Why does bureaucratic corruption occur in the EU?

A principal-supervisor-agent model

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Abstract Why does bureaucratic corruption occur in the EU system? Several examples suggest that bureaucratic corruption exists and that the Commission's anti-fraud agency, OLAF, is not a fully independent authority. We thus develop a novel interpretation of the principal-supervisor-agent model to cope with non-independent anti-fraud units. This model shows that corruption is likely to occur when the expected value to the client from bribing the agent is larger than the expected value to the principal of truth-telling by the supervisor. Overall, this analysis points to the risks of flawed incentives and the lack of institutional independence among principal, agent, supervisor and client. Our main policy recommendations as a result of these findings are that OLAF should be placed outside the Commission, and that whistleblowers should receive adequate protection.

Keywords EU · Bureaucratic corruption · Principal-supervisor-agent · OLAF · Commission

1 Introduction

Since the EU was founded by the Treaty of Rome in 1957, it has achieved great victories: among them, the internal market, political stability, and expansion towards the East. A rather overlooked topic, however, is existing and potential corruption problems in the EU political system. In fact, the extent of corruption at the EU level is unclear and data are in short supply. Back in 1997, the EU estimated that about 5 % of the budget could not be accounted for (George and Bache 2001: 241). With a current total budget of about €120 billion, this translates into an annual loss of €6 billion. To this should be added fraud involving EU funds, e.g., subsidies for fictive olive groves in Rome (Svendsen 2008).

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The European Parliament started a debate about how to regulate corruption problems in 1992. A self-regulatory code for proper behavior was proposed and rejected after heated discussions during the 1990s. In the end, what “started life as a debate in the Parliament ended as a highly politicized contest between party groupings over the declaration of members’ assets and receipts of gifts” (Greenwood 1997: 97).

Recently, Parliament President Jerzy Buzek stated at a meeting with representatives from the non-governmental organization Transparency International that “Public officials who are corrupt attack the very fabric of our democracy” and that “There should be zero tolerance for any form of corruption” (European Parliament 2011). Although corruption is “sticky” and may be hard to change over time at the central level in the EU, “... policy choices that countries make also shape corruption” (Uslaner 2009: 128).

Furthermore, the European Parliament has stated officially that the Commission’s anti-fraud office, OLAF (*Office de Lutte Anti-Fraude*), has failed to serve its political objectives and must be improved (European Parliament 2003). This European anti-fraud office was established in 1988 as the Unit for the Coordination of Fraud Prevention (UCLAF) and was in 1999 renamed OLAF. Its purpose is “... to protect the financial interests of the European Union by combating fraud, corruption and any other illegal activities, including serious misconduct within the European Institutions” (Office de Lutte Anti-Fraude 2011). In spite of this institutional setup, there are several examples of bureaucratic corruption problems and the dubious role of OLAF in limiting them (Pujas 2003; Quirke 2010).

Thus, our research question is: Why does bureaucratic corruption occur in the EU system? This question has not been dealt with adequately in the literature, first and foremost because corruption is difficult to measure due to lack of regulation and transparency (Europa 2011). This is in stark contrast to the US experience, with its comprehensive and transparent legislation on corruption (Svendsen 2011).

Several competing theories may explain why corruption occurs in the EU. Warner (2003) presents four main hypotheses. First, the Agency hypothesis states that international organizations create new opportunities for economically harmful rent-seeking. Second, the Predatory hypothesis argues that states and governments deliberately tolerate corruption in sectors where they could reasonably expect to derive some economic, social and even electoral benefits. Third, the Policy Networks hypothesis suggests that the EU provides multiple institutional points of access for rent seekers and that coalitions among them will develop across institutional and country boundaries. One would expect to find that existing coalitions among corrupt individuals or groups develop creative means for pursuing their interests. Fourth and finally, the Culture hypothesis claims that member states bring national patterns of corruption into international organizations. Consequently, most of the corruption in EU programs can be expected to occur in states with traditions of corruption. It is extremely hard to change the status quo because cultural bases and political institutions are stable and resistant to anti-corruption efforts (see Paldam 2002; Bjørnskov and Paldam 2005; and Paldam and Gundlach 2008 on causal relationships between corruption, culture and institutions).

Our research goal is to develop a special model in order to analyze theoretically corruption in spending or funding at the EU level, motivated by earlier examples of bureaucratic corruption. The model takes a standard principal-supervisor-agent approach (Tirole 1992). We add to the literature in two ways: first, by introducing an agent that can be either honest (not prone to corruption) or corrupt—i.e., when offered bribes, the agent will deliver an inefficient outcome from the point of view of the principal. Second, we apply the general model to an EU setting.

The principal cannot determine the type of agent without the help of a supervisor. It is assumed that the supervisor is a rational economic actor in the sense that the corrupt agent

can pay the supervisor to conceal the knowledge that the agent is corrupt. This happens if the agent can pay more (and therefore the supervisor can earn more from concealing the information) than the value this information has to the principal.

Institutional complexity is at the heart of real-life corruption problems at the central level in the EU. Who controls whom? (Warner 2003: 59). Therefore, we have chosen to model the Agency hypothesis as described above. It is the hypothesis most clearly grounded in public choice, owing to its strict assumption of underlying economic rationality. The other three hypotheses have weaker behavioral assumptions and downplay the role of institutions but, of course, they too deserve attention in future research.

The paper is structured in the following way. Section 2 motivates the model by defining bureaucratic corruption and presenting four examples related to the Commission, Parliament and OLAF. Section 3 then develops an agency model, namely a principal-supervisor-agent model. It points to the consequences of flawed incentives and the lack of institutional independence among principal, agent, supervisor and client. Finally, Sect. 4 contains the conclusion.

2 Bureaucratic corruption and examples

2.1 Bureaucratic corruption

Rent-seeking activities have caught the eye of the public choice literature since Tullock (1967). In general, rent-seeking is constrained by institutions and can take place in a legal form (lobbying) as well as in an illegal form (corruption).

Lobbying is the practice of trying to influence political decisions through a lobbyist, who acts as a representative of another person or interest group. In the case of legal rent-seeking, lobbyists can meet and try to influence political decision makers, e.g., informing decision makers about the consequences of smoking tobacco or liberalizing the agricultural sector in the EU. In addition to professional meetings, legal lobbying activities may include reports or publicity campaigns (Kurriild-Klitgaard 1998; Svendsen 2011).

Illegal rent-seeking, namely corruption, may be defined as “the misuse of public power for private gain” (Rose-Ackerman 1999: 91). The term “private gain” relates to receiving money or valuable assets, but it may also encompass increases in power or status. Receiving promises of future favors or benefits for relatives and friends can be considered as private gains (Lambsdorff 2007: 16). The possibilities include acts ranging from violations of procedures to overlooking illegal activities, and from intervening in the judicial process to advancing personal interests, such as soliciting or accepting kickbacks; pay-offs for legislative support; and the diversion of public resources for private use. Forms of corruption also include nepotism, common theft, fraud, overpricing, funding fictitious projects, payroll padding, and irregularities in tax assessment and collection (*ibid.*). In general, the risk of corruption may involve highly placed politicians or bureaucrats at the central EU level using their public positions to extract large bribes from representatives of, for example, business groups.

Goodman (1989) gives an overview of corruption definitions and distinguishes between “bureaucratic” and “political” corruption. She states:

Political corruption, in the form of the buying and selling of votes, the letting of patronage, and the doing of favors, usually has the end of building party cadres and political machines which will, in turn, support ambitious politicians in their search for power and, perhaps, glory. Bureaucratic corruption, or the passing of bribes or favors

from private hands to public hands in order to obtain a governmental prerogative for private gain, does not have a political purpose at all, but is for the enrichment of the corruptor and the corrupted at the expense, usually, of the public. (p. 655, fn 5)

In summary, the definition of bureaucratic corruption in Goodman (1989) fits the definition of Rose-Ackerman (1999). The “misuse of public power for private gain” phrase appears in Goodman’s terminology, which is directed at bureaucratic and not political corruption. The activities addressed in our model and illustrated in our empirical examples are designed directly to benefit the bureaucrat or politician (i.e., agent) undertaking them or causing them to take place and, thus, relate specifically to “bureaucratic” corruption.

2.2 Four examples

A first example of bureaucratic corruption is the so-called “1999 crisis,” which for the first time forced the Commission to resign en masse. In a report from that year, a committee of five independent experts sharply criticized the internal affairs of the EU system. The pressure from the report was so heavy on the chairman of the Commission, Jacques Santer of Luxembourg, and the other commissioners that the full Commission chose to resign in March 1999 (George and Bache 2001).

Investigations into the Commission were initiated as a result of two events. First, the Humanitarian Aid Office budget, supervised by the Spanish commissioner, Manuel Marin, showed irregularities. In 1998, Marin had advanced to the position of Vice President for the EU Commission, but he was unable to account for a loss of money between 1993 and 1995. Second, there were serious problems in the LEONARDO project, headed by the French commissioner Edith Cresson, who had been Prime Minister of France for 11 months from 1991 to 1992. The purpose of the project was to introduce an automated system of knowledge evaluation all over Europe, encourage re-training through adult education, and teach Europeans a second foreign language (i.e., French for the majority of Europeans). A number of contracting parties, mostly French companies, were invited to make project proposals. One Parisian company, Mayonic Public Relations, entered a contract signed by Louise Re-civieur, who had participated in the outsourcing process, and was subsequently awarded the tender. This was in direct conflict with EU regulations. All LEONARDO contracts were let to companies in Paris or Brussels (van Buitenen 2000).

Apart from lacking explanations for the allocation of the budget, Cresson was accused of nepotism (George and Bache 2001: 240). In August 1998, it was revealed that René Berthelot, Cresson’s friend of 20 years, shared an EU apartment with her in Brussels, and that Cresson had appointed Berthelot to full-time employment as a lead AIDS researcher. Berthelot was a retired dentist from Châtellerault in Western France, where Cresson had been mayor. A committee of five independent experts concluded that Berthelot did not have the academic background necessary for running the AIDS project, which also explained why the project did not produce its intended results. The most alarming fact of the entire episode was that in these two incidents, as well as in 20 others, the “financial controllers” of the Commission had refused to give information or access to relevant documents (Svendsen 2008).

During the fall of 2001, still more wide-ranging material was presented to the EU’s internal fraud department. To date, no action has been taken on it, and, to our knowledge, neither Marin nor Cresson have been punished. After the Santer Commission’s resignation, Belgian authorities attempted unsuccessfully to sue Cresson for criminal activities in 2004. In 2006, seven years after the 1999 crisis, EU courts found that there had been irregularities but that Cresson could not be penalized for them (Svendsen 2008).

Dutch accountant and EU bureaucrat Paul van Buitenen was the driving force behind the establishment of the committee of independent experts. In his book *Blowing the Whistle* (2000), he makes clear that good work is being done across the EU and that clear-cut corruption is, fortunately, an exception to the norm. However, he felt compelled to present information about corruption in the Commission to a member of the European Parliament in December 1998. The press picked up the case and van Buitenen's information led to the fall of the entire Commission three months later. Prior to that dramatic event, van Buitenen had tried in vain to change the system from within by informing his superiors of corruption. He then presented the case to the Commission's anti-fraud agency, UCLAF (OLAF), but to no avail. Paradoxically, van Buitenen received neither answers nor help from the office, which was established for that precise purpose, despite the fact that his evidence was extensive and highly troubling (van Buitenen 2000).

The press coverage of the corruption scandals led to the establishment of the independent committee. Upon the publication of its first report on 15 March 1999, political support for the Commission vanished. The independent committee confirmed that van Buitenen's information was well-documented and that the Commission had acted irresponsibly in response to it, including by suspending van Buitenen for four months on a reduced salary (*ibid.*).

A second example concerns Eurostat, the Commission's statistical office. Here, Danish employee Dorte Schmidt-Brown revealed financial irregularities concerning fictitious contracts with private companies in 2000 and 2001. Her claim was that Eurostat officials inflated payments to contractors and subsequently used the surplus as they saw fit. This practice resulted in millions of Euros being transferred to unofficial bank accounts outside of any budgetary control. In 2001, Schmidt-Brown called attention to the fact that one company, Eurogramme, had received fictitious Eurostat contracts and had not carried out its contracted tasks. Her objections were ignored and Eurogramme's contract was extended. Schmidt-Brown then refused to pay the bill from Eurogramme on the grounds of non-performance. She contacted staff commissioner Neil Kinnock in writing about the matter, and ultimately received a delayed response dismissing her complaints as "unfounded." Not until June 2003 did the Commission finally admit that large-scale corruption had taken place in Eurostat. Dorte Schmidt-Brown received an official apology from Neil Kinnock, but the commissioner in charge of Eurostat, Spaniard Pedro Solbes, was left unpunished (EU ABC 2007a, 2007b).

A third example concerns the Commission's chief accountant, Marta Andreasen. Andreasen was hired in 2002, and fired in 2004 because she refused to sign off on the Commission's 2001 accounts. Andreasen claimed that the accounting systems concealed fraud and that the Commission did not practice double bookkeeping, which would protect against fraud. When her criticism was ignored internally, she went to the budget control committee of the European Parliament, which resulted in a suspension from her post. The notice of dismissal referred to the rules for employees, which among other things require "officials to perform the utmost discretion concerning information they might obtain in the execution of their tasks" (Article 17).

Andreasen has since stated that OLAF is not an independent unit and is not the right institution for solving the problem of corruption in the EU. Andreasen believes that the Commission has been manipulated by powerful directors and managing directors who, for many years, have managed EU resources without oversight. Her claim is that the leaders want to preserve a system that renders fraud possible, and that she was forced out because of her position on the need to reform the system (Carozza 2004).

Paul van Buitenen shares this view. He writes that the new OLAF is still a part of the system it is meant to control (van Buitenen 2000: 194). The problem is that employees

have no sanctioned recourse to an independent authority. According to the current rules, employees may only contact their superior regarding imbalances.

Finally, a recent corruption scandal in the European Parliament was revealed in the spring of 2011. Journalists from the British newspaper *The Sunday Times* had set out to investigate how widespread corruption might be in the European Parliament. Pretending to be representatives of a lobbying firm, they sent invitations to 60 members of the European Parliament (MEPs) to serve as consultants for a non-existent lobbying business. The salary offered was €100,000 per year. Most of the MEPs either did not reply or turned down the invitation, but four agreed to meet with the fictitious lobbyists.

The four MEPs were Romania's former Deputy Prime Minister Adrian Severin, Austria's former Minister of the Interior Ernst Strasser, Slovenia's former Foreign Minister Zoran Thaler, and Spain's Pablo Zalba. All four were asked by the journalists to propose specific amendments to existing legislation in the European Parliament in exchange for payment.

Adrian Severin was asked to suggest an amendment to the Deposit Guarantee Schemes Directive. The amendment would give a bank that went into bankruptcy the ability to delay pay-outs to customers. This was in direct opposition to the stance of Severin's Social Democratic party in Parliament, which works primarily in the interest of consumers over industry. The amendment was implemented in the legislation.

Zoran Thaler was asked to suggest an amendment to the Investor Compensation Schemes (ICS) Directive. The amendment would reduce the sum that finance corporations were committed to pay out as a result of the original directive. The amendment was implemented in the legislation.

Ernst Strasser was also asked to propose an amendment to the ICS directive. The amendment would give investment bank clients a minimum notice of nine months before excluding them from the ICS. Strasser ultimately succeeded in having a 12-month notice implemented.

In all, *The Sunday Times* spent eight months investigating the MEPs' willingness to take bribes, and the scandal was disclosed in March 2011. Thaler and Strasser gave up their seats in Parliament within 24 hours of the disclosure. Severin still sits in the Parliament, although now as an independent. His former party, the Social Democrats, has demanded that he should resign and return his mandate to the Social Democrats. Pablo Zalba was exposed somewhat later in the process. Zalba also agreed to propose an amendment that was later passed. He still sits in the Parliament in his party, the European People's Party (EPP) (Deutsche Presse-Agentur 2011).

After the disclosure of the scandal, an internal investigation was launched in the European Parliament to validate the allegations (European Student Think Tank 2011). Moreover, a committee was formed, chaired by President of the Parliament Buzek, in charge of reforming the MEPs' behavioral codex in relation to lobbyists (European Parliament 2011). It seems unlikely, however, that the new behavioral codex will work effectively as long as there remains no strong, independent agency with the power to enforce the rules of the game.

2.3 Where is OLAF?

The above examples illustrate the presence of people inside the EU who are tempted by corruption, and the existence of outsiders (clients) who are prepared to bribe them. This is the point of departure for our model. However, corruption is a problem only if it neither is detected nor properly sanctioned.

The first three examples of bureaucratic corruption discussed previously came to the public's attention because public servants sounded the alarm. These "whistleblowers" all approached OLAF without success, after which they were forced to go to the public directly.

The fourth case came to light owing to the efforts of journalists at *The Sunday Times*. None were due to internal efforts by OLAF.

As stated above, the central problem is that OLAF is not an independent agency. It is part of the Commission and although its director is appointed by the Council of Ministers and Parliament, the candidate is selected from a shortlist drawn up by the Commission. This arrangement gives the Commission a great deal of potential influence over “who gets the job.” Thus, a major disadvantage of OLAF’s position is that when it investigates allegations of wrongdoing within the Commission (“internal investigations”), it is effectively an instance of the Commission investigating itself (Quirke 2007).

The Commission is already the stronghold of power in the EU. Its bureaucratic leadership is clear from the fact that the Commission has the exclusive right to initiate all legislation; it can choose between possible policies. In this way, most decision-making power in the EU is concentrated in the hands of the Commission at the federal level, rather than in the European or national parliaments. Furthermore, the Commission acts as the enforcement agent of EU lawmaking, and is by far the most influential institution in the EU (Svendsen 2003). At the same time, the Commission promotes the inclusion of affected interest groups in the process of policy formulation in order to draw upon their expert knowledge.

The EU Commissioners and the officials at OLAF are, however, not direct agents of the voters, as they are selected by the governments of the member states, which in turn are chosen by their national parliaments (or in the case of France, the President) of the member states. Thus, the rational ignorance hypothesis also applies to these intermediate actors: The larger the number of member states and Council members, the weaker their incentives to monitor the bureaucracy of the international organization. In general, corruption is more likely to be prevalent in the EU bureaucracy than in national bureaucracies because voters’ and the politicians’ costs of becoming informed about the workings of the European bureaucracy are higher (due to language barriers, distance, and so on) and because the European Commission has more powers than a national bureaucracy (Vaubel et al. 2007). The Commission, for example, possesses a monopoly of legislative initiative and quasi-judicial powers in competition policy and anti-dumping policy (Nielsen and Svendsen 2012). Furthermore, Commissioners are prone to catering to interest groups because many of them may be (and indeed have been) hired by these organizations after leaving the Commission (Vaubel et al. 2012).

3 Principal-supervisor-agent model

3.1 Introduction

The problem of motivating a party to act on behalf of another is known as the “principal-agent problem.” The principal-agent problem arises when a principal compensates an agent for performing certain acts that are useful to the principal and costly to the agent and elements of the performance are costly to observe. Therefore, principal-agent models are relevant for relationships with asymmetric information, and focus on the incentive structures of the relationships.

The principal-agent structure has also gained attention in the description of political structures (delegation).¹ A basic principal-agent structure could, e.g., involve a principal

¹For a critical examination of the usefulness of applying the principal-agent model to analyze the EU, see Kassim and Menon (2003) and Hodson (2009).

Fig. 1 Basic principal-agent model

Fig. 2 Principal-agent corruption model

Fig. 3
Principal-agent-supervisor corruption model

who delegates power to an agent to implement a certain policy. To this basic principal-agent structure, we can add the clients, who are the entities (or representatives of entities) that are affected by the policy (see Fig. 1). As shown in Fig. 2, the clients can bribe the agents.

Asymmetric information is added so that the principal cannot recognize a corrupt agent. Normally the principal hires a supervisor to gather information about the agent. As an example, principal-supervisor-agent models can depict the supervisor as a receiver of a signal that is helpful in designing an incentive contract for the agent. This development is shown in Fig. 3.

Possible collusion between agent and supervisor has been studied. Incentives obviously exist for the supervisor to misrepresent the information or signal he or she receives from the agent, and the agent may be willing to pay for that misrepresentation. The following model formalizes this problem with a supervisor and builds upon Baliga (1999) and Tirole (1992).

The previous section pointed to several examples of bureaucratic corruption. Crucially, the supervisor in charge of protecting the EU against fraud and corruption, namely OLAF, cannot be seen as independent of the EU system. In the model developed here, we take this to the extreme by arguing that the supervising body, in accordance with public choice theory, can be seen as a rational, utility-maximizing entity; it will only be willing to reveal accurate information about corruption if the supervisor receives sufficient compensation for doing so. To address the bureaucratic corruption problem and the role of OLAF in the context of the EU structure, we continue by setting up the formal principal-supervisor-agent model.

3.2 The model

The principal needs an agent to implement its policy or decision, which we denote as an output. We assume two types of agents, β^H and β^C , with probability μ^H and μ^C . β^H is the honest type, immune to corruption, while β^C is the corrupt type, and can be influenced by special interests.

The output can either be inefficient (S^L) or efficient (S^H) from the point of view of the principal. The honest type produces S^H with probability α^H . The corrupt type will, if not faced with an opportunity for corruption, also produce S^H with probability α^H . However, if presented an opportunity for corruption, it will produce S^L with certainty, which is to say that in that case $\alpha^H = 0$. The output S^L can, therefore, result either from bad fortune or happen deliberately through corrupt behavior.

Let the principal have a quasi-concave utility function of the type

$$u^p(S, R) = u^p(S) - R,$$

where we have that $u^p(S^H) > u^p(S^L)$ and where R is resources in monetary terms.

Under full information about type of agent, in the sense that the principal could identify in advance whether the agent is honest or corrupt, it is always optimal to allocate $R(S^L)$ to the corrupt type (because it will always produce S^L); but it is optimal to allocate the larger budget to the honest type, if

$$\begin{aligned} \text{Condition 1: } & \alpha^H \cdot u^p(S^H) + (1 - \alpha^H) \cdot u^p(S^L) - R(S^H) \geq u^p(S^L) - R(S^L) \Rightarrow \\ & \alpha^H \geq \frac{\Delta R}{\Delta u^p}, \end{aligned}$$

where $\Delta R = R(S^H) - R(S^L)$, and $\Delta u^p = u^p(S^H) - u^p(S^L)$.

This condition is most reasonably satisfied if the principal dislikes S^L compared to S^H — that is, the utility increase from receiving $u^p(S^H)$ compared to $u^p(S^L)$ is large.

We, however, consider that without additional information the principal cannot pre-screen the types. This is to say that asymmetric information is introduced such that the principal does not know which output the agent produces when the payment is made.

In this case, the principal is limited to making one payment, and we assume that he or she will either allocate $R(S^H)$ or $R(S^L)$ to the agent.

With no way of screening between the types of agents, the principal will compare the utility of paying $R(S^L)$ and being certain to receive the output S^L , with allocating the larger amount of resources to the agent $R(S^H)$ and receiving S^H with probability $\mu^H \cdot \alpha^H$ (which is the probability that principal faces an honest agent and that the honest agent produces valuable output). Formally,

$$\begin{aligned} u^p(S^L, R(S^L)) &= u^p(S^L) - R(S^L), \\ u^p(S^H, R(S^H)) &= \mu^H [\alpha^H \cdot u^p(S^H) + (1 - \alpha^H) \cdot u^p(S^L)] + \mu^C u^p(S^L) - R(S^H). \end{aligned}$$

The principal will find it optimal to allocate the high level of resources to the agent, no matter the outcome, if

$$\text{Condition 2: } \alpha^H > \frac{\Delta R}{\mu^H \cdot \Delta u^p}.$$

Note that Condition 2 implies Condition 1. Condition 2 is more likely to be satisfied when the probability of a corrupt agent is fairly low and the honest type produces the preferred output sufficiently often. Otherwise, it will be optimal to separate the payments into $R(S^H)$ and $R(S^L)$.

When calculating the benefit from full information (compared to paying $R(S^H)$ in exchange for certainty), we note that the expected benefit from the honest type of agent is the same in both situations, whereas when the principal faces the corrupt type, he or she incurs an expected loss of

$$\mu^C \cdot \Delta R.$$

The reason is that in both cases, the corrupt agent produces S^L , while in the asymmetric information case the principal pays ΔR to this agent.

Given that the expected benefit from full information is $\mu^C \cdot \Delta R$, the principal has an incentive to try to discover the type of agent he or she faces. The principal hires a supervisor to perform this task on his or her behalf. The supervisor examines the agent, and delivers a report to the principal.

We consider that if the supervisor detects corruption and truthfully reveals this information to the principal, the corrupt agent will have to pay back ΔR , such that the corrupt type receives only $R(S^L)$. We can interpret the payment ΔR as a fine in this case. If the supervisor fully reveals knowledge of corruption, it would eliminate the expected loss of $\mu^C \cdot \Delta R$. On the other hand, the corrupt agent has incentive to influence the report made by the supervisor.

As in Tirole (1992), we assume that the supervisor and the corrupt agent can collude such that the supervisor can, if provided the right incentives, manipulate the report to the principal in order to disguise corruption on the part of the agent. On the other hand, if the supervisor delivers a truthful report, this can be verified and rewarded by the principal. This assumption avoids supervisor “double-dealing”, i.e., taking money from the agent and also from the principal.

In Baliga (1999) and Tirole (1992), it is assumed that the agent can transfer income to the supervisor, and that the supervisor is a rational actor in the sense that he or she chooses the offer that yields the highest payment. As already noted, the principal is at most willing to pay the supervisor $\mu^C \cdot \Delta R$ to report truthfully.

In order to determine how much the corrupt agent is willing to transfer to the supervisor in order to conceal information, we need to consider the maximum amount of bribe money that the agent can get.

Consider the client to be an economic actor who will gain additional value (e.g., profit) from changing the output from S^L to S^H . The client is assumed to value output S^L more than S^H . For simplicity, let the client derive profit from the output that the agent generates. This profit function can be written as

$$\pi^C = \pi^C(S) + R,$$

where we have that $\pi^C(S^L) > \pi^C(S^H)$. Finally, let $\Delta \pi^C = \pi^C(S^L) - \pi^C(S^H)$.

Note that it is assumed that if the corrupt agent will not be bribed, it produces (on average) a result identical to that of the honest agent. That is, if the client succeeds in bribing the corrupt agent, its benefit is the expected difference in output from the two types of agents:

$$\alpha^H \cdot \Delta \pi^C$$

Fig. 4 The flow of payments leading to corruption. μ^C : Probability of corrupt agent. ΔR : increased resource allocation to agent if efficient output is observed. α^H : Probability that the honest type produces the efficient output. $\Delta\pi^C$: Increased profit for client from inefficient output

Finally, in our scenario, the agents gain nothing from producing one output rather than another, *ceteris paribus*. Therefore, the agents need to be paid at least the amount of money necessary to change the supervisor's incentives not to reveal that the agent is corrupt. As a consequence, if the client bribes the agent by at least $\mu^C \cdot \Delta R$, then the agent will be able to bribe the supervisor not to reveal that the principal faces a corrupt agent. Taking these conditions together, we have that:

Main result Corruption will occur, if

$$\alpha^H \cdot \Delta\pi^C > \mu^C \cdot \Delta R \quad (1)$$

In other words, corruption will occur when the expected benefit for the client from corrupting the agent is larger than the expected benefit for the principal from revealing the corruption. The result indicates the conditions under which the principal will receive misleading information about the reason S^L is produced by the agent.

Figure 4 summarizes the potential gains to the principal and the client from revealing information and corrupting the agent, respectively.

The key assumption here is that the supervisor acts in an economically rational manner. The supervisor will submit honest reports only if the principal pays the supervisor more than the supervisor can earn from the expected payment from the corrupt agent. Otherwise, the supervisor has no incentive to reveal corruption. From a public choice point of view, the supervisor needs to be compensated with sufficient resources in order not to prefer bribes from corrupt agents.

To make two comparative static results, rewrite condition (1) as

$$\Delta\pi^C > \frac{\mu^C}{\alpha^H} \cdot \Delta R \quad (2)$$

The condition says that the benefit from corruption needs to be sufficiently large in order for corruption to occur. In Tirole (1992), the agent can transfer income to the supervisor at a rate less than 1. In such a case $\Delta\pi^C$ will need to be larger in order to make corruption beneficial. Finally, if the principal can punish the corrupt agent then $\Delta\pi^C$ will again need to be larger in order to make corruption pay.

3.3 The role of transparency

Up to this point in the model, the only way the principal has the ability to discover agent type is by employing a supervisor, e.g., by setting up an institution like OLAF. Information can,

however, be revealed through other processes as well. A transparent political system, for example, would make it possible for a group of voters as principal to assess the efficiency of an agent (a bureaucracy, for instance), and adjust its budget according to performance. Why, then, does the electorate not vote consistently for politicians who can act as well-functioning independent supervisors and fight corruption effectively? One answer may be found in the concept of the rationally ignorant voter (Downs 1957). All taxpayers in the EU would be better off if every citizen closely followed all public affairs. Such a participation rate would result in better collective decisions and less corruption. However, the reality is different; it does not pay for the individual citizen to keep well-informed about everything that goes on, e.g., to keep abreast of how OLAF is doing. Each voter would realize only a small benefit from establishing an independent supervisor and would at the same time have to bear all of the costs of obtaining this collective good, from which every other EU citizen would also benefit.

If voters were fully informed, they would likely punish corrupt politicians and vote for new politicians capable of eliminating corruption. The answer may be that when the individual voter does not have easy access to information, i.e., the political decision-making process is non-transparent, then the incentive to stay fully informed about public matters is weakened severely. It is simply too costly vis-à-vis the individual gain (Olson 1965, 1991). The more complicated the institutional setup and the harder it is to get access to information, the more the incentive for voters to follow EU public affairs is weakened.

As assumed in our principal-supervisor-agent model, we would normally see asymmetrical information between the EU and the electorate. The principal (the voters) has incomplete information about the actions of the agent (i.e., what goes on within the EU system). Full openness and transparency therefore is important for ensuring a free flow of information that can be obtained by voters at little cost. In this way, political decision-makers in Brussels could be controlled by voters and the press more effectively than they have been to date. More transparency would lower the costs to the public of acquiring information and better enable voters to understand, keep track of and judge the institutional setting and interdependencies in Brussels.

The current closed nature of the EU is risky in the long run, as the lack of transparency places a ticking time bomb under the system. There must be extenuating circumstances in order to justify not putting everything forward into the light of the day. Openness is an efficient tool for enabling political factions, the press, interest groups and voters continuously to keep abreast of political decision-making processes and to put political pressure on the EU to ensure optimal policies and efficient regulation of corruption.

How would greater transparency enter our principal-supervisor-agent model? We will illustrate this by introducing the probability of corruption being detected. Intuitively, as the risk of detecting corruption increases, the risk to the agent and supervisor increases, and this will have negative consequences for the expected profitability of corruption. In Sect. 3.2, we assumed that the supervisor can manipulate the report to the principal such that the supervisor is made to believe that the agent is not corrupt. Let us now relax this assumption by saying that there is a positive probability that this is no longer possible. We can introduce a probability parameter $\rho^T \in (0, 1)$, which measures the transparency of the system in terms of the likelihood of corruption being detected. In Sect. 3.1, we implicitly assumed $\rho^T = 0$. On the other end of the spectrum, $\rho^T = 1$ would imply full transparency and that no corruption would remain undiscovered. Finally, we assume that if corruption is detected, the deal between the client and the corrupt (efficient) agent will not be carried out.

Now the expected benefit for the client from bribing the agent is

$$(1 - \rho^T) \cdot \alpha^H \cdot \Delta\pi^C$$

Including this in (2) yields:

$$\Delta\pi^C > \frac{\mu^C}{\alpha^H \cdot (1 - \rho^T)} \cdot \Delta R \quad (3)$$

From (3) it follows directly that as ρ^T increases, the $\Delta\pi^C$ that satisfies (3) must be larger. The result is that when the chance of being detected rises, the likelihood of corruption falls. This result points to the need for more concerted efforts to strengthen the laws and institutions of the EU so that they adequately constrain the union's civil servants, politicians and even its supervising agency.

4 Conclusion

The main contribution of the paper is to develop a theoretical principal-supervisor-agent model motivated by four examples of bureaucratic corruption in the EU. This model was designed to answer the main research question of why bureaucratic corruption occurs there and cope with non-independent anti-fraud units in general. Overall, the model assumed that a fraction of agents were corrupt and that clients existed who gained from bribing these agents, alongside a supervisor who had the ability to hide valuable information from the principal. This novel interpretation of the Tirole (1992) model constitutes a parsimonious representation of information asymmetry by catching the essential incentive structure that potentially leads to corruption in the EU system.

Based on the model, we derived conditions for when corruption is likely to occur. In this institutional setup, corruption was likely to occur when the expected value to the client from bribing the agent was larger than the expected value to the principal from truth-telling by the supervisor. In the EU today, the principal (voters) has requested a supervisor (OLAF) to monitor goings-on and to sanction inefficiencies in the system. OLAF, however, is not fully independent of the interests of the agents (Commission and Parliament). Most strikingly, OLAF is part of the Commission that it is meant to control. This leaves room for clients (lobbyists) to undertake rent-seeking.

Clearly, one main policy recommendation would be to base OLAF entirely outside the Commission. If and when OLAF were allowed to fully detach from the Commission, "... it must acquire fully independent investigating and perhaps even prosecuting powers via a regulatory framework that will reflect the structure and functioning of an EU agency or a chamber of an EU agency whose staff has the teeth to chew on EU fraud" (Xanthaki 2010: 139). A second policy recommendation is that individuals involved in OLAF's investigations—such as whistleblowers and other witnesses—should receive adequate protection if OLAF's channels of information are to be maintained and strengthened.

Overall, the logic of the principal-supervisor-agent framework tells us that access to information in order to control corruption is a necessity, giving the principal sufficient understanding of the incentives that the institution faces and serving as input into the establishment of a well-functioning supervising body. Otherwise, the resulting opportunities for corruption will mean that consumers and taxpayers are forced to pick up the tab.

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