

**The Japanese "drink of the Gods": economic and managerial challenges of sake production in the recent decades**

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**Abstract**

The paper describes drastic turns in the history of sake distribution channels in Japan during the recent years. The traditional rice wine of Japan, sake, has a long standing history of more than 2000 years. It still remains one of the most popular alcohol beverages in the country. We present briefly the history of sake brewing in Japan. Then we describe the managerial issues and focus on the role of toji, the master of technical process, and a powerful administrator. We analyse the economic trends, managerial changes in the brewery employment and structural changes in the production over the last 50 years. We examine taxation and transportation issues, present the configuration of distribution channels and comment consumer preferences. We put forward several hypotheses on the possible future evolution of the sake production sector in Japan.

**Key words:** sake production, consumer preferences, distribution channels, regulations

**Topic area:** Innovation processes and product development

## Introduction

The traditional rice wine of Japan, sake, known as ‘the drink of the Gods,’ has a history of more than 2,000 years steeped in tradition, innovation, and custom. Sake is used for many different purposes in the Shinto religion, including as an offering to the gods and for purifying the shrine. Nevertheless the consumption of Japanese sake is decreasing since its peak in 1974, which resembles a situation with wine consumption in traditional wine European markets, like France, Italy, Spain and Portugal<sup>1</sup> and with beer consumption in traditional beer European markets like Belgium, Germany or Denmark<sup>2</sup>. We aim to identify in our research what really happens in the sake brewing sector in Japan.

"Sake" is often used on the West as a generic name for Japanese liquor made from fermented rice. Several types of sake, several Japanese liquors made of fermented rice, exist today: Normal Sake, Synthetic sake, Shochu (continuous distilled alcohol) and Honakaku-Shochu (single distilled alcohol). Normal and synthetic sake have long standing traditions and conquered their market. Many of consumers do not differentiate these types, particularly in lower-price sakes; it is not always indicated on the bottle whether the sake is normal or synthetic. The raw materials used for normal sake and for sake of special denominations (Honjozo-Shu, Ginjo-Shu and Jummai-Shu) are rice, koji<sup>3</sup>, water, brewing alcohol, and others breweries use alcohol, shochu or sake, glucose, saccharine, amino acids and other fragrances to create a sake compound. It is important to note that for normal sake, brewing alcohol and other ingredients must be under 50% of the weight of the rice.

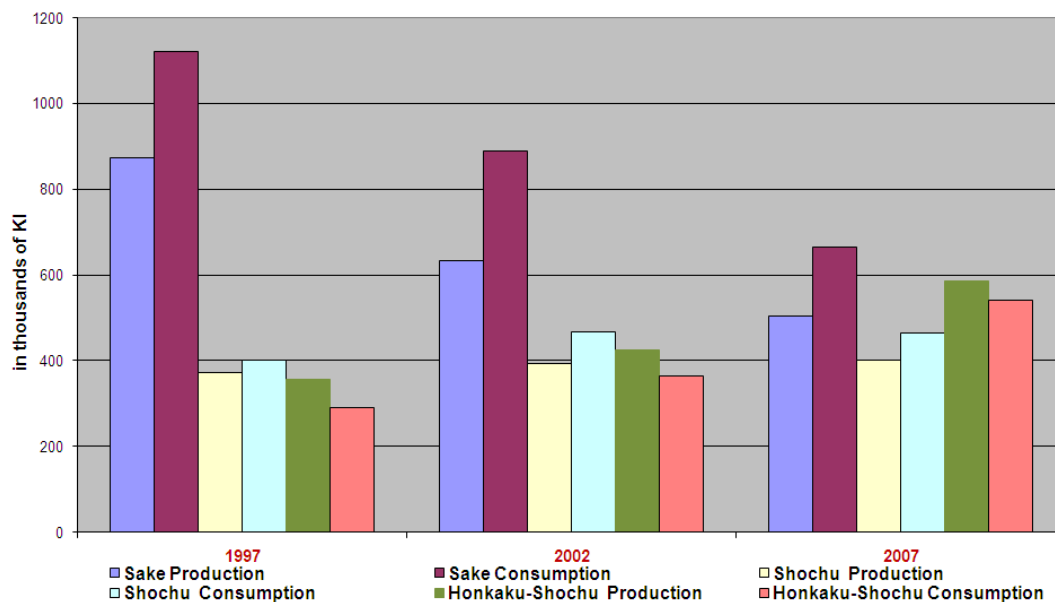


Figure 1. Sake and Shochu production and consumption in Japan (in thousands of kl)

Source: National Tax Agency Annual Statistics Report, 2008

Drastic turns in sake production situation, both in economic, structural and managerial sides are revealed during the last decade. Sake remains one of the most popular alcoholic beverages in the country though in 2004 the volume of the production of Honkaku- Shochu surpassed that of sake (see Figure 1). The sake production decreases as well as the number of local sake breweries: there were about 2000 breweries in the year 2000, while by the year 2009 their number is down to 1400 breweries. Large and medium-sized breweries especially have decreased their turnover; however, some small local breweries have recently grown at a steady pace. Sake sales started slipping since 2005 and they still continue to decrease (see Table 1) .

<sup>1</sup> Competition in Global Wine Market report, 2008 : <http://www.researchandmarkets.com/reportinfo.asp?report>

<sup>2</sup> European Beer statistics : Beer Consumption per country, 2005: <http://www.europeanbeerguide.net/eustats.htm>

<sup>3</sup> Koji is an enzyme essential for brewing sake and used in producing most of the alcoholic beverages of Asia.

	2007	2006	2005
<b>Sake</b>	<b>505</b>	<b>513</b>	<b>449</b>
<b>Shochu (continuous distilled liquor of 25%)</b>	<b>402</b>	<b>416</b>	<b>424</b>
<b>Honkaku-Shochu (single distilled liquor of 25%)</b>	<b>587</b>	<b>600</b>	<b>627</b>

Table 1. Volume of sake production in Japan.

In what follow, starting with a brief presentation of the history of sake brewing in Japan we analyse the economic trends and managerial changes in the sake production industry and put forward the hypotheses on the possible future evolution of the sake production sector in Japan.

### 1. The history of sake production in Japan

The history of more than 2,000 years of sake production in Japan reveals enduring trends stemmed in regulations, innovations, and traditions. Sake production was always strictly regulated by the authorities because it is made from rice grains and rice is the staple food for the Japanese nation. The brewing process required ample space to ferment in one year and its successful production was dependent to a great extent on working capital. Thereby brewers were representatives of the upper-class in Japan and originally sake was produced and consumed mostly by the upper classes. Before the Edo period (1603-1867), large land owners produced sake from rice surplus for drinking during the festivals in the villages. In 1657 the Tokugawa shogunate started issuing licenses (the wooden plates with labels) for sake production. This measure led to a total control of the number of breweries all over Japan. Each year the authorities also allocated the amount of rice available for sake production.

After the Meiji restoration in 1871, the government wrote the rulebook on collecting liquor taxes. According to the new regulations, persons possessing capital were allowed to operate their own sake breweries. Within a year around 30,000 breweries sprang up throughout Japan. The Japanese Industrial Revolution helped increase production by introducing automation and machinery into the brewing process, a popular drink became much more available. Conversely heavy additional governmental taxes were levied on sake production during the next 20 years. Consequently, by 1919 the number of the breweries had decreased to 9,552.<sup>4</sup>

During World War II, the Japanese government effected a compulsory consolidation of Japanese enterprises. The sake brewing industry was considered to have little contribution to a wartime nation; both the number of breweries and the output were reduced by almost 50 percent. Half of the breweries were closed down or changed to war plants. After WWII, the sake industry still remained under governmental control, with imposed strict quotas on rice grain material. The government decided to add artificial additives to sake to cope with the lack of rice material.<sup>5</sup> Even after the 1955 revival of the Japanese economy, the quota of rice material and the price control of sake continued. The big breweries decided to buy sake from local breweries (Oke-Uri, see following for details) to improve the quality of their product.

Until the early 1960s the prices for sake were fixed by the authorities and based on regulations and taxations, despite the fact that the sake industry suffered from overproduction. The rapid economic growth of Japan at this time and the liberation of prices in 1964 boosted production of sake all over the country. An authorized production cartel was carried out from 1969 to 1974, but it was ineffective. In 1964, the small and medium size enterprises (SME) promotion law was adopted to upgrade an industrial structure and improve the productivity of SMEs. It included various measures to modernize designated industries, which included the sake brewing industry, for the next decade.

<sup>4</sup> Nakamura (2002). The number of breweries continued to decrease to 7,077 in 1936.

<sup>5</sup> The artificial additives were alcohol, starch syrup, saccharine, shochu, and an amino acid that tripled the sake yield and was called *triple brewed sake*. Until 2006, when the liquor tax was revised, this triple brewed sake was also called just *sake*.

Thanks to this law, groupings of breweries through joint businesses, alliances, mergers, and cooperation were stimulated and facilitated.

Nevertheless, the structure of sake production was not much affected by the law: most of the sake breweries had a long history, and the owners cared about maintaining the family business and their own brand. Eventually, the SME promotion law proved to be effective by creating bottling cooperatives. By the 1980s, local sake breweries had come to a summit of success. Local sake, especially in the Niigata prefecture, the northern part of Japan, attracted considerable attention and attained a significant growth. Since then, sake production and the number of sake breweries have decreased. There were 2,512 breweries in 1983, and in 2007 there were only around 1,700 breweries possessing licenses.

## **2. The managerial aspects of sake brewing process**

Until the 17th century, sake was brewed all year round. From mid-17th century, the early period of Edo, sake brewing became a seasonal affair from October to March, and the temporally employment relationship was introduced to kuramoto. Toji and kurabito<sup>6</sup> were farmers or fishermen during summer, and starting autumn they moved to kura to work. Most toji did not live close to kura; there were cases when they lived hundreds of kilometres away from kura. Brewing sake itself needs constant efforts, as in all processes, in particular controlling koji and yeast are quite complex, they are closer to art than to engineering or science. The ultimate responsibility for the quality of a final sake product lies on the toji, who should master every technical aspect of brewing.

Although the brewing depended on the toji's six senses, nowadays measuring instruments have been introduced. Considered as minimum requirements, the toji has to be good at figures; he sees the data and calculates to make a production plan, and keeps accounts to pay taxes. However, toji's duties extend beyond actual brewing. Toji recruited kurabito (often coming from far-away villages) and signed a contract with them. For almost 6 months, toji and kurabito worked constantly together, lived in the same place, separated from their families. As the administrator, the toji cared for the kurabito and tried to provide a peaceful atmosphere in kura.

There are some areas in Japan such as Tajima (Hyogo), Tamba (Hyogo), Nambu (Iwate) traditionally famous for producing talented toji. The people in this area are said to be talented like the brewers. Ancient sake-brewing techniques and skills have been inherited by those in toji groups across Japan. However, not all kurabito can become a toji, the toji employment system is based on merit. Toji has to possess different talents – be a good technician, a well-organised administrator, and a man of a character. Many kuramoto have been operating for 200 or 300 years and have been handed down from generation to generation, remaining in the same family up to nowadays. Kurabito also have been working over many generations but not always in the same kuramoto. Not every sake brewery has such a talented toji. In addition, it is not essentially a contract system. Toji is a part-time worker though at the same time he is an independent craftsman.

Big sake companies in Nada and Fushimi in the 1960's built the new factories equipped for air-conditioning and started operating all year round. At the same time, they no longer used the toji employment system, the toji and kurabito became regular employees of the company. Some small kuramoto wanted to maintain old traditions and combine them with new approaches. In one kuramoto, the president's son went to the university to study fermentation, and after the training, became toji. In another kuramoto, the president decided to abolish the toji employment system, and the toji and kurabito became full time employees of the company. The number of farmers declined in Japan; in 2001, there were 1196 toji registered with the Japanese Toji Association, along with 1960 kurabito.

## **3. The sake distribution channels and taxation issues**

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<sup>6</sup> Bitto means the person, so "kurabito" is a name used for workers in sake brewery, kura.

In the early Edo period, sake breweries developed inside towns or in their close vicinity. Later in times, sake breweries expanded into the rural area (Yunoki, 1989). Since the late 1880's the rural sake breweries had spread, vanquishing the town sake breweries. During the Edo period, sake trade flourished: merchants bought sake in the areas famous for good quality sake such as Ikeda, Nada (Hyogo), Fushimi (Kyoto), and shipped sake to the huge Edo (Tokyo) market. Thanks to an exclusive privilege given to them by the Tokugawa shogunate in the middle of the 17<sup>th</sup> century, they built up an immense capital and prospered until 1927, when they began to lose power because of a financial crisis.

Although breweries in Nada, Fushimi had enjoyed the benefits of sake trade with Edo merchants, having become big enough, the merchants had the leadership in sake transactions: they bore sales risks and guaranteed sake quality by putting their trade-mark or a brand name. Breweries in Nada, Fushimi were compelled to sell their product under merchants' brands following the simple principle: one brand one merchant. In 1931, when a brewery in Nada started to create their own brand name designating the exclusive dealer in Tokyo, the decision was astonishing for the industry (Nishinomiya Shuzo, 1989).

Nowadays these big rural sake breweries are top-ranking players producing over 10,000 kl per year, classified as the Type 1 breweries. In 2007 the ranking of 1st to 10th are occupied by the Type 1 breweries and they produced 48.8% of the whole volume of sake in Japan. The breweries of the Type 2 are much smaller in size and primarily supply the local market.

Bulk sake trading among breweries existed for many years when inventory overage or shortage occurred. Before 1944, the liquor tax was levied on an output basis; breweries had to pay depending on the quantity of the production. In 1944, the liquor tax was reformed; liquor tax was levied on the quantity of shipment from factory in the end; which meant that breweries selling sake bulk were exempt from taxes. From 1944 onwards, as mentioned above, big sake breweries increased to buy bulk sake from local breweries, the local small breweries of the Type 2 not only bottled sake by themselves, but also started to actively sell their production to the big breweries of the Type 1 (the contract is called Oke-Uri).

Before 1980s small breweries were exempt from taxes, the preferences in terms of distribution channels were in selling via big breweries. Small companies were obliged to have a license for producing sake however; taxes were paid by the Type 1 big breweries where sake was bottled under the national brand names. In 1973 the sake production reached 1 766 000 kl (Nikkan Keizai Tsushin, 2000). It was the peak of sake production in Japan, the period of the local sake boom between 1970 and 1989, the period of stability for small producers.

At the end of the 80s the sake industry went slowly into the recession process bearing the consequences of the "bubbly economy". Deregulations came up in all spheres, sake distribution channels went through a strong transformation, and the discounters appeared. Since the beginning of 2000 the number of sake breweries in Japan has been shrinking. However local brand names for sake have become more popular. Big groups have started selling their sake to some small breweries who then sell the same sake under the different brand names- the local brand names of these breweries. Swinging of sake-selling and sake – buying processes between the sake breweries of Type 1 and Type 2 continues affecting the structure of sake supply chains due to the regular changes in the taxation system, different level of transportation fees (in general very high in Japan), variety of sake products and new market trends (see Appendix for current sake distribution channels in Japan).

#### **4. Structural changes in sake production: changes of consumer preferences**

What about new market tendencies which influence sake production in Japan? In 1992 a big brewery succeeded in producing with new technology, which makes rice liquefy with an enzyme. This technology makes brewing more cost efficient and lowers the price even further<sup>7</sup> stimulating the

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<sup>7</sup> For example, 2000 ml of normal sake in box costs between 749 Yen and 900 Yen in the discount store in 2008.

growth of synthetic sake production. Some breweries switch completely to producing sweet sake liquors (especially in Kyushu). Other breweries prefer to reorient their production to meet the demands in traditional products.

Recently new associations promoting the principle CHI SAN CHI SHO (Local Production, Local Consumption) become an interesting perspective in terms of new distribution possibilities for breweries, especially in what concerns natural bio agribusiness products like traditional Junmai-Shu. In relation to that, it was useful to mention new rice producers' networks appearing in a Japanese province: they brew sake by rice grown in the close neighbourhood. It is often seen as the social contribution to the regional economy, the activation of the agriculture, and protection of the natural environment of the hometown, and it is highly praised by Japanese consumers. These new opportunities show new trends on the market and are carefully explored now by sake breweries.

Another trend observed is purchasing sake by Japanese kura from small local producers or from Korea. Recently Chinese breweries have started producing sake in the north of China. 70% of the price of sake is the price of rice. As the Chinese rice is not as expensive compared to the Japanese rice, then the price for the Chinese sake is at least 10% cheaper than that of Japanese which add difficulties for Japanese sake producers on the international market ( in the USA, Vietnam in particular) which is growing during the last 10 years.

### **Conclusions**

Sake sales have started slipping down during the last years and they still continue decreasing. Some reasons of Japanese sake decline relate to higher costs compared of other alcohols due to the restriction on imports of its raw material (rice), and a myth that sake contains high calorie. Above all, for the fall of local breweries, the changes in supply chain owing to the deregulation affect a lot. The local sake breweries are obliged to build the new supply chains to grow at a steady pace. They focus more and more on direct distribution turning towards, special expositions and sake tasting saloons, developing sake tourism and using promotion via press and media communication. Internet e-commerce remains a channel preferred by big and medium-size breweries because the brand uniqueness of small local breweries falls short with this channel. More consumer interest towards traditional sake also stimulates the growth of small local sake focusing on new natural sake trends and on sake of specific denomination.

Obviously, this work is but a first attempt to study the sake industry changes in Japan. Further analysis and refinements are necessary. These would include the comparison of economic data of sake and wine/beer production/consumption in European countries to forecast future trends and simulate the possible evolution of this traditional sector.

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**Appendix:** Current sake distribution channels in Japan.

The present sake distribution channels	Major characteristics of the channel	Transportation fees for breweries	Types of breweries		
<b>INDIRECT distribution:</b>					
1	<b>Wholesalers:</b>	Sake breweries using this channel have no control over where the sake they produce is sold which obscures their image and makes it difficult to develop the own brand name.	No fees for breweries	Type 1 & Type 2	
	<b>Nation-wide wholesalers</b>				The big nation-wide wholesalers such as KOKUBU & Co.,Ltd. or NIHON SHURUI HANBAI Co., Ltd.(NISHUHAN) deliver sake to national chain stores (for example a "7-11" convenience store chain) anywhere in Japan following the orders from convenience store headquarters.
	<b>Local wholesalers</b>				The medium size wholesalers such as IIDA in Osaka-Kansai area distribute sake to independent liquor stores in the region.
	<b>Specialised wholesalers to restaurants</b>				This type of operation requires much logistics cost and management of the credit accounts. Some discounters turned into this type of operation. They grow up rapidly in Tokyo and Osaka area.
	Specialised small wholesalers				One specialised sake wholesaler in Tokyo invented the new distribution process controlled by a producer which includes a consumer, a cellarman, a restaurant and an agency in a shell-like model. The major difference between this specialised wholesaler scheme and the two classic wholesaler distribution models presented above is the producer's ability to control the whole process: define the ratio of sake production sold to different actors, choose these actors together with a wholesaler, make decision on bottle sizes , labels, etc.
2	<b>Independent specialty retailers</b>	This distribution channel functions on the basis of exclusive contracts with cellarman. The contract agreement presumes all production to be sold through this channel; certain margins are indicated and can be annually revised. Traditional exclusive contracts are very restrictive. It is presumed that even if a brewery sells 5 bottles to another cellarman, the contract is automatically annulled.	Low or no transportation fees	Type 2	
<b>DIRECT distribution</b>					
Sake brewery directly sells its production to restaurants, cellarman, agency, direct consumers etc.					
4	<b>Internet sales e-commerce channels</b>	The site must be developed, maintained and updated constantly. The problem of image for local breweries remains difficult with this channel as a customer from any part of Japan could buy sake anywhere. The brand	High transportation fees	Type 1 mainly	



		uniqueness falls short,		
5	<b>Sake special expositions salons.</b>	A newly developed channel growing in its popularity with special tasting salons organised all over Japan by seasons.	Medium transportation fees	Type 1 & Type 2
6	<b>Sake Tourism</b>	In a short period of time sake tourism starts flourishing; several companies offer these kinds of amusement trips all over Japan.	No transport fees	Type1 & Type 2
7	<b>Promotion via press/ media communication</b>	Articles in national and local press, on the Internet, meetings on TV round tables make excellent publicity and attract new customers	No transport fees/ Much communication efforts	Type 1; Type 2 coming in.