

Coping with Uncertainty: A Toyotaization of the Chinese Carmaker Tianjin Xiali

Ji REN, Koichi SHIMIZU

In 2002, Toyota launched the production of passenger cars in China at Tianjin Toyota, a joint venture of Toyota and a Chinese carmaker Tianjin Automobile Industry Corporation. This venture has been highlighted as Toyota's first production operation in China. However, already from December 2000, a state-owned company Tianjin Xiali (renamed Tianjin FAW Xiali Automobile Co. Ltd. in December 2002), ex-producer of the Charade, a sedan developed by Daihatsu, is producing a Chinese version of Toyota's small sedan Platz. While the production of Tianjin Toyota is managed by Toyota, Tianjin Xiali is trying, by itself with of course technical support from Toyota, to mount Toyota's production system.

Here we have two interesting cases of the transfer and hybridization of a productive model that Boyer et al. (1998) could not discuss. In the case of Tianjin Toyota, Toyota has to "adapt" its production system to the Chinese technical and social environment, whereas Tianjin Xiali has to "adopt" Toyota's production system in order to produce the Platz. So, study of these firms would give a good understanding of the technology transfer, and especially of the "adaptation" and "adoption" of Japanese production systems in China (cf., Abo, 1994, about this problem). The *status quo*, however, is that it is too early to talk about Tianjin Toyota in which production and work organizations are not stabilized¹⁾. Conversely, Tianjin Xiali is one of China's major carmakers, already established and keeping the first place on the Chinese subcompact car market before contracting its tie-up relation with Toyota in June 2000. So, it is worth studying this company's reorganization in this respect, i.e. verifying to what extent the shift of the model to produce from the Charade to the Platz has forced Tianjin Xiali to transform its production system and human resources management (HRM).

However, the firm in general is faced with uncertainties on the product market and on the labor market (Boyer and Freyssenet, 2002). Regarding the product, Tianjin Xiali has chosen Toyota's Platz in order to overcome the decline in the sales of the outmoded Charade,

1) Following some managers of Toyota's transplants we visited, at least three years are necessary for stabilizing the production system in the case of launching a new transplant.

considering the Platz as a model suitable for the growing Chinese subcompact car market. However, the structural change in the Chinese labor market, provoked by the transition of the Chinese economy to a “socialist market economy”, is imposing certain constraints on the HRM of the firms. The high mobility of the skilled workers deprives firms of the possibility of training workers as in Japan (cf., Minami and Makino, 2001). So, the majority of Chinese firms have renounced in-house training and, instead, hire skilled workers trained by other companies. Since a carmaker needs skilled and motivated workers in order to meet the product quality and productivity demanded, it has to cope with this uncertainty on the labor market. Faced with this macroeconomic constraint, Tianjin Xiali set up a special training system in reconfiguring its employment relations.

Of course, we cannot say that Tianjin Xiali has discovered a “*baguette magique*” (magic wand) for coping with the uncertainties of labor relations, but the human capital facet of the production system is important and worth studying, when it is a matter of technology transfer, and for understanding the competitive edge of a company. For this reason, we are interested in the change that has occurred in the production organization and HRM at Tianjin Xiali after it decided to produce Toyota’s car with Toyota’s production techniques. In this paper, the first section tries to give company features of Tianjin Xiali, including the tie-up relation with Toyota as well as a reconstruction of its productive model. The second section tries to show the characteristics of the HRM in transition at Tianjin Xiali, especially in three fields: employment, training system and wages, taking account of the uncertainty of Chinese industrial relations.

1. Reorganization of the Productive Model of Tianjin Xiali

Adopting foreign technologies, Chinese automobile industry has entered a phase of rapid development. After the Chinese 6th five-year plan (1981-85), the growth of the automobile industry has been accelerated. Its annual growth rate was 17.51% during the 7th five-year plan (1986-90), 24.5% during the 8th plan (1991-95), and subsequently, it is growing at the rate of 3-7%.

In the first stage, the medium and high range passenger cars were popular for private use as well as for official use. However the government introduced a “Gasoline Tax” in 1998 in order to promote subcompact car sales and to protect the environment, so that the demand for subcompact cars has grown rapidly. In this market segment existed three major models: Xiali

Table 1 : Production Volume of Major Carmakers in China

CARMAKERS	1998	1999
SAIC	235,000	254,236
TAIC (TX)	100,021	121,828
FAW	81,837	97,195
DMG	36,240	40,200
Chang'an Auto	35,555	44,583
Beijing Auto	8,344	9,294
Xian Qinchuan Auto	5,005	5,306
Guangzhou Auto	2,590	10,008
Guizhou Aircraft	1,064	1,529

Source: China Automotive Industry Yearbook 1998, P.336-337; China Automotive Industry Yearbook 1999, P.154, 509; and CHINA AUTO, Jan.2000, P.12-14.

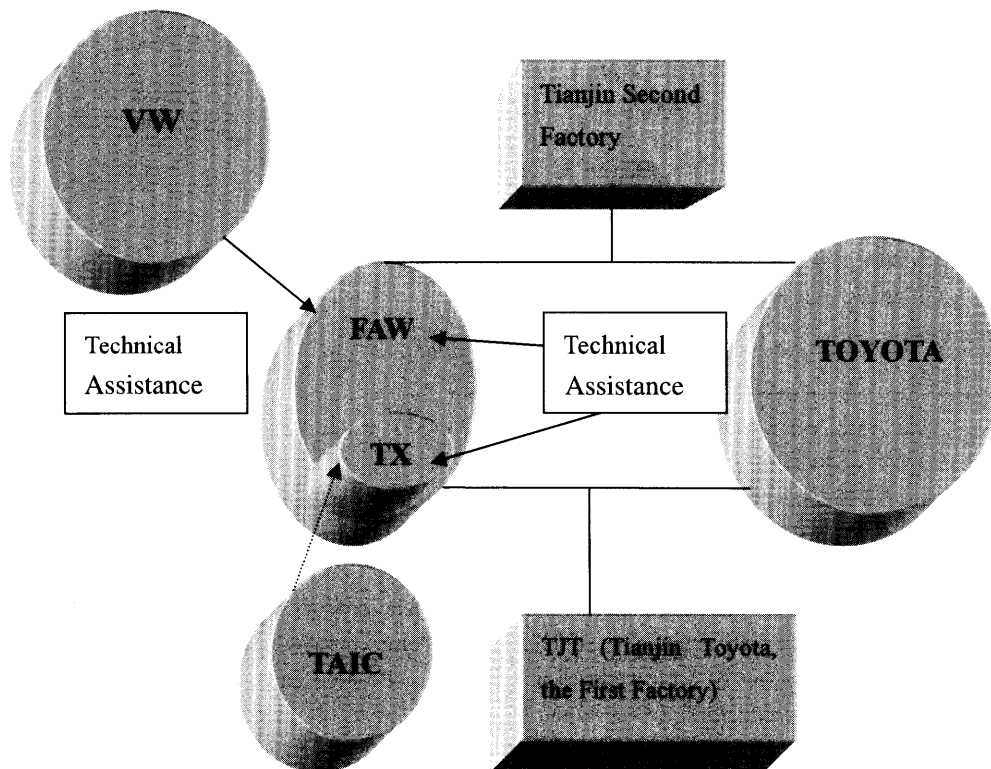
Note: The production volume of SAIC (Shanghai Automobile Industry Corporation) in 1999 includes that of Shanghai-VW and Shanghai-GM. That of FAW (the First Automobile Works) includes the total production of FAW Group Corp. and of the FA-VW Automotive Co. TAIC means Tianjin Automobile Industry Corporation, DMG means Dongfeng Motor Group. The production of Chang'an Auto includes that of Chang'an Suzuki. The production of Guangzhou Auto contains that of Guangzhou Peugeot Automobile Co. in 1997, that of 2,246 vehicles of Guangzhou Peugeot and 344 vehicles of Guangzhou Honda in 1998, and the production of Guangzhou Honda from 1999.

(Charade of Daihatsu), Alto (a model of Suzuki) and Lex (a model of Fuji Heavy Industry - Subaru). Among the six subcompact car-makers, of which four companies are producing the Alto model, Tianjin Xiali (TX) is the biggest, which has been producing the Xiali with technical support from the Japanese carmaker Daihatsu.

1.1 The Tie-up Relations of Tianjin Xiali Inc. with Toyota

With a capital of 1,450 million yuan (about 181 million dollars), and about 7,800 employees, Tianjin Xiali has the capacity to produce 150,000 cars and 200,000 gasoline engines a year. The main products of TX are subcompact cars, and its production share has reached 70% of the Chinese subcompact car output. Even on the automobile market as a whole, TX (main company of Tianjin Automobile Industry Corporation, TAIC) occupies the second position after Shanghai Automobile Industry Corporation (SAIC), producing mainly Volkswagen's vehicles (see the Table 1).

Figure 1: Relationship between Toyota and TAIC, in 2002



TX belongs to TAIC, which had profited from technical assistance given by Daihatsu from March 1986. In fact, the name of Tianjin “Xiali” came from the Daihatsu’s model “Charade” that the then Tianjin Compact Car Works had been producing. When Toyota increased its share of Daihatsu Motor up to 51.2% in 1998, its tie-up relation with TAIC was also passed to Toyota.

So, Toyota concluded a contract with TX in June 2000 about a partnership, though limited, and a model it would produce. On June 5th, 2002, a joint venture, Tianjin Toyota (TJT), was founded by TX and Toyota. In June the production of a new car, the “T-1” , designed by TJT, was announced. Then, Tianjin Xiali, which belongs to TAIC, also transferred stocks to FAW (First Automobile Works) that had a tie-up with Toyota since 1979, so that TX was renamed Tianjin FAW Xiali Automobile Co. Ltd. in December 2002. And, on October 8th 2002, the new car VIOS began to be produced by TJT, and its production volume would be 30,000 units per year. So, it is clear that TX constituted the entry of Toyota’s production operation in China (see the Figure 1).

Table 2: A Comparison between the New and Old Models Produced by TX

	XL2000 (Platz)	TJ7100U (Charade)
Vehicle length(mm)	4,145	3,995
Vehicle width (mm)	1,660	1,615
Vehicle height (mm)	1,500	1,385
Exhaust fumes (l.)	1.3	1.3
Max-energy (H.P.)	86	86
m.p.h.	170	165
Color	White, gray, beige	10 colors
Transmission	Automatic transmission	-
Equipment	ABS	-
	Airbag	-
	Remote-controlled door lock	-
	Power seat	-
Price (RMB)	132,980	92,000

Source: Tianjin Automotive Xiali Co., Ltd., *Annual Report*, 2000, and *China Automotive Industry Yearbook*, 2001.

Toyota has chosen TX as a partner for the reasons below. TAIC had a long-standing tie-up-relationship with Daihatsu, now a daughter company of Toyota. Also, “Tianjin City has a wonderful geographical advantage” (ex CEO of Toyota, Akio Toyoda) : a gateway to the sea, and is also close to Beijing where the Olympic Games will be held in 2008. Another important reason resides in the fact that Toyota is a latecomer on the Chinese automobile market, whereas the biggest carmakers like SAIC and FAW have already found their partners (VW, GM).

The project of Toyota and TX to found a joint venture, which had been submitted to the government, was accepted by the National Planning Committee of China. As a result, Toyota decided to offer production techniques for producing new cars to TX and 8A-FE engines to Tianjin Toyota Engine Inc. Also, TX was allowed to produce new types of cars, named the NBC series (New Basic Car), from NBC 1 to NBC 5, developed by Toyota on the basis of the same platform.

1.2 Choosing Which Model to Produce: New Product Strategy

Due to the decline in sales of the old “Xiali”, TX was searching for a car which would well meet emerging demand for subcompact cars. So, TX has chosen Toyota’s smallest sedan, the Platz, as the successor of old “Charade” (see the Table 2).

Table 3: Comparison between XL2000 and SAIYOU

	XL2000 (Platz)	SAIYOU (Opel)
Vehicle length (mm)	4,145	4,026
Vehicle width (mm)	1,660	1,608
Vehicle height (mm)	1,500	1,420
Exhaust fumes (l.)	1.3	1.6
Max-energy (H.P.)	86	92
Mileage (l./100kilometre)	5	5.8
m.p.h.	170	170
Color	White, gray, beige	White, yellow, etc 7 colors
Equipment	AT	AT
	ABS	ABS
	Airbag S	Airbag W
Price (RMB)	122,980-132,980	100,000-125,000

Source: China Automobile technology, 2000, No.25

The reasons for this choice are as follows. Firstly, the market research TX carried out before the model change, suggested that the Chinese people would have a favorable impression of a sedan vehicle. The Platz, a small sedan suitable for family and official uses, seemed easily accepted by Chinese people, who had begun buying personal cars. Secondly, its equipment is excellent in comparison with its competitors because it is equipped with the latest components and parts such as Toyota's new BEAMS engine, ABS, airbag, etc. Thirdly, the Platz model, developed on the same platform as the Yaris (Vitz), was already well known in China. So, it was expected that even without much work for advertisement, it would reach a wide audience. Another important reason is in the Platz's platform which is the same as other models in the NBC series. So, it would not be necessary to modify the production line very much, when TX produces the next model. In this way, TX has not chosen only the Platz, but all of the NBC models.

The production of this first new car, named "Xiali 2000 Century Platz" (XL2000), was launched on December 14th, 2000, and the local car shops of TX started selling this model. The new model provoked a big reaction in China. Consumers got information about the new car through various channels, and many had ordered the Platz before it had rolled off the production line. However, other carmakers also launched their new models with the same level of equipment. The XL2000's strong competitors are the Saiyou, the Chinese version of the Corsa-B from Opel, produced by Shanghai GM, and the Junjie, the Chinese version of Santana 2000

from VW, produced by Shanghai VW. The Junjie, an AT version of Santana, well know in China, is however less charming than the others. The Saiou is smaller than the XL2000, though it is equipped with double airbags and a 1.6 liter engine (see Table 3), so that the consumers, in northern China among others, showed their preference for the XL2000. Consequently, the sales volume, planned by TX for the year 2001, was already attained by April 2001.

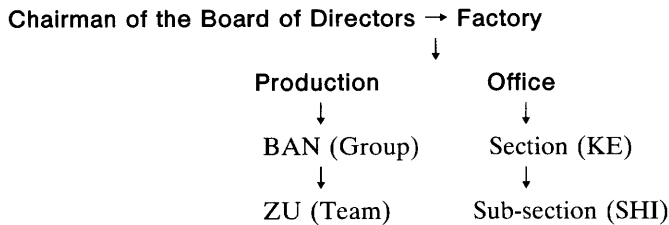
1.3 Reconfiguration of the Production Line

In order to produce the model XL2000 smoothly, the company had to reconfigure its production line. The most important thing in reorganization was adopting the Toyota Production System (TPS), in order to “reduce costs” and assure the product quality (for more on the TPS, see Shimizu, 1999). The following changes were put into effect:

- 1) The “Just-in-time” production has been applied using the Kanban system in order to manage the parts flows and their stocks and synchronize the assembly tasks and parts supply.
- 2) The production is then programmed based on the orders received by the outlets, which have been reorganized and modernized so that they not only sell the cars, but can also manage information about users, sales and after services, and offer repair services, parts and components.
- 3) The assembly line was constructed using technical devices conceived and used at Toyota under its license.
- 4) The cycle time was reduced from 13 minutes to 8 minutes.
- 5) The work organization was transformed from the one shift to two shifts system.
- 6) As for the quality control after the assembly line, the conventional inspection made by controllers was partly replaced by an on-line automatic inspection using the newest technology in China such as “automatic inspection of body size with laser” , and the cycle time of the inspection line now became less than 2 minutes.

Compared with the cycle time observed in Japanese carmakers (1 or 2 minutes), that of the TX is surely too long. However, such improvements in manufacturing techniques and work organization, with technical support from Toyota’s engineers (almost 500 in total have been dispatched by Toyota), have resulted in increased production efficiency: the production volume per day of the XL2000 doubled that of the TJ7100U.

Figure 2: The Hierarchical Organization at TX



TX is made up of three departments, and it has 7,800 employees. The corporate representative of the company is also the chairman of the board of directors. Under him, there is a factory manager at each factory. The factory headquarters have sections called “KE” , and under them, sub-sections called “SHI” . The production section consists of groups called “BAN” (working groups), under which smaller groups named “ZU” (working teams) are organized.

Workers “Kaizen” activities have also been introduced to improve product quality: under the instruction of the engineers dispatched from Toyota, the “SPTT” (an employees’ group working for assuring the flow of parts), the “special check system” and the “monthly check system” were set up. Through these systems, the quality and cost of each production segment are supervised and controlled. Target cost management has been put into practice in order to reduce production costs. As a result, the production costs have gone down while the quality of XL2000 is assured, so that the production of the XL2000 comes close to Toyota’s standard. When applied also to the company as a whole, these measures also contribute to improving the quality of the conventional XL series.

As we saw above, TX is learning the TPS in order to produce the TX2000 (Platz). If its quality and productivity are not yet comparable to those of Toyota, it can achieve at least a higher quality and productivity than when TX was profiting from Daihatsu’s technical support. However, the production depends not only on the production techniques, but also on the HRM, and in this field, TX has to cope with two problems. One is, of course, to modify working conventions in a radical way because the TPS demands a particular kind of workers’ involvement in production. In order to have such involvement, retraining is unavoidable. Right here, TX is faced with another problem: the Chinese labor market is in transition. In order to

solve these two problems, TX has to adjust its HRM so as to be able to produce in line with Toyota's system.

2. The HRM at TX

Because China had a socialist economy based on central planning, the basis of management had been the same everywhere in the country until reform in 1978, which has loosened governmental control over companies. Every company then is now allowed to adjust its management according to its strategy. However, they are faced with constraints other than governmental control: those coming from the labor market. So, we have to take account of these macroeconomic constraints, in order to understand the HRM at TX.

2.1 Uncertainty in the Labor Market

Chinese employment relations have changed radically during the 1990s (cf., Marukawa, 2002, and Yasumuro, 2003). Though the Chinese HRM remains socialist as a whole because there are still many socialist conventions in the management system (family register system, resident card, control of the communist party over the HRM, for example), the reforms of the labor market have provoked a transition in Chinese industrial relations from the socialist model to those based on the market economy. Also, this liberalization of the labor market, even though partial, provokes the opportunist behavior in employees as well as in management.

Before 1990, the state-owned companies had the lifetime-employment system and the job-inheritance system, by which a child of an employee could succeed his father or mother's job after their retirement. These conventions led to over-employment, and then high labor costs, which deprived companies of a competitive edge after liberalizing the market. These traditional systems are being discarded, because companies were faced with the need to reduce labor costs and increase their productivity. So, lifetime employment has been replaced by contracted employment in many companies, and the job-inheritance system has almost disappeared.

Regarding employment, the government had assigned new graduates to the state-owned companies, but now, employment is influenced by the labor market. Companies can hire their employees freely, and after the reform of the education system in 1997, new graduates have the freedom to choose their own jobs. That is, the labor market began to operate, although in an

excessive manner, characterized as “Americanized” (Yasumuro, 2003).

Because rapid economic growth causes a lack of skilled workers in the manufacturing sector, the liberalization of the labor market gives to the people an opportunity to get a well-remunerated job. So, the competition became intense among those searching for work, and the turnover rate of employees became high. Also, the lack of an internal labor market (promotion system among others) is provoking the turnover of young employees who are dissatisfied with their job.

As a result, the company is not so eager to train employees. In fact, there is a great risk for the company that the skilled workers it has trained for itself leave for another company that pays them a higher wage. So, the majority of companies have a tendency to hire skilled workers formed by other companies rather than to hire and train new graduates.

In turn, the employees, discontented with their job and wage, follow at their own expense the education given outside of the company in order to obtain a higher qualification. This is because in China, there exists a “certification of occupational qualification” for the employees²⁾, valid everywhere in the country and which not only confirms employees’ professional competence but also constitutes an important factor in the determination of their wage. So, following such education means that workers will quit their company after getting a certification of higher qualification, which permits them to find a job with higher remuneration.

Faced with such an uncertainty, companies in sectors which demand skilled workers, such as the automobile industry, have to choose between “hire” and “train” , or find a new and original solution.

2.2 Employment at TX

Employees can be recruited, in general, via two channels. The first channel is advertising through the mass media such as newspapers, magazines, television or the Internet. The second channel is the “meeting of employers and job seekers” held by local governments. In this meeting, the applicant and the company’s HR Department staff can communicate with each

2) The criteria of the qualification are different between the blue-collars and the white-collars. While the qualification of the blue-collars is based on their skill and technical ability, that of the white-collars is based on their education at school.

other directly, and not a few people are employed on this occasion, so that both parties prefer this method. However, the local government dictates the number of participating companies, the time and the place of meeting, etc., and organizes the meeting only two or three times per year. In addition, this type of recruitment is locally restricted and not open to people from other regions. For this reason, the company risks not being able to employ a sufficient number of people with the necessary competence.

At TX, selection of applicants seeking full-time employment is made two or three times per year³⁾. Screening of the blue-collar is done only by an oral examination after the verification of the written applications, whereas that of the white-collar is done, based on written and oral examinations. When an administrator is recruited from the external labor market, the applicant has to pass a selection procedure consisting of the application examination, a written examination, an oral examination performed by the HR department, and also another oral examination by company administrators or by the president of the company. When an applicant is hired, he/she has to sign a Labor Agreement with the company, which contains the employment conditions: wage, working hours, paid holiday, welfare, training, disciplines, safety and insurance. In the case of TX, this Labor Agreement should be handed in, within seven days after the conclusion, to the Labor Section of the Tianjin City Administration, which checks its legitimacy.

TX's personnel consist of "permanent" employees and temporary employees. However, even among permanent employees, their employment contract differs in the terms of employment, such as a short-term of four years, a middle term of ten years, and a long-term of twenty years⁴⁾. The employees with the middle- or long-term contract are chosen from the employees with the short-term contract when they are recognized as excellent employees. However, in practice, a large proportion of employees with the short-term contract have a chance to prolong their contract over four years as far as they hope to do so, on condition that they did not commit any serious error or cause any grave accident. Because of the high turnover rate of young employees, the company is obliged to keep these employees as long as possible.

3) In addition, TX happens to employ, though in small numbers, graduates of 16-18 years of age from junior high school, who are dependents of its employees.

4) There also exists a lifetime employment, which is applied only to ex-military-servicemen. The share of this kind of employees is low, and lifetime employment has almost disappeared at TX.

Temporary workers are employed only for transportation of parts in a warehouse, work on the construction site, etc. In general, they are forbidden to enter the production shops because they were not trained regarding production safety and maintenance. The contract term of temporary employees is usually only for one to three months. They come from the rural areas as “excess labor force” and have neither a fixed address nor a family register in the city. However, this type of employment does not require an examination by the City Administration, and the government does not interfere in their employment.

The blue-collar workers are hired from graduates of TX’s technical schools and those skilled workers who are searching for work. Except for the former getting priority, the company prefers to hire skilled workers, because of the high turnover rate among newly hired graduates.

The high turnover rate of young employees constitutes the serious problem even for the employment management of TX. The main cause is in the insufficient internal labor market. Particularly, the evaluation of employees for fixing their wage level does not work reasonably to their eyes. In order to decrease the turnover rate, TX would have to take measures by which the internal labor market functions well. However, the actual HRM, introduced at the time of the model change in 2000, is based on the logic of competitive labor market. That is:

- (i) In the conventional HRM, once an employee is hired, and as far as he/she works seriously (i.e. they do not violate the law and TX’s regulations, etc.), he/she can continue to work until retirement age. However, this system has been replaced by the “competitive employment system”, in which the renewal of the employment contract depends on the result of a technical examination, his/her productivity and his/her assiduity evaluated by the group leader. So, only the best employees can keep their job, and the others will be laid-off. Through this reform, the lifetime employment system has been abolished at TX, except for some rare cases (retired servicemen).
- (ii) Administrators for sections such as production, technology, administration, were previously promoted from the bottom, but now TX is recruiting competent persons from the external labor market. Moreover, a “Head-Hunting Policy” was adopted in 1999, in order to invite those who have managerial experience at a foreign company or sufficient knowledge of advanced technology. In this project, TX offers them high wages, the Tianjin City resident card, a comfortable apartment for their family, etc. These are attractive conditions even for the elite who have graduated from a foreign university.

2.3 In-house Training

The majority of Chinese companies consider the in-house training to be a burden without importance. However, TX still had to educate and train workers at the company's education and training center about the basic principles of the Toyota production system (TPS) and the manufacturing techniques of a new line, in order to launch the production of Toyota's new cars with Toyota's productive techniques.

Before discussing this in-house education and training, we want to explain the technical schools in China in order to shed light on the particularity of TX's case. There is an educational institution called a secondary technical school (equivalent to the Japanese technical high school), of which the educational level corresponds to that of a high school. The students who want to enter a university go to a high school, whereas the other students go to the secondary technical school to learn about an occupation. Some companies also have their own technical school in order to train their own future workers. Students follow lessons about the company's production techniques as well as lessons given at the high school. These companies employ, with priority, graduates of their technical schools without examination, assuming of course that vacancies are available. In fact, almost all students acquire the professional qualification demanded by the company. So, they can immediately work without job training.

TX also has an education and training center for its workers, and six technical schools. To enter the technical school, candidates have to pass an examination after graduating from junior high school. All the students come from Tianjin region and its periphery. In its education and training center, TX also has a "workers' university" (a junior college where workers can acquire a government authorized diploma), a "primary technical school" for the employees hired after junior high school, and "technical schools" mentioned above. In 1998, the staff of 213, including 78 teachers and professors, was in charge of the education and training of more than 30,000 students. Following these courses, employees can obtain a certificate of professional qualification or a government authorized diploma after passing a state examination prepared in the center.

The training of some management methods such as production management, cost management, etc., is given only by educational institutions external to TX, that cannot offer such training to its managers. So, on the one hand, TX has concluded a cooperation contract with the Tianjin University, by which TX pays the fees for its employees who take management

courses at the university. On the other hand, for the training of workers and shop managers on TPS and Toyota's methods, TX dispatched a training team to Toyota's head office in Japan three times in order for them to learn Toyota's shop management and production techniques. Via such preparation, the worker's professional training and conversion of the production line took about half a year, and were completed in February 2000.

By the way, it is often observed in modern China that workers quit their employer to get higher wages at another company. At TX also, employees who acquired higher competence through its training might leave to join other companies. If this were the case, it would be a big loss for TX, because not only the investment in its human capital was wasted, but also it means that TX educated and trained workers for its competitors.

To avoid such risks and prevent the opportunist behavior of its employees, TX has set up a training system based on the contract concluded between the employee and the company. That is, by contracted obligation, an employee has to work at TX for at least three or five years after receiving the training TX gives them. When an employee breaks the contract, he is obliged to reimburse his training costs and pay the damages to the company. When the employee refuses such a penalty, the company refuses, as a punishment, to give him/her the documents (personal data) he/she needs for being employed by another company. This contract has been validated, because the "Labor Law" legitimizes the "labor agreement", the contract signed by the employer and his employees. Therefore, if the company punished the worker by demanding him such a pecuniary compensation because he broke the contract, it is legitimized by the labor agreement.

Taking such measures, TX can now train its employees without risk, and raise the employees' skill level without recruiting expensive skilled workers, even though it has had a tendency until now to employ workers who already have professional experience in another company, and not to hire new graduates.

2.4 The Wage System at TX

In order to reduce the high turnover rate of employees, the wage must be designed so as to give them an incentive to work for the company.

In reality, in China, companies can set the wages by themselves, providing of course they obey the governmental regulations relating to the minimum wage. Because of the differences in

Table 4: The Monthly Minimum Wage of Main Cities

City	Yuan
Beijing City (direct control city)	240
Tianjin City (direct control city)	210
Shanghai City (direct control city)	270
Chongqing City (direct control city)	190
Guangzhou City	320
Zhuhai City	380
Shenzhen City	380

Sources: Japan Labor Research System (1997), P.107.

the living standards between the regions, local governments set the minimum wage. The Tianjin City government takes the following elements into consideration when determining the minimum wage⁵⁾:

- The minimum cost of living for the workers and the average family.
- The national average wage.
- The productivity of each company.
- The state of the labor market.
- The difference in the economic development among the regions.

However, the payment to the laid-off workers the company has to take care of is admitted to be lower than the minimum wage. During their maternity leave, the company has to pay female employees a maternity allowance based on the minimum wage. The minimum wage level of Tianjin City has been 210 yuan since 1995, which is relatively low (Table 4).

At TX, the wage level depends on the company's profits. However, its wage system is the same one as we can observe at many other Chinese companies these days (About the wage systems observed in China, see Marukawa, 2002.) That is:

$$\text{Wage} = \text{AP} + \text{RP} + \text{PS} + \text{A}$$

5) Three allowances, i.e. the overtime allowance, the special task allowance (for night-work, tasks in noisy or high temperature areas, etc.) and the laborer insurance and welfare, are not included in the minimum wage.

AP: Ability-based pay, fixed by job.

RP: Rank-based pay, depending on the hierarchical position of the employee.

PS: Pay related to the length of service.

A: Other allowances, determined by the government.

For example, from the data available today, the share of wage components at Tianjin Compact Car Co. (predecessor of TX) in 1994 was AP = 50%, RP = 30%, PS = 5%, A = 15% (Japan Institute of Labor, 1998).

Here, AP is determined according to the classification of the job allotted to the employee. There were twenty classes: the standard AP for the employee of the lowest class (1) is 198 RMB yuan, that for the employee of the highest class (20) is about 825 RMB yuan. The difference between each two classes is on average about 30 RMB yuan. Blue-collar's highest grade is the 15th class, above which classes are assigned only to managerial positions. Within the same class, the AP is also differentiated by the working place, labor environment, intensity, difficulty of work, etc. The intensity of the work is evaluated according to the "norm of physical and labor intensity", stipulated in the Labor Law. The amount of the RP depends on the hierarchical position of the employees. As for the allowances, they can receive allowances for special tasks, transportation expenses, medical expenses, house rent, etc. Their amount also changes with their working place. In addition, various bounties like piece rate wages and bonuses are also differentiated by work place (the bonus is paid every month to the employees in manufacturing sections, and every half year to those who work in the office or technical sections).

As for overtime work, the allowance has been fixed at TX as below:

- The overtime allowance is calculated at 150% of normal time rate.
- The allowance for the national holiday attendance is calculated at 300% of normal time rate.
- The holiday attendance allowance (when the employee cannot get a substitute holiday) is calculated at 200% of normal time rate.

As we saw above, TX does not have a basic wage as seen at other carmakers in China, and the AP, which accounts for half of the monthly wages, is fixed by the job classification. So, its wages, and therefore its labor costs are not influenced by price fluctuations. For this reason, TX's wage system seems to constitute one of the factors that give it a competitive edge. However, we cannot say anything about the role of the wage system, especially of the AP, in giving an incentive to the employees. Even if it is important for an employee to get a job which

assures him/her a higher AP, the rating of the AP is ambiguous, its criterion being complicated, so that it does not seem that the AP is a significant incentive to employees. As long as the internal labor market is not organized, it seems only a high wage will permit the company to keep the employees it trains for itself. This lack of measures to involve the workers in the TPS might risk reducing the efficiency of the TPS that has been adopted and learned from Toyota.

Conclusion

In this paper, we showed the reorganization of the productive model of the Chinese carmaker, Tianjin Xiali, as an idiosyncratic case of the adoption of Toyota's productive model.

Given the Chinese industrial relations, which are becoming competitive, TX had to modify its production system so as to be able to produce the new model, the Platz, with low costs and high production efficiency as at Toyota. But just here, it is faced with an uncertainty coming from the competitive labor market. Can it keep skilled workers, motivated and involved in the TPS: standard tasks, short cycle time, continuous improvement, QC circle activities, etc.? In fact, the high performance of the TPS comes from the human capital. Whether the production at TX can run well or not depends on its HRM, and in this domain, TX seems to be pursuing contradictory policies. On the one hand, TX has adopted a competitive HRM, i.e. the competitive employment system (employment contract for limited terms), the head-hunting policy, because the labor market is becoming competitive. On the other hand, however, it has to keep skilled workers well trained and motivated, because the TPS demands such workers to be efficient. However, these workers could be obtained only if the internal labor market were well organized. In fact, it is difficult to say that TX has such an internal labor market. One of the solutions to this contradiction is evidently the contracted training system, though this looks insufficient for giving the workers an incentive to be involved in the production as well as in the Kaizen activities as it is observed at Toyota. For this reason, TX would be obliged, sooner or later, to adjust its HRM so as to make its production more efficient.

In the *status quos* however, the reconstruction of the production line using Toyota's production techniques and supports, with changes in methods has allowed TX to remarkably improve its production efficiency and products' quality. But this is because its old production system was too inefficient to be compared with the new one. In fact, even the old, unproductive production system was sufficient for TX because, as a state-owned company, it had been

profiting from its monopolist situation on the subcompact car market. Now, however, the competition on the subcompact car market is becoming fierce or potentially fierce, so that making production more efficient is the challenge *sine qua non* even to state-owned companies such as TX as far as it wants to be profitable in a lasting way. So, we have to emphasize the importance of the HRM.

References

- Abo, T. (1994), *The Hybrid Factory: The Japanese Production System in the United States*, Oxford University Press.
- Boyer, R. et al. (1998), *Between Imitation and Innovation: The Transfer and Hybridization of Productive Models in the International Automobile Industry*, Oxford University Press.
- Boyer, R., Freyssenet, M. (2002), *The Productive Models: The Conditions of Profitability*, Palgrave/Macmillan.
- Japan Institute of Labor (1997), *Chugoku no Rodo Seisaku to Rodo Shijyo* (the labor policy and labor market in China), Tokyo (in Japanese).
- Japan Institute of Labor (1998), *Nikkei Kigyo no Keiei to Koyo Kanri* (the employment management in Japanese-affiliated firms), Tokyo (in Japanese).
- Marukawa, T. (2002), *Roudo Shijyo no Chikaku Hendo* (Structural Change in Chinese Labor Market), Nagoya Daigaku Shyuppan-Kai, Nagoya (in Japanese).
- Minami, R. and Makino, H. (ed.) (2001), *Chugoku Keizai Nyukmon* (Economic development in China), Nihon Hyoron Shya (in Japanese).
- Ren, J. (2002), *Chugoku Jidoyssha Sangyo ni okeru Romu-Kanri: Tenshin Shyari no Kesu* (Human Resources Management in the Chinese Automobile Industry: Case of Tianjin Xiali), Master's Thesis, University of Okayama (in Japanese).
- Shimizu, K. (1995), 'Humanization of the Production System and Work at Toyota Motor Co. and Toyota Motor Kyushu', in Å. Sandberg (ed.), *Enriching Production*, Avebury, Aldershot.
- Shimizu, K. (1999), *Toyotisme*, Repères/Edition la Découverte, Paris.
- Tianjin Automobile XiaLiCo.Ltd. *Annual Report*, 1998-2000 (in Chinese).
- Yasumuro, K. (2003), *Chugoku Kigyo no Kyosoryoku* (Competitiveness of Chinese Companies), Nihon Keizai Sinbun-Sha (in Japanese).