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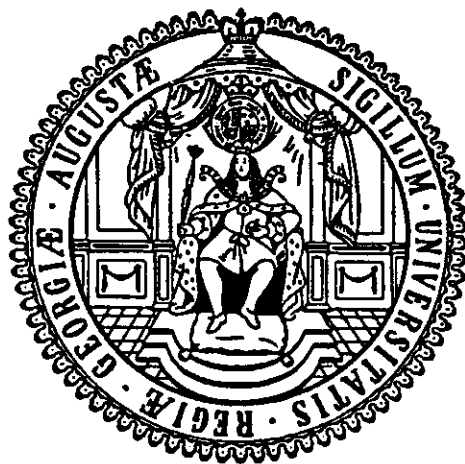
DISCUSSION PAPERS

**Transaction Costs and Corporate Governance
of Sugar Mills in East Java - Indonesia**

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Transaction Costs and Corporate Governance of Sugar Mills in East Java – Indonesia

Ahmad Erani Yustika

Abstract

Despite Indonesia's overall achievements during the past two decades, the economy is encountering a series of problems. One of the biggest challenges is the unsatisfactory performance of the state-owned enterprises (SOEs). Subsidies and uncovered loans to the SOEs have drained the government's fiscal resources, and the signing off of employees creates many social problems. Compared with the SOEs in other sectors, state-owned sugar mills face more serious crises which not only jeopardise the social fabric, but also endanger the production. Research results strengthen the statement that the basic problem in sugar mills is management inefficiency resulting in high transaction costs. This research compares the transaction costs between state-owned (Ngadiredjo) and privately-owned (Kebon Agung) sugar mills

The study shows that in Kebon Agung Sugar Mill transaction costs are higher than production costs, while in Ngadiredjo Sugar Mill the reverse is true. However, the high transaction costs in Kebon Agung Sugar Mill cannot be attributed directly to inefficient institutions, because Ngadiredjo Sugar Mill incurred high costs for plants, land preparation, and fertilizer, which decreased the proportion of transaction costs. If analyzed in detail, the following facts are revealed: (i) market transaction costs in Kebon Agung Sugar Mill are higher than in Ngadiredjo Sugar Mill. This is because Kebon Agung Sugar Mill has established cooperation with sugarcane farmers in the form of extensions and transport subsidies; and (ii) the political transaction costs proportion in Ngadiredjo Sugar Mill is higher than in Kebon Agung Sugar Mill because of the imposition of many 'illegal' fees.

Key words: transaction costs, corporate governance, sugar mill, East Java, Indonesia

1. Introduction

1.1 Background

Problems that have been encountered by the sugar industry in Indonesia recently are very complex, and are both internal and external. Generally, if we categorize, the sugar industry has four basic problems, i.e.: (i) inefficiency at the **farmers' level**; (ii) inefficiency at the **sugar mill level**; (iii) **government policy** has not effectively stimulated the development of the national sugar industry; and (iv) the sugar industry and trading are **very distorted in the international market** (SUSILA, 2002:A4-8). Specifically, inefficiency at the sugar mill level is caused by the **sugar mills being too old and by management of the sugar mills that is still traditional**. This reality means that sugarcane cannot be well-processed (milled) so that the result is not maximal. If we describe based on ownership, privately-owned sugar mills are generally more efficient than are state-owned sugar mills (PRABOWO, 1998:12). This is because most of the privately-owned sugar mills are more newly established so that their technology is better and they are managed with a more professional management system compared with state-owned sugar mills.

In detail, **management and technology cause a decrease in sugar mill performance**. Some assumptions state that in general sugar industries in Indonesia are still efficient, although there are about 27 sugar mills that have problems and are inefficient. According to International LMC (1997), in the case of efficiency, Indonesian sugar industries occupy 21–30 ranks from 62 sugar producers in the world, with production costs of US\$288 – 310 per ton. As a comparison, average production costs of the 15 countries most efficient are US\$301.5 per ton (HUSODO, 1999:14). Yet given the fact that the total number of sugar mills in Indonesia nowadays remains at 64 units (compared with the total number of sugar mills in 1930 which reached 182 units), the assumption that sugar mills in Indonesia are not efficient is reasonable. One of the reasons a sugar mill is closed is because of the inadequacy of raw material (sugarcane) from sugarcane farmers. However, what we should not ignore is management performance of the sugar industry that is bad as a result of high spend-control.

1.2 Problem Setting

However, there is one thing that escaped the notice of analysts of the sugar mill in Indonesia: that the decreasing performance of the sugar mill is caused by **inefficiency of institutions** in managing the relationships among economic actors in the sugar industry.¹ The institutional inefficiency can be detected in the high transaction costs in

¹ Theoretically, efficiency can be categorized as two types: technical efficiency and economic efficiency. In sugar production, technical efficiency refers to high crystal productivity that depends on sugar

the sugar mill. In the sugar mill level, there is much evidence that management is not efficient, which raises many costs. For example, sugar mills must ask for approval from the director (PTPN) for buying equipment/machines, but **the process takes a very long time** because it is the PTPN itself that will buy the tools. This is disruptive to the production process. Government policies also burden sugar mills with things such as multiple taxation for water needs. There is much taxation conducted by government officials (from central to local) for various interests, which also raise transaction costs in the sugar mills. Accumulation from all of the institutional issues results in inefficiency of the sugar mill in Indonesia. From this perspective, inefficiency in the sugar mill can be seen not only in terms of production costs but also of transaction costs generated.

1.3 Research Objective

This research aims to describe the **configuration of transaction costs of the sugar mill in East Java**. Specifically, this research will describe the structure of corporate governance influencing the cost structure of sugar mills. Analysis of corporate governance will show whether the sugar mills' rules of the game are already efficient or not. This research uses the transaction cost economics perspective, because this approach is one of appropriate analysis to evaluate the efficiency of economic institutions. This research also uses the **comparative approach** between the two different institutions, state-owned and privately-owned sugar mills, in order to identify which is more efficient for the sugar mill in East Java.

2. Theoretical Framework

2.1 Transaction Cost Economics

Transaction cost economics (TCE) views firms as governance structures, replacing the neoclassical view of them as production functions. In the latter, once the quantities of inputs used in a production process are specified, exogenous technological considerations will fix the quantity of output (or an efficient frontier linking quantities of multiple outputs). In the TCE view, the differing degrees of sunkness of different inputs will affect the behavior of their owners, unobservability of quality or effort will influence the effectiveness of other inputs, managerial quality and effort will determine how well the inputs are combined, and so on. The mechanisms that are in place to counter these transaction-cost problems, for example, incentive schemes, will also influence the behavior of the various parties. In other words, organizational and

productivity and sucrose content rate. For sugar mills, technical efficiency is influenced by duration of mill time and capacity of the real mill. Meanwhile, economic efficiency is based on the production cost to produce the amount of the same product. See Dibyo PRABOWO, *Antisipasi Industri Gula Menghadapi Ketidakpastian Ekonomi, Gula Indonesia*, Vol. XXIII, Vol. 4, October – December 1998, p. 14

governance structures of firms will have an important impact on what they do (DIXIT, 1996:51). In interpreting the transaction costs within a firm, it may be helpful to understand the 'exchanges' as 'contractual arrangements.' **Firms' transactions involve the contractual arrangement of factors of production, while markets involve the contractual arrangement of outputs** (ZHANG, 2000:287).

FURUBOTN and RICHTER (as quoted by BENHAM and BENHAM, 2000:368) pointed out typical examples of transaction costs are the costs of using the market (*market transaction costs*) and the costs of exercising the right to give orders within the firm (*managerial transaction costs*). There is also the array of costs associated with the running and adjusting of the institutional framework of a polity (*political transaction costs*). For each of these three types of transaction costs, it is possible to recognize two variants: (1) "fixed" transaction costs, that is, the specific investments made in setting up institutional arrangements; and (2) "variable" transaction costs, that is, costs that depend on the number or volume of transactions.

The costs of using the market (*market transaction costs*) may be classified in more detail as follows: (1) the costs of **preparing contracts** (search and information costs narrowly defined), (2) the costs of **concluding contracts** (costs of bargaining and decision making), and (3) the costs of **monitoring and enforcing the contractual obligations**. Managerial transaction costs reduce to the following: (1) the costs of **setting up, maintaining or changing an organizational design**. Such costs relate to a rather wide array of operations. These are typically fixed transaction costs; and (2) the costs of **running an organization**, which fall largely into two subcategories: (a) information costs; and (b) the costs associated with the physical transfer of goods and services across a separable interface. Finally, political transaction costs deals with the provision of such organization and the public goods associated with it. They are, in a general sense, the costs of supplying public goods by collective action, and they can be understood as analogous to managerial transaction costs. Specifically, these are: (1) the **costs of setting up, maintaining and changing a system's formal and informal political organization**; (2) the costs of **running polity**. These are current expenditures for those things formerly specified as the "duties of the sovereign" (FURUBOTN and RICHTER, 2000:44-47).

In the context of firms, STRASSMANN (2002:7) identifies transaction costs as costs of the organization of employees and users; information processing; coordination of suppliers; costs of acquisition; motivation of customers; managing distributors; compliance with regulations; satisfying shareholders and lenders; fees, commissions, tolls and taxes; and research and development. In another way, UNDP (2000:15) classified transaction costs into three forms. *First, administrative costs*. These arise

from inputs of resources needed for transactions. Most include administrative overheads, in particular, staff time. *Second, indirect costs.* These result from the impact of the delivery mechanism on the achievement of development goals, for instance, transport subsidy and cut-load-carry activity. *Third, opportunity costs.* These measure the benefits forgone from alternative applications of the decision-making activities, especially the trade-off between centralistic and decentralistic managements.²

2.2 Ownership Problems and Corporate Governance

In macro-perspective, one of the main issues relating to the firm is the **ownership problem**. The choice of public versus private provision depends on how different ownership patterns affect the incentives to deliver this non-contractible quality, as well as on the cost of such delivery. The efficiency concept here is intended to incorporate fully the social value of quality. To focus on both efficiency and quality, HART, SHLEIFER and VISHNY (1997) consider two types of investment incentives: those to reduce costs and those to improve quality or innovate (SHLEIFER, 1998:137-138). When assets are publicly owned, **the public manager has relatively weak incentives** to make either of these investments, because this manager is not the owner and hence gets only a fraction of the return. In contrast, **private regulated contractors have much stronger incentives** because, as owners, they get more of the returns on the investment. Which ownership structure is more efficient depends on whether having high-powered incentives to invest and innovate is a good idea.

Corporate governance issues arise in an organization whenever two conditions are present (HART, 1995:680). *First*, there is an **agency problem**; these might be owners, managers, workers, or consumers. *Second*, **transaction costs** are such that this agency problem cannot be dealt with through a contract. In a world of incomplete contracts (where agency problems are also present), governance structure does have a role. **Governance structure can be seen as a mechanism for making decisions that have not been specified in the initial contract.** More precisely, governance structure allocates *residual rights of control over the firm's nonhuman assets*; that is, the right to decide how these assets should be used, given that a usage has not been specified in an initial contract. In the context of this corporate governance, one important issue is the mechanism for controlling management.

² Besides interest expenses, POLSKI also formulated non-interest expenses, which consist of (1) employee salaries and benefits; (2) occupancy expenses; and (3) other miscellaneous expenses, i.e. fees paid to directors, trustees and advisory board members, legal fees, advertising, public relations and promotions, charitable contributions, office supplies, information processing, telephone expenses, examination and audit fees and so on. See Margaret M. POLSKI, *Measuring Transaction Costs and Institutional Change in the U.S. Commercial Banking Industry*, Paper presented for the Annual Conference of the International Society for New Institutional Economics, 2000, Tübingen, Germany, p.17

Finally, the transaction cost approach to the study of organizations has been applied at three levels of analysis (WILLIAMSON, 1981:549). The *first* is the **overall structure of the enterprise**. This takes the scope of the enterprise as given and asks how the operating parts should be related one to another. Unitary, holding company, and multidivisional forms come under scrutiny when these issues are addressed. The *second* or **middle level** focuses on the operating parts and ask which activities should be performed within the firm, which outside it, and why. This can be thought of as developing the criteria for and defining the "efficient boundaries" of an operating unit. The *third* level of analysis is concerned with **the manner in which human assets are organized**. The object here is to match internal governance structures with the attributes of works groups in a discriminating way.

3. Research Methodology

3.1 Research Location

The survey was carried out in two different regions in East Java - Indonesia, because about 40% of sugar mills have been operating in this area. The researcher intends to take samples of two kinds of sugar mills in East Java. *First*, a **state-owned sugar mill** is represented by Ngadiredjo Sugar Mill in Kediri District. *Second*, a **privately-owned sugar mill** is represented by Kebon Agung Sugar Mill in Malang District. The two sugar mills were chosen due to having the same production scale. Malang and Kediri Districts, chosen as locations for this research, are also relatively attractive regions (from an economic point of view) compared with other districts in East Java.

3.2 Data Sources

Primary data was collected by using individual **in-depth interviews** are taken to obtain more detailed information. The person interviewed was free to voice his/her own expressions/ideas in an unstructured interview. The interviewer relied on open questions to introduce topics of interest without the interviewer imposing his ideas. Also, the researcher used **key informants** to collect information.³ The study of the sugar mills is expected to reveal processing, marketing, contract system, and enforcement procedures

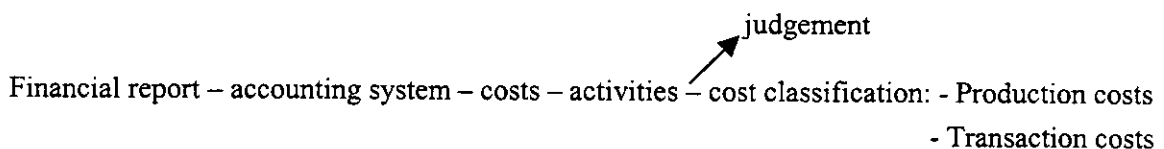
³ Perhaps the single most important diagnostic feature of good qualitative enquiry is its full exploitation of insights from key informants. By key informants we mean persons whose position or previous experience gives them particularly valuable information on a give topic. If the basis is *position*, the key informant becomes, in effect, a surrogate observer for the investigator. On the other hand, if the basis is *experience*, the informant provides the investigator with a chance to view information from other sources in historical perspective –in effect a longitudinal 'time slice'. See Jon MORIS and James COPESTAKE, *Qualitative Enquiry for Rural Development*, Intermediate Technology Publications on Behalf of the Overseas Development Institute, 1993, London, p. 58

in the sugar mills. Besides empirical research, data was also collected from financial annual reports of the sugar mills. Data and information gained from field observation and by interviewing some key-informants turned out to be valuable for this study.

3.3 Method of Analysis

In general, the data that are used in this research are based on the annual financial report of Kebon Agung and Ngadiredjo Sugar Mills (1999-2004). The data is classified into two types, i.e. production and transaction costs. The researcher used the ABC (**Activity-Based Costing**) approach to classify the types of costs (see Figure 3.1). Activity-based costing is an accounting methodology that assigns costs to activities rather than products or services. This enables resource and overhead costs to be more accurately assigned to the products and the services that incur them. In addition, other data were attained through interviews and key persons (accounting unit) in sugar mills in order to get the data that are not written in annual financial reports, such as overlapping activities costs. Decision-making costs were calculated through special measurement, i.e. by calculating the costs arising due to the lateness of decision-making.

Figure 3.1: Classification Process of Production and Transaction Costs



Source: Own depiction, 2004

3.4 Classification of Variables in the Sugar Mills

Another aspect that must be clarified in determining the production and transaction costs' variables is the classification of fixed and variable costs. When analysing production costs at the firm level, fixed costs usually relate to the initial investment of the firm, such as the value of machines and building depreciation. In the case of Kebon Agung and Ngadiredjo Sugar Mills, "fixed" production costs in the form of machine and building depreciation are difficult to ascertain. *First*, the data is not available in the annual financial report of the sugar mill. *Second*, the sugar mills' ages are very old; therefore, machine and building depreciation costs are not relevant anymore. However, "fixed" production costs that are relevant to be applied to the sugar mill are costs for milling preparation, machine spare parts, and labor wage (for contract labor). The "variable" production costs (which depend on the number or

volume of production) of the sugar mill are milling machines, fuel oil, overtime pay, chemicals, land processing, and so on.⁴

“Fixed” transaction costs generally relate to the **specific investments made in setting up institutional arrangements**, while “variable” transaction costs concern **costs that depend on the number or volume of transactions** (FURUBOTN and RICHTER, 2000:43). According to COLLINS and FABOZZI (1991:27-28), the fixed component is easy to measure, as it consists of commissions, taxes, and transfer fees. Unfortunately, the fixed component is much smaller than the variable component, and the latter is much harder to measure. Based on the definition, ‘fixed’ transaction cost variables in sugar mills are costs for extensions, research and development, firm building and facilities, general facilities, managers and administrators, vehicles/cars, special costs, staff and labor allowances, security, donations, taxes, and miscellaneous. Furthermore, ‘variable’ transaction costs include costs for transportation, bonuses, cut-load-carry, smallholders’ contracts, outside-of-estate costs, electricity, salaries, overtime pay, decision-making, and overlapping activities.

3.5 Measuring Transaction Costs of Sugar Mills

In the case of sugar mills, the transaction costs can be classified into the variables as follows: (i) **market transaction costs** (transport subsidies, bonuses, and extensions); (ii) **managerial transaction costs** (salaries/wages for administrative workers, food, facilities, equipment, special costs, electricity, staff allowances, health, spare parts, telecommunications, maintenance, official transport, pensions, fire brigade, decision-making, overlapping activities); and (iii) **political transaction costs** (taxes, tax duplication, donations, security, and miscellaneous costs). Most of these variables are explicit (which means the researcher can get data from the annual financial report of the sugar mill). However, a few of the variables, such as decision-making, tax duplication, and overlapping activities costs must be approached with special calculations, because sugar mill officers usually do not calculate these variables (implicit). For the variables, the measurement can be explained as follows:

- Decision-making = Costs of decision-making delay. Cost of the decision-making process is taken from two sources: (i) a milling machine stopped operating temporarily because of waiting for the machine spare parts that came late. From the total operational

⁴ Also based on LEWIS'S category (1993), production costs can also be classified based on direct and indirect costs. See Prasert NAKCHAROEN and K.J. (Jamies) ROGERS, *Activity-Based Costing Approach to Equipment Selection Problem for Flexible Manufacturing Systems*, Internet Source: <http://arri.uta.edu/eif/prasertierc.pdf> (October 7, 2004), 2004, p. 1. Direct costs include costs for labor wage, overtime pay, chemicals, land processing, and fuel oil; and indirect costs include costs for milling preparation, spare parts, packaging, and complements.

stoppage the sugar mill lost its chance to produce some sugar. The milling stop cost is calculated based on sugar loss multiplied by sugar price; and (ii) employees that have been contracted have no duties during the milling machine stoppage. The employees are given a wage rate/day, and this is multiplied by the number of employees to generate transaction costs (**implicit**).

- Duplication tax = Cost of duplication tax is measured from water tax during the milling season (for six months/180 working days; this is only the case for Ngadiredjo Sugar Mill). In the milling season Ngadiredjo Sugar Mill is charged a water tax by two government agencies: Board of Kediri Revenue (*Dispenda*) and a state-owned water firm (*Perum Jasa Tirta*). Each agent draws tax Rp 62.5 million/month for the same object. From duplication of this water tax, Ngadiredjo Sugar Mill bears total costs Rp 375 million (**implicit**).
- Overlapping activities = This cost exists because one activity is conducted by two divisions (this is only the case for Ngadiredjo Sugar Mill). The measurement is based on the calculations of the Ngadiredjo Sugar Mill Accountancy Unit (**implicit**).

However, at the micro level (firm level), one complex problem is how to identify fixed costs that are not recorded in financial reports, such as marketing costs, research and development, and activities' duplication. These are real costs but were not included among expenditures listed by firms (sugar mills); therefore, they are very hard to determine (*sunken costs*). In the case of research and development activities at the Ngadiredjo Sugar Mill, expenditures were reported separately; therefore, it was easy to measure. However, research and development activities were not recorded in the Kebon Agung Sugar Mill financial report, which was concerned with marketing costs and activities' duplication. The researcher coped with this problem in two ways. *First*, he conducted an in-depth interview with the head of the accounting unit in order to get a description and measurement of transaction costs, for example activity duplication caused by inefficient management at Ngadiredjo Sugar Mill. *Second*, he identified the real activities of the firm (sugar mill), both in Kebon Agung and Ngadiredjo Sugar Mills, in order to get a proper description of activities at the firm level. It was clear from this that there was no research and development activity at Kebon Agung Sugar Mill. Furthermore, there was no marketing activity at either Kebon Agung or Ngadiredjo Sugar Mill.

4. Results of Empirical Research

4.1 Configuration of Production and Transaction Costs of Sugar Mills

Based on the above definitions, a **sugar mill's transaction costs are complex**, because its operation is generally similar to other big enterprises that have assets, human resources, and a decision-making hierarchy. All of these characteristics generate various kinds of transaction costs. Beyond this, in the context of market transaction costs, sugar mills are also related to many parties, such as sugarcane farmers,

cooperatives, distributors, law institutions (notaries), banks, and so on. In many cases, these relationships concern the processes of getting raw material and of distributing sugar. Finally, the sugar mill also deals with government policy (*political transaction costs*) in order to run its business smoothly. These transaction costs include tax payments, security, donations, tax duplication, and miscellaneous costs. All of these activities create a configuration of transaction costs for the sugar mill.

Sugar mill managerial transaction costs can be divided into two groups. **Internal managerial transaction costs** are defined as transaction costs generated from the corporate internal management model, for example policies of wage rate, facilities, and maintenance. At this level, the amount of transaction costs depends on how efficient the management institution is in supporting the production process. **External managerial transaction costs** are transaction costs related to the authority of the management in decision-making. In the case of the sugar mill in East Java, in general the sugar mill management (Chief Executive Officer, hereafter CEO) does not have absolute authority to make decisions because all proposals must get approval from the Board of Directors (hereafter BoD) [PTPN for state-owned sugar mill/PG. Ngadiredjo and PT. RNI for privately-owned sugar mill/PG. Kebon Agung]. The problem is that the BoD often does not know exactly the real needs of the sugar mill so that the BoD disturbs the production process. In this case, centralized decision-making management generates high transaction costs for the sugar mill, which indicates institutional inefficiency in the corporation's management.

For **political transaction costs**, the sugar mill has both legal and illegal expenses related to government policy adjustment. Legal transaction costs are, for example, tax payments, contribution to research institution (P3GI), donation to APTR, and so on. Illegal transaction costs are donations to security, local government (for incidental activities), etc. Formally, the latter cost actually is not compulsory (it is voluntary). However, in fact, if the sugar mill does not pay the donation, the sugar mill will find it difficult to deal with government bureaucracies, for example, taxation and licensing. With this consideration, the sugar mill usually feels compelled to give the donations. This fact is commonly found in almost all enterprises, not only in sugar mills. In one study, **the political transaction costs (legal and illegal), even reached 20-30% of the total corporations' costs in Indonesia** (PASARIBU, 1996:66). Thus, this factor is regarded as a source of institutional inefficiency of the sugar industry in Indonesia. In detail, components of transaction costs in Kebon Agung and Ngadiredjo Sugar Mills can be seen in Tables 4.1 and 4.2, respectively.⁵

⁵ Besides the above components, there are some transaction costs that are not reported in the annual financial report of a sugar mill. *First* are transaction costs which resulted from hierarchy in the process of

Table 4.1: Categories of Transaction Costs in Kebon Agung Sugar Mill

Categories	Description	Expenditure
Market Transaction Costs		
Extension	Payment for conducting farmers' extensions	Explicit
Bonuses/premium	Payment for sugarcane quality premium and clean-fresh-sweet (BSM) sugarcane premium	Explicit
Transport subsidy	Costs of farmers' transportation subsidy	Explicit
Managerial Transaction Costs		
Salaries/wages	Payment for permanent (administrative/management) labor wage	Explicit
Firm facilities	Cost of education and training, clinic medicine, sports, and work security	Explicit
Food/meal costs	Costs of staff/management meal	Explicit
Pension costs	Payment for staff/labor who have pensions	Explicit
Telecommunications	Payments for sending letters, telephone, fax, and others	Explicit
Equipment	Cost of purchasing cutting tools, general equipment/building materials, print goods, and books/newspapers/magazines	Explicit
Spare parts	Costs of purchasing locomotive, lorry, drasin, vehicle, and agriculture tools	Explicit
Special costs	Costs of bank/postage stamps, infrastructure, accomodations, accountant/consultant, testing, and <i>compous</i> operational	Explicit
Electricity	Payment for water, electricity and off-milling season (LMG) electricity	Explicit
Staff/labor allowance	Payment for leave (holiday), labor insurance, labor/staff retired, working period, and social security	Explicit
Health	Costs of staff and non-staff health	Explicit
Maintenance	Costs of machine maintenance and repair	Explicit
Official transport	Payment for staff/management official transport	Explicit
Fire brigade (safety)	Costs of fire security	Explicit
Decision-making	Costs of decision-making delay	Implicit
Political Transaction Costs		
Taxes	Taxes on land and building (PBB), revenue (PPh) on land rent and service, and other taxes	Explicit
Security	Costs of factory security (<i>satpam</i>), plantation, and milling	Explicit
Miscellaneous cost	Costs of unknown use, but always present in each post/division expenditure	Explicit

Source: Own research, 2003/2004

decision-making. For example, the sugar mill management proposes to purchase machines to directors (PTPN), but in fact the machines come late (about two months). Transaction costs are calculated as the costs generated from the delay, such as the number of outputs failed to be produced and laborers off duty. *Second* are transaction costs in the form of duplication of tax payments as a result of the decentralization policy since 2001. For example, every month in the milling season Ngadiredjo Sugar Mill is charged a duplicate tax payment for water, which is collected by DISPENDA (*Dinas Pendapatan Daerah*/Board of District Revenue) and *Perum Jasa Tirta* (Water District Company). *Third* are transaction costs due to machines not functioning during the milling season. Commonly a machine stopped working for one of two reasons: (i) predetermined schedule; and (ii) machine is broken. *Fourth* are transaction costs that result from overlapping of activities because of the corporate management model, for example, purchasing of goods by two divisions: administration and fabrication.

Table 4.2: Categories of Transaction Costs in Ngadiredjo Sugar Mill

Categories	Description	Expenditure
Market Transaction Costs		
Transportation cost	Cost of transportation to carry sugarcane to sugar mill	Explicit
Cut-load-carry	Costs of transporting smallholder-owned sugarcane	Explicit
Smallholder contract	Cost of making contract with farmers	Explicit
Managerial Transaction Costs		
Outside of estate cost	Costs of sugarcane transportation tools, agricultural tools, repair division, remise, garage, warehouse, and <i>pemel</i>	Explicit
Machine and installation maintenance	Cost of milling machine maintenance	Explicit
Research and development	Costs of research and development (R&D)	Explicit
Right on land	Tax of sugar mill-owned land	Explicit
Firm building	Costs of factory renovation and office	Explicit
Firm facilities	Costs of chief and staff official house, hospital (clinic), and social building	Explicit
General facilities	Costs of building street, bridge, waterworks (canal), permanent lorry rail, non-permanent lorry rail, pemel street and bridge, water retribution, rubbish installation	Explicit
Managers and administrative	Payments for chief and administrative activities	Explicit
Central electricity	Payments for office, machine, and other electricity	Explicit
Vehicle/car	Costs of vehicle maintenance (car, bus, jeep, pick-up, landrover, truck), locomotive and lorry, draisine and rail motorcycle, motorcycle, and wheel tractor	Explicit
Salaries/wages	Payments for permanent (management/administrative) labor wage	Explicit
Staff allowance	Payments for structural functions, tax, house rent/electricity/water, pension, labor insurance (<i>Jamsostek</i>), and pension social security	Explicit
Labor allowance	Payments for irregular labor welfare, such as labor insurance and social security	Explicit
Overtime honorarium	Payment for milling labor overtime premium, especially in milling period	Explicit
Security	Costs of factory security (<i>satpam</i>), and waiting cost	Explicit
Cane security	Costs of security in smallholder farmers' land in harvest period	Explicit
General costs	Costs of unknown origin (un-detailed) in financial report	Explicit
Decision-making	Costs of decision-making delay	Implicit
Political Transaction Costs		
Miscellaneous costs	Costs of unknown use, but always present in each post/division expenditure	Explicit
Donations	Donation for village, local government, mosque, national day celebration, and others	Explicit
Tax duplication	Double payments for one tax object (water tax)	Implicit
Taxes	Payments for revenue tax, value additional tax (PPn input), value additional tax (PPn output), and corporation tax (PPn <i>Badan</i>)	Explicit
Overlapping activities	Costs arise because one activity is done by two different divisions, for example transportation costs and official house	Implicit

Source: Own research (treated), 2003/2004

On the contrary, as seen in Table 4.3, the types of production costs are simpler than transaction costs. In Kebon Agung Sugar Mill, production costs include milling preparation, wages/salaries for permanent and impermanent laborers in the milling division, overtime honorarium, restitution of sugarcane farmers' sacks, the process of milling sugarcane, the acquisition of corporate spare parts, complements costs, and land processing. In Ngadiredjo Sugar Mill, production costs include: the process of milling the sugarcane, corporate and processing needs, fuel station, *besali*,⁶ overtime honorarium, milling laborers' incentives, fuel, salaries of workers in the milling division, sugar packaging, purchases by the tools investigator, plant costs, land processing, fertilizer and material, and seed estate. In general, there is no difference in production costs between Kebon Agung and Ngadiredjo Sugar Mills, because the raw material and the output have the same characteristics. The identification makes it easy to trace the total production costs for each sugar mill.

Table 4.3: Categories of Sugar Mills' Production Costs

No	Kebon Agung Sugar Mill	Ngadiredjo Sugar Mill
1	Milling machine and preparation	Sugarcane milling and water pump
2	Labor wage (irregular labor)	Labor wage (irregular labor)
3	Fuel oil	Fuel oil
4	Overtime honorarium	Overtime honorarium
5	Chemistry material	Material and tools
6	Lubricating oil	Fuel station
7	Packaging and sack restitution	Packaging
8	Machine spare parts	Factory, processing, and besali
9	Milled seed	Seed estate
10	Land processing	Land processing
11	Complement costs	Plant costs, fertilizer, and material

Source: Own research (treated), 2003/2004

4.2 Production and Transaction Costs in the Sugar Mills

4.2.1 Production and Transaction Costs in Kebon Agung Sugar Mill

Data in Table 4.4 shows the **composition of production costs of Kebon Agung Sugar Mill**. Some interesting things found were as follows: (i) the **highest percentage of production costs was from milling/preparation activities**, about 36% of total production costs in 2003. The milling/preparation activities include machinery maintenance, milling machine tests, and labor wages involved in the process of milling preparation. The magnitude of this milling/preparation cost indicates two possibilities: there are many broken machines that need to be repaired and sugar mill management is not efficient so that it cannot manage the optimal milling/preparation cost. After that,

⁶ Besali is technical part/division.

the second highest expenses were acquisition of fuel, chemical materials, overtime wages, labor wages, and the milling station; (ii) labor wage expenditure in the milling division, especially for irregular labor, declined drastically in 2003 compared with the previous year. The declining labor wage expenditure was caused by the success of the sugar mill management in restructuring the working system to reduce its labor and overtime, so that it did not need as much labor or overtime; (iii) expenditures for purchasing chemical materials increased (more than 100%) as a result of the increasing price of the chemical materials; and (iv) there was a high decrease of DMG fuel purchasing (in the milling season) due to declining production and milling days in 2003, which saved fuel consumption.

Table 4.4: Production Costs of Kebon Agung Sugar Mill (Rp million)

Production Cost	1999	2000	2001	2002	2003
Mill machine/preparation	3,680	3,633	5,271	8,325	9,219
Wages (irregular labor)	2,202	4,013	6,639	6,766	1,498
Overtime honorarium	1,755	2,453	4,343	3,948	2,219
Purchasing of chemical materials	967	1,236	1,619	1,684	3,606
Lubricating oil	488	488	755	767	748
Fuel oil	429	2,053	6,493	6,534	3,699
Packaging & sack restit.	-	-	386	194	59
Milled seed	130	-	745	-	-
Machine spare parts	539	570	406	635	507
Complement costs	4,937	1,569	2,018	1,656	939
Land preparation	1,860	4,844	6,988	4,980	2,696
Total production costs	16,987	20,876	35,663	35,489	25,190

Note: The numbers in this table have been rounded

Source: Own research (treated), 2003/2004

With regard to **transaction costs composition**, Table 4.5 shows data as follows: (i) labor wage of permanent workers increased sharply (about 100%) in 2003. This was due to the change in workers' composition, because many workers who were previously on irregular (non-permanent) status were promoted to be permanent workers in 2003. If we trace in depth, this permanent workers' wage contributed the highest percentage to the total transaction costs, reaching 25%. After that, the next highest expenses were pension costs, staff/labor allowances, and transportation subsidy; (ii) expenditure for equipment also increased greatly, up 300% in 2003. This increase was because of the building and renovation of sugar mill officials' houses. As additional information, almost all of the sugar mill's staff receives the facilities of official houses; (iii) in

special costs posts,⁷ there was also a sharp increase in expenditure, 600% in 2003. From the total special costs that reached Rp 2.4 billion, most of them (about Rp 1.5 billion) are used to pay a public consultant (accountant) service, mainly to calculate the company's tax; (iv) expenditure for workers' incentives also increased greatly, about 35%. This increase resulted from the fact there were many members of the sugar mill's staff who retired, which obliged the company to give pension incentives; and (v) transportation costs also increased about 100% in 2003. This increase was because the sugar mill increased the transportation subsidy to Rp 5000/quintal of sugarcane (from previously Rp 1500/quintal of sugarcane in 2002) to prevent sugarcane farmers' selling their sugarcane to another sugar mill. Therefore, although the amount of sugarcane processed in Kebon Agung Sugar Mill declined in 2003, the great increase in the transportation subsidy made the total transportation subsidy increase. Besides, transaction costs indicate an increasing trend, except for certain posts such as spare parts for transportation equipment (car), telephone, maintenance, and fire brigade.

From the transaction costs composition, it cannot be concluded that the '*rules of the game*' in Kebon Agung Sugar Mill are less efficient because of the high transaction costs proportion. In some cases, **transaction costs serve as a tool to guarantee certainty for the sugar mill or welfare for the labor.** The increasing transportation subsidy, for example, is to assure that the sugar mill will not lack raw material. With the transportation subsidy, there is incentive for farmers to send their sugarcane to Kebon Agung Sugar Mill. Labor welfare improvement (for example, through improvement of incentives and renovation of officials' houses) is expected to be able to develop labor's commitment and productivity. Therefore, although transaction costs increased, in the long term it will be useful for Kebon Agung Sugar Mill to improve its income with the certainty and labor productivity improvements. However, one thing that should be considered from transaction costs in Kebon Agung Sugar Mill is the change of labor status from irregular labor to permanent labor. In fact, sugar mills do not need many permanent laborers because most activities are concentrated on production activity (milling). Meanwhile, the milling process itself –as we know– only requires six months per year.

⁷ Special costs include costs of bank/postage stamps, infrastructure, accomodation, accountant/consultant, testing, and *compous* operational.

Table 4.5: Transaction Costs of Kebon Agung Sugar Mill (Rp million)

Transaction Costs	1999	2000	2001	2002	2003
Market TC					
- Transport subsidy	1,407	4,117	4,142	2,594	4,769
- Bonuses	855	1,516	1,927	3,039	2,726
- Extension	31	43	51	69	94
Sub total	2,293	5,676	6,120	5,702	7,589
Managerial TC					
- Wages (administration labor)	3,088	4,046	4,786	5,994	10,825
- Food costs	99	173	122	20	31
- Firm facilities	252	327	416	448	436
- Equipment	213	213	187	252	1,057
- Special costs	181	196	410	314	2,410
- Electricity	738	708	850	1,176	1,677
- Staff/labor allowance	2,304	3,395	407	3,118	5,004
- Health costs	262	281	1,085	504	606
- Spare parts	34	32	32	39	32
- Telecommunications	61	57	64	64	58
- Maintenance	2,271	2,276	3,353	4,413	3,356
- Official transport	29	45	50	55	95
- Pension costs	992	1,814	4,043	4,671	5,240
- Fire brigade	7	9	10	6	5
- Security	71	45	56	65	1
- Decision-making ¹	-	-	-	-	256
Sub total	10,602	13,617	15,871	21,139	31,089
Political TC					
- Taxes	198	208	287	197	279
- Miscellaneous costs	487	415	4,718	742	642
Sub total	685	623	5,005	939	921
Total TC	13,580	19,916	26,996	27,780	39,599
Total costs (PC+TC)	30,567	40,792	62,659	63,269	64,789

Note: ¹ Cost of decision-making process is taken from two sources: (i) in 2003, a Kebon Agung milling machine stopped temporarily (stopped operating) for 291 hours because of waiting for the machine spare parts that came late. From the total, 25 hours are operational stopping that was planned and 266 hours were unplanned. As a result, Kebon Agung lost its chance to produce about 30 tons of sugar. If the total stoppage is multiplied by a sugar price of Rp 3140/kg, the transaction costs rise to Rp 110 million; and (ii) employees that had been contracted were not on duty during the time the milling machine was stopped. The employees are given wages of Rp 19,550/day with working hours being 8 hours (average Rp 2444/hour) and total employees reached 225 people, so that the generated transaction costs reached Rp 146 million. Thus, the total generated transaction costs from the stopped milling machine reached Rp 256 million (110 + 225).

The numbers in this table have been rounded

Source: Own research (treated), 2003/2004

If the composition of transaction costs is distinguished by its type, then the proportion of managerial transaction costs contributes the highest percentage to total transaction costs, reaching 78.5%. This is followed by market (19.2%) and political transaction costs (2.3%). This composition is reasonable because activities of sugar mills are mainly focused on the process of producing output so that most of the activities are related to production management. Market transaction costs of the sugar

mill are associated with sugarcane farmers and related institutions, such as Smallholder Sugarcane Farmers Association (APTR), a cooperative, and banks. The sugar mill deals with government policy (*political transaction costs*) on taxes and other expenditures, such as contributions to road reconstruction, national days activities, and so on. Thus, this information shows that most of the transaction costs for the sugar mill relate to the managerial aspect. On this point, the corporate management model is very influential on the magnitude of transaction costs. The more efficient the management model is the smaller the managerial transaction costs will be, and *vice versa*.⁸

4.2.2 Production and Transaction Costs in Ngadiredjo Sugar Mill

The configuration of **Ngadiredjo Sugar Mill production costs** can be seen in Table 4.6. Some interesting things are: (i) **the highest percentage of production costs is factory expenditure and processing**, which reached Rp 25 billions in 2003. This number actually declined in 2002 because the total milled sugarcane decreased. Contribution of factory costs and processing reached 39% of total production costs. This high contribution is normal, because the core activity of a sugar mill is milling sugarcane, so that all production concentration is in the factory and processing. After that, the highest expenses are costs of planting,⁹ milling sugarcane, staff/labor allowance, fuel oil, and land preparation; (ii) costs to buy fuel increased almost 100% in 2003, compared to 2002. This was the result of the increase in fuel price in 2003 (determined by the government), and not by an increase in fuel consumption; (iii) expenditure for salaries/wages decreased a lot, about 400% in 2003 compared with 2002. More interestingly, wage expenditure has been decreasing since 1999. Wages/salaries on this item are for workers who directly work in the production process (milling), who are generally paid by using the standard regional minimum wage (UMR). The declining wage/salary costs resulted from the reduced number of workers

⁸ According to traditional economic theory, a firm can gain a competitive advantage through comparative cost of production by, for example, reducing labor cost. However, recent research from the management field suggests that nonprice factors are equally important determinants of competitiveness. The range of nonprice is diverse and includes human resource endowment, such as skills; technical factors such as research and development capabilities and the ability to innovate; and managerial and organizational factors, both internal to the firm and externally organized through relationships with other bodies, customers, suppliers, public and private research institutes, and other firms (CLARK and GUY, 1998). Briefly, KUMAR and CHADEE point out five factors identified as the most critical for the international competitiveness of enterprises, namely: (i) technology; (ii) human resources; (iii) organizational structure; (iv) government; and (v) the role of capital and finance. See Rajiv KUMAR and Doren CHADEE, *Competitiveness of Asian Firms: An Analytical Framework*, ERD Working Paper Series, No. 4, Asian Development Bank, 2002, p. 2

⁹ Besides getting raw material from sugarcane farmers, Ngadiredjo Sugar Mill also gets sugarcane from self-cultivated land

and better job planning; (iv) sugar packaging costs, including sacks also decreased a lot in 2003 due to the decline of sugar production compared to 2002; and (v) decreasing the amount of irregular (non-permanent) labor wage constitutes a good outcome that means management is willing to learn from previous experiences.

Table 4.6: Production Costs of Ngadiredjo Sugar Mill (Rp million)

Production Cost	1999	2000	2001	2002	2003
Sugarcane milling and water pump	4,227	7,279	77	9,868	10,080
Factory, processing, and besali	13,810	15,225	19,355	29,078	25,376
Fuel stasiun	884	1,190	- 668	1,491	3,080
Overtime honorarium	-	-	1,386	1,812	326
Fuel oil	1,213	1,281	2,955	3,289	6,037
Wages (irregular labor)	1,384	2,363	752	718	142
Packaging	1,379	1,525	2,072	2,408	1,670
Material & tools	1,604	1,520	1,774	1,766	1,553
Seed estate	735	996	1,283	1,463	461
Land preparation	1,892	2,317	2,101	3,553	4,356
Plant costs, fertilizer and material	10,900	15,868	19,530	21,467	12,037
Total production cost	38,028	49,564	51,953	76,913	65,118

Note: The numbers in this table have been rounded

Source: Own research (treated), 2003/2004

Meanwhile, concerning with the **configuration of transaction costs** in Ngadiredjo Sugar Mill, Table 4.7 gives information as follows: (i) the highest expenditure was for staff allowance, approximately Rp 7 billion, followed by general costs, maintenance and machine installation, TMA, and electricity; (ii) cut-and-carry costs declined by 28% in 2003 due the reduced amount of sugarcane milled in Ngadiredjo Sugar Mill; (iii) research and development (R&D) costs declined by 55% in 2003. This decline indicates that the attention of the sugar mill to R&D is less serious, despite its importance for the corporation's innovation/improvement; (iv) there was an increase in corporate construction of 90% in 2003. Some construction costs were for building corporate and sugar mill staffs' housing; (v) there were savings on electricity of almost 100% in 2003. Of course, this was a considerable efficiency for Ngadiredjo Sugar Mill because in 2003 this item contributed 8% to the total transaction costs; and (vi) there was more than a 100% increase on the donation item. This item is 'political illegal' costs, because it is usually related to government interest.

Some important things to note from the composition of transaction costs in Ngadiredjo Sugar Mill are as follow. **First, the magnitude of 'miscellaneous costs,' which are not well identified, reaches Rp 4.5 billions** Almost every sub-post expense

consists of 'other cost' (management usually takes 10% from the total of sub-post costs). But the accounting division does not know at all the use of these costs. These are considered 'illegal costs' where their use spreads out from contributions to directors, to top management, and illegal contributions/payments to the government (local). These variables are still added with contribution to some other parts, which in 2003 reached Rp 250 million (100% increase compared to 2002). This kind of practice often happens in state-owned enterprises (BUMN) in Indonesia, where corporations (including sugar mills) are charged with various illegal levies by (officials of) the government. *Second*, the sugar mill is also charged with high transaction costs for car maintenance/buying and permanent labor wages, which require Rp 4.3 and Rp 3.7 billion, respectively. Cost of cars' maintenance/buying that reaches 4.3 billion/year (even in 2002 reached Rp 6.5 billion) is unreasonable. It indicates that a mark-up process has taken place in the process of buying the car, for which the BoD is usually responsible. The labor wage is considered very high because actually the number of permanent labors in Ngadiredjo Sugar Mill can be reduced, as stated by the Head of the Financial Unit of Ngadiredjo Sugar Mill.

Furthermore, if we differentiate the transaction costs by their types, then **the proportion of managerial transaction costs makes the highest contribution to the total transaction costs, equaling 77.4%**. This is followed by market transaction costs (14.2%) and political transaction costs (8.4%). This composition of transaction costs is generally similar to Kebon Agung Sugar Mill; however, in Ngadiredjo Sugar Mill the proportion of managerial transaction costs is very dominant, while in Kebon Agung Sugar Mill the proportion of market transaction costs is higher than in Ngadiredjo Sugar Mill. The component of managerial transaction costs that make the most dominant contributions are machine and installation maintenance, corporate building (renovation) and housing, electricity, general facilities, chief and staffs' salaries/wages, incentives, and plants costs. The biggest component from market transaction costs is cut-load-carry (TMA) costs, both for self-sugarcane and farmers' sugarcane. This data shows that the concentration of transaction costs for sugar mills is related to their management.

Table 4.7: Transaction Costs of Ngadiredjo Sugar Mill (Rp million)

Transaction Cost	1999	2000	2001	2002	2003
Market TC					
- Cut-load-carry	4,562	6,175	6,667	8,612	6,652
- Transport cost	1,181	2,014	2,421	2,716	1,502
- Smallholder contract	3,424	6,854	9,695	8,373	318
Sub total	9,167	15,043	18,783	19,701	8,472
Managerial TC					
- Wages (administration)	4,558	5,542	3,157	3,605	3,536
- Firm facilities	-	-	-	621	865
- General facilities	630	744	902	1,956	1,782
- Car-vehicle	1,904	1,884	2,404	6,545	4,360
- Outside of estate cost	137	187	259	347	346
- Overtime honorarium	-	-	988	1,143	2,327
- Manager and administrative	479	398	-	573	-
- Central electricity	443	476	252	5,152	4,910
- Labor allowance	4,365	4,176	5,023	6,566	6,896
- Staff allowance	1,747	442	4,961	6,271	6,982
- General costs	3,044	3,598	4,400	7,644	5,728
- Machine maintenace and installation	3,175	3,660	4,267	5,241	5,679
- R & D	19	30	52	156	69
- Right on land	-	-	10	120	109
- Firm building	779	577	1,163	2,883	4,548
- Cane security	36	50	91	118	106
- Decision-making ¹	-	-	-	-	216
- Overlapping activities ²	-	-	-	-	200
Sub total	21,316	21,921	27,929	48,941	48,659
Political TC					
- Taxes	261	516	65	49	146
- Tax duplication ³	-	-	-	375	375
- Donations	26	41	43	107	251
- Security costs	30	34	21	13	39
- Miscellaneous costs	809	1,062	1,859	8,611	4,546
Sub total	1,126	1,653	1,988	9,155	5,357
Total TC	31,609	38,617	48,700	77,797	62,488
Total costs (PC+TC)	69,637	88,181	100,613	154,710	127,606

Note: ¹ Cost of decision-making process was calculated from two sources: (i) in 2003 there were 200 workers in the milling division off duty for two months because the purchasing of a machine was late (as a result of management centralization). Every worker was paid Rp 425 thousand/month despite being off duty (because they were bound in contract). In this case, Ngadiredjo Sugar Mill bore transaction costs of Rp 170 million; and (ii) in the 2003 milling season, a machine was disturbed which resulted in operations stopping for 125 hours, which happened because some spare parts of the milling machines were late. As a result, Ngadiredjo Sugar Mill lost its chance to produce about 14.6 tons of sugar. If the total stoppage is multiplied by a sugar price of Rp 3,140/kg, transaction costs raise to Rp 46 million (total is Rp 216 million).

² Based on calculation of Ngadiredjo Sugar Mill Accountancy Unit

³ Cost of duplication tax is measured from water tax in milling season (for six months/180 working days). In the milling season water tax is imposed on Ngadiredjo Sugar Mill by two government agents: Kediri Revenue Office (*Dispenda*) and a state-owned water firm (*Perum Jasa Tirta*). Each agency draws a tax of Rp 62.5 million/month for the same object. From duplication of this water tax, Ngadiredjo Sugar Mill bore total costs of Rp 375 million.

The numbers in this table have been rounded

Source: Own research (treated), 2003/2004

4.3 Comparison of Production and Transaction Costs in Kebon Agung and Ngadiredjo Sugar Mills

If the proportion of production and transaction costs is compared between Kebon Agung and Ngadiredjo Sugar Mills, it is seen to be different. In **Kebon Agung Sugar Mill**, the majority of costs in the activities are in the form of transaction costs, which are 61.1%; the remaining were in the form of production costs in 2003 (Table 4.8). In **Ngadiredjo Sugar Mill**, the proportion of transaction costs in the activities is 49.0%. However, the high transaction costs in Kebon Agung Sugar Mill cannot directly be concluded as inefficiency of institutions, because Ngadiredjo Sugar Mill is incurred high costs for plant, land processing, and fertilizer. This happened because Ngadiredjo Sugar Mill, besides processing sugarcane from farmers, also plants sugarcane on its own land. Therefore, it also spends production costs in the form of land processing, planting, and fertilizer/seed, which decreased the proportion of transaction costs. Furthermore, an analysis of the proportion of costs at Kebon Agung Sugar Mill between 1999-2002 shows that the majority of costs in the activities are in the form of production costs (similar to Ngadiredjo Sugar Mill). The composition change is caused by two things: (i) on the production costs side, variables of wages/salaries (for contract labor), fuel oil, land processing, and complements costs were decreasing in 2003; and (ii) on the contrary, on the transaction costs side, variables of transport subsidies, wage/salaries, staff allowance, equipment, and special costs were increasing in 2003. The result is that the proportion of transaction costs to production costs was higher than in 2003.

Table 4.8: Percentage Comparison of Production and Transaction Costs for Kebon Agung and Ngadiredjo Sugar Mills, 1999-2003 (%)

Comparison	Kebon Agung Sugar Mill				
	1999	2000	2001	2002	2003
Production costs	55.6	51.2	57.0	56.1	38.9
Transaction costs	44.4	48.8	43.0	43.9	61.1
Total	100.0	100.0	100.0	100.0	100.0
Comparison	Ngadiredjo Sugar Mill				
	1999	2000	2001	2002	2003
Production costs	54.6	56.2	51.6	49.7	51.0
Transaction costs	45.4	43.8	48.4	50.3	49.0
Total	100.0	100.0	100.0	100.0	100.0

Source: Own research (treated), 2003/2004

Thus, actually, the configuration of transaction costs between Kebon Agung and Ngadiredjo Sugar Mills is not significantly different. This is because the management models used in the two sugar mills are very similar, both for internal and external

management. Internally, management in the two sugar mills are categorized into four divisions and are led by an administrator who has restricted authority. In the two sugar mills there are no planning and supervising divisions, so that evaluation cannot be conducted based on activities performed. As a consequence, the proportion of transaction costs is very high compared with production costs. Externally, management of the two sugar mills are only implementing what has been decided by the directors/corporation (PT. RNI for Kebon Agung Sugar Mill and PTPN X for Ngadiredjo Sugar Mill), both corporations being located in Surabaya (capital city of East Java). **These very centralistic management models make the decision-making steps long, which has potential to generate high managerial transaction costs.** This is the model of management applied in the two sugar mills, and it frequently happened that the material needed (as in the purchasing of chemical materials and spare parts for milling machines) came late because they had to wait for the BoD's decision. As a result, in the case of lateness, the process of milling stopped, which generated the high transaction costs.

More details about the configuration of transaction costs between Kebon Agung and Ngadiredjo Sugar Mills are presented in Table 4.9. **First, both in Kebon Agung and in Ngadiredjo Sugar Mills, the most dominant transaction cost is managerial transaction costs.** This is understandable because the managerial activities include almost all of the corporation's main activities, such as the process of milling the sugarcane, staff salaries, and investment costs.¹⁰ **Second, market transaction costs in Kebon Agung Sugar Mill are higher than in Ngadiredjo Sugar Mill, 19.2% and 13.6%, respectively.** Two alternative analyses are: (i) the considerably higher market transaction costs in Kebon Agung Sugar Mill are caused by the magnitude of activities related to other parties, especially sugarcane farmers. Kebon Agung Sugar Mill establishes cooperation with sugarcane farmers in the form of a partnership pattern, whose main purpose is to develop farmers' sugarcane. For this partnership pattern, Kebon Agung Sugar Mill incurs considerably high costs. In addition, Kebon Agung Sugar Mill also provides high transportation subsidies to farmers in order for their sugarcane to be delivered to the sugar mill. In 2003, for example, Kebon Agung Sugar Mill allocated transportation subsidies up to Rp 5000/quintal of sugarcane, so that the total amount spent reached Rp 4.7 billion; and (ii) the internal management of Kebon Agung Sugar Mill is more efficient than Ngadiredjo Sugar Mill, which can reduce the

¹⁰ In general, management of a sugar mill is governed with a conventional model. Good corporate governance has not already been fully run; even the financial report system has not yet followed modern standard accountancy. Moreover, the supervising function is not run by the management of the sugar mill. As stated by Adig SUWANDI, corporate secretary of PTPN XI, 'many people state that one of the causes of inability of the sugar industry based on smallholder farmers in Java is about management.' For details, see Adig SUWANDI, Saham Petani vs Rekayasa Sosial, *Sugar Observer*, No. 24, 2003b, p. 3

managerial transaction costs. For example, machine and installation maintenance in Ngadiredjo Sugar Mill is Rp 2.3 billion higher than in Kebon Agung Sugar Mill. Electricity in Ngadiredjo Sugar Mill is Rp 3.5 billion higher than in Kebon Agung Sugar Mill. From this, it can be said that the internal management model in Kebon Agung Sugar Mill is more efficient than that in Ngadiredjo Sugar Mill. This happened because Ngadiredjo Sugar Mill is a state-owned enterprise managed more centrally and there is no desire to maximize its performance.

Table 4.9: Percentage Comparison of Transaction Costs' Types in Kebon Agung and Ngadiredjo Sugar Mills, 2003 (%)

No	Type of Transaction Costs	Kebon Agung	Ngadiredjo
1	Market transaction costs	19.2	13.6
2	Managerial transaction costs	78.5	77.9
3	Political transaction costs	2.3	8.5
4	Total	100.0	100.0

Source: Own research (treated), 2003/2004

Third, the proportion of political transaction costs does not contribute significantly to total transaction costs. However, the political transaction costs of Ngadiredjo Sugar Mill are higher than in Kebon Agung Sugar Mill because of many 'illegal' costs activities. Unfortunately, the researcher cannot calculate other costs that are possibly spent by the sugar mills for certain purposes. For example, it is assumed that the sugar mills help the Smallholder Sugarcane Farmers Association (APTR) in delivering farmers to perform demonstrations in Jakarta (capital city of Indonesia) to encourage the government to stop sugar import or increase the import tariff. The sugar mills (especially through their directors) are also assumed to give bribes to the government to get licenses for the importing of sugar.¹¹ The study of DE SOTO (1989) calls these expenditures '*non-market transaction costs*,' such as resources spent in waiting, getting permits to do business, cutting through red tape, bribing officials, and so on. These non-market transaction costs are rampant in developing and transition economies, though the size of the official transaction sector is small (WANG, 2003:6). If

¹¹ Of course, from an interview with the chief of APTR Ngadiredjo, every sugar mill certainly gives financial aids to APTR in its working area. The financial aids are usually utilized by APTR to send farmers to participate in demonstrations or are all taken by core officials of APTR. In this category, financial aids from the sugar mill may help APTR be in the position of giving support to the sugar mill. Then, big distributors often bribe APTR to support certain aims desired by distributors, for example, the government is encouraged to withdraw the import license policy of certain distributors. One signature from APTR may have value up to Rp 5 billion, as stated by the chief of Ngadiredjo APTR. If this logic is used, then certainly sugar mills are doing something similar to get import incenses, especially state sugar mills because import licenses are only given to state sugar mills (PTPN) through SK Memperindag No. 343/2002. If this notion is true, these costs, of course, can be classified as political transaction costs.

such information can be gained, it may be that political transaction costs are higher than indicated by this data survey which has already been taken.

Thus, the composition of transaction costs between Kebon Agung and Ngadiredjo Sugar Mills is not different, but market transaction costs in Kebon Agung Sugar Mill are relatively higher than in Ngadiredjo Sugar Mill. On this point, the conclusion that can be drawn is that **the Kebon Agung Sugar Mill institution is relatively adaptive at relating to other parties**, as can be seen from its structure of high market transaction costs. The high market transaction costs cannot directly be concluded as inefficient when they are useful to create certainty. In the case of transportation costs subsidies to sugarcane farmers in Kebon Agung Sugar Mill, compensation for the high transaction costs is made with the certainty that the sugar mill will get enough sugarcane. Without the transportation subsidies, sugarcane input will be uncertain, which could disturb the production process. On the other hand, the lower proportion of managerial transaction costs indicates that the internal management institutions of Kebon Agung Sugar Mill are better than those of Ngadiredjo Sugar Mill. This fact demonstrates that privately-owned enterprises contribute to improved performance of corporate management through giving more space to the CEO to make and implement strategic decisions.

4.4 Corporate Governance Reform of Sugar Mills

Research results strengthen the statement that the basic problem in sugar mills is management inefficiency resulting in high transaction costs. The structure of transaction costs in sugar mills, both in Kebon Agung and Ngadiredjo Sugar Mills, is that **managerial transaction costs are proportionally higher than market and political transaction costs**. Thus, every effort to reduce transaction costs should be started by improving corporate management design so as to raise institutional efficiency. In the context of sugar mills, there are at least two institutional problems causing management inefficiency. *First is that the share ownership structure is concentrated on a few capital owners* (both in state-owned and privately-owned sugar mills). As a result of this structure, control of management cannot be optimum. *Second is a very centralized model of corporate governance*, where the Board of Directors (BoD) holds the corporation fully.

BERLE and MEANS were among the first to consider the relationship between a firm's ownership structure and its performance. They asserted that as the diffuseness of ownership increases, the shareholders become powerless to control professional managers. Further, they argued that, given that the interests of management and shareholders are not generally aligned, corporate resources are not used efficiently in

maximizing corporate profit. Therefore, BERLE and MEANS **suggested that the relationship between ownership concentration and performance should be a negative one.** However, DEMSETZ argued 'that it is unreasonable to suppose that diffuse ownership has destroyed profit maximization as a guide to resource allocation.' Instead, he asserts that a firm's ownership structure is 'an endogenous outcome of a maximizing process in which more is at stake than just accommodating to the shirking problem' (as quoted by WELCH, 2003:288).

With this theoretical framework, the spreading of share ownership is an alternative that can be implemented to reduce the concentration of share ownership in sugar mills. By doing so, control of management (CEO) will be easier because every owner expects that the management will work optimally. This is supported by HART'S statement (1995:681) that one of the strategies to effectively control management is to use the '*large shareholders model.*' Given that small shareholders have little incentive to monitor management or launch a proxy fight, some commentators have suggested that one way to improve corporate governance is to ensure that a company has one or more large shareholders. One of the most appropriate to be considered as share owners in a sugar mill is sugarcane farmers, besides APTR, staff of the sugar mill, an investor, and local government (ARUM, 2000:41).

This share ownership could be started with state-owned sugar mills, such as Ngadiredjo Sugar Mill, because state-owned sugar mills have higher management concentrations (BoD) than do privately-owned sugar mills. There are some aspects that should be considered carefully in the process of share ownership for sugarcane farmers. *First*, the majority of sugarcane farmers are uneducated people, so they would have to be given an understanding about the consequences of share ownership. For example, every corporation can return a profit or loss, so that having a share does not guarantee a profit. *Second*, a monopoly over stock shares by rich sugarcane farmers (*leaf farmers*), who so far dominate the information and organization chain (APTR), must be avoided. Otherwise, share ownership will only benefit the few sugarcane farmers with big capital. *Third*, share ownership must be followed by corporate governance reform. Without corporate governance reform, the process of share ownership will not have significant implications for the sugar mill's corporate improvement.

The unproportional job descriptions between the Board of Directors (BoD) and Chief of Executive Officer (CEO) causes the corporation (sugar mill) not to work well. For example, in the structure of a sugar mill, the BoD holds control over all decision-making processes, such as purchasing raw material and spare parts. As a result, milling operations often stop because the purchasing of spare parts is delayed. This happens because: (i) the office of the BoD is located in a different city (Surabaya) so

that the process of decision-making takes a long time, and (ii) not all members of the BoD have technical competence in sugarcane issues so that the decisions made cannot be implemented quickly. For these reasons, the concentration of management control causes CEOs not to have incentive to make innovative improvements in developing the corporation (sugar mill).

In the long term, sugar mill management should implement corporate governance based on the stewardship model. Stewardship theorists argue that there is an important role for directors. **Directors should empower governance structures and mechanisms to maximize the benefits of a steward.** For CEOs who are stewards, their pro-organizational actions are best facilitated when the corporate governance structures give them high authority and discretion (DONALDSON and DAVIS, 1991). Structurally, this situation is attained more readily if the CEO is also chair of the board of directors. The CEO-chair who is unambiguously responsible for the fate of the corporation will have the power to determine strategy without fear of countermand by an outside chair of the board. Thus, stewardship theorists argued that directors should play a greater role in facilitating and empowering managers instead of monitoring and controlling (as quoted by ONG and LEE, 2000:7).

In other words, sugar mill management must be given space to plan, make, and apply the decisions so that there is incentive for them to work optimally. As stated by ALCHIAN and DEMSETZ (1972:788), more effective control of corporate activity is achieved for most purposes by **transferring decision authority to a smaller group**, whose main function is to negotiate with and manage (renegotiate with) the other inputs of the team. Meanwhile, the function of the BoD is simply to conduct control and evaluation of management performance (CEO). Of course, the BoD has authority to replace the CEO if at any time he/she fails to effectively run the corporation. In this way, technical problems such as provision of raw material, machine purchasing and investment planning can be done by the CEO without BoD approval. With the change in corporate structure, it is expected that transaction costs can be reduced, for example, by reducing the cost of decision-making and operation (sugar mill) delays as a consequence of lateness in the decision-making process. The BoD concentrates on empowering the CEO by giving incentives (rewards), authority, and trust.

5. Concluding Remarks

At the firm level, the components of managerial transaction costs are quite complicated. In addition to this, in the context of market transaction costs, sugar mills must also relate with many parties, such as sugarcane farmers, cooperatives, distributors, law institutions (notaries), banks, and so on. Sugar mills also deal with

government policy adjustment (*political transaction costs*) in order to operate smoothly. Regarding this research, aspects of sugar mill managerial transaction costs can be grouped into two types. *First*, **internal managerial transaction costs** are transaction costs generated from the corporation's internal management model, for example, salary policies, facilities, maintenance, and overlapping activities. *Second*, **external managerial transaction costs** are transaction costs generated related to the hierarchy of management in decision-making. In the case of sugar mills, in general sugar mill management (Chief Executive Officer/CEO) does not have full authority to make decisions (especially for state-owned sugar mills) because all proposals must get the approval from the Board of Directors (BoD).

In the context of sugar mill's transaction costs, the important factor that should be reformed soon is the restructuring of **corporate governance** and supervision aspects. From this corporate governance, the main problem is the wide authority of the BoD to plan and enforce all corporate strategic decisions; even technical activity is often done by the BoD (for example, tools purchasing). On the contrary, the CEO has almost no authority over the daily operational activities, except routine activity that has been decided by the BoD. With this condition, the rule of the game of the corporation (sugar mill) will not be efficient; for example, the process of decision-making is often late. Furthermore, the supervision function of the BoD does not run well, mainly because their position is far from the location of the sugar mill (the location of the BoD is in Surabaya and the sugar mills are in Malang and Kediri Districts). With the long distance, of course, the process of supervision does not run well. Ultimately, these problems have potential to raise the transaction costs in the sugar mills.

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