CHAPTER 8

Industry or Infrastructure?

A Cross-National Comparison of Governance: Its Determinants and Economic Consequences in the Dairy Sector

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This chapter analyzes the relationship between economic conditions and governance with regard to the dairy sector, specifying two main questions: How do economic conditions, especially efficiency pressures, influence sectoral governance, and to what extent does governance affect the sector's economic efficiency? To investigate these questions cross-nationally, one must select countries with variation in their governance arrangements. Thus it is for this reason that the United Kingdom, Germany, and Austria have been chosen. Even so, governance of the dairy industry has only modest variation in the governance arrangements in advanced Western *countries* but differs remarkably from other *sectors* within those countries. More specifically, national systems governing the dairy industry are higly corporatist institutions with unusual and complex governance priorities in which efficiency criteria typical of industries (like profitability) and other criteria typical of an infrastructure (including social benefits) are of nearly the same importance.[1]

To explain the impact of economic conditions on governance and the impact of governance on economic performance, this chapter directs attention not only to the factors accounting for national variations of the dairy sector, but also to those making dairy extremely different from most other sectors. Responding to the complexity of governance priorities, a multidimensional concept for measuring economic efficiency and linking it to governance is developed. The chapter outline is thus: a short description of the economic characteristics of the dairy sector in the U.K., Germany, and Austria; an overview of the national governance systems[2]; an analysis of the determinants of governance; and, finally, an inquiry into the consequences of national governance systems for economic efficiency.

Economic Characteristics of the Dairy Sector

The most striking difference between the three countries occurs when considering the size of farms. In 1985 the average number of cows per dairy farm was seven in Austria, fifteen in Germany and fifty-eight in the U.K. Large differences also exist in the average return of milk per cow. Austria has the lowest annual average return per cow and the U.K. the highest (see Table 8.1).

The main problem of the dairy sector in Austria and Germany concerns overcapacity in the European Community (EC) as a whole. Historically, the increase of milk production was aimed at assuring national independence in case of crisis. In Austria, for example, milk is considered to be of such importance as nutritive food that a certain level of excess supply (21 percent of production) is argued to be necessary for reasons of safeguarding capacity for political crises and independence (Bellak, 1988). The problem of overcapacity is managed partly by subsidized exports, partly by the inevitable increase in milk stocks.

Development of Domestic Demand

Demand for fresh milk products (cream, yogurt, etc.) is increasing only in Germany, while it is stagnant in Austria and even declining in the U.K. The demand for butter has been declining in all three countries since 1970, because health considerations have resulted in a substitution of margarine for butter.

Milk Processing

A remarkable difference of concentration of dairy enterprises exists in the three countries. In 1983 in the U.K., the five largest enterprises consisting of 157 firms absorbed 80 percent of cow's milk delivered, while on the other hand 43 percent of the smallest firms absorbed only 5 percent (Ifo, 1985). The British dairy industry is therefore highly concentrated. In Germany a higher percentage of firms is of medium size. Forty-six percent of firms processed between 20 million and 100 million tons of milk and absorbed 48 percent of the milk delivered. In Austria there exists a lot of small firms (especially for cheese production), but no large firm processes more than 100 million kg of milk. A German firm on average absorbs twice as much milk as in Britain and four times as much as in Austria (see Table 8.1). Raw milk is the most important input factor in all three countries, accounting for about 70 percent to 75 percent of dairy firms' turnover.

The dairy industry employed 5869 people in Austria (1986), 46,883 in Germany (1983), and 41,633 in the U.K. (1983). Six percent of those employed in the food processing industry (food, beverages, and tobacco industry) worked in the dairy industry in Austria in 1986, while in Germany it was ten percent and in the U.K. seven percent.

Distribution of Dairy Products

Distribution of milk and other dairy products in Germany is characterized by a highly complex system of distribution and many types of wholesale and retail trade (Ifo, 1985:63). Retail pressure is weakened by the fact that a big share of

Table 8.1. Economic Characteristics of the Dairy Industry

	Austria	Germany	U.K.
THE PROCUREMENT MARKET			
Contribution of milk to final agricultural production 1986	22%	27%	22%
Average dairy farm size	very small	medium	large
Average number of cows per farm 1985	7	15	58
Average return of milk per cow 1986	3,815 kg	4,843 kg	5,100 kg
Cow milk production 1986 in 1000 tons	3,790	26,349	16,230
Share of raw milk delivered to milk plants 1984	64%	93%	97%
THE SALES MARKET			
Foreign demand for dairy products	net exports	net exports	net imports
Domestic demand for dairy products			
demand for liquid milk	low and stable	very low and stable	very high and declining
demand for other fresh milk products	high and stable	high and increasing	low and declining
demand for cheese	moderate and increasing	high and increasing	low and increasing
demand for butter	low and declining	high since 1984 rising	low and declining
DAIRY PROCESSING			
Milk absorbed by a dairy plant on average (in millions of kg)	12.5	50	25
Concentration of firms	low	moderate	very high
Most important input cost	raw milk	raw milk	raw milk
Number of employed persons	5,869	46,888	41,633
Excess supply:			
Butter stocks 1987	5,000 tone	416,000 tone	267,700 tone
skimmed milk stocks 1987	12,000 tone	474,000 tone	41,300 tone
cheese stocks 1987	9,000 tone	46,000 tone	123,400 tone
Retail pressure	zero	low	low

SOURCE: OECD, *Milk and Milk Products Balances in OECD countries 1976–1984*, Paris: 1986; EUROSTAT, *Yearbook of Agricultural Statistics 1985 and 1988.*

milk product distribution is under the control of processor-owned trading companies that have created efficient centrally located stocks, which supply retailers. In the U.K. wholesale trade of dairy products varies according to the kind of product being traded. In the domain of liquid milk distribution, processing firms dominate the market, especially in England and Wales. In Austria every processor is obliged to supply marketers within fixed areas, and marketers are obliged to buy only from the designated processor, giving perfect monopoly power to processors (see also below). The dairy industry does not suffer from high pressure from the demand side, unlike the food processing industry as a whole (see Farago, 1987).

Governance of the Dairy Sector

Exchange relations performing the transfer of resources within a sector and its environment comprise a multiplicity of economic issues such as the division of labor among sectoral companies, their interaction with suppliers and customers, and their procurement of capital, labor, and knowledge. Analyzing the governance of these and all the other transaction issues shaping the dairy sector would exceed the scope of this study. Moreover, such an all-encompassing approach is not necessary as economic restructuring serves as the main point of reference for this comparative analysis. Because the sector' main problem is excess supply, arising primarily from a glut of raw materials (especially of raw milk), the governance of processors' relations with the primary producers who supply raw milk is an economic transaction of special importance for this analysis. Another issue of importance is the governance of the processors' relations with wholesalers and retailers. This is an important issue because of the glut of raw milk resulting in excess production within the dairy industry. This creates a problem of equating the industry's supply with the demand for processed products.

The following are the parameters of economic transactions to which governance mechanisms are being related:

- the selection of transaction partners by sectoral firms; this parameter also refers to the conditions of market entry;
- the determination of quality of the subject of transaction;
- the determination of quantity of the transaction subject; and
- the setting of prices.

Combining these parameters of economic transactions with transaction issues most relevant for restructuring the dairy industry provides a two-dimensional framework for empirical investigations (Table 8.2). According to this, the comparative analysis of the governance of the dairy sector in the United Kingdom, Germany, and Austria outlined below will focus on mechanisms governing the following:

- the selection of transaction partners/market entry, and the determination of the quality, quantity, and price of the subject of transaction as far as the dimension of *parameters* is concerned, and

Table 8.2. A Framework for Empirical Investigations

Transaction parameters	Transaction issues	
	Relations with primary producer	Relations with customers
Selection of partners/market entry		
Quality of transaction subject		
Quantity of transaction subject		
Price of transaction subject		

the sector's exchange relations with suppliers (of raw milk) and customers in the dimension of *transaction issues.*

United Kingdom

Beginning with the dairy sector's relations with suppliers, no choice between possible transaction partners is left to processors owing to the operation of farmers' coalitions, the so-called Milk Marketing Boards (MMBs), which effectively control the supply of raw milk in the U.K. The boards purchase almost all the milk produced by farmers and organize selling it to the dairy companies; they negotiate with the dairy industry's representatives on a wide range of marketing matters including the boards' selling price.

The MMBs perform this marketing function with legally constituted governance powers and they have certain obligations as well. All farmers intending to produce cow's milk for sale must first obtain government authority to do so.[3] They must then apply to their area MMB to be registered as a producer and take up board membership. The central obligation of the boards to their members is to buy and find a market for all milk offered for sale, provided it complies with certain standards of quality.

Given this legal framework, the MMBs have a "dual personality" (Giddings, 1974), being a quasi-governmental organization and a representative of primary producers (Grant, 1983a). For processors, this milk marketing system means that they are confronted with a state-empowered monopoly that controls the supply of raw milk. Furthermore, setting the buying price for raw milk is beyond the direct influence of processing firms because price negotiations must be conducted centrally with the MMB.

The MMB of England and Wales "undertakes to market all the milk the farmer wishes to sell; to arrange for its collection and transport; to maximize return by giving priority, in the allocation of supplies, to the most remunerative markets" (Grant, 1983:8). For this purpose, it is characteristic of this MMB that it has moved forward into the processing sector. Owning and controlling processing plants can contribute to realizing the milk board's marketing goals since this provides additional opportunities of promoting the sale of processed dairy products in general and of launching new products in particular, all of which results in absorbing greater quantities of milk (Grant, 1983a:13). In

managing these various activities, the board's commercial goals resulting from its processing activities have been subsidiary to producers' objectives.[4]

Among all its marketing activities, the board's key function is negotiating with the dairy industry's representatives on selling prices for raw milk. This takes place institutionally in a Joint Committee, the composition and competence of which are defined by law. According to the Milk Marketing Scheme of 1979, the Joint Committee consists of members appointed by the MMB and members appointed by the Dairy Trade Federation (DTF). The DTF is a peak association with four constituent member associations through which it organizes manufacturers, wholesales, and retailers. As a consequence of this encompassing domain and its specific relation to the MMB in the Joint Committee, all other business associations outside the DTF are irrelevant.

Within this procedural framework the selling price for raw milk is negotiated product by product by the MMB and by the DTF. This means that separate prices are set for different uses to which the milk is put. In this respect, pricing is split for processing milk differentiated according to twelve categories of different milk products and for liquid milk. An important condition for price negotiations is the EC target and intervention system for butter and skimmed milk powder, which sets the floor price for milk for manufacture and also, indirectly, the price for liquid milk. Ultimately, the prices achieved in the Joint Committee depend on market forces and the skill of the negotiators (Grant, 1983a:14).

This pricing system has been in operation since 1985. While setting prices for manufacturing milk has been under control of the Joint Committee since 1954, fixing prices for liquid milk before 1985 was the responsibility of the Minister of Agriculture, who set the maximum wholesale price (at which the MMB sold to the processors) as well as the maximum retail price.

Among the different statutory powers that have devolved to the Joint Committee, overseeing quality is another parameter of transaction central to our study. Quality standards for raw milk are laid down in a Code of Practice agreed upon by the Joint Committee. Quality control is implemented by the MMB, which pays the farmers a price depending on the milk's quality according to a quality payment differential.

Relations between producers and processors are additionally governed by EC regulations. Since 1977 a levy designed to contribute to financing excess production is charged on the price of raw milk, which is subject to EC quality directives beginning in 1989. EC regulation is most important for governing the quantity of milk production. In 1984, a quota system was introduced by the EC for a five-year period in order to cut back surplus production of milk. It constituted a "super" levy to be charged on all milk produced above a specified national quota set for all members states according to their 1981 milk deliveries.[5] The quota system applies, with very few exceptions, to all production of milk and milk products, not just deliveries to dairies.

Although this quota system is directly related to reducing excess production of the agricultural sector, it has important implications for the dairy industry. To the extent to which excess production of raw milk can be reduced by

establishing quotas, dairies capacities suited to process this part of agricultural production grow obsolete. Since the U.K. (as well as the EC as a whole) has succeded in cutting back milk production, this has resulted in a corresponding cutback on the part of processors, especially where those products yielding comparatively narrow profits have been affected. For instance, about 25 percent of the U.K.'s butter-making capacity has been shut down because butter is one of the least profitable operations.

Turning now from the dairy industry's exchange relations with suppliers to those with customers, there are also nonmarket mechanisms of governance at work. In the case of product quality, the dairy industry is subject to national and EC state regulation. At the national level, the industry, like other groups involved, can exert influence on this matter based on consultation rights (De Vroom, 1987), while there is no proper consultation with the industry at the EC level (Pestoff, 1987).

Aside from this, the dairy industry's relations with customers are also governed by (supranationally) established regulations in terms of price, quantity, and even market entry. According to the EC regime for milk, a target price is set for raw milk at 3.7 percent fat content delivered to the dairy companies. Intervention prices are then fixed for butter and skimmed milk powder at a level to ensure that the producers receive a price close to the target price for milk. The obligation to purchase has been limited to maximal amounts (butter and milk powder) and to certain seasons in the year (milk powder) accompanied with the possibility of reducing the buying price (butter). This system is flanked by EC foreign trade practices. Threshold prices set a minimum entry price for imports. Export subsidies are paid and grants are given to processors for improving their storage capacity.

With regard to product quantity, this system provides processors who manufacture intervention products with a large guaranteed outlet. Concerning pricing, the system not only determines the price of products subject to intervention but also has an indirect influence on setting prices for the remaining processed dairy products. This impact upon quantity and price results from the opportunity of manufacturing "for intervention": Processors can, in principle, take advantage of the intervention price.

In all, nonmarket mechanisms are central to the governance of all transaction parameters significant for this study. This nonmarket governance is based on activities initiated and implemented by the state and/or associations. While state activities basically can be distinguished as to whether they are conducted by national or supranational authorities, in the case of associations one can differentiate between those primarily advancing commercial goals (cooperatives) and those performing political tasks (interest associations). State and/or associative activities clearly prevail in governing all parameters shaping the industry's relations with suppliers as well as in governing intervention products and product quality in relation to customers. Table 8.3 presents a brief summary of the governance of the U.K.'s dairy industry (as well as those of Germany and Austria) according to the two-dimensional scheme introduced above. Prevailing governance mechanisms are arranged within of each of the cells.

Table 8.3. Governance Mechanisms Prevailing in the Dairy Sector of the U.K. (England and Wales), Germany, and Austria

Transaction	Transaction issues					
	U.K.		Germany		Austria	
	Processors' relations with:		Processors' relations with:		Processors' relations with:	
Parameters	Producers	Customers	Producers	Customers	Producers	Customers
Selection of partners/ market entry	State-licensed associations[a]	State and market	Market	State and market	State-licensed associations	State-licensed associations
Quality	State-licensed associatons	State and market	State	State	State-licensed associations	State
Quantity	State	State	State	State and market	State and state-licensed associations	State-licensed associations
Price	State and state-licensed associations	State and market	State	State and market	State-licensed associations	State and state-licensed associations

[a] "State" refers to national as well as to supranational authorities.

Germany

Looking at nonmarket mechanisms of governance first, exchange relations of the dairy industry with suppliers are considerably mediated by state regulation. Additionally, associations are not fully absent in governing these relations, although associations of importance compared to that of the British MMBs do not exist. Among the different transaction parameters studied here, the influence of associative action is most significant for governing the quantity of supply. Similar to the British case, governing functions are performed by the cooperative type of association. However, an important difference between the U.K. and Germany is that German producers' cooperatives have been remarkably more successful in moving forward into the processing sector. At the beginning of the 1980s approximately 80 percent of all raw milk produced was bought by cooperatives or processing firms owned by them (Hilbert, 1983:24). This associative link between the processing and the producing sector has given rise to guaranteed outlets for farmers, which may be considered a functional equivalent to the farmer-controlled MMBs in the U.K. Since cooperative manufacturers have formally committed themselves to buying all the raw milk produced by their members, proprietary (noncooperative) dairy companies have been forced to do so de facto. Otherwise, they would have lost their suppliers to their cooperative competitors (Hilbert, 1983:19).

This commitment of processors is backed up by the EC system of target and intervention prices for butter and skimmed milk powder since this also gives processors an opportunity of entering into a market with (moderately) guaranteed outlets, which facilitates carrying out their obligations to buy all the milk delivered. However, farmers are not able simply to maximize their

output regardless of the processors' commitment to buy. This follows from the EC quota system already pointed out in the example of the U.K. As in the case of the U.K., the introduction of the quota system has led to increasingly scarce supplies of milk and to a reduction of processing capacities (primarily for manufacturing intervention products) (Stöckl, 1988).

By analogy with the quantity of supplies, the selling price of producers is determined more by the state than by associations. Again, the governing function of the state resides in the EC system of target and intervention prices while a specifically national system of pricing by government is not established. Complementarily, quasi-governmental organizations play a minor role with regard to selling prices of producers. The *Landesvereinigungen der Milchwirtschaft* (regional associations of the dairy sector) contribute to reconciling conflicts between producers and processors resulting when a producer supposes he is paid a lower price by his dairy company than other companies pay. The company involved can take this case to the *Landesvereinigung*, which then provides a neutral evaluation (Hilbert, 1983:118). Functions, composition, and even the procurement of the resources of the *Landesvereinigung* are laid down by law. Primarily, their functions are advising the authorities (in regulating dairy issues) and processors (e.g., on matters of improving product quality) and balancing the interests of all groups in the dairy sector.

While they have little influence on price and quantity, interest associations are of major importance for governing product quality, although state intervention at national and EC level is the dominant mechanism with regard to these transaction parameters. Concerning the national formulation and implementation of quality standards, interest associations representing interests beyond the dairy sector have a legal right to be consulted by the state. This arrangement basically applies to quality matters pertaining to raw milk as well as to processed dairy products. Considering processed dairy products brings us to the subject of the industry's relationship to customers. In this respect, product quality is most extensively regulated by state intervention, leaving little room for determining the products' composition autonomously by manufacturers. The state is also engaged in governing price and quantity according to the EC milk regime. In contrast to the U.K., there is a statutory instrument aimed at improving the dairy industry's performance by promoting its concentration process.

Apart from the state, associations are also involved in governing product quantity to a limited extent. This especially applies to the farmer-controlled cooperatives, which are organized under the umbrella of *Raiffeisen*. Organizationally, the *Raiffeisen* system is functionally and vertically differentiated. The aim of the system is to coordinate all the activities of its members. At the top level, this task is performed by the *Deutscher Raiffeisenverband*, which additionally audits the second- and third-order cooperatives and represents the *Raiffeisen* system in interest-political matters. At the lower levels, coordinating functions concerning the cooperatives' commercial activities are fulfilled by the sector-specific, higher-order cooperatives. With regard to the dairy sector, this means that higher-order cooperatives, aside from conducting business in their

own right (e.g., launching name-brand goods and import and export trades), also attempt to centralize the sales of all the decentralized first-order processors as effectively as possible (Bellak, 1988). However, this type of associational governance does not result in completely supplanting market competition. This is manifested by the fact that higher-order cooperatives are not able to suppress price competition even among their members (Hilbert, 1983:108).

Together with the state, market competition dominates the governance of the industry's transactions with customers while the state largely prevails over all other governing mechanisms with regard to the industry's relations with suppliers. This is reflected by the fact that the prices paid to farmers display only little regional differences, which would not be the case without deliberate state intervention given the different conditions of production in Germany (Hilbert, 1983:19). Associational governance is not completely absent, albeit of less importance, than in the U.K. (see Table 8.3.).

Austria

Governance of the Austrian dairy sector rests mainly on a close cooperation between associations and the state. The concrete mode of this cooperation varies according to different parameters and issues of economic transactions (Traxler, 1985). Basically, three modes of cooperation can be distinguished:

1. By law, regulatory functions are delegated to a sector-specific board (*Milchwirtschaftsfonds*/MWF) to which the "big four" interest associations are each empowered to send the same number of delegates: These big four consist of: The Conference of the Presidents of Chambers of Agriculture (*Präsidentenkonferenz der Landwirtschaftskammern*/PKLWK), which is the federal association of farmers; the Federal Chamber of Trade and Industry (*Bundeswirtschaftskammer*/BWK), which represents all the business firms outside agriculture; the Austrian Trade Union Federation (*Österreichischer Gewerkschaftsbund*/ÖGB), and the Austrian Association of Chambers of Labor (*Österreichischer Arbeiterkammertag*/ÖAKT), both representing the interests of employees and, additionally, of consumers in the MWF. The four associations decide on employing the regulatory powers attributed to the MWF, and they are under very strong pressure to reach consensus. Since the MWF is part of the state administration from a juridical point of view, its activities are subordinated to state control. Among the different institutions dealing with governing the dairy sector, the MWF is most important.

2. Regulatory functions have not formally devolved to the big four by the state but are performed by associations on a voluntary and autonomous basis. This is characteristic of the Parity Commission for Wage and Price Matters (*Paritätische Kommission für Lohn- und Preisfragen*), which participates not only in governing the dairy sector, but is a sector-nonspecific institution central to corporatist policy formation and implementation in Austria. Its main function is income policy.

3. Regulatory functions are fulfilled by the state while interest associations participate on the basis of consultation. Again, the big four enjoy a privileged

position insofar as authorities prefer dealing with them rather than with other associations.

The main property of these arrangements is that all those associations and, partly, the boards involved in governance are sector-nonspecific in their domain, although the dairy sector and its problems are highly specific. More precisely, the interest organizations are national peak associations of farmers, business, and labor that prevail in Austria's system of interest intermediation and are characterized by a highly encompassing domain and a centralized decision-making process. However, this does not mean that sectoral actors are excluded from participation in governing the sector since each of the big four usually sends delegates representing the dairy sector within their domain to the MWF.

A fifth interest association exerts considerable influence on governing the sector although it is not formally integrated into one of the arrangements desribed above. This is the peak association of the *Raiffeisen* cooperatives (*Österreichischer Raiffeisenverband*/ÖRV). The Austrian *Raiffeisen* system is organized quite similarly to its German counterpart. In the dairy industry, it is even more influential than in Germany. About 90 percent of all the raw milk delivered is bought by processing companies owned by *Raiffeisen* (ÖRV, 1981:68). Analogous to the German case, second- and third-order cooperatives perform an allocative function by handling storage and marketing of the local cooperatives' excess production. Not least, *Raiffeisen*'s economic predominance in the dairy sector results from its privileged position in export, which comes close to a monopoly. Export is implemented almost exclusively by two firms owned by *Raiffeisen*, which are also entitled to administer the state subsidies designed for companies exporting dairy products (Bellak, 1988:52ff). In interest-political respect, *Raiffeisen's* influence in the dairy sector rests on the fact that its cooperatives are organized in the BWK as well as in the territorial subunits of the PKLWK, to which the ÖRV itself is affiliated. As in the German case, Austrian cooperatives are legally subject to a special form of auditing that is periodically implemented by their associations. Because of this, the ÖRV is much better informed about the course of business of dairy companies than any other interest association dealing with the sector. All this places the ÖRV in a key role in governing the dairy sector.

Investigating the powers of the different governance arrangements shows that they constitute a coherent system of nonmarket mechanisms covering nearly all transaction parameters and issues of the dairy industry. Dealing with the industry's relations with suppliers first, the price that farmers receive regardless of the use of their milk delivered is fixed by the Minister of Economic Affairs, and the big four interest associations play a central role in price determination. Concerning the other transaction parameters, procurement markets are fixed by the MWF for each processing company, with companies obliged to buy all the milk from farmers designated, provided that quality standards defined and controlled by the MWF have been maintained. Conversely, farmers are required to deliver their milk to those processing firms to whose procurement area they belong. To cope with excess production of raw milk, a quota system was established by law in 1978. Each farmer who exceeds his individual quota is

liable for a special levy designated to subsidize the sale of excess products at home and abroad.

The dairy industry's interactions with customers are governed in an analogous way. Corresponding to the allocation of procurement markets, sales markets are also allotted to processors by the MWF. Within their fixed sales areas, processors are obliged to deliver to the trade and the trade to buy only from the designated processor. The production program of dairy companies is also under control of the MWF. The MWF regulates which firm may produce which products and also determines the quantity to be manufactured. The retail price for liquid milk is formally fixed by the Minister of Economic Affairs while the big four interest associations prevail in setting the price de facto. Prices for processed dairy products are fixed directly by the big four within the framework of the Parity Commission.

For processors this implies that their profitability is politically preestablished and guaranteed. The realization of profit or loss is directly tied to the MWF's decision on the production program and markets allotted to individual firms. Hence, the actual profits or losses realized by the individual companies are corrected by standard costs and standard returns. They are calculated and set by the MWF with reference to the principle of economic efficiency. Standard costs and returns are designed to serve as an incentive to increase productivity.

According to the encompassing domain of all the actors involved, all prices to be fixed (including those of labor power) and costs to be calculated in this system are brought together into a corporate package deal. The big four interest associations govern collective agreements on wages and also fix the price for milk products autonomously in the Parity Commission. This governance arrangement is completed by regulations on foreign trade and on quality standards of dairy products. To protect the dairy sector against imports coming in below the price of domestic products, countervailing duties are fixed by the MWF. Quality standards for dairy products are largely formulated and implemented by the state. Certain interest associations advise the responsible government minister on questions relating to quality standards.

Governance by state and associations in Austria is remarkably more developed than in the U.K. and Germany. In a coordinated mode, state agencies and associations employ an encompassing system of nonmarket mechanisms governing not only the industry's selection of partners, quality, quantity, and price in relation to suppliers as well as to customers, but also investment and profits. Opacity is the side-effect for the actors who have to manage this highly complicated system (Traxler, 1985:163–67). Especially the MWF, which plays the key role in implementing the system, is burdened by these grave information problems. The MWF needs information about the companies' course of business in order to bring its allocative decision in line with the principles of economic efficiency. Above all, exact data on each single company's costs are required for calculating the standard costs upon which the entire system is based. Unfortunately, the MWF has no access to this information since costs are insufficiently accounted for and documented by the firms. Although the MWF is entitled by law to impose upon firms a system of cost accounting according

to its requirements, it does not enforce such a system but accepts information on costs provided by the firms without auditing them (Bellak, 1988). Owing to this information problem, the MWF is governed by (*Raiffeisen*) companies rather than governing them concerning costs, prices, and profits. Some evidence from economic studies indicates that the Austrian dairy industry enjoys higher margins than the dairy industries of other Western countries (see section entitled The Consequence for Economic Performance later in the chapter).

In 1988, this system was revised by government in concert with the big four interest associations. Essentially, this amendment somewhat enlarges the autonomy of processors with regard to production programs, investments, and sales, and empowers the big four to determine the price of raw milk in place of the formerly responsible minister and makes a certain percentage of a quota forfeit if bought from one farmer by another one. This amendment is designed to serve as a first step toward simplifying the system and harmonizing it with the EC regime since Austria at present seeks a closer association with the EC so as to participate in the EC's liberalized Common Market to be established in 1993.

The Determinants of Governance Arrangements

The aim of this section is to investigate the conditions that may have led to the formation of governance arrangements discussed above. In this context, two questions should be distinguished:

1. What are the factors accounting for the differences among the arrangements established in the U.K., Germany, and Austria?
2. What are the determinants underlying the common feature of these arrangements?

While the former question assumes a nationally comparative perspective in order to investigate the differences among countries, the latter contributes to a sectorally comparative analysis by elaborating the common properties of the dairy sector that distinguish it from other sectors of the economy.

National Differences in Governance

Discussing national differences first requires, however, reference to the countries' most significant sectoral commonality. This is the predominant role of the state and associations in the sector's governance, which has resulted in a mode of institutional arrangements that have been categorized as (neo)corporatist in social science literature (e.g., Lehmbruch and Schmitter, 1982). This means that, for reasons to be analyzed in detail below, sectoral interests are advanced primarily in a *collective* way while the market as the classical institution for pursuing interests *individually* is a governance mechanism of rather subordinate relevance. Given this predominance of pursuing interests collectively, the main factor accounting for national differences in sectoral governance arrangements is the mode of how collective interests are *organized* in the sector.

Generally, associations, whether they be cooperatives or interest organizations, are more important for governing the sector the higher the organizational development of associative interest representation is. Associational structures are more developed the more encompassing they are in scope and purpose, the more coordinated they are internally, and the more they are capable of imposing binding decisions on their members (Schmitter and Streeck, 1981: 124ff.)[6]

Austria's interest associations dealing with dairy problems clearly surpass the other countries' associations in terms of organizational development. Corresponding to this organizational differential, of the three nations considered here, Austria's associations are most involved in performing governance functions. Those of Germany are least involved. Apparently, highly developed associative structures are better functions than are other associations. Owing to their encompassing domain they can internalize collective/public goals underlying these functions rather than other associations. They also have at their disposal more effective means of making their members comply with governance goals. However, encompassing associations that claim to perform governance functions are also burdened with more collective action problems than are other associations. As a consequence, the governance capacities of highly developed associations are ultimately dependent on state sponsorship in all three countries. This sponsorship enables the state to place a lot of the burden of governance upon associations (Streeck and Schmitter, 1985). In Austria and the U.K., these "private governments" have proved to be so successful from the state's perspective that additional functions of price determination were devolved to them in the 1980s. Conversely, it is a common feature of all three countries that the state is engaged most directly in quality regulations of dairy products, which is primarily in the interest of consumers. Because consumers face particular collective action problems and, thus, are the group least developed organizationally, governing on their behalf is left to the state.

Sectoral Properties and the Mode of Governance

Turning now to the question of what distinguishes the sector's governance from that of other sectors, it is important that the dairy industry's relations with suppliers are more extensively governed by the state and/or associations than those with customers. Additionally, as far as relations with customers are governed by the state and associations, they are largely the consequence of regulations on producer–processor transactions. This indicates that the industry's exchange relation with primary producers is the key to understanding the formation of a highly corporatist governance system in the dairy sector.

Among the factors making the dairy industry prone to corporatist governance, the asymmetry of power between suppliers and buyers of raw milk in the industry's procurement market is most decisive. In any market, the distribution of powers between suppliers and buyers essentially depends on their scope of choice in terms of defining the parameters of transaction (Offe and Hinrichs, 1985:14). The central parameters involved are determining the price, quality, and quanity of the commodity, and the location and timing of the selection of partners. The more that suppliers are capable of varying and

specifying their offers within these dimensions, the more they can improve their market position in relation to buyers.

Conversely, buyers will gain an advantage over suppliers to the extent to which they become independent of a specified kind of supply and, thus, can extend their options for procurement. Both strategies affect the power relations between suppliers and buyers by influencing competition on each side of the market. For instance, product specialization is a strategy that contributes to moderating competition among suppliers since this shifts competition from price to quality. Buyers can extend their market options by finding possibilities of substituting other sources for one particular source of supply.

Considering the scope of strategies available to dairy producers and processors shows that the producers' scope of choice is remarkably more restricted in every transaction dimension. This issues from differences between producers and processors in their conditions of production and in their type of product. In the case of farmers, one main characteristic of production is that the number of cows and the amount of milk produced are strongly associated. There is only a limited possibility to slow dow or expand production given a certain number of cows. This decisively restricts the adaptability of supply according to market conditions in terms of quantity. Restraints in varying and specifying the other parameters are set by the property of raw milk. Its homogeneity leaves little room for specifying product quality, and its perishability makes it difficult for farmers to vary supply in terms of timing and location. For these reasons, farmers cannot withhold their product until prices change in a way favorable to them (Grant, 1985:187).

In comparison with farmers, potential buyers of raw milk are much better equipped with options for rational market strategies. The industrial mode of manufacturing renders processors more able to adjust their products' content and thus of substituting for milk other raw materials (e.g. nondairy fats) to some extent. Ultimately, all these differences resulting in an asymmetrical distribution of power between farmers and processors in the market stem from the fact that the development of productive forces in the primary sector lags behind that of the industry structurally. In conjunction with this, the market position of each single producer is weakened in relation to processors insofar as the number of farms is greater, and their economic potential is smaller, compared to dairy companies.

However fundamental these differences in production and product between producers and processors may be, they constitute an asymmetry of options only for *individual market* strategies. This implies that they affect just one dimension of the overall power configuration since farmers can attempt to overcome their individual inferiority through a market- and/or nonmarket-oriented strategy of *collective* action. Basically, two market strategies and one nonmarket strategy can be distinguished of which producers can make use collectively. They can try to form a coalition in order to

1. merge forward into the processing sector (processing cooperatives),
2. centralize and coordinate selling milk to processors (bargaining cooperatives), and

3. lobby for favorable state regulaton (interest associations).

According to Olson (1965), it can be argued that dairy farmers are burdened with difficulties in forming a coalition because of their great number, the homogeneity of product (and correspondingly of interest), and their regional dispersion. In this respect, it is common to the U.K., Germany, and Austria that farmers have succeeded in forming strong lobbies but largely have failed to organize effective market coalitions autonomously. Before the state began providing a legal framework supporting collective action of farmers in the market, farmers found themselves caught in a ruinous price competition accompanied by strong fluctuations of production and income. State assistance was indispensable for the rise of cooperatives, which are presently the farmers' main instrument for influencing the dairy market. In the U.K., a legal basis for the establishment of marketing organizations was the necessary precondition for setting up the MMBs (Grant, 1985:183). In Austria and Germany, cooperatives would not have been able to attain such a dominant position in the processing sector without being equipped with privileges by tax- and cartel-legislation in relation to their proprietary competitors.

Why was there a discrepancy between the farmers' capability of forming nonmarket associations and their difficulties in forming market coalitions? There are differences in the kind of conformity required for advancing different collective goals. If these differences are linked to different opportunity costs with which the cooperating actors are burdened for the sake of the collective interest, then the possibilities of forming collective action will vary even within one and the same group (Traxler, 1990). For organizing an interest-political lobby, a rather simple kind of conformity, essentially consisting of paying dues, is sufficient.

In contrast, forming a market coalition presupposes that each single actor subordinates his individual market strategy to the collective goal. This type of conformity creates opportunity costs that are more of a burden than just paying membership dues since defection (e.g., undercutting a collectively fixed price) makes it possible to improve the individual's own market position at the costs of those complying with the collective goal. This collective action problem, which farmers had to face in the market, could not be solved without governing capacities provided by state intervention for which, in turn, the farmers' lobbies paved the way.

However, it would be misleading to reduce the formation of corporatist governance arrangements in the dairy industry to a matter of farmers' lobbying for this, for (1) these arrangements also contain regulations corresponding to interests other than those of farmers (e.g., quality standards in which, for instance, consumers are interested), and (2) it must be taken into consideration that state policies are susceptible to interest politics but are not simply determined by them. From a theoretical perspective, the point of reference of state activities is not only maintaining social integration (reconciling conflicting interests mainly advanced by lobbies) but also maintaining system integration (satifying the imperatives of societal reproduction).[7] For mediating these conflict-

provoking functions, the state's "interest in itself" can be seen as serving as the guiding principle (Offe, 1975). According to this perspective the state itself has a strong interest in regulating the dairy sector. Historically, the emergence of this interest has been strongly linked with sustaining national security. Two main objectives that, together, affect all transaction parameters studied here can be distinguished with regard to this interest. First, it is related to protecting domestic production so as to make the country as autarkic as possible. Given the instabilities inherent in the dairy market, this implies guaranteeing an assured income for farmers based on a legal framework for determining prices, quantities, and even the selection of transaction partners. The second objective is ensuring the provision of goods of faultless quality so as to secure public health. This gives rise to state-directed systems of quality regulation.

While all these public goals are affiliated with the imperatives of system integration, their implementation in detail is influenced by the requirements of social integration. As already discussed above, sectoral governance arrangements of the countries studied differ primarily owing to the organizability of the interests involved and their specific organizational form as far as forming a coalition has been successful. The state has to consider the demands of the interest groups involved, not the least for reasons of legitimacy. In this respect, governance arrangements of the U.K., Germany, and Austria have in common that there is a remarkable consent to them, especially of farmers and processors. Farmers are generally in strongest accordance with this form of governance since it has been introduced primarily to strengthen the market position of farmers in relation to processors by depriving them of a lot of discretionary power usually held by firms. Seen from this perspective, the fact that processors also largely consent to these arrangements may seem surprising, at least at first glance.

Among the system's different effects in which processors may be substantially interested, the most important one is that they moderate or even exclude competition among them and, thus, reduce uncertainty. Corporatist arrangements on the procurement of raw milk offer the dairy industry an opportunity to regulate competiton, given its high degree of fragmentation and the relative importance of the costs of raw milk compared to other production costs.

What makes it easier to regulate competition through corporatist arrangements than through autonomous coalition-building by the particular groups involved is that corporatist arrangements can rely on a mutual transfer of governance capacity among several actors, which increases each actor's capacity to overcome collective action problems in a way that also strengthens the governance capacity of the arrangement as a whole. In Austria, the membership dues that processors are obliged to pay to their associations are recognized as a cost factor by the MWF (Traxler, 1985:162). In the U.K., the DTF's funds are raised largely from a levy, which is charged obligatorily to the buyers of milk by their supply contract with the MMB, and this levy is also collected by the milk board on behalf of the DTF (Grant, 1985:190).

Apart from these organizational interests of their associations, the essential interest of dairy processors, which is realized by corporatist arrangements, is

that their extensive regulations on the industry's interactions with suppliers result in strengthening the processors' market position in relation to customers even when downstream relations are not governed in an analogously extensive way. While the food processing industry as a whole suffers remarkably from retail pressure (Farago, 1987), this does not apply to dairy processors in the same way since they benefit from the fact that the determination of their buying price directly or indirectly "spills over" to their outlets (Bellak, 1988; Grant, 1983a; Hilbert, 1983). Furthermore, from the perspective of processors, demand for dairy products does not allow expansion but requires reduction of capacities. This enhances the processors' interest in stabilizing prices and sales by corporatist arrangements. The inelastic demand for milk at the retail level makes it easier for farmers, processors, and retailers to externalize the costs of their collusion to consumers.

Simply put, farmers and processors benefit from this form of governance to the disadvantage of consumers, as will be outlined in more detail below. Whatever kind of mental reservations on the side of consumers this may provoke they are hardly transformed into political protest and therefore do not endanger the governance system's stability. This is because consumers are the group least developed organizationally, as already stated. Their low degree of organizability makes any attempt to change the system very expensive for consumers, with the consequence that organizing costs are likely to exceed the benefits of change to be expected. By contrast, maintaining the system creates relatively low costs for farmers and processors, owing to their high organizational development, while this provides them with comparatively high payoffs. It is this distribution of costs and benefits that decisively contributes to the maintenance of the corporatist accord in the dairy sector.

What remains to be explained with regard to the formation of corporatism in the dairy sector is the question of why in the three countries considered (as well as in other countries) this sector is much more governed by corporatism than are other parts of agriculture and the food processing industry, which comparative studies show (Grant, 1987). The determinants of the dairy sector's "corporativization" as outlined above apply, in principle, to the food processing sector as a whole or at least to some segments of it. There is a general asymmetry of power between agricultural producers and industrial processors due to the unequal development of productive forces in these two sectors. According to national security interests, autarky may be the economic objective of state policy not only with regard to dairy products but also to other "security-sensitive" food.

It is primarily a matter of political priorities when products all belonging to this type of food are governed in different ways. Basically, governance tends to become more corporatist the higher a product's political relevance is. What renders a certain food more politically relevant than others depends on a complex interplay of economic, cultural, and natural conditions. In the three countries in question here, dairy is of special political relevance mainly for two reasons. First, milk is a very important staple food. Second, it is an especially relevant source of income for farmers because milk production is less sensitive to weather

and climate than other agricultural products. Hence, it can be carried out by farmers whose land is not suited for alternative uses as far as location is concerned and, with regard to timing, it can be done during all seasons, thus providing for a continuous flow of income.

This special political relevance makes dairy the focal arena for state policy protecting domestic agriculture and results in a special need for a nonmarket type of governance that concerns itself primarily with the provision of collective goods like avoiding fluctuations in supplies and prices.[8] Correspondingly, the way in which the actors involved tend to perceive the sector and to deal with its problems is to consider it an infrastructure of society rather than a "conventional" industry. Yet it has become increasingly difficult to maintain this perception. This especially holds true for the state that in the last resort, has to sponsor the sector's peculiar status of being some kind of infrastructure. Intensified global competition imposing growing resource constraints on domestic economies has created severe fiscal problems for the state, which thus has come under pressure to cut subsidies and to economize the dairy sector. Interestingly, this led not to a "remarketization" in any country studied, but to a reinforced reliance on direct state regulation, concentrating on the quantity dimension of sectoral transactions: Introducing quota systems was the main element of economizing efforts. In Austria and the U.K., where elaborated corporatist systems governing prices already existed, these efforts were accompanied by devolving additional functions of price determination to them; obviously, this complementary corporativization was initiated by the state to relieve itself of increased distributional conflicts resulting from its economizing measures.

In an era of worldwide deregulation, this convergence of extended state regulation and corporatist governance is a very striking pattern of restructuring. Above all, it indicates that distributional issues are still central for the governance of the sector, for introducing quotas is a strategy of reducing overcapacity, which is inspired primarily not by *performance criteria* but by the *principle of equality* since it also gives less competitive producers an opportunity to survive. It is most characteristic of the sector that it becomes increasingly subject to a dialectic of "infrastructural" and "industrial" goals. The economic consequences of governance arrangements for the realization of both categories of goals will be studied in the final section.

The Consequences for Economic Performance

Performance and Its Indicators

The economic performance of a sector can be evaluated by taking the attainment of economic objectives as a yardstick. In principle, four types of economic objectives should be distinguished: allocative efficiency, dynamic efficiency, "fair" distribution, and stabilization. Whereas economic performance evaluation very often only takes into account allocative efficiency criteria, dynamic efficiency and distributionary aspects are also included here. Stabilization (i.e., the

dampening of business cycles by safeguarding employment, demand, etc.) is of no importance for the dairy sector and will not be discussed here.

1. *Allocative efficiency*, in a strict neoclassical sense, is defined by Pareto-optimality, implying technical efficiency of production as well as the production of those goods that maximize the utility of consumers. One can show that under certain limited conditions, perfect competition leads to Pareto-optimality. However, on the empirical grounds that market imperfections and externalities are significant real phenomena, one might doubt the optimality of a real market economy. Other governance mechanisms of a sector can perform better, even if we accept the ideal market as a point of reference. In the case of externalities, the Pareto-conditions do not hold. Furthermore, the formal conditions that have to be fulfilled for a Pareto-optimum have to be replaced by a set of loose but observable indicators in order to operationalize the concept of allocative efficiency. Such loose criteria are, for example, low prices and low costs; high productivity; profitability; market clearing, and independence of subsidies (except in the case of externalities, where subsidies can increase efficiency).

2. *Dynamic efficiency* concerns the sector's capacity for structural change and development. This means the ability of a sector to respond to such changes in environmental conditons as changes in demand, technology, or market conditions. The concept of dynamic efficiency—in the narrow sense of innovative efficiency—dates back to Joseph Schumpeter (1942). While there are (at least theoretically) exact criteria for allocative efficiency, dynamic efficiency has to be defined in a less precise way, as, for example, a satisfying rate of innovation, high flexibility, and so forth. Criteria for dynamic efficiency are, for example, the diffusion of technological progress, product innovation, a sector's growth rate, and an increase in productivity.

3. *"Fair" distribution* (*distributional performance*), besides efficiency, which takes the market as a point of reference, the "fair" distribution of goods and income for transactors within the sector is a further economic objective. What a "fair" distribution is largely depends on the values of a society. While the neoclassical ideal market is the most efficient governance mechanism, its distributional outcome may be unacceptable from an ethical, social, or political viewpoint. Criteria for distributional aspects are sufficient regional provision of goods, improved income of producers or consumers, and so forth. In any case, the question that arises is how to operationalize this performance indicator. Distribution—however it is defined as being fair—always means that some individuals or groups are better off to the disadvantage of others. For this reason, any operationalization of distributional performance implies the identification of the group that should be favored. This study deals with this normative question in a pragmatic way: Since in addition to the state the associations of farmers and processors play the key role in governing the dairy sector and thus decisively influence the formulation of governance goals, development of the farmers' and processors' income will serve as the

point of reference. More specifically, distributional performance is understood as the governance system's capability of supporting the income goals of farmers and processors. In other words, the more that farmers and processors are able to externalize the costs of realizing their income demands, the higher the governance system's distributional performance. From a methodological point of view, this operationalization is only a formal device for ranking the distributional outcome of governance systems but does not mean a value judgment concerning the question of how desirable a certain distribution of income is. What is measured is nothing but the extent to which the interests of special groups are satisfied. By no means does this procedure imply neglecting either interests of other groups or governance goals other than distributional ones.

Table 8.4 presents an overview of the scope of performance indicators and of governance goals that are selected by reference to the interests of *all* the groups involved. As outlined, governance goals can either claim to improve

Table 8.4. Performance Indicators and Governance Goals of the Dairy Sector

Performance Indicators	Sectoral Governance Goals
Allocative Efficiency	
	Provision of a sufficient supply
	Provision of adequate production capacities
market clearing	
overcapacity	Adjustment of production to demand
subsidies	Sales promotion
producer and consumer prices	
profitability	
productivity	
processing costs	
Dynamic Efficiency	
change in productivity	Increase in productivity
change in the number and size of farms and firms	Rationalization of production
change in the structure of delivery	Rationalization of marketing
diffusion of technical progress	
flexibility of restructuring	
product innovation	
"Fair" Distribution (Distributional Performance)	
	Protection of producer's income
improved income of producers	Protection of domestic production
	Avoidance of price and quantity Fluctuations
improved welfare of consumers	
quality	Provision of high-quality milk for health reasons
regional provision	
consumer price	
improved income of processors	

efficiency in the case of market failures or to improve the distribution of goods and income. Performance indicators are related to sectoral governance goals, declared relevant by the governing actors involved. For instance, distributional performance as indicated by improved welfare of consumers can be transformed into the governance goals of the provision of high-quality milk for health considerations. This makes it possible to analyze the sector's economic performance by proceeding from theoretically based indicators that are linked to politically relevant governance goals.

The Sector's Allocative Efficiency

MARKET CLEARING. Overcapacity is the main problem of the dairy sector. A comparison of the degree of self-supply (domestic production of milk/total indigenous utilization of milk) shows a systematic increase from 1970 to 1984 in all three countries (see Table 8.5).

Among the three countries Austria consistently has the highest excess supply of raw milk. In Austria excess of milk has been produced since the 1950s and has increased continuously until 1984. Although a lot of milk is used for feed, 27 percent of domestic milk production was not absorbed within the country in 1985. In Germany, overcapacity of milk emerged later than in Austria. In 1970, German domestic production entirely met domestic demand (100 percent). Since then the degree of self-supply has increased. The U.K. presents quite a different picture. It does not produce enough milk to meet domestic demand for milk and milk products. The U.K. still has no homemade overcapacity, but suffers from the excess supply in the EC as a whole, which has led to tougher competition, an increase of the supply of diversified foreign dairy products, and consequently to more imports. Only since 1987 has there been a clear tendency to reduce milk production in all three nations studied. Among the three countries, the U.K. manages the problem of overcapacity best, followed by Germany, while Austria's performance is the worst.

PRODUCER AND CONSUMER PRICES. Comparison of prices in the three countries is complicated by product differentiation, the impact of subsidies, taxes, differences of price definitions, and exchange-rate effects. A comparison of producer prices (value added tax and producers' levies deducted) in the three countries reveals that the dairy industry in the U.K. is supplied at the lowest

Table 8.5. Degree of Self-Supply of Milk (in percent)[a]

	1970	1976	1980	1984	1985	1986	1987	1988
Austria	116	120	123	132	127	127	123	120
Germany	100	116	122	123	115	116	104	100[b]
U.K.	—	76	87	88	88	90	86	83[b]

SOURCE: Vas (1988); Agrarbericht der Bundesregierung Bonn 1988; OECD (1986); MWF (1970–1988).

[a] Basis of calculation: dairy fat.

[b] Estimates.

price (in 1986 an average of $21.40 per 100 kg of milk); Germany's price lies in the middle (in 1986, $27.90 per 100 kg of milk), and Austria's producer price is the highest (in 1986, $28.70 per 100 kg of milk). These figures correspond to the difference between farm size and average return per cow in the three countries, economies of scale being much more favorable for the U.K. than for Germany and least favorable for Austria. British consumers have traditionally paid more for milk than have consumers in Germany and other EC countries, partly as a result of expensive doorstep delivery. Nevertheless, the Austrian consumer price for liquid milk is still higher.

While German farmers get 48.8 percent of the price the consumer pays for milk, British farmers receive 41.5 percent and Austrian farmers only get 39.5 percent. In Austria, high costs and profit margins of processing and the high cost of milk collection (owing to a very inefficient way of collecting milk in cans) are responsible for high consumer prices. Consumers are also obliged to subsidize export dairy products (cheese and milk powder) through higher prices for milk, butter, and other dairy products. In the U.K., transport costs for milk collection are very low. The MMB has succeeded in installing a very efficient low-cost transport system. Milk is collected in tanks, and farms have corresponding refrigeration systems (Ifo, 1985:15). The U.K. also has the lowest liquid milk processing costs. This can be blamed on the high concentration of dairies. A very small number of firms specializing in liquid milk production produce on a large scale. The top 8 of Britain's 464 dairies had a market share of 75 percent in 1982 (Ifo, 1985:20). Trade margins are the highest in the U.K. because of doorstep delivery. Germany's liquid milk costs are lower in all components compared to Austria's. Its processing costs and milk collection costs are higher than in the U.K.; thus it ranks in the middle with regard to the efficiency of liquid milk production. Butter prices were also the highest in Austria in 1986 and the lowest in Britain. The same holds true for cheese and skimmed milk powder prices.

A comparison of prices and costs of dairy processing among the three countries comes out definitively in favor of the U.K. followed by Germany and Austria.

PRODUCTIVITY, PROCESSING COSTS, AND PROFITABILITY (DAIRY MARGINS). Margins on all dairy products except liquid milk are higher in the U.K. than in Germany. This can either be due to higher profits of the highly concentrated sector and/or higher processing costs. In Britain both higher processing costs and higher profits seem to be responsible for higher dairy margins. The very low labor productivity in dairy processing as compared to Germany indicates higher processing costs. Experts also assess higher profits in the British dairy industry than in that of Germany. However, profits are only realized by a very few large firms, whereas small firms are closing (see section titled Determinants of Governance Arrangements). A rough indirect estimate of profits can be arrived at by adding investment, labor, and intermediate consumption costs and dividing this figure by the turnover. According to these calculations, the U.K. had higher profits (costs are 85 percent of turnover in the U.K. but 90

percent in Germany) in 1983, which confirms the experts' assertion. The highest dairy margins are realized in Austria. In 1984–85, Austria's dairy margins for butter were five times the German margins, three times higher than German cottage cheese margins, and nearly double German skimmed milk powder margins (Steger and Moser, 1987). Austria's processing costs are extremely high (see OECD, 1987a), partly due to the small size of dairy firms. Nevertheless, profits are the highest in Austria. The fact that all overcapacity of production goes into subsidized export and the fact that these exports are, to an increasing extent, handled by the dairy sector itself, gives rise to higher profit margins in Austria. Also, high labor productivity and low labor costs in the dairy industry contribute to higher profit margins. Because there is no cost-price competition among dairy firms at all due to the specific governance of the sector in Austria, it has the highest profits and processing costs of the three countries compared.

In terms of profitability and productivity, Germany is the most efficient country, having the highest competition and therefore lowest profits and processing costs of the three countries. The U.K. rank in the middle. Austria has the most profitable and least productive dairy industry among the three countries.

All together in what concerns allocative efficiency, the U.K. is leading followed by Germany and Austria. Only with regard to profitability and productivity does Germany perform better than the U.K.

The Sector's Dynamic Efficiency

CHANGE IN THE NUMBER AND SIZE OF FARMS AND FIRMS. A significant structural change has taken place in the production of milk in all three countries. The number of dairy farms declined drastically between 1975 and 1985. Germany had the sharpest decline of farms (36 percent), closely followed by the U.K. (35 percent) and by Austria (27 percent); the average number of cows per dairy farm increased in Germany and Austria, and declined slightly in the U.K.

Since 1965 the number of dairy plants has dropped by half in all three nations. The structure of dairy plants changed in favor of larger plants in all countries, but there are significant differences in the speed of adjustment. Germany shows the highest dynamic for medium and large plants. Between 1976 and 1982 the share of small firms processing between 1 million and 10 million kg of milk declined by 13 percent, while the share of medium and large firms increased respectively. The U.K. ranks second. There is especially a tendency for the share of medium plants to decline in favor of large firms. Austria has the lowest dynamic among the three countries.

PRODUCT INNOVATION. Product innovation can be roughly expressed by the increase in the number of dairy products. Product innovation is the highest in Germany, where there is an especially large and increasing number of fresh milk products. The U.K. ranks second, although there has been much effort undertaken in the few past years to increase product diversification. Austria has the lowest rate of product innovation (Hager, 1986).

DIFFUSION OF TECHNICAL PROGRESS. The diffusion of technical progress in production is highest in the U.K., where there are highly specialized dairy farms. Nearly all of them have milking machines. The high specialization of dairy farms in the U.K. is nevertheless also responsible for low flexibility in changing from dairy to meat production (Ifo, 1985:9). Germany ranks second. In Austria, the diffusion of technical progress in farming is extremely low because of the small farm size. Farms are often too small even to use milking machines.

As far as technological progress of processing is concerned, Germany again leads, although it is far behind other EC countries (especially the Netherlands and Denmark) and is therefore judged to be only moderately progressive (Ifo, 1985). Germany's average firm size is far bigger than in Britain (see opening section of this chapter), and investments are also much higher (in 1983 23.6 percent of gross value added at factor costs; in the U.K., 18 percent). The high specialization of British companies seems to be a hindrance to further technological progress. Highly specialized firms are less flexible and less able to accommodate to change in environmental conditions. In Austria, because firms are extremely small, technological standard is the lowest.

In terms of dynamic efficiency, Germany is leading among the three countries followed by the U.K., while Austria is far behind.

The Sector's Distributional Performance

The high degree of regulation of the dairy sector has often been justified as protecting the income of farmers, who would otherwise be threatened by downward pressure of prices in times of excess supply. Also, the protection of consumers with regard to better quality and the assurance of good regional provision of milk products are cited.

In terms of *quality*, British raw milk ranks above Germany, while Austria is far below both. Determining the quality of milk products is very subjective. However, one quantifiable criterion is the number of artificial additives. Austrian and German products rank above British products in terms of this index owing to stringent laws restricting the use of additives.

Doorstep delivery guarantees a high degree of *regional distribution* in the U.K. (England and Wales). About 92 percent of households in England and Wales are supplied. This does not hold true for scattered rural communities in Scotland (Grant, 1983a). In Austria, regional provision of milk and milk products is also very good. About 95 percent of Austria is regularly supplied with milk, which is a far better distribution than in Germany (only 50 percent: Bellak, 1988:128).

Real income data for the dairy sector are not compiled separately from the rest of the agricultural sector as a whole. Therefore, real income in agriculture (measured as real net value added at factor costs per person working in agriculture) will be evaluated. Farmers' real income declined in EC countries from 1973 to 1975 and has been stagnant since (though there are some slight fluctuations in different years). German farmers lost the most income. Between 1975 and 1986 their real income fell by 15 percent. British farmers had income

losses of 10 percent in the same period (Eurostat, 1987). While there were income losses in Germany and the U.K., Austria had a real income increase of 5 percent in the same period (Kovarik, 1987:58). Although in Austria income distribution among farmers is still a big problem, Austria clearly performs best among the three countries, followed by the U.K. and then Germany.

The most interesting question is whether consumers, processors, or producers profit most from sectoral governance. In Austria the high degree of nonmarket governance, which has induced extremely large surpluses, is to the disadvantage of producers and consumers. The cost of every liter of excess production of milk is about 10 percent higher than the price the producer gets. This means that it would be much cheaper to pay some of the Austrian milk producers to stop production and do nothing (Steger, 1988:153). The Austrian consumer pays about 36 percent of its consumption expenditures for dairy products in order to subsidize the dairy system. This is extremely high, the EC average being 23.7 percent (OECD, 1987b). The Austrian dairy system clearly favors processing firms, having higher processing costs but also higher profits than the Austrian manufacturing industry on average.

The U.K., when it joined the EC in 1973, had lower prices for dairy products than other EC countries. To prevent high price increases, which would undermine the British exchange rate, larger consumer subsidies were accorded to Britain than to other EC countries (e.g., for butter until 1985). It has therefore been argued that the U.K. system favors consumers. Nevertheless, the increase in prices for British dairy products attributable to EC entry, although they are still lower than in Germany, could also be considered a disadvantage to consumers. Compared to Austria, consumers are charged less. Producers are protected by entry barriers (MMB admission). The comparatively low producer price in the U.K. does not necessarily mean a disadvantage of British farmers, since they can produce much more cheaply through large-scale operations. The setting of entry barriers and low transport costs for delivery favor producers. Although British processing firms profit less from the system than those in Austria, they take higher profit margins than in Germany. Nevertheless, profits in the U.K. dairy industry are below those of manufacturing as a whole.

In Germany, processing firms profit the least among the three countries. Producers profit from the possibility of producing excess supply at supported producer prices. As is typical in the EC, the system favors producers to the disadvantage of consumers (OECD, 1987b).

Impact of Governance on Performance

How are these differences in country-specific performance profiles affected by governance arrangements? Dealing with this question poses the methodological problem that economic performance is not only contingent on governance. Additionally, a "subjectivistic" and an "objectivistic" cluster of performance determinants can be distinguished. Subjectivistic factors refer to the individual intentions, resources, and actions at the company level, especially to the strategies of management. Clearly, management's abilities influence a company's success, and the aggregated effects of management strategies have an impact on the

performance of a sector. However, management strategies can be successful only to the extent to which they present an adequate response to the firm's environment. In this respect, the governance arrangement is an important element of the environment, which, by constituting opportunities and constraints, defines a feasible set of management options. Hence, management strategies can be seen as factors dependent on governance, at least for the purpose of an aggregated analysis of sectoral performance. Unlike subjectivistic factors, some elements of the firm's environment are determinants of economic performance but cannot be reduced to a matter of governance. These objectivistic factors comprise natural and economic conditions (e.g., climate and the volume of sales markets as a result of a country's size).

To assess the impact of governance arrangements on the sector's economic performance it is necessary to keep constant all the objectivistic factors that cannot be treated as dependent variables of the governance system. Since these factors are largely invariable over time, this can be achived through a combined synchronic and diachronic analysis of performance as presented above: Differences in the development of each country's performance over time, as found in this analysis, can, for reasons already outlined above, be interpreted as the result of the impact of country-specific governance systems. In Table 8.6 the three countries studied are ranked according to their economic performance as well as to their governance properties.

Although the national performance scores differ in the three performance dimensions, nevertheless, they reveal an instructive pattern when associated with the ranking of governance. Germany, where corporatism is least developed and the market has the most important role among the three countries, displays the worst score in the distributional dimension, but is most successful in modernizing the dairy industry as indicated by the findings on dynamic efficiency. Just the opposite applies to Austria, whose governance system is most corporatist and whose dynamic (and allocative) efficiency ranks last; it exhibits the best results in distribution. The U.K. ranks between the other two countries on the degree of corporatism and also obtains a middle position with regard

Table 8.6. Economic performance and governance

	Economic performance			Degree of established corporatist governance*
	Allocative efficiency	Dynamic efficiency	Distributional performance†	
U.K.	1	2	2	2
Germany	2	1	3	3
Austria	3	3	1	1

1 = high, 2 = middle, 3 = low.

† Criterion for ranking: the extent to which the producers' and processors' income demands are realized.

* According to Table 8.3.

to dynamic and distributional performance. It has the best allocative efficiency, although this good performance is qualified by the fact that it has deteriorated remarkably since the U.K. dairy sector became integrated into the EC regime, being more interventionist than the original U.K. system. Additionally, Germany performs better in terms of allocative efficiency as far as profitability and productivity are concerned. In sum, the U.K. lies in an intermediate position between Germany and Austria if all three performance dimensions are taken into account.

Above all, two main conclusions can be drawn from these findings: First, allocative and dynamic efficiency and distributional performance are apparently conflicting goals. The more that distributional demands of producers and processors tend to be satisfied the worse becomes the sector's ability to adapt to restructuring requirements and to attain a market clearing, and vice versa. Second, a high degree of corporatism is an appropriate means for solving the sector's distributional problems, while it obviously impedes progress pertaining to modernization and market clearing.

How does this fit with earlier cross-national studies of the interrelations of corporatism and economic development during the 1960s and 1970s (e.g., Schmitter, 1981), which consistently showed that highly corporatist countries proved better in terms of macroeconomic performance? In this respect one might put forward formal and substantial arguments. From a formal point of view it should be mentioned that the conclusions of sectoral and macroeconomic studies may diverge simply owing to their different focus. Substantially, it might be argued that the governance capacity of corporatism and other nonmarket institutions has decreased as a result of significant changes in the economic and political conditions. Although offering a way to harmonize distributional demands with other economic goals in the context of an interventionist policy made corporatism attractive in the 1960s and early 1970s, this function has become much more difficult to perform in the 1980s. Given a growing divergence of these two sets of goals, interest groups integrated into a corporatist system will presumably use their governance power for advancing their income goals at the expense of other economic goals and thus externalize the costs of resolving their distributional conflict.

However, increased governance problems do not necessarily imply that nonmarket institutions fail to master them. Even externalizing costs by nonmarket institutions does not always lead to economic failure. On the contrary, this can provide competitive advantages as recent studies on the machine tool industry (Herrigel, 1989) and the steel industry (O'Brien, 1989) demonstrate. For instance, nearly the same nonmarket governance measure (protectionism in foreign trade, regulation of prices, and quantities of production) that perform poorly in the case of the dairy industry have played a decisive role in making Japan's steel industry the strongest in the world.

Thus, it can be seen that stating a structural inferiority of nonmarket institutions in relation to the market, as often argued when calling for deregulation, is obviously an overgeneralization. The consequences that result from a certain kind of governance can therefore only be clarified by reference

to the very specific circumstances under which it is applied. What makes the dairy sector differ from the machine tool and steel industries in this respect can be summarized as follows:

- *Policies at the global level.* Although it is true that many countries follow a protectionist policy because steel has been undergoing a severe crisis ever since the mid-1970s, Japan adopted such a policy early in the postwar period and has been consistent in strictly enforcing it. Setting the pace in this respect helped Japan to gain competitive advantages, yet protectionism when generalized among all relevant countries leads to a prisoner's dilemma. This is exactly the case of dairy where protectionism has a long and worldwide tradition, with the result that product costs are above the world market price and exports require subsidies in nearly all Western nations.
- *Sectoral properties.* In both the machine tool industry and steel industry, the significance of nonmarket institutions consists of socializing costs of solving key problems of increasing competitiveness. Because of the sector's high technological complexity, public support for vocational education and research and development can decisively improve competitiveness in the machine tool industry (Herrigel, 1989), while institutions enabling the adoption of long-term perspectives are strategically relevant for the steel industry owing to its capital-intensive production (O'Brien, 1989). Leaving aside natural differences in the preconditions for production, comparable key problems of competitiveness do not exist in the dairy industry, given the relatively little capital required and the low degree of technological complexity and product differentiation. Since competition is comparatively less sophisticated, nonmarket institutions offer a smaller potential for achieving competitive advantages and can be established nationally with less difficulty in the dairy sector.
- *Governance priority.* As already mentioned, governance arrangements are primarily suited to solve distributional problems in the dairy sector. This unusual priority thwarts the realization of other performance goals because they conflict with distributional demands. For instance, progress in productivity just tends to increase the sector's overcapacity under the condition of a predominance of distributional goals and generalized protectionism.

Conclusions

In conclusion, governance mechanisms aimed not at *socializing* costs, as in the case of machine tool and steel, but at making the actors *internalize* their costs of production and transaction as much as possible would be required under the special circumstances of the dairy sector so as to improve allocative and dynamic efficiency. Redesigning governance in this way can only be done by the state, which sets the basic elements of the sector's institutional framework. Generally, the state is confronted with more problems in realizing this institutional redesign the more that relevance accrues to distributional issues

as a result of a former attribution of governance powers to interest groups. Therefore, highly corporatist governance arrangements, however successful they may be in income policy, are particularly burdened with difficulties in economic restructuring of sheltered sectors like dairy.

Notes

1. On this, see several national case studies (Farago, 1985; Grant, 1985; Traxler, 1985; Van Waarden, 1985; Young, Lindberg, and Hollingsworth, 1989), and a cross-national inquiry into the public role of business associations (Jacek, 1985).
2. This overview includes only developments up to the end of 1988.
3. Granting government authority entails compliance with regulations concerning clean milk production.
4. One important reason for this priority may reside in the fact that the MMB's revenue as a market institution considerably dwarfs its revenue as a processor (Grant, 1983a:13).
5. In the case of the Irish Republic and Italy, national quotas have been allotted to them based on their 1983 milk deliveries.
6. By "associational structures" we mean interest organizations as well as associational systems in this context.
7. For this differentiation, see in detail Lockwood (1964).
8. Owing to variations in economic, cultural, and natural circumstances, this special political relevance does not accrue to dairy in all countries. For instance, rice is the food that has political top priority in Japan. Correspondingly, the Japanese mode of governing rice shows interesting similarities with the governance of dairy in the three countries considered.

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