

Economics of Lenten Power Dinner

Social Spending by Trading Companies in Imperial Japan*

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Abstract

Trading companies have two sources of profit; arbitrage in competitive commodity markets and matching narrowly defined demands and supplies in differentiated high-end markets. In the latter markets, communications with the demand side on what is needed and with the supply side on what is feasible. Since the market is highly differentiated, i.e., not commoditized, the margin is higher than commodity markets operations. Processing information of both sides by interacting with them in person provides the opportunity. Using the data from Mitsubishi Corporation from the 1920s to the 1930s, we present that a rise in social spending at a department was associated with a rise in the department's profit and conclude that social spending was optimized for information production to maximize the profit. Our archival work on relevant cases demonstrates that potential procurers were eager to access essential technical information while declining extravagant dinner, which is consistent with our theoretical prediction and empirical results.

Keywords Information production; social spending; machine learning; R-Learner.

JEL classification codes D22; L11; L15; D83

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1 Introduction

In financial markets, there are two sources of profits in the financial industry. One is the arbitrage of differences in valuations of already issued debt instruments. The field is competitive markets that are open to potentially infinite market participants. Faster processing of information that is being revealed determines the profit. The other one evaluation of projects to be invested or debt instruments to be issued. The way includes corporate financing for future projects and underwriting of common stocks and bonds. Matching the private information of the potential debtors and information about risk premium demanded by potential investors determines the profit. The markets are, by construction, monopolistic or oligopolistic. Better information production leads to higher profits (??; ??; ??; ??; ??; ??; ??).

Much the same applies to the real economy. There are two sources of profits for trading companies. One is arbitrage in competitive commodity markets such as those of oil, grains, metals, gum, etc. The other one is the matching of buyers and sellers in high-end markets. They include intermediate products and final consumption goods of aerospace, plant, space, and defense industries. A brand new weapon is developed as the state, the buyer considers what it really needs, and the seller develops new technologies that would be liked by the state. By construction, information of both sides is private information. Linking the information on both sides provides the agent with profit (??; ??). The market is not competitive by construction. Thus, if the agent succeeds in matching, it earns profits of much higher rates than operations in competitive commodity markets such as grains' do.

Information production production is surely possible bilateral trades between original sellers and buyers without intermediary agents on networks that connect them as the platform (?). Such information production through direct information exchanges is

more likely if their industry is well matured industry (?). Development of information and communication technologies and so called platformers has enabled such direction information production in a broader range (?).

However, in industries where technological uncertainty is high and players are heterogeneous such as private companies, state-owned or regulated companies, and authorities, direct relational contracts for information production would be harder. Then trading companies could capitalize on the opportunity to line them and produce information. Energy and defense industries, whose anecdotal evidence we examine in section 5, have been among such ones in the sense that the most advanced technologies are pursued and stakeholders are heterogeneous.

Facing the two markets, trading companies allocate traders to competitive commodity markets in trading rooms and agents to in-person meetings with potential consumers and potential suppliers. Interactions with potential clients on both the supply and demand sides should be mostly in person, because the information is credential, because the potential supplier has not yet found a potential buyer, or because the potential buyer has not yet found what it actually needs. The potential buyer might find what it really needs as acquiring additional information by suggestions from a trading company that accesses the credential information of the potential seller. If it does, the agent trading company would earn a much higher profit than operations in competitive commodity markets.

This paper studies whether it works in the real economy, taking an example from Imperial Japan in the interwar period. Japan was building an aircraft carrier battle group of its imperial navy and sought alternative sources of strategically important raw materials such as iron and oil. Japan in the interwar period still heavily depended on oil imported from the US, steel imported from the US, and iron imported from Britain and

India. Diversification of raw material sources was a critical issue to the imperial navy and army.

Leading trading companies, such as the Mitsubishi Corporation and the Mitsui & Company, linked the information on the demand side and the supply side in the West. Japan's defense and energy industries in the interwar period was barely self-contained. Instead, Japan desperately sought newly developed technologies from the West.

Japan in that period is a good case to study information production by trading companies in the real economy. Under the Constitution of the Empire of Japan of 1889, not only judges but also prosecutors were perfectly independent against the legislature and administration including the military (?), different from them under the Constitution of Japan of 1946. Judges and prosecutors were defined to directly serve the emperor such that they were perfectly internally promoted. Neither the cabinet nor the military was allowed to intervene in their promotions. Thus their law enforcement such as investigation of corruption was much more stringent until 1945. The democrat US that occupied Japan did not consider that the perfect independence of the justice and law enforcement were not democratic and advised the Japanese government to amend the constitution. The amended constitution of 1946 stipulates that supreme court judges are to be designated by the prime minister who is elected by the house of representatives and prosecutors were under the command of the minister of justices. Accordingly, corruption investigation in post-war Japan has been much more modest. In-person meetings between authorities and the private sectors are more susceptible to corruption. If we want to identify the effect of information production by in-person meetings between authorities and trading companies, data before the Second World War is ideal.

Also, the Japanese case in the interwar period has geopolitical relevance. Now, the emerging power, China, is building an aircraft carrier battle group but is still technologi-

cally behind the West to potentially confront the US. Currently, the current great games of trading businesses are between the Chinese state and Western sellers. The interwar period counterpart of contemporary China was imperial Japan, which was building an aircraft carrier battle group seeking Western technologies while considering a possible war with the US. A better understanding of imperial Japan would lead to that of the People’s Republic of China.

The remainder of the paper is organized as follows. Section 2 presents our theoretical prediction regarding relationships between social spending by a trading company and its profit rate. Section 3 describes the data we use and methods of our analysis. We use internal data of the Mitsubishi Corporation, which was involved in businesses between Japanese authorities such as the imperial army, navy, and the South Manchuria Railway, from the 1920s to the early 1930s. Since the company made each department report the costs, including social spending for in-person meetings, and its imputed profit in each period, we deploy regressions with department fixed effects. Also, we adopt R-Learning, a machine learning algorithm, for a robustness check. Section 4 demonstrate the empirical results by the fixed effect models and R-Learner algorithm. Section 5 presents an episode of procurement of shale oil extraction facilities by the South Manchuria Company and the Imperial Navy, to provide concrete information presented in section 4. To diversify the oil source from the US, Japanese authorities considered American, British, and German technologies to drill for oil in Manchuria. The Mitsubishi Corporation and other Japanese trading companies helped the efforts to earn a profit of information production.

2 Theoretical prediction

2.1 Model

To investigate social production, let us consider a production function of department i in period t as

$$Y_{i,t} = S_{i,t}^{\alpha(\rho_{i,t})} C_{i,t}^{\beta}, \quad (1)$$

where $Y_{i,t}$ denotes output, $S_{i,t}$ denotes labor inputs for social interactions with clients, $\rho \sim N(0, \sigma^2)$ denotes a stochastic shock on productivity of $S_{i,t}$ such that $\alpha(\rho_{i,t})$ is increasing in $\rho_{i,t}$, $C_{i,t}$ denotes labor inputs for other activities than social interactions, and $0 < \alpha(\rho_{i,t}) + \beta < 1$. We assume identical wage w for both S and C and the total labor input $L = S_{i,t} + C_{i,t}$ has been determined by the headquarters such that $S_{i,t} = L - C_{i,t}$. Furthermore, we assume that the market is competitive such that $E[S_{i,t}^{\alpha(\rho_{i,t})} C_{i,t}^{\beta}] = wL$.

The profit is

$$\Pi_{i,t} \equiv S_{i,t}^{\alpha(\rho_{i,t})} C_{i,t}^{\beta} - wL. \quad (2)$$

Given the constraint $S_{i,t} + C_{i,t} \leq L$, the manager maximizes the profit such that $S_{i,t}$ is increasing in $\rho_{i,t}$ and $C_{i,t} = L - S_{i,t}$ is decreasing in $\rho_{i,t}$. Thus, the maximized profit is

$$\Pi_{i,t}^* = [S_{i,t}(\rho_{i,t})]^{\alpha(\rho_{i,t})} [C_{i,t}(\rho_{i,t})]^{\beta} - wL. \quad (3)$$

The maximized profit rate is

$$\pi_{i,t}^*(S_{i,t}(\rho_{i,t}), C_{i,t}(\rho_{i,t})) \equiv \frac{\Pi_{i,t}}{Y_{i,t}} = \frac{[S_{i,t}(\rho)]^{\alpha(\rho_{i,t})} [C_{i,t}(\rho_{i,t})]^{\beta}}{Y_{i,t}} - \frac{wL}{Y_{i,t}}, \quad (4)$$

such that

$$\begin{aligned} & \mathbb{E} [\log [\pi_{i,t}^* (S_{i,t} (\rho_{i,t}), C_{i,t} (\rho_{i,t})) + 1]] \\ &= \mathbb{E} [\alpha (\rho_{i,t}) \log S_{i,t} (\rho_{i,t})] + \beta \mathbb{E} [\log C_{i,t} (\rho_{i,t})] - \mathbb{E} [\log Y_{i,t}] . \end{aligned} \tag{5}$$

Equation (5) is an identity that holds as long as the manager optimizes labor inputs $S_{i,t}$ and $C_{i,t}$ given $\rho_{i,t}$.

Since L is fixed by the headquarters and hence L is not a policy variable of the department manager. Regarding inputs, $S_{i,t} = L - C_{i,t}$ is the policy variable of the department manager. Productivity of social interaction depending on information production, $\rho_{i,t}$ is an intrinsically random variable because if the information is public, social interaction is not productive at all. Instead of spending time for power lunch or social dinner, workers must use their time for trading to price in public information updated in period t . Their workplace must not be a restaurant or a bar but a dealing room or a desk with the monitor.

However, randomly, social interaction becomes productive. A client firm might consider bond flotation. In this case, neither the client nor underwriter does not the optimal price and timing deterministically such that they interact to share the information they have and produce new information by interacting each other's information. The Ministry of Defense might want to develop a next generation of fighter jets. Again, neither officers nor manufacturing makers know the ideal design and timing of rollout deterministically. They produce new information by sharing information they have. Now the power breakfast or social dinner produces valuable information so that social interactions become profitable. To maximize the profit, the department manager raises the ratio of $S_{i,t}/L$ responding to the shock $\rho_{i,t}$.

Therefore, if the department manager maximizes the profit, he/she raises $S_{i,t}$ if and

only if he/she finds a rise in $\rho_{i,t}$ such that the decision increases $\log [\pi_{i,t} + 1]$. Provided that, our prediction is as follows.

Prediction 1. *If the department manager optimizes the expenses for social interactions with clients to maximize the department's profit responding to business opportunity shock $\rho_{i,t}$, a rise in social expenses $wS_{i,t}$ raises profit rate $\pi_{i,t}$.*

3 Data and estimate methods

3.1 Data

The Mitsubishi Corporation treated each department as an accounting entity such that each department reported trade volume, total cost, depreciation, the net profit that was the value of trade volume from which total cost and depreciation were subtracted, to the headquarters semiannually for the spring term, May/April to September/October and the fall term, October/November to March/April. The amount of social spending that was included in the total cost was also reported. We have the data from Spring 1923 to Fall 1938. During the period the Mitsubishi Corporation had 11 departments in total; coal, fuel, metal, machine, oil, grain, agricultural products, fertilizer, fishery, and general merchandise. The original documents are held by the official archives of the Mitsubishi group, The Mitsubishi Archives of The Mitsubishi Economic Research Institute.¹

The key feature of the documents is that the social spending of each department was separately reported to the headquarters as well as each department's profitability. Making a document is costly and hence, a document almost always has its aim in a profit-maximizing entity. Mandated reports of social spending indicate that the Mitsubishi

¹<http://www.meri.or.jp/> (in Japanese): Accessed December 4, 2021.

Corporation attempted to optimize the social spending to maximize each department's profit. Therefore, the Mitsubishi Corporation case is an ideal one to test prediction 1.

3.2 Fixed effects model

As discussed in section 2, if social meetings with clients produced valuable information, we should observe associations between an increase in social spending ratio and that in profitability. Motivated by equation (5), our baseline estimate model is a fixed effects model for level terms such that

$$\begin{aligned} \log [\text{profit rate} + 1]_{i,t} = & \gamma_1 \log [\text{social spending}]_{i,t} \\ & + \gamma_2 \log [\text{other cost}]_{i,t} + \gamma_3 \log [\text{trade volume}]_{i,t} + \mu_i + \epsilon_{i,t}, \end{aligned} \quad (6)$$

where

$$[\text{profit rate}] = \frac{[\text{net profit}]}{[\text{trade volume}]},$$

$[\text{social spending}]$ denotes the cost for social interactions,

$$[\text{other cost}] = [\text{total cost}] - [\text{social spending}],$$

of department i in period t , μ_i denotes department dummy variable of department i , and $\epsilon_{i,t}$ denotes error term. Based on prediction 1, the estimate of our interest is γ_1 . Significantly positive γ_1 is consistent with prediction 1.

In practice, the budget for social spending of department i for period t might have been reserved according to the profit rate of department i in period $t - 1$ such that profit rate and social spending have a common trend. If there is a common trend, estimates by levels as in equation (6) might overestimate the coefficient in interest, γ_1 .

Thus, to remove a possible common trend for robustness check, we also estimate by first differences such that

$$\begin{aligned}\Delta \log [\text{profit rate} + 1]_{i,t} = & \gamma_1 \Delta \log [\text{social spending}]_{i,t} \\ & + \gamma_2 \Delta \log [\text{other cost}]_{i,t} + \gamma_3 \Delta \log [\text{trade volume}]_{i,t} \quad (7) \\ & + \mu_i + \epsilon_{i,t}.\end{aligned}$$

Again, $\gamma_1 > 0$ is consistent with prediction 1.

3.3 R-Learner estimate

Equation (6) is a log-linear additive model deducted from equation (1). If the actual production function at the Mitsubishi Corporation cannot be properly approximated by equation (1), estimated γ_1 by equation (6) might be biased. Therefore, as a robustness check, we non-parametrically estimate function of nuisance terms such as $\log [\text{othercost}]$, $\log [\text{trade volume}]$, department dummy variable μ_i and then estimate impact of a change in $\log [\text{social spending}]$ by deploying the Robinson approach with R-Learner algorithm (Lehmann and Wager, 2015).

The approach non-parametrically predicts the outcome variable and the key independent variable for i by using all the samples other than i . Then the predicted outcome variable, which is profit rate in our case, is regressed on the predicted key independent variable, which is the social spending in our case. Therefore, it is an intuitively straightforward way to check whether parametric estimate by equation (6) is substantially biased.

Consider a relationship between the profit rate $\pi_{i,t}$, social interactions $S_{i,t}$, and vector of other characteristics such as other cost and department, $\mathbf{X}_{i,t}$. The ideal impact of

social spending τ is

$$\log \pi_{i,t} - E[\log \pi] = \tau [\log S_{i,t} - E[\log S]] + \mu_i, \quad (8)$$

where $E[\log \pi]$ and $E[\log S]$ are population means of $\pi_{i,t}$ and $S_{i,t}$. Although we cannot see the population means, we have side information about the samples, $\mathbf{X}_{i,t}$. Therefore, we first predict $\pi_{i,t}$ and $S_{i,t}$ as functions of $\mathbf{X}_{i,t}$ by the super learner algorithm.² With specifying the number of folding for cross validation, we estimate candidate learns, weight them and obtain the super learner estimate. Thus the super learner estimate is the weighted average of values predicted by candidate learners. Let denote $E[\log \pi | \mathbf{X}_{i,t}]$ and $E[\log S | \mathbf{X}]$ as predicted $\pi_{i,t}$ and $S_{i,t}$, respectively. By regressing residual of the output π on that social spending S ,

$$\log \pi_{i,t} - E[\log \pi | \mathbf{X}] = \hat{\tau} [\log S_{i,t} - E[\log S | \mathbf{X}]] + \mu_i, \quad (9)$$

we obtain predicted impact of an increase in social spending $\hat{\tau}$. By writing $f(\mathbf{X}_{i,t}) \equiv E[\log \pi | \mathbf{X}]$, equation (9) is rewritten as

$$\log \pi_{i,t} = \hat{\tau} [\log S_{i,t} - E[\log S | \mathbf{X}]] + f(\mathbf{X}) + \mu_i. \quad (10)$$

An OLS estimate including those by fixed effects models is a specific case of equation (10) such that a cross validation to predict Y and S is not performed. Therefore, predicted $\hat{\tau}$ is comparable to γ_1 in equation (6).

²<https://cran.r-project.org/web/packages/SuperLearner/vignettes/Guide-to-SuperLearner.html> Accessed December 16. 2021.

4 Results

4.1 Fixed effects model

The estimate results are presented in Table 1.

Table 1: Effects of social spending on profitability.

	<i>Dependent variable:</i>			
	$\log[\text{profit rate} + 1]_{i,t}$		$\Delta \log[\text{profit rate} + 1]_{i,t}$	
	(1) OLS	(2) fixed effects	(3) OLS	(4) fixed effects
$\log[\text{social spending}]_{i,t}$	0.012*** (0.004)	0.011** (0.005)		
$\log[\text{other cost}]_{i,t}$	-0.020*** (0.005)	-0.003 (0.008)		
$\log[\text{trade volume}]_{i,t}$	-0.006*** (0.002)	-0.004 (0.003)		
$\Delta \log[\text{social spending}]_{i,t}$			0.015*** (0.006)	0.015*** (0.006)
$\Delta \log[\text{other cost}]_{i,t}$			-0.041** (0.018)	-0.043** (0.018)
$\Delta \log[\text{trade volume}]_{i,t}$			-0.002 (0.006)	-0.002 (0.006)
Constant	0.260*** (0.045)		0.001 (0.002)	
Observations	159	159	148	148
R ²	0.217	0.043	0.059	0.060
Adjusted R ²	0.202	-0.043	0.039	-0.016
F Statistic	14.318***	2.155*	2.986**	2.918**

Note:

*p<0.1; **p<0.05; ***p<0.01

The estimate in column (2) is our benchmark result. It indicates that an increase in social spending by 1% raises the profit rate by 1.1%. Our data set is biannual, so that social spending was likely to mediate business opportunity shock $\rho_{i,t}$ observed by

the director of department i in period t . For instance, the department director might find a profitable business opportunity $\rho_{i,t}$ and then allocate more social spending to a person in charge of the opportunity. In this case, our significant result captures the causal relationship between the business opportunity shock $\rho_{i,t}$ and the profit rate, which was mediated by the department director’s business sense and social spending $S_{i,t}$ he adjusted. What we observe is only $S_{i,t}$ but not $\rho_{i,t}$ itself. However, as indicated by narratives in section 5, half a year was likely to allow the department director to mediate $\rho_{i,t}$ by adjusting $S_{i,t}$.

Additionally, our results are robust against the removal of the common trend as shown in column (4). Our results do not rely on the opposite direction of causality: Because the department was profitable last term, the department was allowed to use social spending, and high profitability was realized depending on the last term’s profit mediated by this term’s social spending.

In summary, the department director’s sense mediated by social spending or social spending on its own, social spending raised profitability at least as a mediator. Social spending was an instrument to produce profitable information that leads to profit.

4.2 R-Learner approach

As a robustness check of the results in Table 1, we estimate the impact of social spending by R-Learner approach (?) as presented equation (9) using the Super Learner algorithm.³ To estimate equation (9) with the Super Learner algorithm, we specify 2-fold cross validation. Regarding candidates, we try (1) OLS and random forest⁴ algorithms and

³<https://cran.r-project.org/web/packages/SuperLearner/index.html> Accessed on December 18, 2021.

⁴<https://cran.r-project.org/web/packages/ranger/index.html> Accessed on December 18, 2021.

(2) OSL, random forest, and LASSO⁵ algorithms as candidate learners. Predicted $\hat{\tau}$ by equation (9) are presented in Table 2.

Table 2: Effects of social spending on profitability estimated by R-Learner.

	<i>Dependent variable:</i>	
	$[\log \pi_{i,t} - E[\log \pi \mathbf{X}_{i,t}]]$ (1)	$[\log \pi_{i,t} - E[\log \pi \mathbf{X}_{i,t}]]$ (2)
	Super Learner	Super Learner
Candidate learners	OLS random forest	OLS random forest LASSO
Folders for cross validation	2	2
$[\log S_{i,t} - E[\log S \mathbf{X}]]$	0.014** (0.007)	0.011* (0.006)
Confidence interval lower	0.000	-0.000
Confidence interval upper	0.027	0.022
Observations	158	158
<i>Note:</i>		*p<0.1; **p<0.05

The results are qualitatively consistent with that by equation (6) in column (1) of Table 1 and the magnitudes of $S_{i,t}$ neither differ from that. We conclude that the result in column (1) of Table 1 is robust.

5 Analytical narratives

5.1 Merits of social interactions

In the data, we cannot observe business opportunity shock $\rho_{i,t}$ but only can $S_{i,t}$ which we argue is a response by the department director to $\rho_{i,t}$. To support the argument, we describe the merits of social interactions perceived by business people of the Mitsubishi

⁵<https://cran.r-project.org/web/packages/glmnet/index.html> Accessed on December 18, 2021.

Corporation, and, its rival, the Mitsui & Company, and smaller competitors around Manchurian business opportunities.

In the early twentieth century, Manchuria was a geographical cornerstone to the Republic of China, the US, the USSR, and the Empire of Japan. It was also a center of growth in Northern China (?). In Manchuria, Russia had built and operated the Chinese Eastern Railway since 1897. As a result of the Russo-Japanese War, 1904–1905, Japan acquired the southern Manchurian part of the Chinese Eastern Railway and reorganized it as the South Manchuria Railway Company. The USSR inherited the remaining part of the Chinese Eastern Railway in 1917. Sharing Soviet Russia as a common threat Zhang Zuolin (Chang Tsuo-lin), the warlord of Manchuria under the Republic of China, and the Empire of Japan cooperated until the imperial army of Japan betrayed Zhang by assassinating him in 1928 (?, pp. 258–266, 293–348).

Manchuria, notably the South Manchuria Railway Company, became an experimental organization for Japan to test advanced technologies. Deeper investment in the South Manchuria Railway and its railway zone under the Japanese control was also a geographically rational choice given that the US enhanced its existence and opposed the old imperialism under the Washington system after the First World War (?, pp. 235–266, 304–311). For instance, the fastest train under Japanese control before 1945 was the limited express “Asia” operated on the Southern Manchuria Railway.⁶ The Japanese authority, notably the imperial army, and the headquarters of the Southern Manchuria Railway company sought the most advanced technologies from the West as well as deployed domestically developed ones.

As is now, the most advanced technologies were by construction not prevalent yet.

⁶The steam locomotive that pulled the express, the model Pasina (renamed the model SL 7 by the People’s Republic of China after the war) is presented in Shenyang Railway Museum (<http://www.china.org.cn/english/olympic/218670.htm>).

The characteristics of such technologies were not public information but private information held by developers. Possible plans of the imperial army and the Southern Manchuria Railway were naturally private information. The demand and supply were matched by large trading companies that globally operated. Connecting private information, not responding to public information, was precisely the process of information production that enabled trading companies to earn higher profit rates than arbitrage in open commodity markets.

In 1923, Tajiro Shirahama, the manager of the Equipment Division of the General Accounting Department, and Jou Ushijima, the manager of Railway Operation of the Department of Railway planned to make an official trip to London for possible procurement. The director of the Dalian branch of the Mitsubishi Corporation sent a letter to the director of the London branch. The letter was titled “On merits of business entertaining on a trip abroad” and requested the London branch to greet Shirahama and Ushijima.⁷

Therefore, we earn really noteworthy profits due to your branch and other branches that courteously treat clients who make official trips from this region, and because of that we would like to note what we expect just in case and please kindly tell it to the director of your branch and managers of divisions in charge.

1. Although we would like to express our appreciation to our clients of the Manchuria Railway Company and other authorities who favor us, we should be careful about gifts, and they often hesitate to be invited to dine, and even if we find a less conspicuous to invite them to dine, they don't appreciate it that much such that it is just waste of money.

⁷No. XXXX

2. Particularly, we have almost no such opportunity for government officials.
3. Therefore, while we profoundly understand that it gives extra trouble to them, we wish, as a branch office in the East, overseas branch offices to consider to courteously treat clients who make official trips.
4. Absolutely, we do not wish other branch offices to spend large amounts to satisfy the material needs of visitors, and it would be sufficient to contact them seriously and courteously, as is our good habit.
5. For travelers far distant from home, hospitality by fellow Japanese would be far more valued more than money and become a pleasant memory that is remembered for a long, long time, which is demonstrated by the clients who came back to this branch and express cordial gratitude to overseas branch offices of our company.
6. In addition, whenever gentlemen from the South Manchuria Railway or other organizations are dispatched overseas, they are on a mission to study industrial machines and further, on a mission to procure them and are accredited to do so, or it means a stair toward his future promotion.
7. Mitsui & Company, which is a little ahead of our company in human resource management, internal information exchanges, and advertising, dispatches internal engineers from this place (Shanghai) or engineers who work abroad to attend the researchers of facilities that cost hundreds or thousands yen, such as Grain Elevator of the South Manchuria Railway and Washing Plant, so that it pays the cost to dispatch to the East from overseas operations, and by doing so, pursues an order of consignment purchase from the South Manchuria Railway and, in case

of open bidding, attempts to be preferred by the market.

8. Although our company takes its own way so that it does not need to follow the Mitsui & Company, we could gradually go ahead to bet our company so that an increase in our personnel is to be accompanied with searching names of official oversea travelers and internal transmission of the information are hoped to be greatly pursued so that we cordially hope your appropriate handling.
9. While we understand that you consider that engineers on overseas trips should be mostly respected, so-called clerical staffs should not be overlooked, since they would be promoted to a department manager of a division manager so that the difference in returns on treating them cannot be immediately materially compared with those on engineers.

There are three critical points. The first one is that potential clients from the South Manchuria Railway Company, the imperial army, and the imperial navy did not want to have extravagant dinners. It might be because they wanted to save time but also because of stringent probes by investigators under the Constitution of the Empire of Japan. They feared their procurement was suspected to be corrupted (1, 2, and 4). The second one is that, still, potential clients want to interact with fellow Japanese overseas (5) so that potential clients did not need dinners but time of Japanese staff overseas. The third and most important one is that potential clients desperately wanted to access information about brand new technologies in the West, and to meet the demand, the rival, the Mitsui & Company dispatched internal engineers to give make advises and suggestions to engineers and officials from the South Manchuria Railway and the army and navy, who were in charge of possible procurement or were likely to be promoted to managerial positions (6–9). Technical advice, and linking between potential demand

and supply sides globally, that is, information production was the most critical task of trading companies in highly differentiated high-end markets.

5.2 Imputed social spending

As described above, the Mitsui % Company was the benchmark for information production to the Mistubishi & Corporation. While the Mitsui % Company considered the time of internal expertise spent for potential clients to be critical, the imputation of such social spending costs became an issue so branch office managers intensively discussed the imputation of the cost for in-person meetings with potential clients in 1921. Cited below is stated by the manager of the Hong Kong branch office.⁸

Social spending, including allocation of specialized staff, for searching potential suppliers and provision of technical advice, was highly likely to provide the company as a whole with a higher margin than operations in competitive commodity markets. However, for financially independent branch offices, its own social spending to advise potential clients of another branch office implies positive externality. Without addressing the issue, social spending for information production of the trading company as a whole inevitably becomes less than optimal level.

As a project to fix this issue, a conference of global branch offices of the Mistui & Company held in 1921 is intriguing. A statement in the conference from the director of the Hong Kong branch office was informative.⁹

At the Hong Kong branch office, whenever a ship arrives, the number of visitors from the East, West, South, and the North, in particular bringing

⁸No. XXXX

⁹No. XXXX

a reference issued by a board member of the headquarters, is numerous. In fact, to accommodate them, one or two specialized staff need to be engaged in charge of the handling. If we do not care for them, the reputation of our company would be hurt so we are dedicated to treating them kindly. However, our capacity is not sufficient so that we invite them to dinners at company residence, still, out of 1,000 dollars expenses for social spending by the Hong Kong branch office, 99% are spent for visitors with references issued by other branch offices. Of course, some of such branch offices offered transfer of payments of such costs to the original branch offices, however, procedures of cost transfers are burdensome, so often the costs are incurred by the Hong Kong branch office. However, we would like to expect that if the social spending costs inevitably rise further, social spending should be imputed to the origin branch that requested a meeting with the visitor.

Responding to the statement, the sales department manager of the headquarters suggested that the London branch office and the New York branch office should appoint staff specialized in social interactions with potential clients. However, the suggestion was dismissed because the aim “won’t be satisfied by those who were good just at English but do not understand business.”¹⁰ Critical to visitors from authorities such as the South Manchuria Railway, the navy, and the army was concrete technical advice that notified them what a potential procurement of an item enabled them to do.

For global operations of Mitsui & Company, while the Hong Kong branch was a gateway to the East, the San Francisco branch was the gateway to the West, in the world after the First World War. The burden incurred by the San Francisco branch rose accordingly. Following is a letter sent by the San Francisco branch manager to the

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headquarters on MONTH DATE, 1924.¹¹

Whatever the reference indicates, we end up having to take care of visitors and it costs us.

1. ...snip...
2. Moreover, their questions so eccentric such as how thick asphalt of road surfaces in San Francisco, wanting to see facilities of some Pier of the port, on railways, and so on. Visitors are either from the public or private sector and their specialties are broad, so that we do not necessarily know from A to Z and we quite often have to study them. Such questions include those that would have been better asked in New York or London, but they want to give us some crap when they land here, and we have to answer that we don't know about what we don't know, but in reality, we have to keep their company and make a suggestion to a certain degree.

...snip...

If our staff spend one hour, it costs approximately 2. If someone has to send a message by telegraph, it needs time for stenography, sightseeing needs cost for a taxi ride. If they are in our office, they interrupt our business by talking loudly so that we have to prepare a reception office to quarantine them, which also costs more than simple business purposes.

Visitors to the San Francisco branch from Japan were experts in their field and they wanted to exchange their knowledge with a staff of Mitsui and got anything potentially

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related to their field from the thickness of asphalt to railway operations. Visitors also wanted to show their knowledge. This was natural as an attitude of Japanese experts who sought advanced technologies to be procured in the 1920s, but quite burdensome to the staff of the San Francisco branch. The issue was keen particularly because each branch was an accounting entity. In other words, what the manager of the San Francisco branch of Mitsui & Company really wanted to discuss was imputed social spending. His point was, the cost of social spending directly incurred by the San Francisco branch was to be imputed to branches of origin when each branch earning was calculated.

Responding to the request, Mitsui & Company introduced a imputation system of social spending under which social spending cost incurred by a visitor's destination branch was imputed to the branch office at the visitor's origin that issued a reference to the visitor in May 1924. The notification of the system to branches also mentioned that branches at visitors' origin should not misguide visitors to expect extravagant business entertainment.¹² The aim of social interactions was not having tasty dinners but information production.

5.3 Imperial Navy, South Manchuria Company, and shale oil

5.3.1 Shale oil project in Manchuria

Among the most geopolitically and technologically urgent issues to the Empire of Japan in the 1920s was the diversification of fuel sources. The imperial navy almost solely depended on oil imported from the US, while the US and Japan were in strained relations. A possibility to the navy was shale oil in Fushun Coal Mine owned by the South Manchuria Railway. Kerogen shale was mineable in Fushun Coal Mine. The South Manchuria Railway could be able to produce by retorting kerogen shale. However, the

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oil-shale industry was still developing so that which retorting technology would fit kero-gan shale mined from the Fushun Coal Mine was not obvious before the project began. Thus both navy and the South Manchuria Railway needed to pursue advanced facilities for retorting from Scotland, Germany, and the US. Notably, the Scott company already had a history of operations and hence it seemed to be the most reliable. The German candidate was developing a new technology to save the operation cost, in order to decide which technology to be procured, the navy and army, which were the final procurer of produced oil and the South Manchuria Railway, which was the procurer of retorting facilities and producer of oil for the navy and army, formed a council for facility procurement. The council was composed of experts from the navy, army and the South Manchuria Railway and in charge of procurement of retorting facilities (? and ?).

The procurement process thus resulted in tension between the navy that preferred the more reliable Scott technology and the South Manchuria Railway that preferred the German technology expected to save the operation cost. At a meeting of the council held in May 21–28, 1925, the council decided to adopt the Scott technology, led by the primary procurer of oil, the navy. However, after a tentative operation, the German technology was eventually adopted (?). The project was inherited by the People’s Republic of China after the Second World War and formed a precious source of fuel (?).

The Mitsubishi Corporation had distribution rights of potential suppliers in Germany and the US, the Mitsui & Company those in the US, and another trading company, Takada & Company the Scott company. Those trading companies attended visits of experts from the navy and the South Manchuria Railway and conveyed the information they had to them. The choice between the reliable Scott technology and rising German and American technologies was surely a tough one. We do not aim to judge which of the navy or the Manchuria Railway Company was correct. Instead, we describe how

critical information about the critical issue to Japan's national interest was exchanged. A provision of more valuable information would have led to a greater profit. Thus each company dispatched its best experts to attend the visitors from Japan.

5.3.2 Chasing to provide information

Key persons of the council members in charge of procurement were; Tadao Kimura, Researcher, the Central Laboratory, the South Manchuria Railway; Kinzo Okamura, Department Chief of the Fushun Coal Mining Industry, the South Manchuria Railway; Keido Uehara, Researcher of Fuel Fabrication Plant, Engineer Major, the Imperial Navy; and Kanji Kurihara, Professor at Meiji Vocational College and Engineer of the Tokuyama Coal Briquetting Plant, the Imperial Navy. They globally sought technical information in 1924 to be ready for the council meeting planned in 1925. Particularly, Kinzo Okamura from the South Manchuria Railway and Kanji Kurihara from the navy took critical roles in procurement decisions (?).

In August 1924, Kinzo Okamura planned to visit, through Dalian and Yokohama ports, to the US, Britain, Germany, and Sweden. The Dalian branch of the Mitsubishi Corporation wanted to be involved in the project. Thus the director the Dalian branch sent a letter to the headquarters of the Mitsubishi Corporation.¹³

We asked Mr. Okamura to give us an opportunity to meet and have dinner, but he declined because he arrived at Dalian this morning, and here is the home of the South Manchuria Railway so we could not have such an opportunity... snip... We would like you to meet him (before his departure to the US).

¹³Letter from Seiichi Mishima, Director of the Dalian Branch, Mitsubishi Corporation to the headquarters, August X, 1924. No. XXXX.

Concerned about being suspected of being corrupted, Okamura declined dinner at Dalian. Receiving the letter from the Dalian branch, Kyohei Kato, Executive Managing Director, and Kono Yoshitoshi, Vice Director, Division of Machinery, met Okamura on August 16, 1924, and hear the aim of the trip and his requests of visits to plants in the US. Then the headquarters noticed the aim and his visit requests branches in North America.¹⁴ Director of the Fuel Division, the Mitsubishi Corporation sent a letter to the San Francisco branch to describe this point.¹⁵

The gentleman (Kinzo Okamura) is an engineer from the South Manchuria Railway and is dispatched to Europe for procurement regarding kerogen shale that has currently attracted attention and on the way to Europe he said that he wants to visit the Avon Refinery of the Associated Oil Company. To our company, taking care of him would favor us in relation to huge procurement of kerogen shale machines and selling its products, and if we fail to do so, he would be attended by the Mitsui & Company to visit a refinery of General Petroleum Corporation . . . snip . . . We would like you to attend him following the attached memorandum about the meeting with him.

The letter reports that Kinzo Mitsui wanted to visit the Avon Refinery, the Associated Oil Company, from which the Mitsubishi Corporation had imported oil and also warned that Mitsui & Company seemed to approach him. The General Petroleum Corporation, California, granted exclusive sales rights in Japan to the Mitsui & Company. So the Mitsubishi Corporation suspected that Mitsui might invite Okamura to visit a plant of the General Petroleum.

The director of the Dalian branch of the Mitsubishi Corporation also sent a letter to

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¹⁵Letter from Kazushige Tsutsumi, Division of Fuel, the Mitsubishi Corporation to Shuzo, Shimatani, the Seattle branch, August 19, 1924. No. XXXX.

the director of the San Francisco branch that:¹⁶

Although Mr. Okamura is originally an electrician (who earned a Bachelor of Engineering from the Imperial University of Tokyo), he is sent on a serious mission for procurement of machines for the currently planned kerogen shale industry of Fushun, . . .snip. . . , when the project is finally implemented, given the circumstances, he is also expected to hold a prominent position and so we should interrupt without doubt and he is substantially important person, to be prepared for the planning of the second term, and thus, we would like you to attend him sufficiently.

Meanwhile, branches of the Mitsui & Company also shared information about Kinzo Okamura. Seko, the director of the London branch, the Mitsui & Company sent a letter to the Seattle branch.¹⁷

Mr. Kinzo Okamura, Department Chief, . . .snip. . . plans to visit Britain to make a decision on procurement for the Oil Shale Plant currently planned by the South Manchuria Railway, and according to the Dalian branch, he is going to depart Yokohama on August 19. . .snip. . . , we expect that the director of the Division of Machinery and the director of the Dalian branch have also requested you to attend him and this is not only for this particular project but he is very important person to our company so that, although we understand that you are busy, we dare to ask you to attend him particularly kindly when he passes your city. Takada & Company and some others would surely pursue him and so please be careful not to be outdone by them.

¹⁶Letter from Seiichi Mishima, Director of the Dalian Branch, Mitsubishi Corporation to the Director of the San Francisco Branch, August 2, 1924. No. XXXX.

¹⁷No. 315309.

After all, Mitsui succeeded in attending Okamura exclusively so that Mitsubishi Corporation failed to approach him in the US. On the West coast, the director of the San Francisco branch of the Mitsui & Company exclusively attended Okamura and other companies such as the Mitsubishi Corporation could not approach him.¹⁸ Then Okamura went to New York through Chicago. The New York branch of the Mitsui & Company reported as follows.¹⁹

A letter from the San Francisco branch noticed that Engineer Okamura is going to arrive at Chicago on September 17 and so we dispatch our (the New York branch's) staff there. Responding to the requests from the gentleman (Okamura) and by our suggestions, we are ready to attend him to visit many plants. Although the Takada & Company also sent staff to Chicago, it seems to be simply to attend him for sightseeing...snip... However, engineers from the Mitsubishi research division have already studied oil shale several years ...snip... and have substantially rich data and other materials on the issue to be considered by him, but we have heard that Mitsubishi started out late for this issue...

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¹⁸No. XXXX.

¹⁹No. 3153123.

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