Reconstruction and Engineers on Cotton Textile Industry in Korea

Seo MoonSeok[1]

In this paper I tried to examine and illustrate the process of rebuilding during the1950s, continuity and discontinuity between the colonial period and 1960 in the cotton textile industry after the liberation. If the previous papers were about finding the facts of continuity and discontinuity, then this paper examines inheritance in its continuity and discontinuity owing to Koreans after the liberation.

Looking at Korea's economy after the liberation, the relation between the colonial economic system and the Japanese Empire started to fall apart, and finally the production system collapsed. This effect was appeared in the cotton textile industry so that the majority of production in the industry halted. Furthermore, in those factories managed by Japanese, the Japanese workers returned home and, as a result, normal operations were impossible.

In spite of this difficult situation, Korean engineers and skilled workers used the facilities and production eventually resumed. Kyungsong Spinning Co. and Namman Spinning Co. workers filled the void left by the Japanese engineers and, with the help of skilled workers, maintained the facilities. However, the efforts of the Korean workers in the cotton textile industry were in vain due to the Korean War of 1950. Approximately 80 percent of the cotton textile industry was destroyed as a result. And, colonial material inheritance lost its original form.

After the Korean War ended, the cotton textile industry was able to rise from its ashes. Korea's economic reconstruction started with engineers rebuilding the facilities. Each factory was rebuilt and facilities were reestablished, and production at last recommenced.

Centering on Korean engineers, the cotton textile industry of colonial material inheritance facilities were maintained and rebuilt. This experience

1. Research Professor at the Dankook University

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proved to be the foundation for the rapid economic growth of the 1960s.

It is more productive to look at how Koreans' influenced the continuity and discontinuity of colonial inheritance after the liberation, instead of holding common argument of continuity and discontinuity of partial sectors of colonial inheritance. The cotton textile industry of colonial inheritance was combined with factors of ownership and management, devastation from the Korean War, new facilities and technology, and skilled workers, etc. It is reasonable to state that history cannot have a sudden discontinuity or continuity.

Keywords: Cotton Textile Industry, Reconstruction, Engineer, Vested Company

I. Introduction

This article aims to illuminate the reality of continuity and discontinuity between the colonial period and the 1960s by examining the reconstruction process of the Korean cotton textile industry in the bridging period after the Liberation and in 1950s. To date, the studies of continuity and discontinuity have mainly focused on what colonial inheritance was continued, or discontinued, in the transition. This study, taking a different perspective, pays attention to how the colonial inheritance was continued and discontinued by Koreans' activities in the bridging period.

Following August 15, 1945, when Korea achieved independence from Japan, the economic specialization in the Korean peninsula, led by the Japanese colonial government, began to collapse. However, after a period of time, a new agency and a new economic order began to emerge where the agency of the economic specialization system had disappeared. Even though Koreans tried to overcome the gap, it was hardly achievable since they had to face a sudden and unexpected deconstruction of the Japanese-led economic system.

It was the United States military that occupied this gap. Taking over the southern portion of the Korean peninsula, below the 38th Parallel, the American military declared itself a military government in South Korea. The U.S. military government, securing the occupied region, attempted to establish an American-type capitalistic economic system for the purpose of having the southern portion of Korea play a role in American interests. As a result, under the U.S. military government, a regime grounded in capitalistic economic order was established

in South Korea. In this new system, Koreans began to produce goods by reoperating their own factories and those owned by the Japanese during the colonial period. There were some differences between Korean-owned and Japanese-owned factories in that the former were smaller and the latter were larger in relative size and number.

In contrast to the southern portion of Korea, the northern part of the peninsula, above the 38th Parallel, was occupied by the USSR. The USSR established a regime built on a socialist economic system. This juxtaposition of capitalism and socialism led the Korean peninsula to the frontline of the Cold War. This precarious circumstance resulted in the Korean War in 1950, and as a result, Korea suffered tremendous loss throughout the war.

The postwar recovery in South Korea proceeded through UN aid, in which the U.S. played a major role. Even though Korea received aid from foreign countries, it was Koreans themselves who participated in the recovery process at the damaged sites. The rebuilding efforts resulted in the reopenning of factories and the restoring of industrial sectors in the mid-1950s.

Taking into account these radically changing social environments, this article aims to examine how Koreans dealt with the inheritance of the colonial economic system, and how they have developed the Korean economy. In constrast to the popular views that attribute the development of the Korean economy to external impacts such as "colonial occupation" or "foreign aid," this study attempts to point out the internal factors that enabled the economic development of Korea. In other words, this study argues for an internal-cause theory in the development of the Korean economy, rather than an external-cause theory.

In order to fulfill this goal, this article examines Koreans' activities in the cotton textile industry. The reason why the cotton textile industry was selected for study is due to the fact that it is the best individual sector for showing how Koreans dealt with the inheritance of the colonial economic system. First, the textile industry is a representative industrial sector developed by Japanese investment in the colonial period; secondly, a large proportion of the cotton textile industry consisted of vested companies — an economic inheritance of colonial occupation — at the time of the liberation; and thirdly, the large-scale factories in the cotton textile industry, utilizing massive equipment, provides a great opportunity to examine the changes in the industrial structure. In these contexts, this study discusses Koreans' activities and the ensuing outcomes in 1950s for the development of the Korean economy, by investigating the textile industry that had been developed by Japanese investment, and that had experienced radi-

cal changes during the period after the liberation and in 1950s.

This article consists of four sections including the introduction. Section II examines how cotton textile equipment, as a representation of colonial inheritance, were rearranged by Koreans after the liberation. Section III discusses how Koreans rebuilt cotton textile facilities that had been destroyed during the Korean War; and finally, section IV makes conclusions based on the discussions above.

II. Operation of Cotton Textile Factories After the Liberation

Production in all large-scale cotton textile factories was suspended immediately after the liberation. The political uncertainties and confrontations were so intense that production in factories could not proceed as normal. Moreover, the absence of Japanese, who played core roles in the factories, caused most cotton textile factories to stop operations. This section examines how Koreans, in this tough situation, attempted to rebuild the cotton-textile industry by rearranging factories and resuming operations.

1. The Situation When Korea Achieved Liberation

This sub-section examines the situation in the cotton-textile industry when Korea achieved liberation; surveying the core equipment of the industry. Even though other textile factories were located in the Northern part of the Korean peninsula during the colonial occupation, the large-scale cotton textile factories were concentrated in the Southern part of Korea.[2] Despite the suspension of production after the liberation, the equipment that each factory possessed gives us an opportunity to examine the cotton textile industry at that time. Table 1 shows the core equipment, spinning machinery and weaving machinery possessed by the large-scale cotton textile factories, surveyed by the Spinners & Weavers Association of Korea after the liberation.

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2. The only factory located in the contemporary territory of North Korea was Songgo Industry Co. This factory, initiated as a training site of Songdo higher Common school, produced high-quality textiles. Located below the 38 latitude line, the factory belonged to the Southern part of Korea after independence. For detailed information of Songgo Industry Co, see the *Songdominbo*: 10 by Woo, Jihyeong.

Table 1 The Equipment Size of the Cotton Textile Industry After the Liberation

	Spinning Machinery:Frame(spindle)			Weaving Machinery:Loom(set)		
Factory	**Installed equipment (A)**	**Uninstalled equipment (B)**	**% of total equipment**	**Installed equipment (C)**	**Uninstalled equipment (D)**	**% of total equipment**
Gunze Spinning Co.(Daegu)	19,928	15,672	10.6	0	408	4.2
Dainippon Spinning Co.(Kyungsung)	0	0	0.0	417	0	4.3
Daiwa Spinning Co.(Changdong)	0	0	0.0	150	0	1.6
Toyo Spinning Co.(Kyungsung)	45,328	0	13.4	1,440	231	17.4
Toyo Spinning Co.(Incheon)	35,088	0	10.4	1,292	0	13.4
Chosun Spinning and Weaving Co.(Busan)	40,000	10,304	14.9	1,264	49	13.7
Chosun Cotton Co.(Mokpo)	0	0	0.0	86	0	0.9
Chosun Linen SpinningCo.(Incheon)	4,480	0	1.3	0	0	0.0
Kanebuchi Co.(Chunnam)	35,104	3,264	11.4	1,440	70	15.7
Kanebuchi Co.(Kyunsung)	48,320	1,400	14.7	1,525	0	15.9
Unknown factory	0	48,224	14.3	0	211	2.2
Subtotal	228,248	78,864	91.0	7,614	969	89.3
Kyungsong Spinning Co.(Kyungsung)	**25,600**	**4,600**	**9.0**	**896**	**0**	**9.3**
Songko Industrial Co.(Gaeseong)	**0**	**0**	**0.0**	**130**	**0**	**1.4**
Subtotal	25,600	4,600	9.0	1,026	0	10.7
Total	253,848	83,464	100.0	8,640	969	100.0
Total (Installed and Uninstalled)	337,312		100.0	9,609		100

Source: Spinners & Weavers Association of Korea (1957).
Banghyeopchangnipsipjuyeonginyeomji, I-12 to 13
Note: (1) The 'Not-Installed' facilities include those being installed.
(2) The reason for excluding some factories may lie in the fact that Kureha Spinning Co. Daejun factory and Kanebuchi Co. Chuncheon factory were being built, and Chosun Spinning and Weaving Co. Daegu factory and Chosun Linen Spinning Co. Jeonju factory produced knit and linen, respectively.
(3) The author separated Korean owned factories —Kyungsong Spinning Co. and Songko Industrial Co. —from those Japanese owned.
(4) The equipment of unknown factories was included in the Japanese owned factory section.

The large-scale factories that possessed more than 30,000 spinning machines and 1,000 weaving machines included five factories within three companies, specifically Kyungsung and Incheon factories of Toyo Spinning Co., Busan factory of Chosun Spinning and Weaving Co., and Chunnam and Kyungsung factories of Kanebuchi Co.. In addition, the Korean-owned Kyungsong Spinning Co. had approximately 25,000 spinning machines and 900 weaving machines. In total, 253,848 spinning machines and 8,640 weaving machines were already installed in the factories, while 83,464 spinning machines (approximately 1/5 of the all-installed spinning machines) and 969 weaving machines (approximately 1/10 of the all-installed weaving machines) were not yet installed.[3]

Even though the factories owned the equipment, a number of issues hindered the re-operation of the factories. The political turbulence after the liberation and the ideological confrontation between the left and right played a role in hampering the reoperation of the factories. Moreover, inner factors prevented Koreans from reopening the factories. First, one of the critical problems was the disappearance of Japanese operators who returned to their home country at the end of the colonial occupation. In the Japanese-owned large-scale cotton textile factories, Japanese monopolized the management and engineering sectors, completely excluding Koreans. As such, Koreans were limited as receivers of Japanese order.

A second problem was the scarcity of raw cotton, the core material. Since the major products of cotton textile factories at that time were not mixed fabric but cotton yarn and cotton fabric, raw cotton was an important part of the raw material. However, raw cotton was not provided after the liberation—the raw material had been coercively collected during the colonial period—and the disappearance of collectors and the collecting system conditioned the unavailability of the raw cotton. According to a report that surveyed those suspended textile factories, forty-six out of fifty-six factories indicated that the unavailability of raw cotton was the primary reason for suspension of operations

3. These numbers include only the equipment possessed by the factories that participated in the Spinners & Weavers Association of Korea. The numbers exclude the equipment owned by factories that did not take part in the association and the equipment that did not arrived at factories, staying in storage sites such as train stations. In addition, they also exclude the equipment of medium and small-scale factories and of small factories inside house. However, the excluded equipment does not match with the characteristics of modern equipment, which can be used in modern integrated production systems. Therefore, the numbers above cover the large majority of modern equipment.

(*Namjoseongwadojeongbujunganggyeongjewiwonhoe* 1946:190).

Third, the scarcity of accessories[4] created another reason for the suspension of operations. During the colonial period, most accessories were provided by Japan. However, the ruptured relationship between Korea and Japan after the liberation led to a scarcity of accessories and, as a result, production could not proceed as normal.

Fourth, a lack of available electricity also contributed to the suspension of production. Electricity is the essential element for the operation of factories. However, social turbulence after the liberation resulted in an irregular supply of electricity. Therefore, each factory that relied on electricity to operate equipment faced an unstable supply which caused serious problems.

2. The Re-operation of Factories After the Liberation

1) The Basis of Re-operation

The increased population, led by returning foreign residents after the liberation, triggered sky-rocketing demands for cotton textile products. However, the cotton textile factories, as discussed above, could not avoid the suspension of production. Furthermore, it was unrealistic to import cotton textile products from overseas. Consequently, the high demands for cotton textile items resulted in soaring prices for the fabric. These conditions created a market situation in which the production of cotton textile meant gaining high profits (Spinners & Weavers Association of Korea 1997:86-88).

However, in spite of the elevated prices, cotton textile factories continued to experience difficulties in reoperating production. As shown in the previous subsection, the scarcity of raw cotton, accessories, electricity, and skill-engineers prevented Koreans from resuming production. First of all, they needed to procure raw cotton, the core material, and the only way to resolve this problem was to import the raw material from foreign countries. However, the situation in Korea after the liberation would not allow Koreans to import materials from

4. Accessories refers to special parts used in textile equipment. Different from general machinery parts or complementary materials for production, accessories have both characteristics of elementary parts and consuming parts. Accessories consist of metal accessories, repair accessories, spinning accessories, weaving accessories, and stitch accessories.

overseas. An alternative solution way was to enlarge the farmland for cotton or increase cotton collection, as a long term project. However, enlarging the cotton farmland was impractical with the troubling food shortage at the time, and increasing cotton collection was also infeasible with the unstable political situation after the liberation. The cotton scarcity issue was finally resolved in 1947 when the GARIOA fund enabled cotton importing. As a result, the production of cotton textile industries began to be resume.

Secondly, the accessories — the essential elements of equipment maintenance and repair — needed to be acquired. Since domestic accessories of high quality were not available at that time in Korea, the procurement of accessories had to depend on imports. Fortunately, some accessories provided by the GARIOA fund in 1947 made it possible to overcome the crisis of suspended production (Spinners & Weavers Association of Korea 1997:83). In 1949, the allocation of funds—$230,000 from government foreign reserves and $530,000 from ECA aid—fully activated the importing of the needed accessories. In addition, some essential accessories were imported by private foreign trade (Spinners & Weavers Association of Korea 1957:25-26). As such, these avenues enabling the procurement of accessories allowed for the resumption of production.

Thirdly, the regular supply of electricity was a vital part of rerunning factories, however South Korea faced a problematical situation since its supply of electricity mainly depended on North Korea. Although certain factories — such as Chosun Spinning and Weaving Co. — that had electricity generators experienced fewer difficulties, the issue of the procurement of electricity was critical, especially in 1948 when North Korea halted its electricity supply to South Korea. As such, the lack of electricity presents a significant reason as to why production could not reach its maximum point.

In conclusion, the cotton textile industry after the liberation established a basis for the resumption of production; overcoming the outer political turbulence and inner obstacles of reoperating factories.

2) The Supplement of Korean Engineers and Skilled-workers

The issues surrounding raw materials, accessories, and electricity presented obstacles in resuming production in the cotton textile factories. However, the absence of agency of ownership and management for the factories introduced a serious problem. The large-scale factories owned by the Japanese during the colonial period faced vacant positions that had previously been occupied by Japanese employees.

Labeled as enemy properties, the Korean government took over ownership of those Japanese-owned factories. However, it was impossible to fill the empty positions left by Japanese engineers. Engineers who could understand and manage the entire process of manufacturing were essential to the resumption of production. However, since the majority of Korean workers — most of them women — were weavers in manufacturing lines, they lacked the knowledge and technique required in the manufacturing process. During the time of Japanese occupation, the large-scale cotton textile factories did not employ Korean engineers, nor did they employ Japanese engineers who graduated from higher educational institutions within Korea. Those Koreans and Japanese who graduated from Kyungsung Higher Technical School, the only institute in Korea that trained textile engineers, were only allowed to work at government offices handling industry-related tasks (Seo Moonseok 2003b). The majority of engineers in the large-scale factories had worked and received education in Japan. At the end of the 1930s, when the cotton textile industry had reached a peak, no Japanese-owned large-scale factories employed Korean engineers except the Incheon factory of Toyo Spinning Co., which had hired one Korean engineer, Seo Jungik, who graduated from Nagoya Higher Technical School. (Seo Moonseok 2003a, 2003b). Due to this situation, South Korea faced a substantial problem in securing engineers to fill the empty positions left by Japanese engineers (Seo Moonseok 2003c, 2006b).

The only available source to fill the vacant positions were the senior engineers who worked at Kyungsong Spinning Co., the only company operated by Koreans and Korean capital. In this company, the main operators of the factory were Koreans who graduated from the department of textiles at Kyungsung Higher Technical School, and Korean engineers who studied in foreign countries, including Japan. Some of the Korean engineers who had developed skills at the Kyungsong Spinning Co. could fill the empty positions left by the Japanese engineers after the liberation. In particular, those returning engineers from Namman Spinning Co., a company that Kyungsong Spinning Co. established in Manchuria, covered some of the empty positions in those Japanese-owned large-scale factories after the liberation (Seo Moonseok 2003c, 2006b).

However, the case of skilled-workers was different from that of engineers. Since the initiation of cotton textile factories in the 1930s, the majority of weavers and female workers were Korean. Even though these workers suffered from unimaginable workloads and colonial labor management, they were able to gain skills in operating equipment. Although they were not allowed to learn high

quality skills, they were able to develop skills to enable them to operate equipment. Those weavers and female workers who became skilled-workers after a long-term experience in the industry, played an important role in resuming production in each factory after the liberation. According to a report in 1953, most skilled-workers, categorized as "technicians," had worked in the factories before the liberation (Spinners & Weavers Association of Korea 1954).

3) Repair and Installation of Equipment

The Korean textile engineers who were newly employed after the liberation, and skilled-workers who had worked before the liberation, mainly participated in repairing equipment in each factory. Equipment in some factories were damaged due to neglected management or fire intentionally set by the Japanese. Other factories that avoided considerable damage were able to reoperate equipment quickly, and began to install those not-installed facilities, such as removal equipment, that were imported from Japan in the 1940s. This effort resulted in the installation of most uninstalled equipment at the time of the liberation, including 83,464 spinning machines and 969 weaving machines.

In addition, there was some equipment sent to Korea from Japan in the 1940s that did not reach factories, remaining idle in train stations at the time of the liberation. That equipment, with unknown ownership, included 48,224 spinning machines (more than half of the total uninstalled spinning machines) and 211 weaving machines (approximately 1/5 of the total uninstalled weaving machines) (Spinners & Weavers Association of Korea 1957:12-13). Some of the equipment was sold to individual factories for installation. As a result, machines increased to 50,674 from 1945, the year of the liberation, to 1949, one year before the Korean War, making the total number of machines in the cotton textile industry equal to 304,522. Since no equipment was imported during this time period, the newly installed equipment were those that had arrived in Korea before the liberation.

Table 2 shows the changes in the number of spinning machines in each company between 1945 and 1949. In 1946, when the installation of equipment had not yet started in full scale, Daegu factory of Gunze Spinning Co. had lost 19,928 spinning machines. Arson set by the Japanese burned all spinning machines in the factory (Bank of Korea 1953:478). The factory overcame the damage and, in 1949, the number of spinning machine reached 12,000. In 1947, most factories enlarged their number of spinning machines from only a few thousand to ten thousand, making up 41,470 in total. The enlargement of equip-

Table 2 Changes in Numbers of Spinning Machines : Frame (including uninstalled equipment 1945 to 1949)

Name of factory (at the time of the Liberation)	Years	1945	1946	1947	1948	1949	increase/decrease(total)
Gunze Spinning	Total	19,928	0	3,200	10,000	12,000	
Co.(Daegu)	+ / -	0	-19,928	3,200	6,800	2,000	-7,928
Dainippon Spinning	Total	0	0	8,190	8,200	8,656	
Co.(Kyungsung)	+ / -	0	0	8,190	10	456	8,656
Daiwa Spinning	Total	0	0	0	0	0	
Co.(Changdong)	+ / -	0	0	0	0	0	0
Toyo Spinning	Total	45,328	45,328	45,328	45,328	45,328	
Co.(Kyungsung)	+ / -	0	0	0	0	0	0
Toyo Spinning	Total	35,088	35,088	35,088	35,088	35,088	
Co.(Incheon)	+ / -	0	0	0	0	0	0
Kureha Spinning	Total	0	0	5,376	10,712	15,848	
Co.(Daejun)	+ / -	0	0	5,376	5,336	5,136	15,848
Teikoku Linnen	Total	4,480	4,480	4,480	4,480	4,480	
Spinning Co.	+ / -	0	0	0	0	0	0
Chosun Spinning and	Total	40,000	40,000	50,304	51,024	50,304	
Weaving Co.(Busan)	+ / -	0	0	10,304	720	-720	10,304
Kanebuchi	Total	48,320	48,320	49,720	49,720	49,720	
Co.(Kyunsung)	+ / -	0	0	1,400	0	0	1,400
Kanebuchi	Total	35,104	35,104	38,368	38,368	38,368	
Co.(Chunnam)	+ / -	0	0	3,264	0	0	3,264
Kanebuchi	Total	0	0	5,136	5,136	5,564	
Co.(Chuncheon)	+ / -	0	0	5,136	0	428	5,564
Kumsung Spinning	Total	0	0	0	0	8,966	
Co.(Anyang)	+ / -	0	0	0	0	8,966	8,966
Samho Spinning	Total	0	0	0	0	0	
Co.(Daegu)	+ / -	0	0	0	0	0	0
Subtotal (vested equip-	Total	**228,248**	**208,320**	**245,190**	**258,056**	**274,322**	
ment)	+ / -	**0**	**-19,928**	**36,870**	**12,866**	**16,266**	**46,074**
Kyungsong Spinning	Total	25,600	25,600	30,200	30,200	30,200	
Co.(Kyungsung)	+ / -	0	0	4,600	0	0	4,600
Total	Total	**253,848**	**233,920**	**275,390**	**288,256**	**304,522**	
	+ / -	**0**	**-19,928**	**41,470**	**12,866**	**16,266**	**50,674**

Source: Spinners & Weavers Association of Korea (1957).

Banghyeopchangnipsipjuyeonginyeomji; Spinners & Weavers Association of Korea. Every-year. *Seomyuyeonbo*

Note: author separated Kyungsong Spinning Co. (Kyungsung) from the vested companies owned by Japanese, since Kyungsong Spinning Co. had been owned by Koreans before the liberation.

ment after the liberation reached its highest point in 1947, and production resumed in full scale during that year.

The increased number of spinning machines (12,866) in 1948 consisted mainly of 5,336 in the Kureha Spinning Co., Daejun factory and 6800 in the Gunze Spinning Co., Daegu factory. The table shows that Kureha spinning Co., Daejon factory had not installed equipment until 1947, when the factory started installing around 5,000 machines each year.

In 1949 the number of increased equipment was 16,266, including 5136 in the Kureha Spinning Co., Daejon factory and 8,966 in the Kumsung Spinning Co.. The Kumsung Spinning Co. was a new company established after the liberation which relied on the equipment left unused in front of Youngdungpo Station, rather than arranging for new equipment to open its factory (Hwang Myongsoo 1987:121-122).

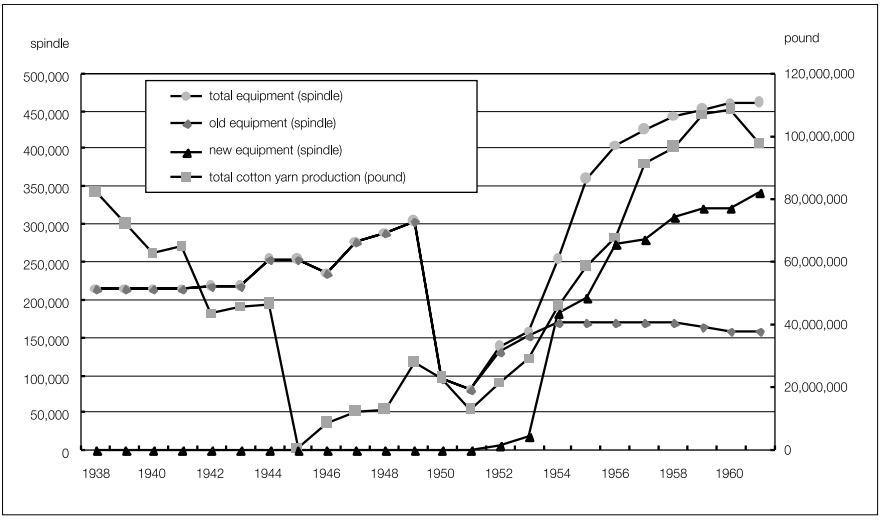
Figure 1 compares the volume of spinning equipment before the liberation and after the liberation. Initiated in the 1910s, the large-scale cotton textile companies rapidly developed in the mid-1930s and reached their highest point in 1938.

Reaching 200,000 at the end of the 1930s, the number of spinning machines was maintained at around 210,000 until 1943. In 1944, a massive introduction of removal equipment caused the number of spinning machines to increase to 253,848, and this number continued until the liberation. The number increased again after the liberation, totalling over 300,000 in 1949. As a result, in the case of spinning machines — the core of textile equipment — the amount increased by 50,000 machines after the liberation compared to the number before the liberation.

Table 3 illustrates changes in the number of weaving machines from 1945 to 1949. In 1946, one year after the liberation, there was no increase in equipment since production had not yet resumed in full scale.

In 1947, the increase in the number of weaving machines by 657 consisted mainly of 408 in Gunze Spinning Co. Daegu factory and 231 in Kyungsong Spinning Co., and 200 in Kanebuchi Co Chuncheon factory. In addition, Mokpo factory of Chosun Cotton Co. (72) and Kwangju factory of Kanebuchi Co. (70) played a role in the increased number of weaving machines. The newly installed 408 machines in Gunze Spinning Co, Daegu factory were procured from uninstalled equipment at the time of the liberation, and 200 machines in Chuncheon factory of Kanebuchi Co., were provided by transferring equipment from

Figure 1 Changes in Numbers of Spinning Equipment : Frame (1938 ~ 1961)



Source: Spinners & Weavers Association of Korea (1957). *Banghyeopchangnipsipjuyeonginyeomji*
Spinners & Weavers Association of Korea. Every-year. *Seomyuyeonbo*
Bank of Korea. 1953. *Myeonbangjikgongeope gwanhan josa*

Kyungsung factory of Kanebuchi Co. The 231 new machines of Kyungsong Spinning Co. were assumed to be provided by Kyungsung factory of Toyo Spinning Co., a neighboring factory of Kyungsong Spinning Co.[5] Simultaneously, some portion of the 300 decreased machines of Toyo Spinning Co. Kyungsung factory were transferred to Chuncheon factory of Kanebuchi Co..

In 1948, the Busan factory of Chosun Spinning and Weaving Co. increased its weaving machines by only 44. On the contrary, Daegu factory of Gunze Spinning Co. experienced a decrease in weaving machines by were 408, and Chuncheon factory of Kanebuchi Co. had a decrease of 200 weaving machines. These two factories lost all weaving machines due to fire and bombing, respectively.

5. *Kyungsongbangjik osibyeonsa* mentions that "224 weaving machines were installed" (p. 222) in 1943 and a section of the same book, "*Jikpo mit maesa saengsanchulha siljeok*" recorded a 224 increase, making up 1080 in total, from June 1943. However, according to the Seomyuyeonbo of Spinners & Weavers Association of Korea, combining the number of equipment (896) in 1946 and the increased number(231) in 1947, the total number was 1,127.

Table 3 Changes in Numbers of Weaving Machines : Loom (Including uninstalled machines 1945~1949)

Name of factory (at the time of the Liberation)	Year	1945	1946	1947	1948	1949	Increase/decrease(total)
Gunze Spinning	Total	0	0	408	0	0	
Co.(Daegu)	+ / -	0	0	408	-408	0	0
Dainippon Spinning	Total	417	417	413	413	413	
Co.(Kyungsung)	+ / -	0	0	-4	0	0	-4
Daiwa Spinning	Total	150	150	148	148	148	
Co.(Changdong)	+ / -	0	0	-2	0	0	-2
Toyo Spinning	Total	1,440	1,440	1,140	1,140	1,140	
Co.(Kyungsung)	+ / -	0	0	-300	0	0	-300
Toyo Spinning	Total	1,292	1,292	1,280	1,280	1,280	
Co.(Incheon)	+ / -	0	0	-12	0	0	-12
Chosun Spinning and	Total	1,264	1,264	1,258	1,313	1,313	
Weaving Co.(Busan)	+ / -	0	0	-6	55	0	49
Chosun Cotton	Total	86	86	158	158	158	
Co.(Mokpo)	+ / -	0	0	72	0	0	72
Kanebuchi	Total	1,440	1,440	1,510	1,510	1,510	
Co.(Chunnam)	+ / -	0	0	70	0	0	70
Kanebuchi	Total	1,525	1,525	1,525	1,525	1,525	
Co.(Kyunsung)	+ / -	0	0	0	0	0	0
Kanebuchi	Total	0	0	200	0	176	
Co.(Chuncheon)	+ / -	0	0	200	-200	176	176
Kumsung Spinning	Total	0	0	0	0	50	
Co.(Anyang)	+ / -	0	0	0	0	50	50
Subtotal	**Total**	**7,614**	**7,614**	**8,040**	**7,487**	**7,713**	
(vested equipment)	+ / -	**0**	**0**	**426**	**-553**	**226**	**99**
Kyungsong Spinning	Total	896	896	1,127	1,127	1,127	
Co.(Kyungsung)	+ / -	0	0	231	0	0	231
Songko Industry	Total	130	130	130	130	130	
Co.(Gaeseong)	+ / -	0	0	0	0	0	0
Total	**Total**	**8,640**	**8,640**	**9,297**	**8,744**	**8,970**	
	+ / -	**0**	**0**	**657**	**-553**	**226**	**330**

Source: Spinners & Weavers Association of Korea (1957).

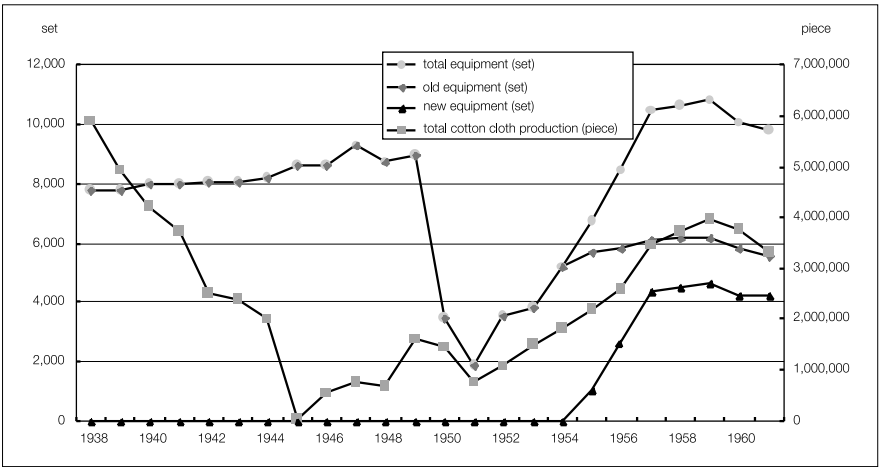
Banghyeopchangnipsipjuyeonginyeomji; Spinners & Weavers Association of Korea. Every-year. *Seomyuyeonbo*

Note: The author separated Kyungsong Spinning Co. (Kyungsung) from the vested companies owned by Japanese, since Kyungsong Spinning Co. had been owned by Koreans before the Liberation.

Table 3 shows that weaving machines increased by 226 in 1949, combining 176 in Kanebuchi Co. Chuncheon factory and 50 in Kumsung Spinning Co, Anyang factory. Kanebuchi Co. Chuncheon factory made up the increase of 176 weaving machines by repairing damaged machines and by installing 100 machines received from Kanebuchi Co. Kyungsung factory; Kumsung Spinning Co. Anyang factory increased its equipment by buying and installing the machines which were stocked at Youngdungpo Station (Spinners & Weavers Association of Korea 1957:11-12).

Figure 2 compares the volume of weaving equipment before the liberation and after the liberation. The large-scale cotton textile factories established under the Japanese colonial government possessed 7806 weaving machines in 1938, when the factories experienced the greatest successful outcomes. This number of machines was maintained until 1944 when the installation of removal equipment led to an increase in machines up to 8016. The growing volume of weaving equipment reached 8640 in 1945 at the time of the liberation. After the liberation, despite increased installation of the uninstalled equipment, the volume of equipment increased by only 330 until 1949, mainly due to fire damage. This increased number of machines equals approximately 4 percent growth after the liberation.

Figure 2 Changes in Numbers of Weaving Equipment: Loom (1938-1961)



Weavers Association of Korea, combining the number of equipment (896) in 1946 and the increased number (231) in 1947, the total number was 1,127

Source : See figure 1.

The situation of the repair and installation of equipment after the liberation, surveyed by the volume of core equipment in the cotton textile industry—including spinning machines and weaving machines—shows that spinning machinces increased by approximately 58,000, while approximately 8,000 machines decreased, resulting in a growth of 50,674 machines. In the case of weaving machine, 969 machines left uninstalled at the time of the liberation were installed, and approximately 600 machines were lost, resulting in an increase of 330 weaving machines in total.

In conclusion, this time period can be defined as a stage when the production by Koreans was initiated through rearrangement of colonial inheritance and an increase in equipment.

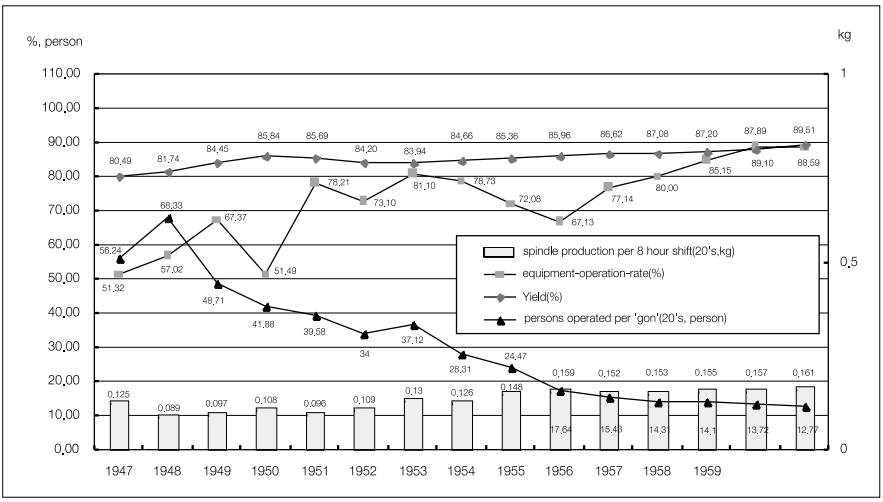
4) The Resumption of Production

The cotton textile industry was the first industrial sector that resumed production in full scale after the liberation. First, Figure 3 illustrates the case of the spinning sector. By December 1945, those factories that resumed production included Kyungsong Spinning Co., Kanebuchi Co. Chunnam factory, Daiwa Spinning Co., Chosun Linen Spinning Co.. However, compared to 1944, cotton yarn production decreased from approximately 46,000,000 to 600,000 pounds (1/70), and the operation rate declined from 88.38 percent to 4.29 percent (1/20). The reason for the rapid reduction lies in, as mentioned previously, the suspension of production caused by political turbulence and vacant positions created by those Japanese who left for their home country.

However, in 1946, the resumption of most factories led to a 37.59 percent growth in the equipment-operation-rate and an increase in the cotton yarn production up to approximately 9000,000 pounds. In addition, persons operated per '*gon*' (20s), a unit that indicates the required number of persons to produce one '*gon*' of 20s yarn, reached 52.54 persons.

In 1947, after the liberation, when production of textiles reached a considerable level with more than ten million pounds of cotton yarn produced and a 51.32 percent equipment-operation-rate—an indicator of equipment efficiency—a basic structure of production was established. Spindle production per 8 hour shift (20s), which shows productivity of equipment, increased to 0.125 pounds which is comparable to the amount in the mid-1950s. However, an increase of persons operated per '*gon*' (20s)—an indicator of labor productivity—pointed to a decline in productivity, which showed that a technical problem was the main obstacle. The yield that shows productivity in terms of raw material also stayed

Figure 3 The Conditions of Production in the Spinning Sector (1947 -1961)



Source : See figure 1.

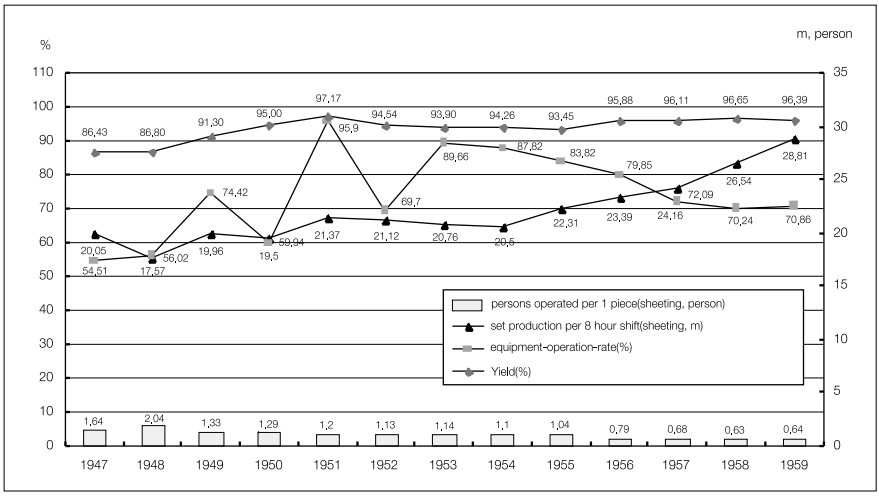
at a low level (80.49 percent) compared to those in 1950s.

In 1948, despite a slight increase in yield, the shortage of electricity caused a significant problem in production, particularly for the factories that depended on outer sources of electricity. In contrast, those factories that had electric generators attempted to earn more profit by employing a two-shift system. For this reason, production did not decrease in spite of the shortage of electricity. The changes in manufacturing, such as the two-shift system, also caused a significant increase in persons operated per '*gon*' (20s) and a decrease in spindle production per 8 hour shift (20s). However, yield increased to 81.74 percent compared to 80.49 percent in 1947.

In 1949, growth of efficiency in all categories led to an initiation of full-scale production after the liberation. Yield showed an increase (84.45 percent) in this year compared to 1948, and the equipment-operation-rate exhibited a significant increase (67.37 percent). In addition, spindle production per 8 hour shift (20s) improved in comparison with 1948, and persons operated per '*gon*' (20s) also reduced markedly from 68.33 persons in 1948 to 48.71, reflecting recovery of technical stability.

Considering the big picture, compared to 1938 when the textile sector reached its highest production level before the liberation, the production scale (28 million pounds) was approximately 1/3 of the level in 1938 (82 million

Figure 4 The Conditions of Production in the Weaving Sector (1947-1961)



Source: See figure 1

pounds). However, taking into account the production scale of 45 million pounds in and after 1942, the production scale indicates a 60 percent recovery in the productivity level before the liberation.

Figure 4 shows the situation in the weaving sector. In 1947, when production resumed in full scale, the indicators show the level of production at that time: 1.64 persons operated per 1 piece (sheeting); 54.51 percent large equipment operation rate; 86.43 percent yield; and 20.05m set production per 8 hour shift (sheeting). In 1948, even though yield and the large equipment operation rate increased slightly, set production per 8 hour shift (sheeting) decreased significantly from 20.05m to 17.57m, and persons operated per 1 piece (sheeting) increased from 1.64 persons to 2.04 persons. As in the spinning sector, the shortage of electricity caused these changes.

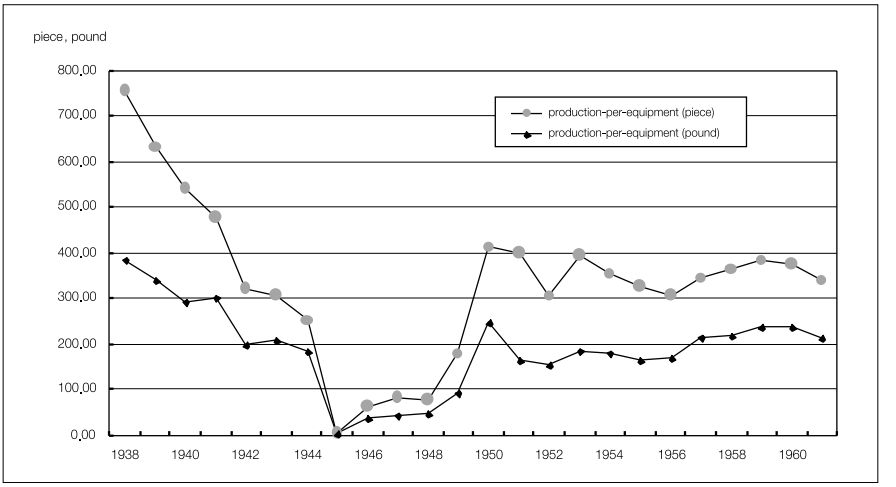
However, in 1949, efficiency in all categories improved, showing a decrease in persons operated per 1 piece (sheeting) equalling 1.33 persons, and an increase in the equipment-operation-rate to 74.42 percent, yield at 91.30 percent, and the set production per 8 hour shift (sheeting) totalling 19.96. Generally speaking, the weaving sector reached a significant level of production after the liberation with overall improvement of productivity, with the exception of the electricity shortage in 1948.

Again, considering the big picture, compared to 1938 when the weaving sec-

tor showed its highest production scale before the liberation, the total amount of production was 30 percent (1.6 million *piece*) of that in 1938 (5.9 million *piece*), in spite of an increase in equipment from 7,806 to 8,970. However, in comparison with figures in and after 1942, when the scale of production was approximately 2 million *piece,* the production size after the liberation had recovered 80 percent of its production size before the liberation. Considering the significantly lower large equipment operation rate in 1949 (74.42 percent) compared to 1938 (96.21 percent), the production size indicates a high level of production efficiency.

Let us compare the situation after the liberation with the situation before the liberation. Even though scarcity of data hinders a detailed comparison, a simple comparison of production-per-equipment[6] in Figure 5 helps us to understand the conditions before and after the Liberation. The production-per-equipment from 1938, when the production scale reached its highest point before the liberation,

Figure 5 Changes in Production-per-Equipment (1938 -1961)



Source: See figure 1

6. However, it is not sufficient to simply measure production-per-equipment. Since production level is determined by all factors related to production, it is problematic to evaluate the level simply considering the number of equipment. For example, the same number of equipment can show considerably different results, according to number of operatable equipment, operation time, and average yarn count.

to 1961 shows clearly that production-per-equipment after the liberation was significantly reduced compared to before the liberation.

The reduction was caused by inner-factory conditions such as the aforementioned problems with raw materials, accessories, electricity shortages, and scarcity of engineers, and also by outer-factory conditions including political instability which made a regular process of production impossible. Specifically, those difficulties were prevalent during a time period between independence and 1948. In this period, despite the resumption of production, the outcomes did not reach a desirable level in terms of production-per-equipment. In particular, the suspension of the electricity supply from North Korea in 1948 interrupted the consistent increasing of production initiated in 1947, holding the scale of production at the level of 1947. However, Figure 5 illustrates a full-scale reconstruction of the cotton-textile industry in 1949 with a rapidly increased production-per-equipment compared to 1948.

3. A Case of Individual Factory— Kyungsong Spinning Co.

The Kyungsong Spinning Co. was the only factory that was established and managed by Koreans before the liberation. Therefore, the factory did not experience any serious problems in operating the factory after the liberation, with the exception of some disputes related to the confrontation between the left and right. Particularly, the factory retained the experience gained by managing operations since the 1920s, and secured engineers with long experience and knowledge, and skilled-workers with careers in the factory.

Some of these engineers and skilled-workers in the Kyungsong Spinning Co. played crucial roles in other factories for rearranging equipment and resuming production after the liberation. Among them, the engineers returning from Namman Spinning Co. which Kyungsong Spinning Co. established in Manchuria, greatly contributed to rebuilding other factories.

> "Our company recommended a great number of returning engineers and workers of Namman Spinning Co. to Jeil Spinning Co. (Toyo Spinning Co. Kyungsung factory during the colonial period) fulfilling the request of the company that is suffering from scarcity of engineers and skilled-workers. This resolves the most difficult problem of Jeil Spinning Co. and the issue of moral responsibility of our company, making the all three parties happy" (Kyungsong Spinning Co. 1969:119-120).

Table 4 Participants of Spinning Companies who have worked at Kyungsong Spinning Co. and Namman Spinning Co. (1949)

Employed Company		**Employee**	
Name of Company (Former name)	Location	Position	Name
Jeil Spinning Co. (Toyo Spinning Co)	Seoul Headquarter	Managing staff(Director)	Choe, gwangwon and 3 persons
Jeil Spinning Co. (Toyo Spinning Co)	Youngdungpo factory	Managing staff (Factory manager)	Choe, gwangwon and 4 persons
Jeil Spinning Co. (Toyo Spinning Co)	Incheon factory	Managing staff (Factory manager)	Choe, gwangwon and 2 persons
Jeil Spinning Co. (Toyo Spinning Co)	Anyang factory	Managing staff (Factory manager)	Choe, gwangwon and 1 persons
In addition to those named above, employees of Jeilbangjikgongsa included 51 leading persons out of a total of 296, and a great portion of leading workers in factory			
Koryeo Spinning & Weaving Co. (Kanebuchi Co.)	Yeongdeungpo	Managing staff (Engineering manager)	Yun, Giljung and 1 person
Chonnam Spinning & Weaving Co. (Kanebuchi Co.)	Kwangju	Managing staff (Factory manager)	Kim, Boksul and 1 person
Chunju Spinning & Weaving Co. (Kanebuchi Co.)	Jeonju	Managing staff (Executive director)	Kim, Hyeonok and 1 person
Daehan Spinning Co. (Dainippon Spinning Co.)	Yeongdeungpo	Managing staff (Factory manager)	Hwang, Jeongdo and 2 persons
Chosun Linen Spinning Co. (Enemy property)		Managing staff (Factory manager)	Son, Jinhyeon
Chosun Spinning and Weaving Co. (Enemy property)		Managing staff (Carding factory Manager)	Kim, Yeongnae
Daejeon Spinning Co. (Kureha Spinning Co.)	Daejeon	Managing staff (Administrator & Factory manager)	Kim, Jonggyu
Daegu Spinning Co. (Gunze Spinning Co.)	Daegu	Managing staff (Engineering president)	Choe, Sayeol
Kumsung Spinning Co. (Chosun Weaving Co.)	Anyang	Managing staff (Engineering president)	Choe, Sayeol
Daea Spinning Co. (Daiwa Spinning Co.)	Changdong	Managing staff (Engineering president)	AnEungjin and 2 persons

Table 4. Continuation

Employed Company		Employee	
Chuncheon Spinning Co. (Kanebuchi Co)	Chuncheon	Managing staff (Engineering president)	Lee, Hyeongyeong
Samseong Spinning Co. (Kadakura Spinning Co.)	Jeonju	Managing staff (Executive director)	Kim, Daeyeong
Ministry of Commerce and Industry	Seoul	Managing staff (Engineering director)	Yu, Hansamg
Ministry of Commerce and Industry	Seoul	Managing staff (Textile director)	Kim, Gyuseon and 2 persons

Source:「思見德化願書」

> [Note: Since the workers of Namman Spinning Co. had worked at Kyungsong Spinning Co., or had been employed by Kyungsong Spinning Co., the company had some responsibilities for the returning workers.]
>
> "In addition to the transferred workers of Namman Spinning Co. to Jeil Spinning Co., engineers who had worked at our company played a core role when other spinning companies start manufacturing after the liberation" (Kyungsong Spinning Co. 1969:119)

From September to early November 1945, the workers of Namman Spinning Co. returned to their home country at three times. The first group consisted of more than 1,000 female workers and, in second group, 400 to 500 workers and their families were added, totalling 1,500 returnees (Kyungsong Spinning Co. 1969:118-119). Some portion of these workers participated in other factories as core engineers, as shown in Table 4.

The engineers who returned from abroad and who worked in Kyungsong Spinning Co. contributed a great deal to other factories' rearrangement of equipment and resumption of production after the liberation. They covered the whole engineering issues, playing a core role — such as factory manager — in each factory and participated in broad areas, including the Ministry of Commerce and Industry which administered industrial policy at that time. In addition, skilled-workers who had long-term experience and technical skills in each factory played a practical role for repair and operation of equipment.

III. The Operation of the Cotton Textile Factories During the Korean War

1. The Loss by the Korean War

The cotton textile industry was one of the most damaged industries during the Korean War. Due to the fact that most cotton textile factories were built on spacious grounds and equipped with large facilities, they were often used for military purposes. Consequently, these factories were major targets throughout the the Korean War. According to survey data of Spinners & Weavers Association of Korea, 195,080 spinning machines were damaged, representing 66 percent of the total 292,072 spinning machines in existance before the war. In the case of weaving machines, it was reported that 65 percent or 5,102 of the total weaving machines were damaged (Spinners & Weavers Association of Korea 1957:1-14).[7]

However, as presented in Table 5, the data based on the equipment survey of each factory shows some differences from the data of Spinners & Weavers Association of Korea. When the factories not included in the data of Spinners & Weavers Association of Korea are added and official statistical data are used, the adjusted data show that 73.8 percent of total spinning machines and 79 percent of total weaving machines were damaged. Before the Korean War, the total number of spinning machines exceeded 300,000 in 1949, equaling exactly 304,522 machines. However, the Korean War reduced the number to 209,930 spindles in 1950 and 14,798 spindles in 1951, leaving only 79,794 spindles. In other words, 73.8 percent of the total 304,522 machines, which is equivalent to 208,462 spindles, were damaged in the Korean War.

However, some individual factories increased their equipment during the war. Those factories include Chosun Spinning and Weaving Co. Daegu factory (former name: Gunze Spinning Co. Daegu factory) and Samho Spinning Co. Daegu factory, both of which were located in Daegu City. These factories

7. However, considering the state of equipment before and after the war, the data does not present the conditions of damage accurately. For example, the data show 100 percent damage except spinning equipment of Jeonju Spinning Co. and weaving equipment of Dongyang Spinning Co. Incheon factory. In addition, the data omit some factories from the survey list (Spinners & Weavers Association of Korea *Banghyeopchangnipsipjuyeonginyeomji* 1957:1-14).

enlarged their equipment size during the war by purchasing evacuated equipment to avoid damage.[8] Since the shortage of cotton products was critical, they increased equipment by collecting all available resources. In total, Chosun Spinning and Weaving Co. Daegu factory and Samho Spinning Co. Daegu factory increased their equipment to 5,600 and 4,282 spindles, respectively.

In the case of weaving machinery, 5,483 machines in 1950 and 1,604 machines in 1951 were damaged, out of a total of 8,970 machines in 1949, leaving only 1,883. The most damaged factories included large-scale factories such as Koryo Spinning Co. Seoul factory (1,525), Chonnam Spinning Co. Kwangju factory (1,510), Dongwang Spinning Co. (1,280), and Jeil Spinning Co. (1,140). In total, 6861 weaving machines (79 percent) out of a total of 8970 machines were damaged in the entire industrial sector.

As in the case of spinning factories, some factories increased their weaving machines during the war. For example, Chosun Spinning and Weaving Co. Busan factory, located in Busan city, installed 184 weaving machines which were evacuated to Busan. Chosun Spinning and Weaving Co. Deagu factory procured weaving equipment during the war by installing 386 weaving machines.

In sum, approximately 80 percent of the major facilities in the cotton textile industry were damaged during the war. This means that most facilities built in the colonial period were lost. The damages of the war — such as burned factories, destroyed manufacturing lines, and collapsed buildings — made it impossible to succeed with factory systems built before the liberation.

The tremendous losses caused by the war hindered reoperation of production using colonial inheritance. Therefore, it was essential to procure engineering systems that could rebuild the production lines and human resources who could operate the engineering systems. While some factories that procured the systems and human resources were able to actively participate in the rebuilding, other factories that were unable to procure them faced difficulties in recovering based on the war damage.

8. Kyungsong Spinning Co. raised funds for rebuilding Yeongdeungpo factory by evacuating its properties to Daegu, including metal materials, such as machinery of Uijeongbu factory and spare parts such as reeling machines stocked in storage (Kyungsong Spinning Co 1969: 134-135). In addition, the company “brought 244 machines to Busan and sold them during the evacuation” (Ibid., p.138)

Table 5 Damage of Cotton Textile Industry by the Korean War (The Case of Each Factory)

Name (at the time of the Liberation) / Name(during the Korean War)	Year	Spinning Machinery:Frame				Weaving Machinery:Loom			
		1949	1950	1951	Damage (%) +/-spindle	1949	1950	1951	Damage +/- number
Gunze Spinning Co. (Daegu)	Total	12,000	14,800	15,600	-30.0	0	204	386	-
Chosun Spinning and Weaving Co.(Daegu)	+/-	2,000	2,800	800	5,600	0	204	182	386
Dainippon Spinning Co.(Kyungsung)	Total	8,656	0	0	100.0	413	0	0	100.0
Cheonnam Spinning Co. (Seoul)	+/-	456	-8,656	0	-8,200	0	-413	0	-413
Daiwa Spinning Co.(Changdong)	Total					148	0	0	100.0
Daea Spinning Co.	+/-					0	-148	0	-148
Toyo Spinning Co.(Kyungsung)	Total	45,328	0	0	100.0	1,140	0	0	100.0
Jeil Spinning Co.	+/-	0	-45,328	0	-45,328	0	-1,140	0	-1,140
Toyo Spinning Co.(Incheon)	Total	35,088	20,088	0	100.0	1,280	166	0	100.0
Dongyang Spinning Co.	+/-	0	-15,000	-20,088	-35,088	0	-1,114	-166	-1,280
Chosun Spinning and Weaving Co.(Busan)	Total	50,304	50,304	50,304	0.0	1,313	1,313	1,497	-14.0
	+/-	-720	0	0	-720	0	0	184	184
Chosun Cotton Co.(Mokpo)	Total	0	0	0	0	158	0	0	100.0
Daehan Cotton Co.	+/-	0	0	0	0	0	-158	0	-158
Kanebuchi Co.(Chunnam)	Total	38,368	0	5,000	87.0	1,510	1,132	0	100.0
Chonnam Spinning Co.(Kwangju)	+/-	0	-38,368	5,000	-33,368	0	-378	-1,132	-1,510
Kanebuchi Co.(Kyunsung)	Total	49,720	0	0	100.0	1,525	0	0	100.0
Koryeo Spinning &Weaving Co.(Seoul)	+/-	0	-49,720	0	-49,720	0	-1,525	0	-1,525
Kanebuchi Co.(Chuncheon)	Total	5,564	0	0	100.0	176	0	0	100
Koryeo Spinning & Weaving Co. (Chuncheon)	+/-	428	-5,564	0	-5,136	176	-176	0	0

Table 5. Continuation

Name (at the time of the Liberation) / Name(during the Korean War)	Year	Spinning Machinery:Frame				Weaving Machinery:Loom			
		1949	1950	1951	Damage (%) +/-spindle	1949	1950	1951	Damage +/- number
Kureha Spinning Co.(Daejun)	Total	15,848	0	0	100.0	0	0	0	0
Daejun Spinning Co.	+/-	5,136	-15,848	0	-10,712	0	0	0	0
	Total	8,966	0	0	100.0	50	0	0	100.0
Kumsung Spinning Co.(Anyang)	+/-	8,966	-8,966	0	0	50	-50	0	0
	Total	0	4,800	4,282	-	0	0	0	0
Samho Spinning Co.(Daegu)	+/-	0	4,800	-518	4,282	0	0	0	0
Teikoku Linnen Spinning Co.(Incheon)	Total	4,480	0	0	100.0	0	0	0	0
Dongyang Spinning Co.(Hakik)	+/-	0	-4,480	0	-4,480	0	0	0	0
	Total	0	0	4,608	-	0	0	0	0
Donga Spinning Co. (Busan)	+/-	0	0	4,608	4,608	0	0	0	0
Subtotal (vested equipment)	Total	274,322	89,992	79,794	70.9	7,713	2,815	1,883	75.6
	+/-	16,266	184,330	-10,198	-178,262	226	-4,898	-932	-5,604
Kyungsong Spinning Co.(Kyungsung)	Total	30,200	4,600	0	100.0	1,127	672	0	100.0
	+/-	0	-25,600	-4,600	-30,200	0	-455	-672	-1,127
Kyungsong Spinning Co.(Kyungsung)	Total	0	0	0	0	130	0	0	100.0
	+/-	0	0	0	0	0	-130	0	-130
Total	Total	304,522	94,592	79,794	73.8	8,970	3,487	1,883	79.0
	+/-	16,266	-209,930	-14,798	-208,462	226	-5,483	-1,604	-6,861

Source: Spinners & Weavers Association of Korea

2. The Recovery of War Damage and Resumption of Production

1) The Basis of Recovering War Damage.

It seemed impossible to recover from the damages that the cotton textile industry endured during the Korean War. However, despite the shortage of resources for

rebuilding, the cotton textile industry recovered quite rapidly compared to other industrial sectors. The reason for this accelerated recovery lies in the social background of the cotton textile industry, since it produces clothes, a general necessity, and was required to fulfill the high demand even in the time of post-war recovery.[9] The highly positive market conditions for cotton yarn and cotton cloth played an important role in creating motivation to rebuild facilities and to resume production. In other words, the high demand of cotton yarn and cotton cloth after the war provided a basis for the rebuilding of the cotton textile industry. In addition, the possession of similar, yet older, equipment enabled the industry to rebuild new equipment by collecting and assembling undamaged parts. This technical background also accelerated the recovery of the industry. Due to these reasons, individual factories were able to conduct recovery efforts in large scale. Even though there was no imported equipment immediately after the war, the rebuilding of war-damaged equipment led to the recovery of the cotton textile industry. Cotton yarn and cotton cloth produced in each factory were immediately sold to cover the scarcity of the necessary articles (clothes) after the war. Wholesalers gave payment in advance and waited in front of factories. This condition of high demand urged each of the factories to expand their size of production by repairing older equipment. There was a noticeable quality difference between the rebuilt equipment and the equipment used before the war. However, since imported equipment was not available, factories did not have any other choice.

2) Role of Engineers and Skilled-workers

The large-scale cotton textile factories had to procure two essential factors—capital and technology—in order to recover from the damages and rebuild their factories. First, let us discuss the aspect of capital. Most large-scale cotton textile factories, categorized as vested companies, were sold to the private sector between 1951 and 1955. With secured ownership and a strong will for their business, the private owners actively conducted recovery work using their own capital. While some new owners who procured capital for the rebuilding process could accelerate the recovery of their factories, others, who do not have access to capital, could not conduct the recovery work as quickly. The factories that did

9. The case of Cheonnam Spinning Co. illustrates the high demand of cotton textile items. Even though the factory produced only *Taebeonsoo(*太番數*)* cotton yarn, the "sale of the product just covered the demand of Kwangju and vicinity, where the factory is located."

recover rapidly included those managed by continuous owners and those privatized relatively early, since they were secured in terms of ownership (Seo Moonseok 1997:107, 142). Therefore, privatization was an important factor for the recovery of factories.

Second, the aspect of technology also had a significant influence on the recovery of equipment and the rebuilding of factories. As mentioned above, in the situation with a shortage of engineers, the absence of engineers to command the rebuilding of factory lines and solve technical problems was a crucial issue in conducting the recovery work. However, the recovery of equipment after the war did not just mean the replacement of parts. Before the Korean War, maintenance of equipment was conducted under normal conditions where all equipment was regularly operated. However, since the factories were damaged by bombings and fire during the war, the parts included factory buildings as well as machines. Therefore, the recovery work meant not only repairing individual machines, but also rebuilding the entire manufacturing system within the factories.

In contrast to contemporary facilities where power is delivered directly to individual equipment, the factories at that time delivered power from a center to individual equipment using a belt. Therefore, the control of the whole manufacturing line was critical in the recovery process and the reoperation of the factory. Furthermore, considering the specific characteristics of textile machines, such as high-speed rotation and high-speed to-and-fro motion, the recovery of the equipment required a high degree of technical competency. The remaining skilled-workers were not able to fulfill the technical requirements. Therefore, senior engineers, having higher levels of knowledge and experience on the manufacturing lines, was essential. It was the engineers mentioned above who dealt with the issues.

To improve their technical skills, the engineers conducted research in relation to the Central Engineering Institute and the Engineering department of the Spinners & Weavers Association of Korea. They also learned the high-level technology of foreign countries by traveling overseas and inviting foreign engineers to visit. In addition, the engineers vigorously participated in organizational activities through the Korean Textile Engineering Association and the Spinners & Weavers Association of Korea in order to share the outcomes of research activities. They educated skilled-workers and engineers, and endeavored to spread technical skills by issuing textbooks and publications. The engineers also contributed greatly to the development of textile technology in Korea

by enthusiastically participating in the establishment and administration of the textile department at Seoul National University, originating from Kyungsung Higher Technical School (Seo Moonseok 2006a).

Since Kyungsong Spinning Co., the leading company in terms of rebuilding factories after the war, was established by Koreans and continuously operated by Koreans, ownership of the company was clear; unlike other vested companies which were mostly owned by the Japanese. In addition, the company had a strong will to continuously participate in the cotton textile industry. The high quality engineers employed with the company had long-term experience with the manufacturing lines and the technical systems, enabling the company to recover from war damage without any outside help. Furthermore, the engineers from Kyungsong Spinning Co. — who either worked at the company or who worked at Namman Spinning Co. established in Manchuria by Kyungsong Spinning Co. — contributed to the recovery works of other companies.

However, most large-scale factories operated by Japanese engineers during the colonial period experienced difficulties in procuring Korean engineers who could deal with the issues involved in the recovery work. In the situation of the absence of engineers and unclear ownership and vision, some vested companies were forced to give up their business, selling off parts of equipment. Those factories that were unable to overcome the war-damage and consequently collapsed include Kanebuchi Co. Chuncheon factory, Toyo Spinning Co. Kyungsung factory, Kanebuchi Co. Kyunsung factory, Daiwa Spinning Co. Changdong factory, Chosun Cotton Co. In addition, Dainippon Spinning Co. Kyungsung factory, Toyo Spinning Co. Incheon factory, Kanebuchi Co. Kwangju factory, Kureha Spinning Co. Daejeon factory, Kumsung Spinning Co. Anyang factory and Teikoku Linnen Spinning Co. Incheon factory (Seo Moonseok 2006c).

3) The Recovery of Equipment

The Korean War resulted in a huge loss of spinning equipment. As shown in Figure 1, spinning equipment which exceeded 300,000 before the war, was decreased to 79,794 spindles in 1950 and 1951. However, since 1952, spinning machines were quickly recovered and the number of machines increased to approximately 170,000 spindles in 1954. This new equipment base consisted of those machines installed before and after the liberation. The amount of rebuilt equipment was equivalent to 81 percent of equipment before the liberation (approximately 210,000 spindles) and around half the amount before the Korean War.

However, the efficiency of the rebuilt equipment, which was reconstructed from destroyed and burned parts, was significantly low. In the situation where essential accessories for rebuilding the core equipment were not available, workers were required to make these parts by themselves. Nevertheless, the rebuilt equipment continuously stayed in the factories. This was caused, in part, by the high demand of cotton yarn. However, the reason why the rebuilt equipment stayed in place even during the late 1950s, when demand was slightly reduced, lies in the fact that the scale of equipment was used as a basis for the assignment of raw cotton to each factory. Therefore, production and equipment at that time could not avoid a relatively low efficiency level.

In addition, since 1952, newly imported spinning machines reached more than 200,000 spindles in 1955, outnumbering the older equipment. In December 1953, 55,400 spinning machines in total were imported through the $2.8 million aid fund from UNKRA. The first portion (1,000) of the 109,568 spinning machines imported through government dollors reached Daegu Knit Co. in 1953.[10] Combining approximately 170,000 rebuilt machines and approximately 200,000 new machines during 1954, the procured equipment greatly exceeded the scale of equipment before the liberation.

As shown in Figure 2, the number of weaving machines—the core equipment in the weaving sector—was approximately 8,000 before the liberation. With installment of the uninstalled machines, the number of weaving machines reached 8,970 in 1949. However, the Korean War destroyed approximately 6,800 machines, resulting in a decrease of weaving machines to 1,883 in 1951. The rebuilding of war-damaged equipment in 1952 added to the number of machines in existance; approximately1600 in 1952, 300 in 1953, and 1,300 in 1954. As a result, the number of weaving machines grew to 5,180 in 1954.

Since 1955, new weaving machines began to be imported and by 1959, when the scale of equipment reached the highest point during the 1950s, 4,653 new machines were procured. In contrast to the case of spinning machines, the

10. This factory was operated in different names such as Chosun Spinning and Weaving Co. Daegu factory before the liberation, Daegu Knit Co. since 1949, and Naeoe Spinning Co. in and after 1955 (Seo Moonseok 1997:116-117, 156). This time period, when spinning machines were imported, shows technical aspects quite different from previous periods for two reasons: first, the exporting companies sent engineers to the importing factory and transmitted technical skills; and secondly, graduates of textile engineering departments of universities began to play major roles.

number of old weaving machines before the liberation outnumbered new machines.

4) The Reoperation of Production

Despite the huge losses caused by the Korean War, the frontline maintained at Nakdong River saved Busan and Daegu from war damage. The undamaged factories in the cotton textile industry include Chosun Spinning and Weaving Co. Busan factory located in Busan, and Chosun Spinning and Weaving Co. Daegu factory and Samho Spinning Co. located in Daegu. Among them, Chosun Spinning and Weaving Co. Busan factory covered a large majority of the scale of equipment and production.

In the spinning sector, the scale of production changed from 28.16 million pounds in 1949 to 23.27 million pounds in 1950 and 13.05 million pounds in 1951. Chosun Spinning and Weaving Co. Busan factory, covering 17 percent (4.8 million pounds) of the total production in 1949, produced 31 percent (7.29 million pounds) and 75 percent (9.74 million pounds) of the total production in 1950 and 1951, respectively. In the weaving sector, the scale of production drastically decreased from 1.6 million *piece* in 1949 to 1.4 million *piece* in 1950 and 0.75 million *piece* in 1951. Chosun Spinning and Weaving Co. Busan factory, occupying 16 percent (0.25 million *piece*) of the total production in 1949, produced 35 percent (0.49 million *piece*) and 85 percent (0.63 million *piece*) of the total production in 1950 and 1951, respectively. In other words, most cotton fabric at that time was produced in the Chosun Spinning and Weaving Co. Busan factory.

The Korean War caused suspension of production in all cotton textile factories, except those located in Busan and Daegu. The scale of production, at its lowest in 1951, gradually increased in the process of recovery from war damage. As mentioned above, the operation of rebuilt equipment recovered from damage after the war enabled the increase in production. In 1952, the operation rate of large-scale equipment decreased from 78.21 percent to 73.10 percent, since, as shown in Figure 3, most factories except Chosun Spinning and Weaving Co. Busan factory could not reach a level of normal production, in spite of the rebuilding efforts. In 1953 when the rebuilding of equipment was completed in full scale, the operation rate of large-scale equipment increased to 81.1 percent. However, a decrease in the operation rate of large-scale equipment was unavoidable when the new machines were imported, and the operation rate was based on both new and rebuilt machines. In 1956, when recovery from war damage

was accomplished, a rapid increase in equipment led an excess of supply over demand. In 1957, the cotton textile industry, facing a dull market, attempted to find a way out through prohibition measures against imports of cotton yarn and fabric, by supplying military goods, and by exporting goods to foreign countries.

Spindle production per 8 hour shift (20s)—an indicator of production efficiency—improved from 0.0096kg in 1951 to 0.1kg in 1952 and maintained a level of 1.5kg since the mid-1950s. In addition, labor productivity indicated by persons operated per '*gon*' (20s) also improved significantly, showing a continuous decrease from 37.12 persons in 1953 to 12.77 persons in 1961. Finally, yield showed a gradual increase from 83.94 percent in 1953 to 89.51 percent in 1961. In sum, the cotton textile industry improved in all aspects when recovery work was completed, including increased productivity, efficiency of equipment, efficiency of raw material, and labor productivity.

In the weaving sector, as shown in Figure 4, set production per 8 hour shift (sheeting)—an indicator of equipment efficiency—demonstrated a rapid increase since 1955 with imports of new equipment, even though the number stayed at a low level between 1951 and 1954. The equipment-operation-rate exhibited a noticeable decrease in 1950 due to the war and experienced a remarkable increase in 1951 due to the operation of some portion of the total factories. Although factories utilized rebuilt equipment which caused a decrease in equipment efficiency after 1951, the equipment-operation-rate actually increased between 1953, when the rebuilt equipment was operated in full scale, and 1955, when new equipment began to be imported. Yield, staying at a level of 93 percent to 94 percent between1952 to 1955, began to continuously increase since 1956. In addition, persons operated per 1 piece (sheeting), a category showing labor efficiency, dropped under 1 person starting in 1956.

As shown in Figure 5, when compared to the colonial period and, in particular, 1938 when production reached its highest point, production per equipment in this period was at a much lower level. However, in comparison to the production level between 1942 and 1945, it is said that both the spinning sector and the weaving sector actually recovered the level of production-per-equipment before the liberation.

3. A Case of an Individual Factory – Kyungsong Spinning Co.

Even though most factories in Yeongdeungpo, Seoul experienced complete damage, Kyungsong Spinning Co. endured relatively less harm The spinning

factory was burned by the retreating North Korean troops, but fortunately the weaving facilities were able to avoid damage.

> "The remains of the burned factory stood with the surviving weaving factory in our company, Youngdungop factory. At that time, most cotton textile factories experienced war damage, including those heavily damaged Hanyoung Spinning & Weaving Co., Koyreo Spinning and Weaving Co., and Jeil Spinning Co." (Kyungsong Spinning Co. 1969:130)

In this situation, Kyungsong Spinning Co. devoted itself to rebuilding its factory, appointing Jin, Jaehong as chief in the recovery work. The first recovery team, departing from Busan on March 20, 1951, could take a train to Suwon. However, they had to walk from Suwon to the Yeongdeungpo factory. However, recovery work could not be initiated at that time since the British Engineering Corps was staying in the Yeongdeungpo factory. Despite a dispatch of a recovery survey team on April 20, 1951 organized by Jin, Jaehong and Kim, Byungun,[11] only a few security guards were able to be stationed in the factory, but they were unable to begin recovery work. In September of the same year, the United Nations Civil Assistance Command Korea (UNCAC) refused to give permission for recovery work, stating that "there are no machines to be repaired and reused in the factory." After long-term persuasion, the British troops left the factory on November 28, 1951 and the recovery work was finally started.

The first work that the recovery team conducted after cleaning the factory and reorganizing the department was the construction of a casting factory for the manufacturing of equipment parts and the reassembly of machines after disjointing (Kyungsong Spinning Co. 1969:132-135).

> "From the end of December, those burned machines, such as blowing machines, carding machines, and drawing machines, were disjointed,

11. Jin, Jaehong and Kim, Byungun, who graduated from the Kyungsung High Technical School and who widened their first hand experience of the textile industry while working in Kyungsong Spinning Co., were the most qualified engineers in the 1950s. They, working in turn as factory manager of Kyungsong Spinning Co., witnessed the history of Kyungsong Spinning Co. Youngdungpo factory. For detailed information, refer to (Seo Moonseok 2003c, 2006b)

> wiped with oil, reassembled, and then installed in the former third weaving factory" (Kyungsong Spinning Co. 1969:136).
>
> "Even all undamaged weaving machines needed repair work due to rust caused by long term suspension of operation" (Kyungsong Spinning Co. 1969:138).

Kim, Byungun, a factory manager who was in charge of recovery work, conducted the "collection of parts from burned machines abandoned in the ruined factory" and was responsible for "sending letters to cotton textile factories in foreign countries in order to ask for reference books for technical issues in machine repair and recovery work" (Kyungsong Spinning Co. 1969:138).

In the case of Chonnam Spinning Co., factories were completely destroyed and recovery team members who were dispatched to conduct recovery work were killed by an ambush of communist guerrillas (Chunbang Co. 1984:40).[12] Building on these tremendous efforts, factories were rebuilt, production resumed, and the cotton textile industry was reconstructed.

IV. Conclusion

The Korean economy after the liberation faced great difficulties as all industrial production was suspended. This shutdown of production resulted from the collapse of the colonial economic system that had been operated by the economic relationships between the colonizing and the colonized.

The cotton textile industry was one of the industrial sectors that suffered from these difficulties. The production in most cotton textile factories was suspended. In addition to the outer shock caused by independence, most large-scale cotton textile factories operated by the Japanese could not continue production

12. The tremendous efforts of recovery work within the factories can be described as "recovery work started by creating nothing to everything in a factory whose buildings and equipment were completely destroyed. The recovery work included constructing new buildings, adjusting distorted machines, and replacing burned machine parts," and "each department of manufacturing line conducted miraculous recovery works through adjusting, piercing, patching, and tightening. Everybody made tremendous efforts for the recovery work" (Chunbang Co. 1984:143)

due to vacancies left when the Japanese returned to their home country. This is due to the fact that Japanese-owned large-scale factories were operated mainly by the Japanese themselves. In those factories, Koreans were only allowed to participate in production as workmen.

However, Korean engineers and skilled-workers, by rearranging equipment, were able to resume production during the difficult time. Engineers from Kyungsong Spinning Co. and Namman Spinning Co. filled the empty positions previously occupied by the Japanese, and skilled-workers rearranged and repaired equipment. Factories even installed the uninstalled equipment left unused during the colonial period, resulting in more procurement of equipment after the liberation than before the liberation. Production began to operate under normal conditions in 1947 and the rebuilding process was accelerated in 1949.

However, Korea's efforts to rebuild the cotton textile industry was ruined due to the Korean War in 1950. The war inflicted critical damage on the cotton textile industry, damaging approximately 80 percent of the major equipment. As a result, the cotton textile industry lost the material basis inherited from the colonial period.

Despite the damage caused by the Korean War, the cotton textile industry started recovery work from the debris of destroyed factories. The recovery work organized by engineers began with rebuilding burned equipment. They resumed production in the ruined factories through a rebuilding process where burned equipment was disjointed and then reassembled to form new equipment. In the recovery process, the amount of equipment was increased and efficiency levels in all aspects of production was improved. As a result, the cotton textile industry recovered its production level to the pre-liberation period in the 1940s. Even though the rebuilt equipment had some efficiency constraints, the cotton textile industry was reconstructed based on the rebuilt equipment, fulfilling domestic demands. Engineers played a core role in the recovery efforts after the war. Forming organizations, they conducted research and participated in activities to share the outcome of research. Inside the cotton textile sector, they contributed to the improvement of technology by issuing textbooks and publications in order to train engineers, and by participating in the establishment of education institutions.

In sum, the cotton textile industry in Korea was reconstructed by engineer-centered recovery work in which engineers rearranged the inheritance of the colonial economic system and rebuilt equipment damaged during the war. The rapid economic development of Korea since the 1960s was grounded in these

experiences of reconstruction.

When this study is applied to the perspective of continuity and discontinuity of colonial inheritance, the discussion on how Koreans continued, or discontinued, the colonial inheritance after the liberation, in addition to its meaning and implications, is more constructive than the argument of which parts of colonial inheritance were continued or discontinued. In the cotton and textile industry, the colonial inheritance has both discontinued factors, such as the substitution of owners and managers, the destruction caused by the Korean War, and the introduction of new equipment and human resources, and continued factors including the maintained equipment and skilled-workers. History shows that everything cannot discontinue at one moment, nor continue at another.

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Seo Moonseok is a research professor at Dankook University, Korea. His research field includes the vested company and cotton textile industry. His current research project seeks the role of Koreans for economic growth in Korea.