

Institutional Economics of Public Firms and Administrations

Some Guidelines for Efficiency-Oriented Design

by

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The German public sector is confronted with drastically increasing household deficits. Yet, a coherent concept of reorganizing public enterprises and administrations does not seem to be being applied. At the same time, economic models often appear too abstract or too complicated to be applied by practitioners. Some general guidelines must therefore be developed that are in line with economic reasoning and that can offer orientation for concrete applications. In this article, we develop such a set of rules which is derived from the New Institutional Economics. (JEL: H 40, M 21, D 23)

1. Introduction

Competitive forces in the public sector are less intensive than in the private sector. Thus the need to develop efficiency-oriented reasoning has not been forced to develop as urgently. There are, however, several determinants that substitute for explicit classical market competition, e.g. scarcity of public funds, interregional and international competition of locations. Such forces call for efficiency arguments and design even in the public sector. Yet the reorganization of the German public sector is not based upon a coherent strategy or concept.

The purpose of this paper is to develop pragmatic adaptations of three branches of the New Institutional Economics to organizational problems in the public domain. Finally, a systematic, theory-based approach to organizational design of public firms and administrations will be suggested. It is not the subject of this paper to actually apply formal neo-institutional models to individual practical problems, but rather to offer some general guidelines to those such as officials dealing with these problems.

The theoretical models we refer to have mainly been developed for use in private sector organizations. In transferring these models to public sector orga-

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nizations, we are following the conviction that the assumptions as to human behavior and rationality, which are the basis of these models, are valid in public as well as in private sector contexts. Crucial characteristics of human behavior are individual *utility maximization* and *opportunism*.¹ The notion of rationality which is implied in our approach is the conception of "*bounded rationality*" as described by SIMON [1993] and WILLIAMSON [1975]. It refers to the limited capability of individuals to have information about all alternatives and consequences, to process that information, and to communicate within the limits of language.

Another presupposition of our analysis is that the objectives of public sector organizations are externally given. We are aware of the fact that this is only partly true,² but in our context, the interdependencies between means and ends can be neglected to the same degree as they are being neglected in private sector organizations. The aims of public firms and administrations will be assumed to be given from the political process, which will not be analyzed in this paper. Yet our theoretical framework is, to a large degree, consistent with important assumptions and results of the public choice approach, especially with the requirements of *methodological individualism*. The state is supposed to have two types of functions, those of a *protective state* but also the functions of a *productive state*.³ Therefore, almost everything can be a public goal, provided that there is some general consensus about it.

It is our objective to "translate" abstract economic theory into practical management tools.⁴ These theory-based tools, which have already been applied to practical consulting projects in the private sector, might thus be valuable instruments to increase the efficiency of public sector organizations. The approach presented below is normative in so far as it uses positive arguments for actually shaping practical organizations.

In both the private and the public sector, problems of delegation and coordination are caused by a division of labor that goes along with a scarcity of resources in relation to desired outputs. If the problems as well as the characteristics of the individuals and resources involved are similar, it should be possible to transfer an organizational framework which has been successfully used to reduce organizational problems in private sector firms to public sector organizations as well.⁵

In section 2 we will present an outline of our theoretical framework. Some applications to practical organizational problems of public sector organizations will be discussed in section 3. In the same section, an implementation scheme will be proposed. The last section comprises some concluding remarks.

¹ See also FURUBOTN and RICHTER [1991, 4–5].

² See LANE [1992, 74–76, 167, 210–211] and HOMANN [1980].

³ See BUCHANAN [1975].

⁴ See also PICOT [1990].

⁵ See also MOE [1984, 758–763], BUDÄUS [1988], and ENGELHARDT [1992, 84–87].

2. A Theoretical Framework for Organizational Problems in the Public Sector

The prevailing division of labor between the private and the public sector of national economies has historically evolved. Many reasons other than economic efficiency have influenced the development and expansion of public firms and administrations. Economic efficiency is defined as the desired output at the lowest possible input of resources. Therefore, what we are seeking is a way to organize the production of politically desired outputs that is not only effective, but at the same time most efficient compared to alternative forms of organization.

There is no economic reason why all politically desired outputs should automatically be produced by public organizations or civil servants – even if those goods and services are demanded and paid for by the state.⁶ From an economic point of view, public firms and administrations are simply one organizational form of producing politically desired outputs, and compete with alternative forms of organization. This is illustrated by table 1. In Germany, there exists the following range of possibilities for rendering individually or collectively those goods and services:

- civil servants or officials (Beamte) in public administrations,
- ordinary employees or clerks (Angestellte) in public administrations,
- public employees in other public organizations, e.g. firms (such as public transportation or public savings banks) or “Sondervermögen” (social security etc.),
- all kinds of public and private non-profit-organizations,

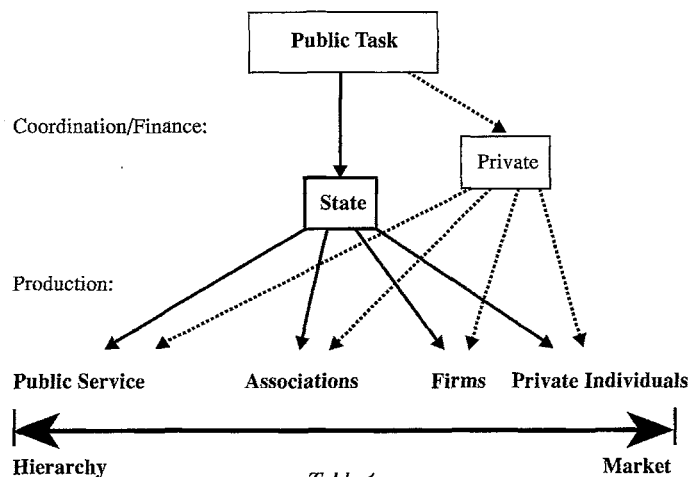


Table 1
Alternative Arrangements by Which Goods are Produced and Paid for

⁶ See also STIGLITZ [1989, 15].

- “private” firms with a high share of government ownership, e.g. Deutsche Lufthansa,
- private firms with a low share of government ownership, but controlled by public supervisory authorities or politicians who are appointed to the supervisory boards of those companies, e.g. electric power-supply companies, such as RWE or VEW,
- private firms which are dependent on government orders, e.g. local garbage disposal and cleaning companies,
- private firms whose production is regulated by public restraints, e.g. environmental or data protection laws,
- private associations which are not recognized as non-profit-organizations, e.g. associations of certain professional groups,
- independent private companies or individuals.

The question then is: Which politically desired outputs should be produced in public firms and administrations, and which can be more efficiently produced in a different way? Given a certain politically desired program, the first step in our analysis is to find criteria to decide which form of organization has to be chosen for the production of which kind of goods and services.

This problem bears a strong resemblance to the procurement decisions of private firms. As far as practical problems of vertical integration or desintegration in private companies are concerned, the transaction costs approach is broadly acknowledged to offer useful criteria. These will be transferred to functions of the public sector in the subsequent section.

2.1 Transaction Costs Approach

In line with transaction costs theory,⁷ our argument is that in the public as well as in the private sector, the allocation of tasks to different organizational forms should be based on an analysis of the characteristics of the good and services which have to be produced. After this classification has been made, the tasks can be allocated to the appropriate producer.⁸ Due to a better use of economies of scale, a reduction of organizational slack, and the competitive forces of private markets, this method not only ensures a reduction of transaction costs but of overall production costs and an increase in adaptability to new demands and new frameworks as well.⁹

The difference between our procedure and the prevailing procurement policy of government institutions is that, at this stage, we ignore traditional, legal, interest-group and other constraints. At first, we develop a purely economic framework of how a certain good or service could be most efficiently produced.

⁷ See WILLIAMSON [1990].

⁸ See PICOT [1991a] and RUBIN [1990, 3–22].

⁹ This has been discussed in greater detail in PICOT and WOLFF [1992].

Afterwards, political and other constraints can then also be considered. Following this method and supporting it by an adequate system of public accounting,¹⁰ we will be able to point out the "costs" of considering non-economic arguments, so that the taxpayer, i.e. the voter, can decide if she or he is prepared to bear those costs. The procedure currently prevailing is completely nontransparent to the public because the allocation of public resources does not follow publicly discussed rules of efficiency, but nontransparent contingencies of bargaining between interest groups and politicians. The procedure suggested below is therefore more in accordance with a democratic system than the present one.¹¹ The traditional German public sector as described by Max WEBER [1985] has historically evolved to ensure an effective and "rational" fulfillment of orders in a hierarchically structured system. It is not designed to ensure the efficient fulfillment of democratic voters' needs and to justify public spending.¹² So it is only logical that the rules of public firms and administrations must be adjusted to new and changing requirements of democratic systems.

The characteristics which we use to classify the goods and services demanded are *specificity* and *strategic relevance*. In order to support the analysis, uncertainty and frequency can be considered as well.

A production process is highly specific if the required inputs can either not be used at all for the production of alternative products, or only at high opportunity costs. From a practical point of view, specificity refers mainly to investments into the development of the design and quality of a product, human capital, machines and logistics. The fewer the alternative uses of an input resource, the higher the specificity of that resource.

Strategic relevance refers to requirements which result from the competitive situation in particular markets, e.g. the observance of secrecy. Strategic relevance may, in the case of private firms, correlate with specificity, since specific investments are useless if they do not help to improve market positions. In the case of public firms and administrations, however, it is more likely that secrecy of data must be observed because individual rights or "national interests" are concerned. Whenever constitutional elements of a state are affected, the neglect of which might cause instant and irreversible damage to members of the community or to the entire state, a production process bears high strategic relevance. It is obvious that in this respect, even services requiring only (technically) unspecific inputs can be of a high strategic relevance to state, e.g. the travel arrangements for the German Chancellor. To take him from Bonn to Berlin is not a specific task. But the requirements of his protection might demand a special organization of his journey, e.g. by an air force plane. Therefore, the distinction between specificity and strategic relevance seems to be useful in analyzing "public" tasks.

¹⁰ See also section 3.2 of this paper.

¹¹ For an in-depth discussion of the relation between organizational rationality and democracy, see HOMANN [1988, 133–177].

¹² See BECKER [1992, 141–151].

Thus we can deduct from transaction costs-analysis that the following principle should be observed: Goods and services that bear a high specificity and high strategic relevance demand a high degree of vertical integration, whereas goods and services with a low degree of specificity and strategic relevance can be easily outsourced.¹³

The degree of vertical integration of public tasks varies between the extremes of a total vertical integration ("make", i.e. *hierarchy*) and a total disintegration ("buy", i.e. *market*). The "make" decision of a state means that a good or service must be produced exclusively by public servants working in the public domain, e.g. police services. The "buy" decision means that a good or a service must be purchased externally, e.g. a pencil for the German Chancellor's secretary can be bought in an ordinary private stationery shop.

In between these two extremes, we find at least two major alternatives. One important form of organization existing between civil service and private companies is *cooperation* between different kinds of public and private organizations (private/public partnership). The quality and intensity of that cooperation can be specified by different contractual agreements ranging from classical to relational contracts.¹⁴ In addition, the state may also use its right to control private organizations by *law and regulation* without actively participating in the production process.¹⁵

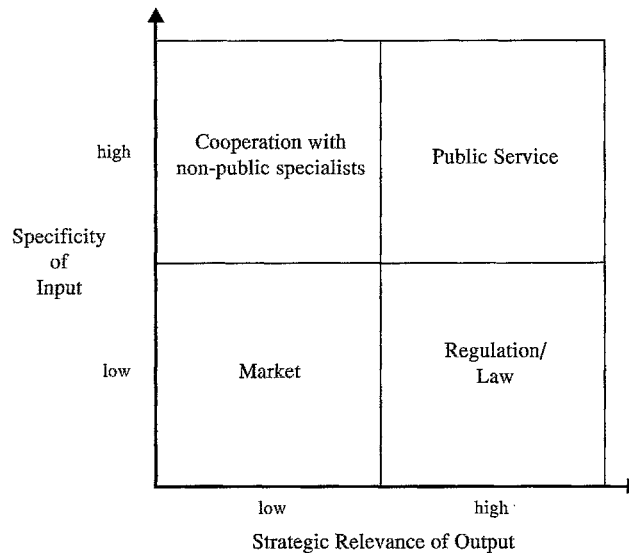


Table 2

Choice of the Appropriate Form of Organization

¹³ See also PICOT [1991 a, 346].

¹⁴ See MACNEIL [1974] and [1978].

¹⁵ See GOLDBERG [1976] and KLEIN, CRAWFORD and ALCHIAN [1978, 302].

Hence there are four basic alternative forms of organizations for the production of politically desired goods and services that can be matched with specificity and strategic relevance.

As a result of the first step of our argument and in accordance with transaction cost theory, we can conclude:

- Unspecific tasks with low strategic relevance should be purchased from external partners in ordinary markets, e.g. stationery for public offices or cleaning and gardening services for public buildings.
- For specific tasks with a low strategic relevance, e.g. public road planning and construction, we suggest a cooperation between public organization and specialized private suppliers.
- Highly specific tasks which are at the same time of high strategic relevance can efficiently be done by specialized public organizations, e.g. services in the fields of internal and external public security or jurisdiction.
- The accomplishment of unspecific but strategically relevant tasks can be assured by means of regulation, e.g. limits to exhaust emission or compulsory education.

We have so far avoided the problem of measuring transaction costs. Yet there is no need to measure them in order to find adequate organizational solutions. In this context, the only function that transaction costs have is that of providing for an intellectual link between categories of tasks and forms of organization in order to explain why certain goods or services require certain forms of procurement. Once an agreement on the classification of tasks is reached – e.g. on the basis of elaborate questionnaires and interviews¹⁶ –, there is hardly any need for discussion of the appropriate form of procurement.

2.2 Property Rights

Because of opportunistic and rational utility-maximizing behavior, individuals tend to cause external effects when dealing with resources which are allocated to third parties. If individuals do not have to bear the consequences of the way in which they deal with scarce resources, they have no direct incentive to use those resources efficiently. In property rights terms: *The more completely the rights over resources are allocated to the acting individual, the stronger are the incentives to use and preserve those resources efficiently.*

“Property rights assignments specify the norms of behavior with respect to things that each and every person must observe in his interactions with other persons, or bear the cost for nonobservance” (FURUBOTN and PEJOVICH [1972, 1139]). There is an entire bundle of rights relevant to the economic theory of organization.¹⁷ These rights can be summarized in three categories:

¹⁶ See also section 3.3 of this paper.

¹⁷ See ALCHIAN and DEMSETZ [1972, 783].

- a) the right to control a firm,
- b) the right to be a residual claimant, and
- c) the right to sell all rights that the ownership of a firm brings about.

Following Furubotn and Pejovich, we can say that, by the allocation of property rights, individual decisions are influenced and indirectly controlled: *The allocation of property rights defines the constitution of organizations*. This is illustrated in table 3. There is historical evidence that some types of firms have been more successful than others, e.g. state-owner or worker-managed firms do

Table 3
Allocation of Property Rights in Different Types of Firms

Perspective Type of Firm	static			dynamic
	Allocation of Property Rights			Transferability of Property Rights
	Control	Residual Claim	Sale	
Enterprise with single ownership	Entrepreneur	Entrepreneur	Entrepreneur	unlimitedly transferable
Corporation without workers' codetermination	Management	Shareholders	Shareholders	unlimitedly transferable
Corporation with statutory codetermination	Management/ Employees	Shareholders	Shareholders	limitedly transferable
Corporation with voluntary codetermination	Management/ Employees	Shareholders	Shareholders	unlimitedly transferable
Worker-managed firm (e.g. in ex-Yugoslavia)	Workers/ Management	Workers	—	non transferable
Non-profit-organization	Members, resp. Politicians (State)	—	—	limitedly transferable
State-owned firm	Politicians (State)/ Management	State	State	limitedly transferable
Public administration	Politicians (State)/Public Servants	—	—	non transferable

not seem to have the same economic success as manager- or owner-led companies.¹⁸

The category "right to control" the firm comprises many different rights to make decisions and give instructions.¹⁹ These can be allocated individually. In addition, there are substitutes for personal ownership, such as performance-related pay, competition, or corporate culture, which can also be used as mechanisms to reinforce an individual responsibility for decisionmakers. So there is a whole set of different combinations that define different types of organization. The different allocations of property rights, say, in an industrial holding or profit center organization and in a classical public bureaucracy allow for completely different incentive-structures. Generally speaking, an allocation of property rights which internalizes a maximum of effects to the acting individuals will allow for the most efficient production process, compared with alternative settings.

In public enterprises and administrations, however, many of the organizational options are not available. Since property rights in state-owned firms and administrations are hardly transferable, options such as equity participation of managers and workers cannot be implemented. Incentive pay systems, e.g. in the form of profit participation, are difficult to introduce if performance cannot be measured.²⁰ In addition to this, there is hardly any competitive pressure on public firms because their selling is granted by the public owner while their funding is granted by the tax payer. At the same time, civil servants and public employees are comparatively free of competitive pressure because their special legal status offers almost absolute job security and relatively safe career paths.²¹

The definition and allocation of property rights or substitute mechanisms incurs transaction costs. These must be considered when deciding on the organizational design of a firm. Therefore, there is a close relation between transaction costs implications as described in the previous section and property rights. In order to secure a maximum of adaptability to environmental changes, e.g. new market requirements, it is important to choose an allocation of property rights which allows for organizational changes by easily transferable property rights. For changing tasks, it is useful to choose an allocation of rights which can be changed at low transaction costs. In this respect, publicly owned firms and government administrations have major disadvantages. Alternative settings are described by the column "Transferability of Property Rights" in table 3.

For this section, we can conclude: *For an efficient procurement of politically desired goods or services, resources should be allocated to that organization which is defined by a transaction costs-minimizing allocation of property rights.*

¹⁸ See for example PICOT and KAÜLMANN [1985, 967–978].

¹⁹ See ALCHIAN and DEMSETZ [1972, 783].

²⁰ See also section 3.2.

²¹ See also section 3.1.

2.3 Agency Problems

In addition to the transaction costs- and property rights-approaches, we will now introduce *risk aversion* of individuals and *information asymmetries*. For a simplification of the following argument let us assume that, in general, agents are more risk averse than the principals. For reasons which will be explained below, this seems to be even more true in the German public service than, for instance, in the American public service. In order to develop further principles of how organizations have to be structured for an efficient production of goods and services, we will therefore concentrate on the problem of information asymmetry.

If person P (principal) puts person A (agent) in charge of pursuing a certain goal on his behalf, an agency-relationship is established. This means that P allocates resources to A, and A's decisions also affect P's utility. Wherever division of labor or a delegation of tasks appear, asymmetric information is likely to arise.²² This means that P may lack environmental information, or information on A's qualification, efforts or intentions, or a combination of both. In any case, there is scope for opportunistic actions on the part of the agent A. This is very likely to happen if A's interests differ from P's, so there is a conflict of interests. This is called the agency problem.

Table 4 shows three types of asymmetric information: *hidden characteristics*, *hidden action/hidden information*, and *hidden intention*.²³

In the case of *hidden characteristics*, the principal lacks information as to the actual quality of the goods or services which are offered by the agent. The reason for this problem is that the principal cannot monitor and verify all characteristics of the agent's offer. So there is the possibility of opportunistic behavior by the agent even before the contractual agreement. The principal must bear the risk of an *adverse selection* of his contractual partner.²⁴ This is an essential threat to the principal's utility especially when she or he is tied to a specific agent by a long-term contract, such as life-time-labor contracts in the German public service. In addition to this, there is a dynamic aspect: The agent's characteristics might change *in relation* to his environment, even if the agent himself does not change, but if her or his environment or the task does.

In the case of *hidden action* or *hidden information*, the principal is unable to monitor or to assess the efforts of the agent after the contractual agreement has been established. This causes the risk of *moral hazard*, which becomes worse as the fungability or "plasticity" of resources and the monitoring costs rise.²⁵ The greater the number of uses to which a certain resource may be put, the higher is its plasticity. In public administrations, the main inputs are human capital,

²² See also EISENHARDT [1989] and SPREMANN [1990].

²³ See SPREMANN [1990, 565–572] and DIETL [1993, 131–152].

²⁴ See also MOE [1984, 754–756].

²⁵ ALCHIAN and WOODWARD [1991], 132–134].

Types of Information Asymmetry and Ways of Reducing Them

Information Asymmetry Distinctive Criterion	Hidden Characteristics		Hidden Action/ Hidden Information	Hidden Intention
Principal's Information Problem	Quality of contract-partner's offer unknown		Agent's effort not assessable	Agent's intention after contract. Agreement unknown
Cause of, resp. Main Influence on the Problem	Possibility to hide characteristics		Resource plasticity, monitoring costs	Dependency on, uniqueness and deprivability of resources
Agent's Scope of Action	Before contractual agreement		After contractual agreement	After contractual agreement
Example	Insurance Company (Principal) and Client (Agent); Employment of personnel		Stockholder (P) and CEO (A); performance in public service	Fishermen (P) and Cannery (A); strike of public service
Type of Risk	Adverse Selection		Moral Hazard	Hold Up
Method of Problem Solving	Reduction of information asymmetry by		Coalignment of interests	Coalignment of interests
	Signalling/ Screening	Self selection		
Methods of Risk Limitation (Examples)	Balance-sheets, references, certificates	Refined contractual agreements	Reputation of contract partner	Profit participation of agent
Practical Examples	University Degree	Insurance conditions, German BAT and Beamtenrecht	Lawyer	Equity participation, incentive pay system, bonuses
				Acquisition of cannery by fishermen; contrac- tual penalties; "Beamtenschaft"

office equipment and money. All of these are fungible. At the same time, there is a large amount of moral hazard losses in large bureaucratic organizations, such as public firms and administrations, because ownership (tax payers) and control are completely separated, and there are long paths of hierarchy and delegation. There are also utility losses if, due to expert knowledge, senior employees cannot assess the jobs of subordinate employees. This might, for example, be the case with research institutes which are supposed to be controlled by a minister who may not be experienced in that particular field of science. The plasticity of resources and monitoring costs tend to be rather high in public firms and administrations.

In the case of *hidden intention*, there is a dependency of the principal on the resources which the agent contributes to the production process. The principal depends on a continuation of the agency relationship due to specific investments and lack of alternatives. This type of risk is called *hold up*.²⁶ From transaction costs point of view, this is the situation of ex post-specificity after the fundamental transformation.²⁷ Even if it is possible to monitor the agent's effort and all external factors, the principal does not have the means to change the situation. A brief example can illustrate the hold up problem: In 1992, there was a strike by large sections of the German public service. The public garbage disposal system in Munich was involved as well. There was no alternative way of getting the garbage removed. It is easy to imagine what this meant to the population of Munich and for the bargaining position of the trade union.

In general, there are two ways of limiting the principal's disadvantages, either by a reduction of the information asymmetry, or by a coalignment of interests between principal and agent. A reduction of the information asymmetry can be facilitated by signalling, screening of self selection. In table 4, examples are also given of how a coalignment of interests can be secured in practice.

Public administrations and firms bring about all kinds of information asymmetries between principal and agents. This refers to taxpayer-politician relationships as well as to agency relationships inside public firms and administrations. Due to the specific constellation of property rights, which is illustrated in table 3, agency problems may be even worse than in privately owned firms. Thus it is even more important that all methods of risk limitation are used when shaping public organizations. For now, we can conclude: *Signalling, screening, self selection, and all contractual methods to coalign the interests of principal and agent should be used also in public firms and administrations if they help to reduce the costs of opportunistic behavior and waste of public resources.*

²⁶ See GOLDBERG [1976, 439] and ALCHIAN and WOODWARD [1991, 130–132].

²⁷ See WILLIAMSON [1990, 70–72].

3. Some Applications to Public Firms and Administrations

Now that we have derived some general guidelines to restrain efficiency losses in public firms and administration from three types of institutional analysis, we will proceed to further illustrate their application. First, the special status of employees in the German public service will be analyzed. Then, we will point out the effects of an improved system of public accounting. At the end of this section, we will outline a way in which the implementation of organizational improvements in public firms and administrations could actually be realized.

3.1 The Special Status of Public Employees

Let us assume the "state", i.e. the politicians who are acting as agents for the voters, has to procure goods or services which are highly specific and strategically relevant. From table 2 we can deduce that the recommended form of organization should be characterized by a high degree of vertical integration. A total vertical integration demands the acquisition of all specific input resources. In public administrations, however, as in many private businesses, the most important type of input is human capital. Since the abolition of slavery, however, a total vertical integration of human capital is impossible.

Instead, the employer seems to secure the protection of his specific investments by labor contracts. As explained in section 2.1, the state not only has the right to enter into ordinary, legal contracts, but, in addition to the legal possibilities which are accessible to all individuals, it also has the right to protect its interests by law and regulation.²⁸ It is exactly this right that the German state is using when granting a special legal status to its public employees. In 1991, there were about 6.7 million public employees in Germany (out of about 80 million inhabitants). More than 2.1 million of them were employed by the 16 German federal states, about 1.6 million by municipal authorities, 532,200 by the Bundespost, 462,000 by the German railways, 300,000 by the social security-administrations and similar organizations, and about 628,800 by the federal government, including the members of the German army.²⁹ At first sight, it must be doubted whether this large public workforce is really necessary in order to fulfill nothing but specific and strategically important tasks of the state. Thus, there is a potential for privatization. This is being increasingly realized and explored, for example in the case of Telekom and the German railways, with both seeming to be on their way to privatization. However, it seems interesting to analyze whether special characteristics of public tasks offer sufficient economic justification for special regulations of public service labor contracts.

²⁸ See table 2.

²⁹ See INSTITUT DER DEUTSCHEN WIRTSCHAFT [1993, Table 82] and LAU [1992, 19].

About one third of these public employees are "Beamte". The main effect of the "Beamtenrecht" is that they are granted a life-time-employment and an outstanding pension system. The state guarantees a system of promotions and lifelong payments to them which is somewhat independent of their actual performance.³⁰ In return, German "Beamte" are expected to serve their employers with a special degree of loyalty and reliability. For example, they are not allowed to strike. The "Beamten" are said to have a characteristic sense of duty or even a special "ethos."³¹

From the point of view of an economic theorist, it seems hard to believe, that any employee should not behave in a utility maximizing and opportunistic way according to her or his individual preferences.³² There is evidence that there is individual utility maximization also in the public sector.³³ Our approach suggests that special patterns of behavior that might appear in the public service result from the special conditions of their labor contract. From an agency point of view, the German "Beamtenrecht" causes a bundle of effects:³⁴

1. *Self selection.* The Beamten-status offers a high degree of job- and income-security. This is particularly attractive to comparatively risk-averse employees. Depending on their personality, they might, in return, be prepared to develop a special sense of duty.
2. *A coalignment of interests.* Since not only the employer but also the employees have specific investments into a long-term relation of this kind, the "Beamtenrecht" offers *hostages* to both parties. Under normal conditions, a public employer cannot dismiss "Beamte." This way, specific investments on the side of the employee are protected and encouraged. A special kind of protection may be necessary in order to secure a sufficient amount of human capital for the production of services which are not only strategically important but also highly specific.³⁵

In principle, the "Beamtenrecht" offers useful instruments to reduce problems of *adverse selection* and *hold up* in public firms and administrations. So the general idea of the "Beamtenschaft" can be conceived to be justifiable even from an economic perspective.³⁶ This does not mean that it should be used as the only instrument. The *moral hazard*-problems, however, are not yet solved unless we believe in a special Beamten-Ethos. In order to solve monitoring problems, we will suggest some more effective methods in section 3.2.

³⁰ For further details see BECKER [1989, 822–825].

³¹ See for example OETTLE [1980].

³² See for example RUBIN [1990, 47–50].

³³ This is supported by VON LOESCH [1980] in a direct response to OETTLE [1980].

³⁴ See table 4.

³⁵ See table 2.

³⁶ This is also reflected by the economic discussion on tenure, see ALCHIAN [1984, 38], CARMICHAEL [1988] and MILGROM and ROBERTS [1992, 380–381]. See also KLEIN, CRAWFORD and ALCHIAN [1978, 317].

The result of our short positive analysis is a general appreciation of the special status of public employees. But, for reasons of efficiency, these special rights should be restricted to the very limited number of employees who actually deal with specific and strategically important tasks. Our impression of the situation in German public firms and administrations is that the public employers have failed to draw this distinction. There are many public employees doing jobs which are in no way specific or strategically relevant to the state, e.g. gardening, cleaning, cooking, repairing cars, etc. For this kind of work, the costly employment of "Beamten" does not offer any advantages in comparison to alternative solutions and is, therefore, inefficient. The second issue concerning the German public service which economists cannot justify is why even those public employees who are not "Beamte" have almost the same rights, but not the same duties, as "Beamte." As opposed to "Beamte", they have, for example, the right to strike. This right was used in 1992 and caused an estimated cost of DM 310 million to the state and an additional DM 200 million to the private economy.³⁷ On the other hand, all public employees have almost the same high job-security as "Beamte." From an economic perspective, it is rational to grant extra rights to employees if in return they accept extra duties. This does not seem to be the case in all parts of the public service. One result is that the production of many public services, which should not be public, is too expensive. Another result is that the public service tends to be comparatively incapable of adapting to new demands and developments. If the special rights brought about by the "Beamtenrecht" are not allocated according to the rules which have been developed above, the outcome is bound to be inefficiency. In Germany, the definition and allocation of civil servants-rights must be revised.

For this section, we can conclude: *To grant special rights to public employees is efficient, if and only if tasks are concerned which are at the same time highly specific and strategically important to the state.*

3.2 Transparency and Incentives by Information and Communication

The problems of *hidden action* and *hidden information* present the worst threats to the efficiency of agency-relationships. Both can be the roots of *moral-hazard* problems. Especially in public administration, most of the resources which are used in production processes, such as human capital, telephones, computers, and office equipment, can also be used for many other purposes; hence there is a high degree of *resource plasticity*.³⁸ At the same time, it is hardly possible to monitor the efforts of individual employees – even if we assume all external factors to be well-known and constant – since we do not or even cannot measure the output of many public production processes. As opposed to private firms, public firms and administrations have only recently begun to consider the introduction of accounting-systems which allow for information on the

³⁷ See IWD [1992, 7].

³⁸ See table 4.

inputs and outputs of certain production processes. The traditional "Kameralistik" was developed to secure effectiveness in the fulfillment of orders from monarchic rulers. It is completely inappropriate in a democracy, where the taxpayers insist not only on an effective but also on an efficient public service.³⁹ There must be a transparent system of accounting which generates precise information as to the costs and performance of production processes in public firms and administrations. Otherwise, it will remain impossible to control the allocation of inputs in such a way as to avoid a waste of resources.⁴⁰

To economists this is self-evident and not even new. But when discussing the topic of accounting with practitioners in German public administrations, the possibility and the necessity of a new public accounting system is often denied, because the function of public firms and administrations is not to achieve any financial profits but to fulfill political orders.⁴¹ This response reveals a misunderstanding of the aim of accounting systems. No matter what kind of goal is to be accomplished, it is essential to have information on the costs and performance of the production system. Without this information, the voters have no possibility of verifying whether their mandate has been fulfilled. Without publicly available information on the performance of public firms and administrations, an efficient allocation of resources cannot be ensured. It is precisely the vague character of public interests that makes even more necessary the mechanisms to secure their accomplishment.

A public accounting and reporting system would offer information to the public as well as to the participants in "public" production processes themselves. It would lead to a considerable reduction of agency costs within the public sector. The German taxpayer would become aware of the costs of some well-established public institutions and could evaluate their benefits *and* costs. This might keep the politicians from offering a lot of "benefits," which voters only ask for as long as they do not know the exact costs. In Switzerland, for example, there is no plebiscite without detailed information on the cost of the topic concerned.

The public system of accounting and reporting should be supported by means of modern information technology. Part of the new public information system should be a number of terminals which are accessible to the public. These terminals could not only offer information in issues of interest. They could also offer standard services like registrations and collecting applications for official documents. There are many routine tasks which could be shifted away from public employees. In this respect, the authorities could learn a lot from the banking sector.⁴²

³⁹ See LÜDER [1987], [1989] and EICHORN [1991].

⁴⁰ See BUNDESRECHNUNGSHOF [1991], BUND DER STEUERZÄHLER [1987], STREIM [1987] and SIMON [1993, 103–116].

⁴¹ See also LANDERER and RÖHRICHT [1991, 85–87].

⁴² See STAUDT [1990], ZITZELSBERGER [1992], SMITH and WIELD [1991], and KEEN [1991, 36–38].

In addition to the fields which are discussed above, economic tools can also be used for decisions on performance-related pay schemes,⁴³ the optimal degree of decentralization⁴⁴ or the implementation of workgroups.⁴⁵ A wide range of organizational problems can be analysed and solved by the set of principles which we have presented and used above.⁴⁶

3.3 Implementation

In this section, we will describe how a specific organizational problem can be dealt with in practice. We will give an outline of how new patterns of organization can be found and implemented for a specific task.

Let us assume the authorities of Munich had to assess security at the local subway system. The question is: Which is the most efficient way to guarantee the security of subway passengers? Let us assume that until now, Munich has had 250 guards who are employed by the city of Munich. Only the senior officers are "Beamte." Imagine there are three competing private security companies, which would be able to offer the services required at approximately the same price and quality. So the problem is the basic decision on the question of procurement, not the choice of a specific contract partner.

Since there is no detailed system of accounting, there are no exact figures on the production costs of the public subway security service. In particular, the costs of administrating and maintaining the necessary equipment (vehicles, uniforms, weapons, etc.) cannot be defined precisely. Therefore, a mere comparison of production costs does not offer sufficient evidence of which alternative should be chosen. Additionally, the local politicians hesitate to dismiss 250 public employees. Those who are "Beamte" can not even be dismissed legally. Nevertheless there is evidence that the present organization of the subway security might not be the most efficient one.

The decision process could be structured into 13 steps:⁴⁷

1. Preparing the actual project, the members of the team must be selected. It is crucial that the team should comprise not only representatives of the interest groups concerned, but also some external experts, who are able to moderate the process of decision-making from a "neutral" point of view. A schedule and fixed deadlines must be given to the team. In addition, the tasks which must be analyzed must be pointed out as precisely as possible. In the case of our example, activities such as the maintenance of vehicles or the cleaning of uniforms would have to be considered separately.

⁴³ See OECD [1993, 25–37].

⁴⁴ See PICOT [1991 b].

⁴⁵ See WOMACK, JONES and ROOS [1991].

⁴⁶ For a more detailed analysis and further examples refer to PICOT and WOLFF [1992].

⁴⁷ See also PICOT [1991 b] and GERHARDT, NIPPA and PICOT [1992].

Note: It is of great importance that the procedure is transparent to all individuals concerned. Often, there is a broad consensus about the existence of problems. This consensus has to be maintained during the process of decision-making in order to secure a broad acceptance of the solution. There must be a permanent access to information for everybody who feels concerned. In addition, it is even useful to disseminate information on the project outside of the team, because employees, for instance, might offer valuable suggestions from their own experience.

2. The team then has to examine the environment, the institutional framework, and the external factors which influence the accomplishment of the tasks. This means that the present form of procurement and possible alternatives have to be pointed out.

3. On the basis of this information, a questionnaire must be formulated. The objective of the questionnaire is to structure information according to the characteristics of the activities which are to be reorganized. Subsequently, the persons to be interviewed can be selected and contacted for appointments.

4. Information on the tasks and all the individual activities which are part of them must be systematically collected by using the questionnaire.

5. This information must be summarized and evaluated.

6. Subsequently, a concept for reorganization can be developed.

7. The concept has to describe and explain the general strategical perspective "make" or "buy" according to the method which is described in section 2.1.

8. In most cases, there will be no "pure" make-or-by-decision. Instead, there will typically be a recommendation to cooperate with private suppliers. In our example, the recommendation might be a cooperation with one or two of the private security companies.

9. For each separate activity to be reorganized, the degree of vertical integration must be specified and a recommendation for a contractual agreement developed, e.g.: long-term contracts with private suppliers, "public" shares in important suppliers, or close cooperation with other authorities, such as the police. Here, the principles from section 2.2 and 2.3 have to be considered.

10. The differences between the recommended and the actual form of organization must be pointed out.

11. The reasons for those differences must be identified, analyzed and explained to the employees and the public.

12. Necessary corrections of the organizational patterns can be implemented.

13. The project can be officially completed.

Often the implementation of organizational changes cannot be achieved within short periods of time, especially if the acquisition of new staff or the dismissal of employees is necessary. Yet there is a high degree of acceptance of the recommendations which result from a transparent and a participative method of this kind. *Organizational changes cannot successfully be implemented without all parties concerned being convinced that these changes are indeed beneficial.*

4. Organizing the "Public" Sector With "Private" Means

Our aim in this essay has been to transfer complex economic ideas into some coherent guidelines which can be easily understood and applied by practitioners. The first practical projects in the public sector which have been analyzed according to this concept are showing rather encouraging results.⁴⁸

The idea of applying neo-institutional theory to problems of the public sector is by no means new. But in Germany, there is a lack of *planned* and *systematic* organization in many public firms and administrations. Often, there is a lack of economic know-how in public organizations, because the traditional education of the "Beamten" is still more law- than management-oriented. In addition, there is a strong, traditional rejection of a general adoption of private management methods. In many cases, this seems, at first sight, to be justified because the legal framework of public firms and administrations is quite different from that of private enterprises. Yet, neo-institutional analysis reminds us of the fact that institutions should be shaped in order to meet well-defined demands – not vice versa. This has been neglected in German public firms and administration for too long.

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Institutional Economics of Public Firms and Administrations

Comment

by

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In his keynote address to last year's meeting of the American Economic Association, dedicated to an institutionalist of an earlier generation, Richard T. Ely, and published as the Richard T. Ely Lecture in the most recently published issue of the *American Economic Review*, Professor Arnold HARBERGER [1993, 3] makes a plea that the field of economics should be more oriented towards practitioners. He argues that our profession should take a lesson from the medical profession, where, "... the textbooks, treatises, and journal articles written by medical scientists display more understanding of the situation of the practitioners and end up being more relevant to the specific decisions they have to take than do our corresponding writings."

I think that Harberger would approve of Professor PICOT's and Ms. WOLFF's [1994] effort here today, because they take a branch of economic theory – neo-institutional theory – and turn it into a tool of considerable use and practicality for the practitioner. The question they address – "How should public firms be organized and structured in order to maximize efficiency?" is answered through the lens of three branches of neo-institutional theory – the analysis of transaction costs versus market exchange, the assignment of property rights in such a manner as to maximize the efficient allocation and use of resources, and agency problems arising from risk aversion and asymmetric information across individual agents. What the authors produce is a blueprint for structuring and organizing public agencies that not only pleases the economist, because of its well founded and sensible economic rationale, but also the practitioner, because of its feasibility and ease of implementation. Indeed, Arnold Harberger would be pleased.

Still, the blueprint provided by Professor Picot and Ms. Wolff may not yet be ready to be sent off to Bonn. For example, they recommend that only certain government workers be granted a Beamte status – a position of privilege in terms of job security and pension benefits, but also greater responsibility in terms of loyalty and commitment to the employer, in this case the state. They argue that only those workers engaged in tasks which are both highly specific and strategically important to the state be granted such a privileged status. As

they point out: why provide, say a gardner, cook, or auto mechanic, or subway security guards this extra benefit without demanding anything extra from them in return. The solution, they suggest, is to restrict this status to, say, only the handful of people who would in turn subcontract the actual service – say providing protection in the subway – without having to resort to a proliferation of the Beamte status to all those individuals actually providing the service.

I find this argument sensible and compelling – as long as there are no externalities across individuals. That is, as long as the attitude of each worker in terms of dedication, loyalty, etc., does not spill over to other workers. But what if it does? Which is to say there may be a hidden gain in providing non-specific and non-strategic workers the same status – the Beamte status – because of their impact on such workers through externalities.

The Japanese system revolves around minimizing differences in status across individuals rather than accentuating them (AUDRETSCH [1989]). The emphasis is on homogeneity and harmony and equality of status, because apparently the externality of one worker's attitudes on his co-workers is embedded into the entire organization of work. The importance of externalities may be magnified when confronted by organizational change. The authors conclusion that, "Organizational changes cannot successfully be implemented without all parties concerned being convinced that they are indeed beneficial," could be interpreted as predicting that organizations where the agents feel they have, in terms of that famous concept introduced by Albert O. HIRSCHMAN [1970], "Voice," will be more accepting of change than those agents who are more prone to fear "Exit." Perhaps this is why Japanese firms have proven to be generally more flexible than their European and especially their American counterparts – Japanese workers have apparently a greater propensity not only to accept but even to create organizational change (AUDRETSCH [1989]).

Professor Picot and Ms. Wolff look at the glass of German public firms and find it half empty. But from my American perspective, I see a glass that is half full. Americans, and especially conservative Americans, seem to assume that public firms cannot be administered in any way that makes them attractive. By contrast, Germans, and especially conservative Germans, recognize that properly administered public German firms make an invaluable contribution to the economic and social welfare. So, when Professor Picot and Ms. Wolff conclude that there is a lack of "planful and systematic organization in many public firms and administrations ... because the traditional education of 'Beamten' is still rather law-biased," I wonder whether this weakness is not really a hidden strength – to internalize the externalities in attitudes across workers.

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Institutional Economics of Public Firms and Administrations

Comment

by

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The recent movement away from government supply to private supply of certain goods and services is, in my view, the first small break in the dike of growing government control over the use of society's resources. In the unlikely event that the privatization trend continues, the natural question arises as to where it should stop. Is there a minimal subset of activities that can only be supplied by government? If so what is the set and how can we insure that the natural monopoly of government will not be used to collect rents for government?

PICOT and WOLFF [1994] address both of these issues as they relate to the current situation in Germany. They use the recent contributions to economics in the area of transaction costs, property rights and agency problems to answer both questions. Picot and Wolff argue that input specificity and strategic importance can form a foundation for defining the set of goods where government has a natural monopoly. Their argument is consistent with the theory that if long lived highly specialized inputs are to be supplied, then investors must be assured that after their investment opportunistic demanders will not renege on agreements concerning returns. As is well known, such conditions in the private sector often lead to vertical arrangements to guarantee that opportunistic behavior will not occur.

I must say, however, that input specificity does not imply that government is required. Private arrangements dealing with input specificity are commonplace. Further, strategic importance is also not sufficient to require government. The production and design of military hardware and the long history of mercenary armies are samples of high input specificity and strategic importance that have a long standing history of being supplied by the private sector. In fact, the "norms" of behavior of mercenaries and weapons manufacturers replace the so-called "loyalty" that Picot and Wolff seem to imply that government work requires.

After arguing that there is a proper subset of all activity that must be supplied by government, the authors set out to show us why government might supply them inefficiently. Here is where the principles of transaction costs, private

property and agency problems rear their head. Picot and Wolff argue that government agencies are inefficient and suggest ways to change this fact of life. They argue that a realignment of the public sector can make it behave as if it were a private sector so that for any given outcome, the input cost is minimized.

Once a determination is made as to the minimal set of activities that are most efficiently left to government two questions must be answered. First, what do we want from public enterprise? Second, how can our public enterprise goal be achieved?

What do we Want From Public Enterprise?

Ideally, a public enterprise would yield results similar to competitive equilibrium. Specifically, such an enterprise would result in output being set where the marginal rate of substitution in consumption between government produced goods and privately produced goods was equal to the marginal rate of substitution in production between these same two sets of goods. Additionally, no good or service that if produced by the government would enhance welfare, is not produced. Finally, each government produced good is produced until the marginal social value equals the marginal social cost.

How can This Goal be Achieved?

Picot and Wolff argue that because of the nature of public goods, property rights given to operators cannot be transferable which results in the classic problem of operators of government enterprises under-investing in both human and non-human capital (under-capitalization). Because of the long-term contract between the public sector (agents) and the citizens (principals) we are exposed to adverse selection (people who select government jobs have a productivity to play the government game) and moral hazard (once in the game, the participants behave opportunistically). Picot and Wolff argue further that the separation of principals and agents makes it difficult for principals to monitor agents.

In order to solve these problems, the authors argue that we must change the public accounting system and shorten the contract length. The changes they suggest can be summarized in a simple rule. The efficiency of government enterprises can be improved by reducing the cost of the principals monitoring the enterprises. While information cost is important, given the incentives of the public (principals) to use the information generated, it is possible to make the cost low enough to warrant the average citizen's time in accessing information. There is no doubt that interest groups will use this information and perhaps less expensive information will lead to more interest groups and a form of competition among interest groups. Even if we make the information concerning the

government enterprises easier to obtain, the generators of the information (the agents) have incentives to doctor the information. The history of the U.S. in this regard does not make me sanguine about the outcome.

Conclusion

If we want efficiency, we cannot depend on the principals monitoring the agents. The principals (citizens) are affected very little by any given government program and do not have the time to monitor these programs. The agents (government employees who run the program) will behave opportunistically. What Picot and Wolff suggest is the implementation of a set of rules that make the monitoring of agencies less costly so that more principals will have the incentive to monitor their agents. I applauded the analysis of publicly supplied goods and services undertaken by Picot and Wolff. They get to the nub of the problem and suggest solutions that move us toward an incentive compatible monitoring of government agencies by the citizens. However, because of the tremendous gulf between the costs of monitoring and the incentives to monitor, I do not expect that any of these reforms will be effective in reducing the size of government.

On a more fundamental level the question is, do we want to make government more efficient? If one could be guaranteed that increasing efficiency in government enterprises would result in the resources previously used by government being restored to private hands, then I think the answer is obvious. The history of government, however, does not give one confidence that such a repatriation of resources is likely to take place. Most likely, the released resources would be placed in other government programs that would result in further government imposed resource misallocation in the private sector.

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