even for agents who sanction non-willing clients. Hence, as we have seen, the job is particularly attractive to altruistic agents. Using our results on the allocations agents make (section 5.1) and which agents take the job (section 5.2), we know that, if the principal decides to induce at least part of the agents to sanction non-willing clients, $R\int_{\widehat{\theta}}^{\overline{\theta}} f(\theta)d\theta$ allocations will be made by agents who are willing to take the job but not willing to sanction, and $R\int_{\widetilde{\widetilde{\theta}}}^{\widehat{\theta}} f(\theta)d\theta$ allocations will be made by agents who are willing to take the job and sanction non-willing clients. The resulting expected payoffs to the principal of these two groups of agents are respectively $\left[\frac{(b-c)L}{L+M+N} - w - \frac{(L+M)\pi}{L+M+N}\right]$ and $\left[\frac{(b-c)L+zN}{L+M+N} - w - \pi\right]$ per agent. The principal's optimization problem can thus be written as:

$$\max_{w,\pi}\left[\frac{(b-c)L}{L+M+N} - w - \frac{(L+M)\pi}{L+M+N}\right] R\int_{\widehat{\theta}}^{\overline{\theta}} f(\theta)\,d\theta + \left[\frac{(b-c)L+zN}{L+M+N} - w - \pi\right] R\int_{\widetilde{\widetilde{\theta}}}^{\widehat{\theta}} f(\theta)\,d\theta \tag{9}$$

where $\widehat{\theta}$ is described by (5) and $\widetilde{\widetilde{\theta}}$ by (7). It is easy to verify that the participation constraint of agents who do not sanction, described by (6), is not binding, unless $\widehat{\theta} \leq \widetilde{\theta}$. In the latter case, the bonus is too low to induce any agents to sanction non-willing clients and, hence, the optimization problem is the same as in the case of flat wages, which we studied in the previous section. If $\widehat{\theta} > \widetilde{\theta}$, the first-order conditions for the optimal base salary and bonus are:

$$\frac{\partial EU_p}{\partial w} = \left[\frac{(b-c)\,L + zN}{L+M+N} - w - \pi\right] Rf(\widetilde{\widetilde{\theta}}) \left[\frac{Lk - Nv}{L+M+N}\right]^{-1} - R\int_{\widetilde{\widetilde{\theta}}}^{\overline{\theta}} f(\theta)d\theta = 0 \tag{10}$$

$$\frac{\partial EU_p}{\partial \pi} = \frac{N\,(z-\pi)}{L+M+N} Rf(\widehat{\theta})\frac{1}{v} + \left[\frac{(b-c)L + zN}{L+M+N} - w - \pi\right] Rf(\widetilde{\widetilde{\theta}}) \left[\frac{Lk - Nv}{L+M+N}\right]^{-1}$$
$$-\frac{L+M}{L+M+N} R\int_{\widehat{\theta}}^{\overline{\theta}} f(\theta)d\theta - R\int_{\widetilde{\widetilde{\theta}}}^{\widehat{\theta}} f(\theta)d\theta = 0 \tag{11}$$

Raising the base salary w has the same effects as in the case of flat wages, except that the additional agents sanction non-willing clients (which raises the marginal benefits) and need to be paid bonuses (which reduces the marginal benefits). Furthermore, as before, when raising the base salary, the principal has to pay a higher salary to all agents, which is reflected by the last term of (10). Due to this monopsony effect, the principal may again optimally choose to hire too few agents to serve all clients.

Raising the bonus π has three effects. Firstly, it induces $Rf(\widehat{\theta})\frac{1}{v}$ agents to sanction and receive a bonus rather than allocate no help to non-willing clients. This results in a total increase of the principal's payoff described by the first term in (11): The principal gains z from each additional sanction to non-willing clients at the cost of paying an additional bonus π. Secondly, as for the base salary, by raising the bonus the principal attracts additional agents willing to sanction, which is reflected by the second term in (11). Notice that this term is identical to the first term in (10), which reiterates our result above that raising the base salary or the bonus have the same effect on recruitment of agents willing to sanction. Lastly, the marginal costs of raising the bonus are described by the last two terms of (11): Agents are compensated better for correct decisions.

In the optimum the principal equates the marginal benefits and costs of raising the bonus and of raising the base salary. Combining the first-order conditions gives:

$$(\pi - z)\,\frac{f(\widehat{\theta})}{v} = \int_{\widehat{\theta}}^{\overline{\theta}} f(\theta)d\theta,$$

which implies that the optimal bonus π exceeds the value to the principal

of sanctioning a non-willing client (z). The intuition follows. By raising the bonus, some additional agents are induced to impose sanctions, which raises the principal's payoff by $(\pi - z)$, as discussed above. Hence, it is optimal for the principal to raise the bonus at least to the point where the bonus equals the value to the principal of sanctioning non-willing clients. This echoes the familiar result that, with risk-neutral agents, optimal bonus pay equals the full marginal product. However, there is an additional benefit of raising the bonus. Recall that an increase in the bonus enables the principal to reduce the base salary by the same amount without losing any agents, because the bonus and base salary are perfect substitutes for the marginal agents. Expected wage compensation for agents who do not sanction decreases, however. They bear the full loss of the reduction in the base salary, but gain only partly from the increase in the bonus as they do not sanction. Raising the bonus thus enables the principal to extract rents from the agents who do not sanction non-willing clients. In the optimum, the bonus therefore exceeds the principal's value of sanctioning non-willing clients.[12] Nevertheless, if $\overline{\theta}$ is sufficiently high, the optimal bonus does not induce all agents to sanction non-willing clients. The principal simply finds it too costly to induce highly altruistic agents to impose sanctions.

Nonpecuniary payoffs negative when agents sanction ($Lk - Nv < 0$) In this case, the job is mainly about disciplining instead of helping clients for agents who find it optimal to impose sanctions on non-willing clients. As we have seen in section 5.2, in order to induce at least some of the agents to sanction non-willing clients, the total pecuniary payoffs of the job for these agents must at least be equal to the outside option utility, $w + \pi \geq \bar{A}$, implying that some agents from the bottom of the altruism distribution sort into the agency. Using our previous results on which allocations agents make (section 5.1) and who will take the job (section

[12] Obviously, more sophisticated separating contracts may enable the principal to extract even more rents from the altruistic agents. We leave an analysis of this for future research. Note also that rent extraction can only occur when the principal has monopsony power. When there are many identical principals, competition rules out rent extraction, and the optimal bonus π is equal to the principal's value of sanctioning a non-willing client (z).

5.2), we know that $R\int_0^{\widetilde{\widetilde{\theta}}} f(\theta)\,d\theta$ allocations are made by agents willing to sanction and $R\int_{\widetilde{\theta}}^{\overline{\theta}} f(\theta)\,d\theta$ allocations are made by agents not willing to sanction.[13] The principal's optimization problem can thus be written as:

$$\max_{w,\pi}\left[\frac{(b-c)L+zN}{L+M+N}-w-\pi\right]R\int_0^{\widetilde{\widetilde{\theta}}} f(\theta)\,d\theta+ \tag{12}$$
$$\left[\frac{(b-c)L}{L+M+N}-w-\frac{\pi(L+M)}{L+M+N}\right]R\int_{\widetilde{\theta}}^{\overline{\theta}} f(\theta)\,d\theta,$$

where $\widetilde{\theta}$ is described by (6) and $\widetilde{\widetilde{\theta}}$ by (8). The first-order conditions are:

$$\frac{\partial EU_p}{\partial w}=\left[\frac{(b-c)L+zN}{L+M+N}-w-\pi\right]Rf\left(\widetilde{\widetilde{\theta}}\right)\left[-\frac{Lk-Nv}{L+M+N}\right]^{-1}+$$
$$\left[\frac{(b-c)L}{L+M+N}-w-\frac{\pi(L+M)}{L+M+N}\right]Rf\left(\widetilde{\theta}\right)\left[\frac{Lk}{L+M+N}\right]^{-1}$$
$$-R\int_0^{\widetilde{\widetilde{\theta}}} f(\theta)\,d\theta-R\int_{\widetilde{\theta}}^{\overline{\theta}} f(\theta)\,d\theta=0 \tag{13}$$

$$\frac{\partial EU_p}{\partial \pi}=\left[\frac{(b-c)L+zN}{L+M+N}-w-\pi\right]Rf(\widetilde{\widetilde{\theta}})\left[-\frac{Lk-Nv}{L+M+N}\right]^{-1}+$$
$$\left[\frac{(b-c)L}{L+M+N}-w-\frac{\pi(L+M)}{L+M+N}\right]Rf(\widetilde{\theta})\left[\frac{L+M}{L+M+N}\right]\left[\frac{Lk}{L+M+N}\right]^{-1}$$
$$-R\int_0^{\widetilde{\widetilde{\theta}}} f(\theta)d\theta-\frac{L+M}{L+M+N}R\int_{\widetilde{\theta}}^{\overline{\theta}} f(\theta)d\theta=0 \tag{14}$$

The first term in (13) shows that, as before, by raising the base salary w, the principal attracts more agents who are willing to sanction. However, in this case, he also attracts more agents who are not willing to sanction,

[13] Using (5), (6), and (8), it is easy to verify that in all cases where the principal hires neither all nor none of the potential agents, it holds that $\widetilde{\widetilde{\theta}}<\widehat{\theta}<\widetilde{\theta}$. In other words, none of the agents hired from the top of the altruism distribution sanction, while all agents hired from the bottom do sanction non-willing clients. Hence, the incentive constraint (5) is redundant.

resulting in additional payoffs described by the second term of (13). Furthermore, the principal has to pay a higher salary to all agents, described by the third and fourth term in (13), which can lead to the same monopsony result for the optimal number of allocations as before: Too few agents to serve all clients. The first two terms in (14) show that by raising the bonus, the number of agents willing to sanction as well as the number of agents not willing to sanction increase. Finally, the last two terms of (14) describe the increase in bonus paid to all hired agents. Combining the first-order conditions and rewriting gives:

$$\left[\frac{(b-c)\,L}{L+M+N} - w - \frac{\pi\,(L+M)}{L+M+N}\right] f\left(\widetilde{\theta}\right) \left[\frac{Lk}{L+M+N}\right]^{-1} = \int_{\widetilde{\theta}}^{\overline{\theta}} f\,(\theta)\,d\theta,$$

$$\left[\frac{(b-c)\,L + zN}{L+M+N} - w - \pi\right] f\left(\widetilde{\widetilde{\theta}}\right) \left[-\frac{Lk - Nv}{L+M+N}\right]^{-1} = \int_{0}^{\widetilde{\widetilde{\theta}}} f\,(\theta)\,d\theta.$$

If an interior solution exists for both of these equations, the principal optimally hires agents from the top and the bottom of the altruism distribution, as in Francois (2007) and Prendergast (2007). The principal does so until the expected gains from hiring additional agents from each group are equal to the increase in rents he has to leave to this group of agents. Highly altruistic agents do not sanction non-willing clients and are paid a low income, while agents with low altruism sanction non-willing clients and earn high bonus pay. Hence, when the nonpecuniary payoffs of the job are negative for agents who sanction, pay-for-performance has a profound effect on the sorting of agents. While in the case of flat wages, only the most altruistic types opt for the job, with pay-for-performance sorting from the top and bottom of the altruism distribution can result. When the value to the principal of sanctioning non-willing clients, z, is sufficiently high, it may even be optimal for the principal to hire agents from the bottom of the altruism distribution only. The same holds when $\overline{\theta}$ (the most altruistic agent's degree of altruism) is sufficiently low. In these cases, the benefits of hiring the most altruistic agents (low wage costs) do not compensate for the costs (that some non-willing clients do not get a

sanction). However, the opposite may also be the case. When the value of sanctioning is sufficiently low or when there is sufficient mass of highly altruistic agents, the principal does not find it worthwhile to offer high pecuniary payoffs so as to attract agents who are willing to sanction. This results in sorting of the most altruistic types only, as in the case of flat wages.

6 Robustness results

The previous section studied a simple pay-for-performance scheme: Agents earn a reward whenever they make a correct allocation. This section examines some alternative incentive schemes.

First, since there is only a misalignment of preferences when a client should be sanctioned, payment of a bonus could be confined to instances where agents give correct sanctions. It is straightforward to show that such a scheme does not affect any of the main results; it merely leads to a decrease in agent's expected bonus pay and an increase in the base salary of exactly the same size. The principal thus neither gains nor loses from narrowing the performance indicator: the decisions made by agents are identical and the increase in base salaries is exactly compensated by the reduction in expected bonus pay.

Similarly, an incentive scheme that pays a bonus for correct allocations and let agents pay a penalty for incorrect allocations does not change any of the main results. The reason is that allocations are either correct or incorrect. Hence, in addition to receiving the bonus, the agent now also avoids paying a penalty by making a correct allocation rather than an incorrect one. In the optimum, the sum of bonus and penalty simply equals the optimal bonus derived in the previous section. The expected compensation for each agent remains the same by adjusting the base salary necessary to attract the optimal number of agents.

Likewise, adding probabilistic auditing to the model rather than assuming that the principal observes the appropriateness of all allocations made by agents does not affect any of the main results. Clearly, with probabilistic auditing, a given bonus (or penalty or combination thereof) is a less powerful motivator the lower is the probability of auditing. How-

ever, by adjusting the bonus sufficiently, exactly the same behavior can be induced without further agency costs. More specifically, it is easy to verify that when the principal audits each allocation with probability δ, a bonus equal to π^*/δ is optimal, where π^* is the optimal bonus derived in the previous section.

Lastly, the principal can condition bonus pay on actions (sanction, no help, employment services) rather than on performance (correct allocations). Consider a scheme that pays agents a bonus π each time a sanction is allocated. Like the incentive scheme studied in the previous section, this scheme induces some of the agents to sanction non-willing clients, namely those for whom condition (5) holds. However, and importantly, it also induces some agents to sanction clients who should *not* be given a sanction. More specifically, any agent for whom condition (5) holds does not only sanction non-willing clients, but also sanctions the willing and able clients he meets. Further, some of the agents are induced to sanction rather than help willing and unable clients, namely when:

$$\theta_j < \widehat{\theta} = \pi / (v + k) .$$

In short, conditioning the bonus on actions rather than on performance results in excessive sanctioning, which clearly bears a cost to the principal (represented by x in our model). Plausibly, this is also one of the key reasons for why such schemes are rarely observed in practise and, if they are introduced, cause a lot of turmoil in the press.[14]

With a bonus for sanctions, the self-selection of agents depends on whether the expected joys of helping the willing and unable are larger than the expected sorrows of sanctioning the non-willing and willing and able clients; that is, whether $Lk \gtrless (M+N)v$. If $Lk > (M+N)v$, a group of highly altruistic agents is willing to take the job. The least altruistic among those sanction the non-willing and willing and able clients and allocate help to willing and unable clients. Furthermore, as long as the

[14] A recent example is the Dutch police where police officers ran the risk of being withheld a pay rise when not meeting a target number of fines (see http://www.dutchnews.nl/news/archives/2010/09/quotas_for_police_fines_are_wi.php). While not identical to a scheme rewarding agents for each sanction, it is clear that such a quotum system can give rise to the same problem of excessive sanctions.

pecuniary payoffs for agents at the bottom of the altruism distribution are sufficiently high, $w + \pi > \bar{A}$, a third group of agents is willing to take the job and sanctions all clients. If $Lk < (M+N)v$, a group of highly altruistic agents is willing to take the job, but does not sanction. Additionally, when pecuniary payoffs are sufficiently high, a group of lowly altruistic agents is willing to take the job and sanctions all clients. The most altruistic among those do not sanction willing and unable clients, but allocate help instead.

7 Concluding remarks

We have studied the effects of pay-for-performance in street-level bureaucracies where agents have the dual task of helping some clients while disciplining others. Our theoretical work has some clear predictions which can be tested in future empirical research, e.g. using data such as those used by Behncke et al. (2010) combined with data on how agents are compensated. In particular, our study suggests that pay-for-performance can have important effects on the self-selection of agents into street-level bureaucracies. While organizations paying flat wages are predicted to be attractive mainly to highly altruistic (or client-oriented) types, organizations using pay-for-performance are also (and sometimes only) attractive to agents who have a neutral stance towards clients. Further, our analysis predicts that understaffing (as measured by, e.g., unexplained differences in caseloads per agent, see Bloom et al. (2003)) is related to the degree of competition between agencies and to the composition of their client population. More specifically, our results suggest that bureaucracies facing less competition in the labor market for agents are more likely understaffed, and the more so when their clients more likely qualify for help or a sanction.

While we have focussed on pay-for-performance as a means to align the agents' and principal's interests, there are of course several other ways to do so. We discuss three of these alternatives here. A first alternative is to monitor (a part of) the agents' allocations before they are put into effect and to punish and overrule an agent when a wrong allocation is detected (see e.g. Van der Veen 1990). In an earlier draft of this paper, we explored

this case. If the agent only cares about the effects on the client's welfare of his own decisions and not those by the principal, the results are similar to the case of pay-for-performance studied above. However, some results change when we assume that the agent, once he has met the client, cares also about how clients are affected by later decisions taken by the principal. Then, like bonus pay, monitoring induces part of the bureaucrats with lower levels of altruism to sanction non-willing clients. But when the monitoring rate is sufficiently high, there are further consequences for sorting: Sorting into the job from the bottom of the altruism distribution only, even by agents not willing to sanction. The reason is that, with a high monitoring rate, the agency is likely to overrule the bureaucrat when observing that the bureaucrat has not imposed a sanction on non-willing clients. When the bureaucrat's sorrows of these sanctions are larger than the joys of helping others, the job is no longer attractive to altruistic people and the agency needs to offer a relatively high wage to attract people who will all be little concerned about clients' welfare.

A second alternative way of aligning the principal and agents' interests is to advise the agent on what allocation to make using a statistical assignment program which uses data on clients' characteristics (profiling). Many countries use such a procedure (see OECD, 2007, Black et al., 2003, Rosholm et al., 2006). One reason to introduce profiling is to avoid case-managers' bias. Or, as Bell and Orr (2002: 281) put it, to promote that "identical persons will get the same treatment, regardless of who their caseworker might be". Profiling constrains agents' room for discretion if the agency penalizes agents for diverting too often from the advised allocations. This can be considered as a special case of monitoring and is thus likely to lead to the same results as described in the previous paragraph.

A third alternative is to use clients' complaints to find out when a wrongful decision has been taken by an agent. However, complaints would be uninformative in our model, because agents do not sanction willing clients. The only clients who would complain about sanctions are non-willing clients, who are sanctioned deservedly. All other allocations are in line with the clients' preferences. No complaints are to be expected in those cases. Complaints, however, are informative in models where agents need to exert effort to make a correct allocation, as studied by Prendergast

(2007).

We have abstracted from any private costs to agents of sanctioning clients, like for example physical threats, lots of paperwork, or the chance to become engaged in the legal process of sanctions and appeal (see e.g. Considine 2000). Such private costs would make agents even less willing to sanction non-willing clients. To induce agents to impose sanctions, the bonus would need to compensate agents for these private costs in addition to the sorrows arising from agents' altruism towards clients.

Further, we have treated the cost of a sanction to clients, v, as an exogenous variable. An interesting issue is what value of v the principal would optimally choose. While lowering v makes it more easy for the principal to induce agents to actually impose sanctions, it may adversely affect clients' job search behavior as misbehavior results in a less costly sanction. Hence, the basic tradeoff that could arise would be between providing the right incentives to clients by setting higher sanctions and savings on the costs of incentivizing agents to provide sanctions by setting lower sanctions. If agents are very responsive to changes in v, however, the tradeoff may be nonexistent as reductions in v bring about a big increase in the probability of being sanctioned, such that job search behavior of clients also improves.

We have assumed that agents differ in their altruism towards their clients, but that each agent's level of altruism is the same towards all of his clients. Thus, we assumed that agents do not discriminate against some clients. But as Lipsky (1980: 108) observes: "some clients simply evoke workers' sympathy or hostility (...) workers may be inclined to 'give the underdog a break' or may favour clients with similar ethnic backgrounds, as when racial or ethnic favoritism prevails in discriminatory decision making." These feelings can impact agents' allocation decisions in important ways. Feelings of reciprocity (Fehr and Gächter, 2000, Fong et al., 2006, and Fong, 2007) can also play a role. People tend to treat friendly and deserving people better than hostile and undeserving people. In our model, reciprocity could imply that agents treat willing clients more favorably than non-willing clients, thus improving the alignment of the principal's and agents' interests. However, these reciprocal feelings are in practice not likely to be strong enough to achieve perfect alignment,

which is also clear from the empirical literature discussed in section 2.

Lastly, an agent's altruism does not need to be stable over time. As Blau (1960: 347-348) notices "the attitudes of most new case workers toward clients were strongly positive, if somewhat sentimental and idealistic (...) But as he encountered clients who blamed him personally for not helping them enough (...) and clients met his trusting attitude by cheating and lying, the newcomer tended to experience a 'reality shock' (...) This disillusioning experience might make a worker bitter and callous, or induce him to leave the job, and even those who did not have either of these extreme reactions tended to change their orientation to clients." This is clearly an interesting topic for future research. De Cooman et al. (2009) and Buurman et al. (2009) make some steps in that direction.

Notation

- $\bar{A}$ = agent's outside option utility
- L = number of willing and unable clients (type l).
- M = number of willing and able clients (type m).
- N = number of non-willing clients (type n).
- Q = number of allocations
- R = number of potential agents
- S = number of clients
- U_a = agent's utility function
- U_c = client's utility function
- U_p = principal's utility function
- b = principal's benefit when a willing and unable client receives employment services
- c = principal's cost when a client receives employment services
- $f(\theta)$ = density function of agents' types
- g = non-willing client's cost of employment services
- k = willing and unable client's benefit of employment services
- v = client's cost of a sanction
- w = agent's base salary
- z = principal's benefit when a non-willing client receives a sanction
- $z - x$ = principal's net benefit when a willing client receives a sanction
- π = bonus for making a correct allocation
- θ = agent's level of altruism towards clients

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