Haute école de gestion
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Asian Competition in the Clock & Watch Sector:

What threats to the Swiss industry?

Bachelor Project submitted for the obtention of the Bachelor of Science HES in Business Administration with a major in International Management

by

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I. Declaration

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III. Executive Summary

The Swiss clock & watch industry has been the indisputable leader worldwide during many decades in terms of excellence and notoriety. Many challengers such as Japanese or American companies, tried to compete at the same level without dazzling success thus far. However, three main competitions had significant impacts on the Swiss industry over the years. The first was the new production process of American companies that forced Swiss companies to shift from an artisanal production to a mass production factory system in the late 19th century. The second came the Japanese watches quartz innovation that obliged Switzerland to differentiate its products with a “Swiss Made” label for protection. The last and current competition is coming from Mainland China which is omnipresent in the low-end segment, having the largest production of watches in terms of volume, and that is willing to upgrade its production to high-end segments. Under this third competitor, the Swiss clock & watch industry is once more challenged.

This paper focuses on the understanding of the competition that the Swiss industry is currently facing and identifying the levels of threat on the different steps of the value chain. Comparing the previous Japanese competition with the current Chinese competition will lead us to the identification of the imperfections of the Swiss industry in which competitors found a failure or an opportunity in order to contest some market shares.

In the first part of the analysis, different threats are distinctly identified at different stages of the value chain. For example, Chinese firms bring a serious menace in the upstream stages of the value chain in raw material production, intermediary manufacturing, and assembling. Whereas there is a lack of know-how when it comes to market and communicating the brand to the end consumers. Moreover, the help of the local government is non-negligible for the future growth of Chinese watch brands.

In the second part, several similarities and differences between the previous and current competitions are determined. It comes as no surprise that the low-end segment is the most vulnerable. The Swiss industry was strongly challenged in this segment by Japan as well as by China. In addition to that, Switzerland has not been protecting enough its products and is still struggling to improve it. Last but not least, technological innovation is and will always be a factor that could call into question the industry, talking about the quartz revolution in the past and the possible smartwatch revolution nowadays, which could not be measured for the moment.

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1.1.1. A brief history of the sector

Dutch and English sailors who began to dominate the oceans from the half of the 17th century, thanks to larger ships, needed marine chronometers to better calculate distances. Until the mid-seventeenth century, clocks were inaccurate and often contained a single needle. Progresses in 1670 were made with the first watch having spiral spring provided with a balance. These advances were reflected in Europe too. Daniel Jeanrichard located in Ste-Croix in the Swiss Jura, created its first watch in 1681, copied from an English model discovered in 1679. Later, he formed dozens of artisans. The English watchmaking then developed. Daniel Quare who in 1686 adapted the hand to the center of the dial. So far, only the hour was used. In 1700, still in England, the use of drilled stones as pivot bearing for balance is a leap forward in technology. The Geneva watchmaking built its domination over Europe in the second quarter of the 18th century. In the previous thirty years, the Huguenots, fleeing persecution after the Edict of Fontainebleau in 1685, had introduced the English innovations. Since then, Swiss production remained in the hands of independent watchmakers or small-specialized workshops and this until the mid-nineteenth century. The custom was that the master watchmaker presented a very neat piece before receiving his watchmaker certificate. Each craftsman was dedicated to the manufacture of a special component and apprentices were specialized in manufacturing of the movement, according to the archives of the Swiss movement watches. In 1927, a telecommunications engineer named Warren Morrisson researched a system to generate highly stable frequencies. It was based on the piezoelectric effect of quartz to build more reliable watches than the old mechanical clock systems. The consequence was that quartz watches would reach an accuracy of one thousandth of a second per day. To meet greater precision requirements, atomic clocks were created in 1947. In 1967, the trade of the first quartz watch to the public opened many opportunities for Japanese manufacturers. It became the specialty of Seiko Japanese watch brand, created in 1881 by Kintaro Hattori. In 1937, Seiko had crossed the threshold of more than 2 million watches sold worldwide, and in 1941 it produced the first pocket chronograph in Japan before reaching a leading position in the 1950s in the watch market.

1.1.2. Current global production and trade

There is no data on world production of watches. If it can be estimated at about 1.2 billion pieces, export and import results are higher because a product may be re-exported and thus be counted twice. However, these data reflect very well the forces involved and help to identify trends facing the industry worldwide. The major routes that can be identified are between Switzerland, Hong Kong, and China (see figure 6). Switzerland remained the largest exporter of timepieces in 2013. It exported $ 23.6 billion worldwide. Compared to 2012, this corresponds to an increase of 1.9% in local currency (excluding currency's effects). Second, Hong Kong exported or re-exported watchmakers products up to $ 10.0 billion, an increase of 3.7% in local currency. The main destinations were the United States, Switzerland and China in relatively equal proportions. It was followed by Macao and Japan, among others. China has also been a major player in watchmaking exports. 7.9% of growth in local currency registered a total value of $ 5.6 billion. Chinese watch exports went to Hong Kong, the United States and Japan. France saw its watch exports reached $ 2.4 billion; a large part of it was made up of re-exports, mainly to other European markets. This result exceeded by 7.2% the value realized in 2012. In fifth position, Germany exported the equivalent of $ 2.4 billion, an increase of 10.8%. (See table 1).

In 2013, Hong Kong absorbed most of world trades, before sending them partly to other markets. Its watch imports totaled $ 10.4 billion, virtually identical to those of 2012 (-0.5% in local currency). The United States has brought into their territory the equivalent of $ 5.2 billion. These imports increased by 6.0% in a year. Confirming the slowdown in China, its watch imports declined 7.9%; they were about $ 3.9 billion. Swiss imports of watches and components were $ 3.7 billion. This offshore sourcing has the same trend as exports, an increase of 2.1%. France occupied the fifth position, with a value of $ 3.1 billion (+ 3.6%) (See table 1). (FHS, 2014)

Table 1 - Import/Export of watches by countries in 2013 (ITC Trade map 2015)

	Countries	Value imported in 2013 (USD thousand)
	World	**50,763,026**
1	Hong Kong, China	9,941,623
2	United States of America	5,236,762
3	China	3,903,174
4	Switzerland	3,756,424
5	France	3,060,751
6	Japan	2,936,277
7	Germany	2,882,571
8	Singapore	1,958,381
9	Italy	1,741,637
10	United Kingdom	1,715,959

	Countries	Value exported in 2013 (USD thousand)
	World	**45,969,450**
1	Switzerland	23,554,552
2	China	5,568,388
3	France	2,395,946
4	Germany	2,379,767
5	Italy	1,784,957
6	Singapore	1,708,363
7	Hong Kong, China	1,458,859
8	United States of America	1,231,306
9	Japan	1,079,773
10	United Kingdom	799,542

Hong Kong occupies a prominent place in world trade watches; regarding exports of watches and watch components, the former British colony ranks second behind Mainland China quantitatively and second behind Switzerland in terms of turnover (2012: 357.2 million of units exported, turnover of 9.6 billion USD). However, it should be noted that Hong Kong does not manufacture almost anything but acts as a hub of world trade watches. As a Special Administrative Region of the People's Republic of China, it is a separate customs area and pursues its own trade policy. The port city sees no tariffs, which makes it a storage and distribution center very popular for watches' producers. Relations are particularly close and sustained with Switzerland and China. Foreign watches (for example Swiss) are re-exported from Hong Kong to other Asian countries, including China. Conversely, numerous quartz watches and watch components made in China transit through Hong Kong before going abroad, especially in the United States, as well as in Switzerland, or return to China (Crédit Suisse, 2013).

1.2. Swiss clock & watch industry overview

Just like watches, the Swiss watch industry is characterized by a complex structure, based on a division of labor in continual progression. Originally, watchmakers were making the full development of a watch (movement and transmission). Fragmented manufacture progressed in the seventeenth century. The notion of interchangeability was known in the Jura from 1770. That's when the first machine tools for mechanical manufacturing a standard outline emerged, thanks to the innovation made by Frédéric Japy in the Jura Franche-Comté. However, the Swiss drafts-based factories progressed slowly in the standardization and standardization of component parts and thus in the mechanization of production. The long quest for interchangeability marked the entire nineteenth century, encountered setbacks and half success.

It was not until the mid-nineteenth century that profound changes in the production system contributeed to the renewal of regional economic and social fabric: the transition from a traditional watchmaking production to a factory production was the response to progress made by the Americans since the middle of the century in standardization, machining of components and mass production of cheap watches.

The American competition was nearly fatal to the Swiss industry (exports of watches in the US fell by 18.3 million francs in 1872 to 4 million in 1877-1878). It was in the Bernese Jura and the Jura Mountains that were set the technical and organizational foundations of large-scale manufacturing. This gave rise to new centers, where some large factories edify themselves, bringing to their site hundreds of workers, not specially trained or qualified, enrolled in a predominantly rural area. In 1883, there were about 97 watches institutions subject to the Federal Law on the work in the factory, 46 of them are located in the canton of Berne and 11 others in the canton of Solothurn.

The Swiss reaction to the American competition turned to be very flexible. It all began with the American Waltham's automated screw machine that was delivering a similar quality than the Swiss watch screws, but at a faster pace therefore in larger amount. The Swiss reaction had therefore a dual mode of development. On the one hand, some continued to cultivate advanced watchmaking horlogerie (luxury watches, special finishes, manual and "complications", and high precision accuracy). These companies most attached to the traditional professions would, on the other hand, coexist with integrated firms for mechanized production of medium and low range watches. This flexibility was tested by the severe 1921-1923 crisis, the global depression of the 1930s and the rise of protectionism. These circumstances precipitated a cartel movement that began in the inter-war period (holding companies emerged in the late 1920s, such as Ebauches SA or the Swiss Society for the watch industry) and lead to a major reorganization at a national scale. This movement, led to the financial and industrial sector concentration. The year 1931 saw the birth of the "superholding" General Society of Swiss watchmaking SA (named Asuag), a private organization bringing together in an almost monopoly the production of watches in Switzerland. Receiving the support of the federal authorities, the plan intended to fight against foreign competition and was characterized by conventional regulation of relations between industries. The second crisis that Switzerland faced was against Japan that started to produce quartz watches in the mid-20th century. Japanese companies took the major market share in the low-end segment, which represented the most important production in terms of units produced.

Despite those serious crises, the Swiss watch industry has always occupied a prominent place in the world market. By 1870, it accounted for about three-quarters of world production in volume and two-thirds in value in the early twenty-first century. It always appears as a value as the first world exporter (16.2 billion francs in 2010 for a global manufacturing of watches, movements and basic pieces. In the international division of labor, it is therefore positioned clearly in the higher ranges, with prices and average costs significantly higher than those of other producers. With around 600 companies, the watch industry in 2010 was the third largest Swiss export industries, behind machinery and chemicals. 1/3 of the people working in the sector in Switzerland were located in the canton of Neuchatel, where most of the major companies have set some of their production plants, if not the whole production (Fallet, 2015).

This success has been based from the beginning on an inexhaustible capacity to adapt to changes in demand and an assiduous geographical diversification of opportunities. The map is continually redistributed following the option of global market fluctuations. In 2010, Europe and Asia were the main customers buying respectively 31% and 53% of Swiss production. While having maintained an undisputed leadership in the high-end, Swiss watchmakers were forced from the middle of the 19th century, to deal with the modern mass consumption trends that were at the opposite of the luxury watch industry that was producing fewer products. The First World War was very profitable for the sector; aircraft counters and timers for bombshells were required to be built at that time (Elginwatches.org, 2002). .

Table 2 - Production of watches in 2013 (ITC Trade map 2015)

	Volume produced (units)	Value ($)
Switzerland	29.2 million	23.6 billion
China	663 million	5.6 billion
Hong Kong	354 million	1.4 billion

As shown on table 2, Switzerland exported 29.2 million of finished watches in 2012, down 2.2% regarding the year 2011. It represents only 2.5% of the 1.2 billion watches produced worldwide in one year. It is almost nothing, at least in quantity. China holds the first rank in terms of quantity produced with 663 million pieces in 2012, which is the largest exporter of finished watches in the world. Followed by Hong Kong with 354 million units. Switzerland appears in 3rd position. But this ranking is reversed when it comes to value: Switzerland, then becomes number one; 95% of Swiss watches are sold over 1,000 francs. Note that a Swiss watch cost on average $739 in 2012 ($688 in 2011), against $3 on average for a watch from China.

The Swiss watch industry has no equivalent in the world. If we take into account the latest annual report Swiss watch exports, it shows that in 2012, exports reached 21.4 billion francs, up 10.9% compared to 2011. In 2011, they had already reached 19.3 billion francs (+19.2%). Thus, despite an uneven economic environment worldwide, the facts are clear: Swiss watch exports confirmed the good health of the industry, who had two record years in succession (Crédit Suisse, 2013).

In 2012, all export regions experienced a growth. Europe observed the strongest annual growth (+ 16.3%), representing a value of 6.5 billion francs. Absorbing 30% of Swiss watch exports, the Continent even took market share from Asia, which continues to absorb 54% of exports to 11.6 billion francs. Regarding the destinations by country, Hong Kong remained the largest market, which still served as a commercial hub for Asia and bought 20.4% of Swiss watches (up by 4.4 billion francs). Hong Kong was followed by the US (10.2%, 2.2 billion) and China, with a share of 7.7% to CHF 1.6 billion. In Europe, Germany acquired for 1.2 billion francs of Swiss watches which is a significant increase (33.1% compared to 2011), and is ranked fifth in the standings (Crédit Suisse, 2013).

Today, the watch industry and microtechnology in Switzerland employs nearly 56,000 people, a figure that increased by 5.7% in a year and has never been equaled for over 35 years. We have to go back to 1975 and the beginning of the watchmaking crisis, to find a figure higher than in 2012 (exactly 55'816 employees). Since the 2010 census, the gain in labor amounts to 7'268 people (+ 15%). The loss of 4,800 jobs between late 2008 and early 2010 is a distant memory. The top three most watchmaking cantons in terms of employees consist of Neuchâtel (15'323), Bern (11'184) and Geneva (9'358). Watchmaking can benefit on a high level of qualification of labor ; these qualifications are getting higher and higher. The proportion of workers with a higher education degree gathers 62.9% of the entire labor (61.5% in 2011), or two-thirds of the employees; 20 years ago, it only had one third.

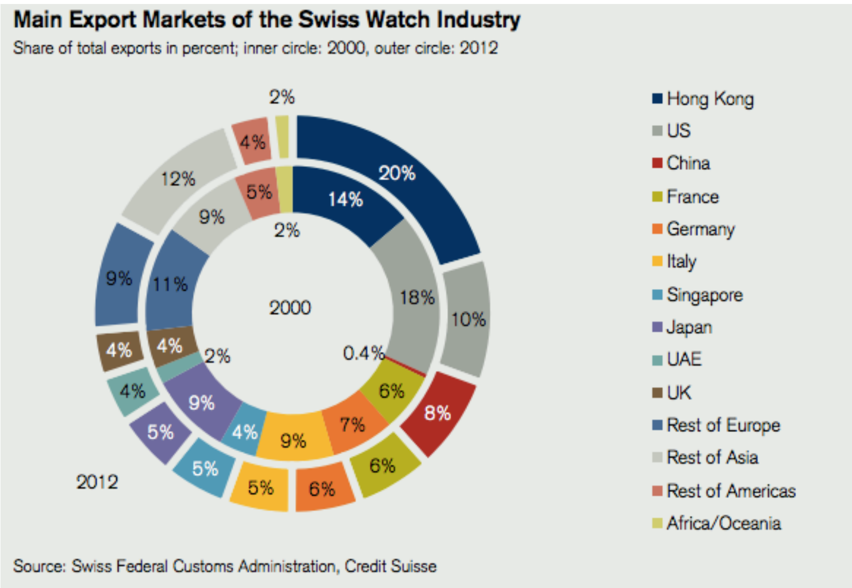
Between them, the Swatch Group, Richemont and Rolex constitute 45.8% of the global watch market and are considered as major key players in the industry. Fossil (USA) is in fourth position, it overtook the place of LVMH. The three largest Japanese watchmakers' players (Citizen, Seiko and Casio) together have 9.4% of the market share, having still less shares than Rolex alone (Wthejournal.com, 2015).

1.3. Swiss trading partners in the sector

Geographical diversification opportunities of the Swiss watch industry has improved steadily between early 1990 and 2009. This reflects among others the growing importance of emerging markets for Swiss watch brands. The rapid rebound of the industry after the financial and economic crisis and the strong export growth of the past three years are mainly due to an already noticed presence in emerging markets, where demand for luxury goods just recorded a boom at that time.

Asia has contributed the most by far to the increase in Swiss watch exports during the last decade. About 70% of the growth in the period 2000-2012 is indeed a credit to Asian countries. Hong Kong and China in the lead by providing more than 40% growth. Singapore, the United Arab Emirates (UAE), South Korea, Taiwan, Saudi Arabia, and Japan are also among the 15 countries that contributed the most to the growth. An additional 24% was contributed by Europe, including France and Germany. The American continent contributed about 6%, the US by providing half (See Chart 1).

Chart 1 - Main Export Markets of the Swiss Watch Industry (Crédit Suisse, 2013)



The chart above (Chart 1) points out very distinctively the major players and trading partners of Switzerland. Hong Kong is the most important partner by far with 20% of the export going there. There is a trend that the trade routes are growing in the Eastern countries from Switzerland and the Western ones are decreasing. Hong Kong grew by 6% from 2000 and 2012 as well as China that grew by 8%. Singapore and the other

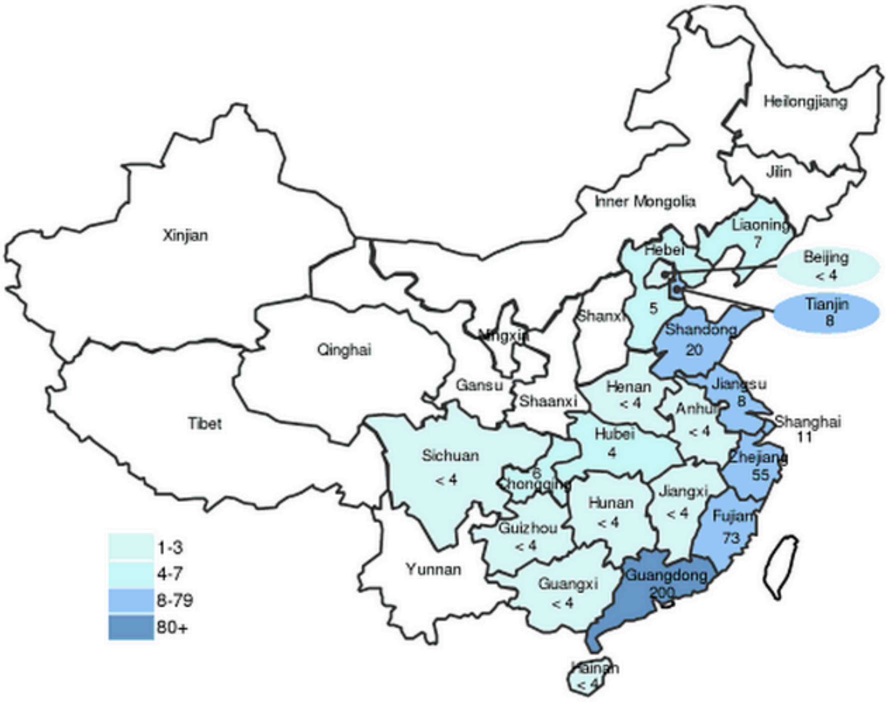
Asian countries are the only ones (with China and Hong Kong) to keep growing their activities with Switzerland. The only Asian country that is decreasing is Japan by almost half of its import from Switzerland.

In 2000, the United States still constitute the main market for the Swiss watch industry with a share of 18% of total exports, ahead of Hong Kong (14%) and Japan (9%). The importance of Mainland China was then negligible (0.4%). With the strong growth in Asia, the geographical distribution of Swiss watch exports, however, is heavily modified and this in the space of ten years. The trading hub in Asia is Hong Kong, which has overtaken the US as the largest market in 2008. In 2012, 20% of sales for export were generated in this Chinese special administrative region, twice as much as the United States. Growing at a very fast pace, China has climbed to third place in 2011. In 2012, it concentrated 8% of Swiss watch exports. If Hong Kong, Macao and Taiwan is added, 30% of exports now goes to the Chinese market, which is almost double in importance from 2000.

The growing importance of the Chinese market is certainly a certain accumulation of risks for the industry, but it also opens up remarkable opportunities for growth. The rise of China as a production country can probably be explained, at least in part, by delocalization from Hong Kong and other producers to cross-border Guangdong Province. In China, the special economic zones are areas enjoying a special legal regime, which makes them more attractive to foreign investors. In 1979, four Chinese special economic zones were established in the provinces of Guangdong and Fujian in southern China to attract foreign investors. Those two provinces are, without surprise the two most important areas in terms of number of watch manufactures. They are located on the border of Hong Kong, and Macao that help trades with international firms that want to enter the Chinese market. These areas offer to foreign companies preferential terms (tariffs, free repatriation of investments and profits, no taxes for years and very low taxes, extraterritorial status for executives who come to work, etc.). It has been an important driver of reforms for foreign investors. In 2013, China has created a free trade zone in Pudong, which includes the international airport of Shanghai. Shenzhen area seems to follow the same path (English-pudong.gov.cn, 2015). Recent free trade agreements between Switzerland and China that will be applied in the near future, should not influence a major change in external trades as it will take place over a period of years, thus price reductions will not be meaningful. Moreover, the fast rising cost in China will persuades companies not to cut their prices (Shotter, 2014).

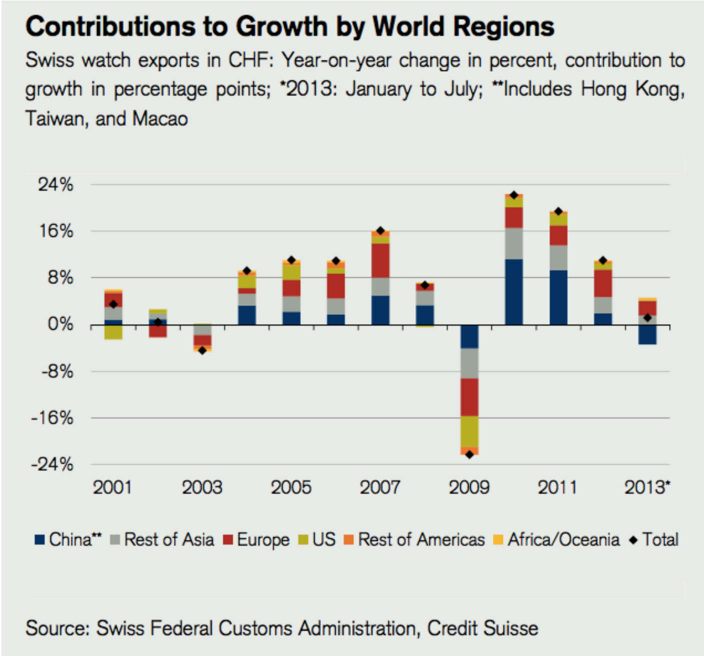
The map below (figure 1) shows the main hot spot of watch production firms across China. Without surprise Guangdong region is the main area because of its proximity to Hong Kong. The first firms started there before developing in the other coastal regions such as Fujian, Zhejiang, and Shandong regions. Foreign companies in China control half of the shares in the industry.

Figure 1 - Distribution map of clock & watch production in China (*Pan, A. 2012)*



On the chart below (chart 2), we can see the contribution to the Swiss watch export by regions. The trend that is evolving is clearly focused on the Asian continent with China as the leader. Even though, the trend is weakening for the last 3 years, the Asian countries played a very important role in the Swiss watch industry and trading relationships are becoming more and more powerful. The exports to a country do not necessarily correspond to sales to local end users. In some markets, business with foreign tourists indeed plays an important role. It is, for example the case in Hong Kong, Singapore or Dubai, as well as in Switzerland. European countries such as France with the capital of luxury Paris, Germany or Italy profit from these wealthy tourists buying watches. This explains the relatively large share of these countries in the Swiss watch exports.

Chart 2 - Contributions to Growth by World Regions (Crédit Suisse, 2013)



Thus, the raising growth in Asian countries could be positively interpreted in the short term because it helps the watch industry and consequently the Swiss watch economy. But in the long term, this growth could become a threat to the Swiss industry as it could become more independent and start competing with Swiss high-end watches (Crédit Suisse, 2013).

2. Definitions

Watchmaking is divided into two distinct branches: luxury watches (haute horlogerie) and the fashion segment (low-end). The first includes all works whose complete perfection is the main merit. It is necessary that the machine, handled by a workman is accurate in all its parts. In contrast, the fashion segment focuses on the exterior forms of the watch. The idea of haute horlogerie is thus associated with its origin to excellence and product complications. But if we want to be more precise on the segmentation of the industry, it can be divided into four price categories: mass (Under USD $600), middle ($600 - $1’500), upper ($1’500 - $8’000), and luxury ($8000 and higher) watches. Watches in the low-end segment consist in most of the case of radio controlled and digital watches, whereas the high-end watches are mechanical watches. The key players and the most important countries that are concerned by the global clock & watch industry are Switzerland, Japan, Hong Kong, and Mainland China. Switzerland has the reputation and almost monopoly in the luxury segment, whereas Japan, Hong Kong, and China are very efficient and powerful in the low-end segment (Donzé, P. 2015).

In order to understand the strategic choice of watch companies of where to produce and what key factors should be analyzed, the process of making a watch needs to be defined. When a company decides to delocalize or change its center of production, there is always a reason why it is done. First of all, every watch needs to be elaborated from computer design. Major brands, including Rolex, Swatch, and Patek Philippe have their own design offices within their company, but small independent design companies exist for brands that decide to outsource their design phase. Raw materials that can be used vary from the quality and price of the watches. Basic and low-end watches are made of plastic, titanium, or stainless steel, whereas luxurious watches are made of silver, gold, carbon, diamond, platinum, or ceramic. Thus, raw materials need to be accessible on the production/manufacture site. The manufacturing process is one of the most important parts and is divided into two parts. The first one is about shaping and tailoring the components of the watch. It can be hand-made or machine-made. The second one, which is the most important because it requires great knowledge and skills, is the process of manufacturing and assembling the watch components. Labor must be qualified to operate on specific machinery able to shape specific components. Thus, the location of this manufacture must be studied very cautiously because of the need of skilled labor and the availability of adequate machinery.

The quality control is the last step before the watch is shipped to retailers. It consists of checking possible defects in order to ensure high quality. This control can be made at the end of the production line for small and low end watches, but the most luxurious and important brands set the control at the earliest point of the manufacturing process (Madehow.com, 2015).

The transfer of watch manufacturing technology was a difficult asset to handle for Switzerland. When Swiss companies saw a potential threat of Japanese companies between 1930 and 1960, it was already too late; they did not think that Japanese firms could compete against them by changing the roots of watchmaking with innovative ideas and the quartz battery. What is happening in Hong Kong and China nowadays is similar to the Japanese case at first sight. But more in depth analysis will help to identify similarities and differences about these two competitions. Swiss companies are pioneer on many domains in the clock & watch industry but the investments made internationally can raise the competition once those foreign companies have acquired enough knowledge and capital to work by themselves. Therefore Swiss brands have to manage the technology very carefully in order to have a control on investment made abroad (in China or Hong Kong for example).

In order to defend Swiss products and more precisely Swiss watches, an “ordonnance” was made by the Swiss Federal Council in 1971: it is called “Swiss Made“ certification. It is the first time a Swiss watch was protected by law. To be considered as a Swiss watch and to receive the label, its movement must be Swiss, its movement must be cased up in Switzerland, and the manufacturer must carry out the final inspection in Switzerland. Regarding the movement, it must be assembled in Switzerland, inspected by the manufacturer in Switzerland, and the components of Swiss manufacture must account for at least 50 percent of the total value, without taking into account the cost of assembly (Ordonnance réglant l'utilisation du nom «Suisse» pour les montres, 1971).

The Great Hong Kong region also known as the Greater Pearl Delta River is an economic center that regroups the Guangdong Province, including Shenzhen, Guangzhou, Foshan and Dongguan (in Mainland China), Hong Kong, and Macau (both Special Administrative Regions of the People's Republic of China). The region is one the most affluent market in Asia in terms of retail activities, but also in the production/manufacturing sector. This economic region is very comprehensive as it includes production hubs, retail centers, management and financial services, tourism industry and a transit platform that play a major role in the East Asia economy as well as in the whole continent. It has emerged as one of the most dynamic economic regions in the world. It has specific trade agreements that help the cooperation throughout the region and make it very attractive for investors (Enright, 2005).

Figure 2 - The Great Hong Kong Region (Enright, M. and Scott, E. 2005)

3. Research Questions

The author of this paper tries to address two core research questions as follows.

Question I. How did the Swiss clock & watch *industry face the competition from the Great Hong Kong region since the late 1970s onward? At what stage of the value chain it is a potential threat to Switzerland?*

The Swiss clock & watch industry was leading by far this market worldwide before 1970. At that time 50% of the world watch market was held by the Swiss watch industry. The Swiss advantage compared to its main competitors was Switzerland's neutral political position in World during the 20th century. The trigger that launched the beginning of the global competition started with the quartz innovation as a substitute of the mechanical movements that are most of the time more expensive to produce. Japanese companies, including Seiko were pioneers in this segment and the popularity of quartz battery was increasing year after year. In 1978, the number of quartz watches produced overtook the mechanical watches and resulted into a crisis in Switzerland that was not producing a lot of quartz movements at that time. This revolution stimulated new markets in Asia and in the United States, which raised the competition against the Swiss watch industry of mechanical watches versus quartz movements. Hong Kong and more recently Mainland China are the major regions that represent the most important threat to Switzerland, knowing that the Japanese market is loosing shares years after years. Thus, what are the actions and measures to counter this rising competition?

Starting from this core question we can dig into more details concerning the new competition of Hong Kong and China that the Swiss industry faces.

Question II. Is the Swiss industry facing new competition from neighbor China and Hong Kong, and less from its Japanese competitors as observed during the previous crisis in the 1970s?

Is it only an issue following the delocalization of foreign production to China, or do we observe the rise of domestic Chinese capacity and know how in this sector? What similarities and differences can be identified?

Knowing that China is becoming more and more powerful and acquires the necessary knowledge to produce without foreign inputs, the transfer of clock & watch technology is again at the center of the debate as it happened in Japan with the rise of quartz production introduced by Swiss companies at the time. Foreign direct investments are very substantial in China, but now Chinese companies aim to take the lead and to become independent from foreign firms.

Are Chinese and Hong Kong players competing with the Swiss clock & watch industry, including by investing in Switzerland and buying some companies? Is Chinese competition also climbing the high technology ladder and starting to compete in higher tech segments of the sector, challenging more and more the Swiss supremacy? Are Asian producers grabbing more attention and popularity in the luxury segment than its Swiss competitors?

4. Methodology

In order to respond to the research questions raised earlier, this paper has to look for several sources of existing scientific and empirical knowledge.
The core hypothesis to be validated or invalidated is that the Swiss clock & watch industry, as well as the Japanese industry is under threat, which does not concern the entire value chain but parts of it.

First of all, this paper borrows from world economic history and history of industrialization in particular, with a specific focus on the industrialization of Switzerland. The contribution of micromechanics and the clock & watch industry worldwide and in Switzerland will be scrutinized.

Second, it borrows from basic engineering and technological knowledge of the clock & watch sector, accessible to the general public, so that global competition can be understood in various segments of that industry (low, medium and luxury segments).

Thirdly, economic geography is also needed to understand the industrial landscape of the Pearl River Delta and the business linkages between Hong Kong and the South Guangdong region, especially vis-à-vis Guanzhou and Shenzhen.

Fourthly, knowledge has to be derived from studies in global production networks, international trade and the role of FDI (foreign direct investment), to perceive how the Swiss-Asian division of labor has been evolving in the clock & watch sector over recent decades.

In addition, this paper also relies on interviews of professionals working in this industry in Hong Kong and Switzerland. Different perspectives are exposed from various sources of information.

5. Conceptual Framework

Theory of industrialization

Prior to introducing the theory of industrialization, it is important to understand previous theories of trades and production, including the theory of mercantilism that promotes economic development through the enrichment of nations through external trades, properly organized to create a surplus in the trade balance; the first person to introduce this theory was Victor Riqueti de Mirabeau in the 18th century. Industrialization plays an essential role in social theory. It is often described as the main agent in the construction of modern society; Hobsbawn (Hobsbawn, 1968) said: “the industrial revolution marks the most fundamental transformation of human life in the history of the world recorded in written documents". But others believe that industrialization is only one component in a set of changes, including rationalization or urbanization. Berg will say: “the industrialization process is an expression of a complex of forces that are really rooted in more general processes, in what are most aptly characterized as the processes of modernization" (Berg, 1979). There are two main parties: The classic liberal theory supported by Durkheim and the critical theory of uneven development supported by Marx (Marx, 1867). The first theory believes in “laissez faire” economies and the second one criticizes the industrial capitalism. According to Werner Sombart (Sombart, 1928), the industrial revolution, which is the turning point in the industrialization of the industries, is a phenomenon that already started in the 14th century with the emergence of the bourgeois society in Florence, Italy. According to Fernand Braudel (Braudel, 1967), the term “industrialization” could define a process, which is more or less progressive and not brutal as it is described in the United Kingdom. Later on, the French historian, Patrick Verley insisted on the continuity of this phenomenon as the driving force of the industry’s growth in the late 17th century and in which lays the demand dynamism for consumer goods in order to stimulate technical progress (Verley, 1997). Industrialization modified consequently the industrial world in the 20th century. As Burnham claimed (Brunham, 2003), during the Industrial Revolution, the industrialist put the merchant as a leading actor in the capitalist system and influenced the decline of the traditional handcraft skills of artisans.

As a reference, the clock & watch industry industrialized in the 20th century by switching from an artisanal production to a factory mass production in the United States and Switzerland. Later on, some Asian industries followed the same path with Japan and Hong Kong watch industries in the late 20th century. The Industrial Revolution led to increased technology intensity, which helped to shape modern society. The concept of “laissez-faire” is the following: “Let-it-be economics: the belief that an economy functions best when there is no interference by governments” (The Economist, 2015). The invisible hand of the market is the main element of the concept: the economy is guided by an organic development. Therefore, institutions and government are playing a marginal or secondary role. Adam Smith (Smith, Cannan, Lerner, 1937) first introduced the term “invisible hand of the market” in order to describe the natural force that drives free market economies. According to him, this invisible hand will guide the actors involved in exchanges of goods and services to trade in the most mutually beneficial manner, and laissez-faire economics is the best strategy to deliver national growth (Brophy, 2002).

On the contrary, the “visible hand” relies on a form of superior authority, including governments and monopolistic firms that constrains and surpasses the invisible hand in the coordination of economic activities (Chandler, 1977). The laissez-faire concept is not applied in all economies, and governments still control the main key sectors as in China for example. But the roots of Hong Kong economic governance lay on the “laissez-faire” concept.

As mentioned above the Swiss industry entered into the process of industrialization in the second half of the 19th century. Three factors enabled the mass production. First, the introduction of electrical energy promoted the mechanization of work. Then, the population was growing but was not absorbed by the primary sector, thus this workforce was used in the workshops of the secondary sector. Finally, this free-trade period was another a key factor. The Swiss domestic market was very limited and opening its borders to the world could achieve the sales required for profitability. And in the absence of protectionist taxes, technical advance was a decisive element in which Switzerland had a very good position compared to the competition (Charpilloz, 2003). Therefore, the clock & watch industry substantially helped the Swiss economy to move from an agricultural economy to a manufacture economy by creating many jobs in the secondary sector.

Global value chains and segmentation

The term “Global commodity chain” is the ancestor of the term “global value chain” used today, which defines the whole process of production of goods from the raw material to the purchase by the end-consumer. Behind this definition, Gereffi distinguished two types of chains: producer-driven chains and buyer-driven chains (Gereffi, 1994). In producer-driven chains the main company is the manufacturer that monitors the production system through its network of suppliers, sub-contractors, and subsidiaries. In buyer-driven chains, the main company is the retailer that transfers its position from its consumer market knowledge, while they outsource most of their production. Adam Smith (Smith, 1956) recognized that the existence of the different demand of goods and services are based on the Imperfect Competition theory (Robinson, 1938). He said that “Market segmentation involves viewing a heterogeneous market as a number of smaller homogeneous markets, in response to differing preferences, attributable to the desires of consumers for more precise satisfaction of their varying wants.” Since then, many other definition of segmentation has been suggested but this one was retained for its value and accuracy. This macro view of segmentation was then studied more into details and helped to understand the apparition of group of consumer responding the same to the marketing mix (Dickson and Ginter, 1987). Industries had to adapt their production from low-end to high-end, based on these consumer demands in order to satisfy them; the clock & watch industry being now segmented as such though different regions of the world.

Network economics and supply chains

Nagurney (Nagurney, 2003) says that the evolution of physical networks in time and space as well as the effect of human decision-making on these networks help to develop theories and methodologies that are network-based. Network has impacted many disciplines, including economics, biology, engineering, mathematics and physics. The concept of network in economics was first introduced by Cournot (Cournot, 1838) who stated that “competitive price is determined by the intersection of supply and demand curves, and had done so in the context of two spatially separated markets in which the cost associated with transporting the goods was also included” (Nagurney, 1993). Beckmann, McGuire, and Winsten (Beckmann, 1956) also clearly acknowledged the generalization of networks as a means of theorizing even decision-making of a company with paths matching production processes and links corresponding to renewals as the material moved down from the source to the endpoint. The paths then abstracted the production possibilities accessible for a company. Zhang, Dong, and Nagurney (2003) have lately generalized to recognize not only paths but also chains in networks in order to isolate the “winning” supply chains. Paths correspond to processes of production and links can be either interface or operation links in this application context (Nagurney, 1993). Supply chain and networking are two essential concepts in the clock & watch industry because companies producing watches highly depend on suppliers of components and raw materials. The industry is based on networks that work like gears, which have to be efficient and reliable in order to deliver the final product.

Large and SME subcontracting linkages

Subcontracting is a particular form of outsourcing that involves close relations and information exchange between companies (Heshmati, 2003). Three main theories can explain the process of subcontracting. The first one is the “dualistic approach” which considers that large companies have more power than small companies and realize benefits at the expense of small subcontractors (Berger and Piore, 1984). The second one, called “development approach” is about a positive relationship between large and small firms that work together (Watanabe, 1971). Holmes (1986) identified three main types of production subcontracting following this approach: capacity subcontracting, specialization subcontracting, and supplier subcontracting. In the first case, the only part subcontracted by a subcontractor is the fabrication of the product asked. In the specialization subcontracting, the decision about the method of production is also on the hands of the subcontractor. Finally, the supplier subcontractor is supposed to have the full control on the development, design, and method of production. In the 1970s-80s, subcontracting was seen as a tool for modernization. For example, Watanabe claimed, “subcontracting can smooth the path of small enterprises and make them a suitable instrument for mass employment creation in developing countries that are committed to industrialization” (Watanabe 1971). The third one is the “networking and clustering approach”. It consists in understanding subcontracting as support networking initiatives and development of industrial clusters (Pyke, 1992). Clusters accrue significantly benefits for the industry; firms located in these industrial clusters can act as contractors and subcontractors at the same time (Rama, 2003).

6. Competition versus cooperation between the Great Hong Kong and Switzerland (Part I)

6.1. The clock & watch industry in the Great Hong Kong Region

6.1.1. Introduction

The major characteristics of the capitalist service oriented economy in Hong Kong are the free trade policy, the low taxation applied by the local government, the minimum public interference, and the strong links with Mainland China and the Asia Pacific region. The free market policy refers to the concept of positive non-intervention. It is made possible thanks to the maximization of governmental revenue made on property taxation, due to the fact that the Hong Kong government controls land ownership in a highly urban density setting, and thus does not need revenue from other taxes. A minimum wage policy was implemented in 2010, a long time after foreign investment has been made in the clock & watch industry. Therefore, all these business friendly advantages have attracted many foreign companies. The free trade policy suggests that Hong Kong continues to apply no barrier to trade. Thus, Hong Kong does not commit taxes on exports or imports of goods. Licensing is also kept to a minimum. The natural need to fulfil public obligations to meet public health, security or safety is the only case when the local government applies the licensing policy.

However, the Hong Kong government controls some key economic infrastructure, including the airport, the port, public transportation, and most importantly the land, which provides the major flow of public revenue. The local government plays a kind of subsidiary role in between the fifty business elite families of Hong Kong and the Central Government and the Communist Party of China. Its major competences focus on urban planning and development, infrastructure, and monetary policy.

As of October 2013, more than 210 Swiss companies were based in Hong Kong, with a focus in banking, insurance and pharmaceutical as well as in a few other sectors. About 110 Swiss companies have their regional headquarters or offices in Hong Kong, especially to obtain better access to Mainland China and to other East Asian countries.

The biggest trading partner of Switzerland in the clock & watch industry is by far Hong Kong. As the figure 6 shows, the trading route towards Hong Kong is the most important regarding finished watches ready to be sold in Hong Kong or just in transit to be sold in other Asian countries. On the reverse way, most of the product transiting between Hong Kong and Switzerland are parts of watches (components) ready to be assembled in manufactures in Switzerland.

Hong Kong is the largest market for Swiss watches sold in Asia, which still serves as the commercial hub for Asia and bought 20.4% of Swiss watches in 2012. In the 1980s, Swiss manufacturers started to delocalize their production plants to Hong Kong in order to reduce the costs of production.

Swiss manufacturers used to produce various watch components, and ship sent them to Switzerland to assemble all the parts. It is still the case nowadays but in smaller amounts. Hong Kong and Chinese firms have also started to produce their own watches “Made in China”, and to compete with Switzerland at least on cheap range of watches. Since the early 1990s, Hong Kong/Swiss manufacturers have started to face Mainland China’ s competition producing at cheaper prices and attracting more investors. This trend is mainly the result of cross-border delocalization from Hong Kong to the Guangdong region and the Pearl River Delta. Hong Kong is then used only for the transit of watches and components between Switzerland and China. Hong Kong and the Guangdong Province are commonly named the Great Hong Kong in economic and trade terms as they are both dependent on each other.

While Hong Kong was industrializing, local manufacturers such as watch producers did not receive any type of public assistance. Manpower training, research and development, new technology, and the provision of capital to local manufacturers, were considered as a failure in technological advance of this country, as well as the lack of space to build more production plants (Borrego, J, 1996).

The indirect way the government was involved in the manufacturing sector was by trying to attract more industrial investments by making available more industrial land for the settlement of manufacturing firms. The problem was that this move was attracting large companies and small firms were left aside because of the expensive prices of land set by the government.

One of the explanations about Hong Kong strong position in the watch industry is the city-state benefit of its free market economy that attracted a lot of companies and its strategic location in East Asian routes. Swiss companies saw a major opportunity to implement production plants there as Hong Kong government let the market develop organically.

Regarding the clock & watch industry in China, relations are particularly close with Switzerland. Foreign watches, including Swiss watches are re-exported from Hong Kong to other Asian countries, including China. Conversely, a number of quartz watches and watch components made in China transit through Hong Kong before going abroad, especially in the United States but also in Switzerland, or return to China. Even though trades between the two countries are slightly decreasing, both countries would not be able to survive separately as the industry has become very dependent. Switzerland receives a lot of components of watches from China, whereas China sells a lot of luxury Swiss made products on the domestic market. The recent free trade agreement between Switzerland and China will facilitate even more trade within the industry.

The number of watch producers grew in the late 20th century, starting in the Guangdong Province, close to Hong Kong, and then expanded in the coastal provinces further north. This expansion is the result of the production companies from Hong Kong that migrated in neighbor China to reduce costs such as labor. This increase of production in Mainland China is becoming a threat that Switzerland should contain before those companies gain enough power to direct and lead the Asian market by its own. Chinese market took a lot of market shares from Hong Kong in the low-end and mass production. Mainland suppliers have eaten a lot of Hong Kong suppliers such as Wal-Mart, which produced an important number of watches. It is now only producing in China whereas in the 1980s-90s it was producing in Hong Kong.

6.1.2. Production

The table below shows that the number of clock & watch enterprises in Hong Kong started to increase sharply in the 1980s to reach its apogee between 1980 and 1985 (Hketoberlin.gov.hk, 2014); it almost reached the same level than Switzerland, knowing that the Swiss watch industry was employing nearly 50’000 people after the crisis in the 1970s, which was the lowest employment rate in the Swiss watch history (Fédération patronale, 2015). Then it started decreasing because of the delocalization in the

Guangdong region. This shift of production sites will be explained later on the paper. In comparison, the Swiss sector was employing 55’816 workers in 2012 (FHS, 2014).

Table 3 - Number of watch companies based in Hong Kong (1960-2014) (GovHK, 2014).

	1960	1965	1970	1975	1980	1985	1990	2014
Enterprises	61	102	229	471	1’509	1’805	1’690	121
Employees	2’433	4’556	9’773	15’783	49’454	36’692	27’154	887
Employees as % of all manufacturing industries	1.1	1.3	1.8	2.3	5.5	4.3	3.7	0.8

As of the year 1994, Hong Kong was still dominating the low-end segment; it overtook the Japanese market in 1987 indirectly, through the delocalization of two of the three most important watch companies in Japan (Seiko and Citizen) to build production plants in Hong Kong. Despite facing competition against the US production of LCD (digital) watches in the 1970s, the industry could find a new impulsion with quartz movement brought by Japanese firms at that time (Glasmeier, 1994).

Nowadays from a manufacturing point of view, many Hong Kong-based companies delocalized to Mainland China; thus the number of production companies sharply decreased and it is not anymore a matter of manufacturing but managing the process of production in Mainland China. Hong Kong watch industry is more focused and plays a major role in the service, management and small production delivery regarding the watch industry. The largest production of watches is currently located in the Middle Empire and more precisely in the Guangdong Province. The current situation in Honk Kong only includes a few production firms that are producing hundreds of watches (compared to thousands of watches produced each year in the 1980s).

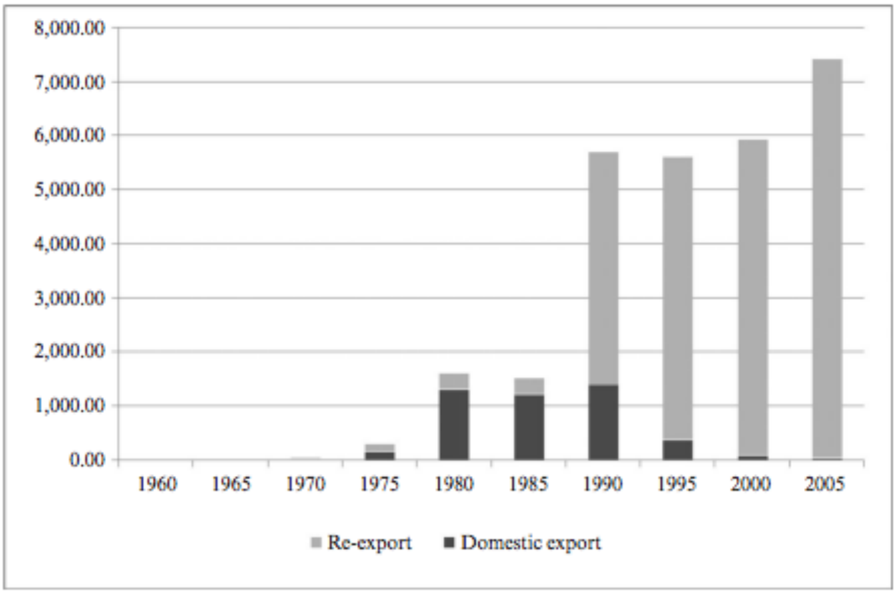
Several factors helped the city keep the watch manufacturers from delocalizing to Mainland China until the 1990s. For example, the international trade law regulated the name of origin of a watch to its country of assembly. The minimum wage policy was not implemented before 2010, keeping the cost of labor rather cheap. Incentives were offered to companies that wanted to produce in Hong Kong; low tax, export, and import policies which are a major factor for companies that trades internationally especially in the watch industry. But all these features were becoming eroded over the years and Mainland China took the advantage in the late 1990s by applying similar policies in special economic zones that were created in the country.

6.1.3. Sales

The production level of Asian markets is the equivalent of the production in Europe or America, sometimes even more advanced in terms of technical capability. But the sales segment of the watch industry in Hong Kong has a complete different timeline than the production segment. It is very important to make the difference between these two segments. In the sales segment, Asian firms are running behind, with Hong Kong as the only exception, but only from a retail point of view.

As introduced earlier, the city-state is the most important distribution center of watches in the world and is the largest importer of finished watches. As a fact, 20% of Swiss finished watches were sold in Hong Kong in 2014. The main consumers in Hong Kong are Mainland Chinese coming to Hong Kong with the intention to shop. The 2015 trend is showing an increase in sales volume but a stagnation in terms of turnover. The main explanation is that Chinese tourists are less wealthy than in previous years and spend less while shopping in the city-state (Zaki, 2015). Since the delocalization movement in the 1990s, Hong Kong has shifted from a production center to a re-export and retail center used by Chinese production to ship their products all around the world (figure 3).

Figure 3 - Composition of Hong Kong Watch Exports, Millions of USD, 1960-2005 (*Donzé, P. 2010)*



The fact that the government does not perceive any taxes on watch products is a major advantage for Hong Kong. Thus, watches sold in retail stores are cheaper in average than in other countries except Switzerland. Historically, Hong Kong has always been a major distribution hub thanks to its efficient and reliable transit platforms, including the airport and the port of Hong Kong.

6.2. The rise of domestic Chinese firms

Chinese watch companies are emerging in the global competition and can put forward some serious advantages that other companies do not have. Tianjin Seagull (founded in 1955), Beijing Watch Factory (founded in 1958), and more recently Fiyta (founded in 1987), which is owned by the government, are Chinese companies growing in the middle and high-end segment with international ambitions.

Before the 21st century, Chinese companies were limited to the production segment (Original Equipment Manufacturer) in the watch industry. Since then, companies acquired the knowledge and the skills to grow by their own thanks to the transfer of technology occurring with the delocalization of watch manufactures from Hong Kong to China. Nowadays, These companies have the competences to compete with Swiss or

American brands in almost all the stages of the global value chain according to professionals.[1]

The will of the Chinese government to reduce watch importations in the 1950s (Byrd et Tidrick, 1992) was undertaken by the government itself who currently owns Fiyta and launched Tianjin Seagull as well as Beijing Watch Factory to have a certain control over the local industry. The country exported 23 times more watches than Switzerland in terms of volume, whereas the value exported is 4.5 times inferior to Switzerland (Crédit Suisse, 2013). It shows that the country is a very important player in the industry and has some important degree of market power. The table 4 expresses the statistics that confirm the significance of this player.

Table 4 - China vs. Switzerland in terms of volume and value of exported watches in 2012 (Wthejournal.com, 2015).

	Volume exported (million)	Value exported (billion)
China	678.5	5.1
Switzerland	29.5	22.95

The Chinese industry started to diversify its activities into the watch industry in the late 1970s to become a major player in the watch component supplier segment following the experience of Hong Kong a couple of decades earlier. It is conjointly the result of the delocalization of production firms coming from Hong Kong.

The Chinese government was highly involved in the process of the development of the watch industry, firstly, by building local watch companies, but also by creating special economic zones (SEZ), in the Shenzhen area in particular. The government established these special zones in order to attract FDI by offering special tax and fee incentives. The Shenzhen SEZ is located on the boarder with Hong Kong. It facilitates trade with Hong Kong, which is a major transit hub in East Asia. The concept lies on three main pillars: labor intensive manufactures, technology transfers resulting from FDI inflows, and preferential trade arrangements. The successful integration of these zones is mainly due to access to low-cost labor, land, and raw materials; size of the potential domestic market; and government incentives (Wu, 1997). The local watch industry is nowadays well established in the Shenzhen SEZ where more than 200

[1] Interview with Marco Sieber, CEO and Chairman of TMS Group based in Hong Kong. Basel, March 25th, 2015.

watch manufactures were located in 2012, forming a ideal logistics cluster to reduce transit flows (Pan, 2012).

The current situation is complex in the Chinese watch industry, which is globally distributed and horizontally integrated. Two major trends are defining the market. On the one hand, the largest and most experienced brands, including Tianjin Seagull, Shanghai Watch factory, and Beijing Watch Factory are attempting to move upmarket to the high-end segment by producing watch complications (high-end movements) as the Swiss brands. On the other hand, several Chinese factories are manufacturing their own movements and sell them to other Chinese companies. This has been leading to the rise of another type of companies called "mushroom companies" that appear overnight and sell their products only online for very cheap prices. Then, they disappear as quickly as they had appeared (Sri, 2014).

Table 2 - Tariffs in China's trade of watches and parts thereof in 2015 (ITC, 2015)

Watches trades	Tariff (estimated) applied by China (%)
Singapore	0
Thailand	0
Vietnam	0
Malaysia	0
Hong Kong	4.8
Switzerland	11.1
USA	13.2
Germany	13.2
Italy	13.2
Japan	13.2
France	13.2

Watches trades	Tariff (estimated) faced by China (%)
Singapore	0
Hong Kong	0
Thailand	0
Switzerland	0
Malaysia	0.1
Japan	0.2
USA	0.7
Germany	1.9
Italy	1.9
France	1.9
Vietnam	5

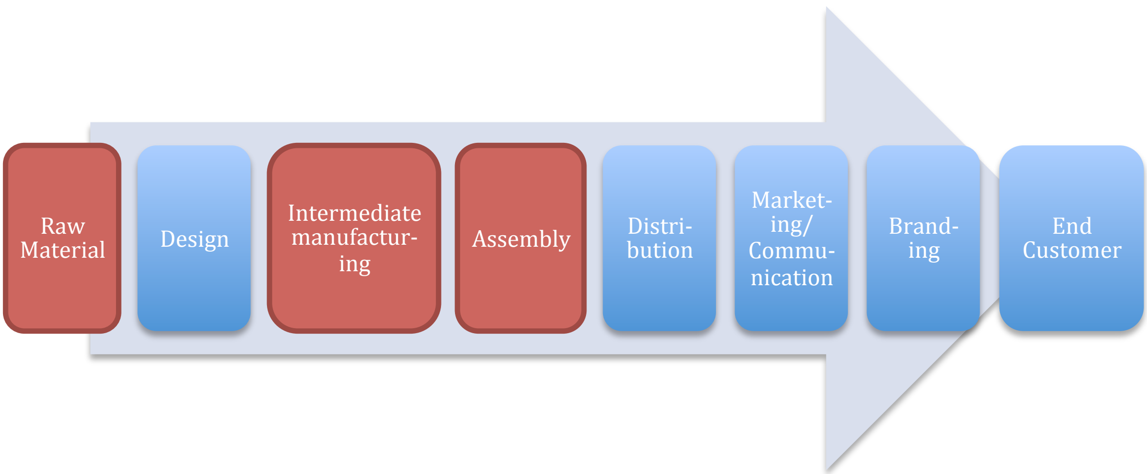
Looking at the tariff applied and faced by China regarding the watches trades (table 4), the strategies implemented by the Chinese government can be analyzed. It is fairly clear that imports of watches and parts thereof in China are facilitated for countries supplying China in components. Thus, Thailand, Vietnam, and Malaysia are benefiting of free trade policies when exporting watches to China. Then, in the export of watches and parts thereof out of China, preferential tariffs are applied to countries that have substantial import of watches coming from China such as Singapore, Hong Kong, and

Switzerland. Even though other countries do not have important tariff policies when importing watches from China. The analysis of tariff related to watches import and export helps us identifying the strong will of the Chinese government to facilitate trade in the watch industry and promote the production and development of Chinese brand internationally.

If Chinese brands are successful moving up market and producing luxury watches, how will the consumer market react to the rising supply of watches? Jean-Claude Biver, head of Watchmaking at LVMH (Tag Heuer, Hublot, and Zentih Group), one of the most influential professional in the watch industry says that "the Swiss watch industry has no competition", (Swiss Watch Wire, 2012) the high positioning of the Swiss industry is very difficult to reach and the barriers to entry are very high; they are not only tangible assets, but also intangible like the brand image, the history, and the value of a Swiss Made watch. J.C. Biver defends his position by saying that "nobody will buy a $10,000 watch if it's not Swiss made" (Swiss Watch Wire, 2012), thus Chinese brands will have to find a new consumer pool instead of taking consumers that are buying Swiss watches.

6.3. Industry segments in which Asian companies are a threat

Chart 3 - Typical value chain in the watch industry



At a macro level, the Great Hong Kong is a threat to the Swiss industry. Its growth potential and the ambitions of local Chinese firms confirm the willingness to compete on a global scale. The segments in which a company based in the Great Hong Kong is a threat to the Swiss industry can clearly be delimited by considering the value chain of a typical company in the industry. On the one hand, China is highly competitive on the upstream stages of the value chain, in raw material, manufacturing and assembly. Indeed, it already dominates the low-end and mass production segment. For example, Wal-Mart, the American retail store has its watch suppliers located in Shenzhen. It is the largest client in China in terms of watches orders and the largest watch retailer worldwide. Therefore the production plants located in Mainland China (mainly in Shenzhen) have a higher power in terms of dependence-relation (Wal-Mart, 2014). On the other hand it still lacks of skills and knowledge on the downstream level regarding the marketing, communication and relationship with the customer.

Several factors could lead Chinese companies to compete with the leaders in the industry:

Firstly, the “Made in China” is often related to poor quality production, but hundreds years ago this origin was assimilated to high quality product including silk, porcelain, and ceramic. This prestigious history could be used as a marketing tool to move up the value chain as some companies are already trying to do. In a near future, the strategy should clearly pay off. Since the years 2000, the quality of Chinese products has been improved. In the watch industry, Chinese companies such as Fiyta or Tianjin Seagull are already producing high-end watches including tourbillions (which is the most expensive complication to produce for a watch). The government is also highly supporting these brands to raise the quality of watches produced. According to a survey (HKTDC, 2010) conducted at the Hong Kong Watch & Clock Fair in 2011, the product designs with the biggest growth potential in the Asian market are jewelry/gemstone watches as well as automatic movement watches, which reinforces the Chinese government’s belief to move up with the quality of products manufactured in China and investing in local brands. It is only a matter of time before we see Chinese luxury watch brands competing with established luxury companies (CKGSB Knowledge, 2012). To go a step further, some Chinese brands are shifting from the « Made in China » to the « Created in China », in which designs and development belong to the Chinese company itself and help the companies to differenciate from the negative perception of « Made in China » (HKTDC, 2014).

Secondly, the Great Hong Kong region is already benefiting from a great infrastructure for watch production. Thus, logisitcs and skills to produce are already available, and technological skills can compete with global companies. They are even more advanced in some sectors of the industry, and they are the most important suppliers of external parts for Switzerland (parts completing the external appearance of the watch). Another argument for Chinese brands to move up to the luxury segment is that it is the most secure and reliable segment of the industry. In other words, the economic crisis in 2008 hit the low and middle segments, but the luxury sector did not face any decline in terms of sales to the end customer. Therefore, it is a low-risk strategy for the Chinese government to invest in the luxury segment in order to avoid external risks that cannot be controlled such as a global crisis.

Thirdly, the potential and serious threat coming from the upstream level of the supply chain is a positive factor for China. Chinese suppliers of components benefit from a large and easy access to raw material needed for the production of watches. The location of production plants for such supplies was wisely organized to be close to raw materials in order to facilitate their transit (Wu, 1997). The threat is also imminent in the production and assembling chains of the industry. This region has a large pool of labor force, and extensive hour regulations are much more attractive than in Europe or North America. Paradoxically, the quality control is more efficient in China than in Switzerland in the low-end and middle-end segments. This is because Chinese companies can employ more people for controlling operations, and thus a largest number of watches are checked before being send to the retail stores. Marco Sieber, owner of a watch company in Hong Kong, noticed that in a collection of Swiss watches, 10 out of 100 watches have to be sent back because of defects or broken parts; whereas only 1 out of 100 watches coming from a Chinese firm has a defect.[2]

Fourthly, the Chinese consumer market has the biggest potential growth in the next decades. It is an important opportunity for Chinese companies because the average Chinese consumer purchasing power is increasing every year. Moreover, studies have shown that local brands are preferred to foreign brands. Nevertheless, the trends and customs in the watch industry are slightly different: so far, the only brands that have acquired notoriety and reputation in the high-end segment are Swiss companies. But once the Chinese brands such as Fiyta or Tianjin Seagull will reach adequate communication skills, they will become serious competitors for Swiss brands. In terms of revenue generated, Swiss products dominate the segment of watches with a unit price of above CHF1'000 belonging the high-end category. Whereas low-end watches segment priced below CHF150 is dominated by domestic brands (HKTDC, 2014).

[2] Interview with Marco Sieber, CEO and Chairman of TMS Group based in Hong Kong. Basel, March 25th, 2015.

Fifthly, Chinese brands such as Fiyta, Tian Wang, Rossini, and Tianjin Seagull are already securing and protecting their market shares from international competition. They have patents and proprietary intellectual property rights on their products, in which some have invested in the most advanced technologies. They have already mastered the three most elaborated complication movements in the industry (tourbillon, minute-repeater, and moon phase perpetual calendar), and they are ready to mass-produce these types of watches (HKTDC, 2014).

The drawbacks of the Chinese watch industry stand somewhere else. Even though Chinese companies are bringing a growing threat at the international level in the upstream stages of the value chain, they are still in the learning process in several areas, including marketing, communication, and customer relations.

The know-how concerning the downstream stages of the value chain in communication and marketing areas is still inferior in East Asia compared to Western countries. Swiss high-end brands are much more powerful in terms of marketing and communication, whereas Asian (China, Hong Kong, and Japan) companies are still following at the lower level. Swiss brands are far ahead from Chinese or other Asian brands in terms of visibility and communication to consumers. For example, when analyzing the stands of Asian, European and American brands presented at the largest watch & clock fair Baselworld in Switzerland, it can be clearly seen what brands care the most about their visibility. European brands (mainly Swiss) cover the most visible places in that famous fair (figure 4), whereas the only Asian-owned company, Corum (red square) is located in a corner with limited visibility. Even more striking, Corum before being acquired by a Chinese company was located on the first left stand in front of the main entrance with the best visibility (Baselworld, 2015).

Figure 4 - Floor plan at Baselworld Fair 2015 (Baselworld, 2015)

It shows that Asian brands do not invest on the downstream levels, including communication and marketing, but are more focus on the development, innovation and production endeavors. The second reason about this change of location at the fair is because the group owner of Corum, Kering Group wanted to have all its brands on the same stand even though the only Chinese-owned company has the worst location allocated (Kering, 2015). As this fair takes place in Switzerland, there is a certain protectionism movement occurring within the exhibition in which major actors (Swatch, Rolex, and Patek Philippe) have a powerful and influential presence when it comes to the dispositions of the stands. Even though a Chinese firm would be willing to massively invest for an interesting place, there only a few chance that the company receives a visible place on the main floor at the fair.

There is a parallel market in the clock & watch industry that should not be neglected. The counterfeit market of watches is very important where 10 millions of Swiss counterfeit watches are sold annually. China produces 72% of the counterfeit watches worldwide, It is considered as a serious threat that not only Swiss companies are facing, but also regarding Japanese as well as American companies (FHS, 2007). The consequences for the Swiss watch industry mainly concern the image of the official brand. It would impact as a "brand dilution". Indeed, when a product is counterfeit at a large scale, customers will tend to shy away from it, preferring to invest in a brand that is able to keep intact its symbol of exclusivity, especially for high-end parts (Pittet, 1997). It would also cause a loss of confidence on the part of potential buyers, who find same watches of lesser quality on the market compared to the original.

To conclude, Asian firms are in terms of technical capability a real threat to Switzerland. Chinese companies have started to acquire Swiss watch companies to obtain the necessary knowledge and skills, and upgrade their brand value in Asia. However, the Asian threat is not alarming from the perception and marketing viewpoints. Even if downstream stages of the value chain are not threatening the Swiss industry, it is not a reason to minimize and neglect the threat because Chinese brands will soon be able to focus on that last segments in order to be able to compete on every steps of the industry.

6.4. Swiss Counter Measures

6.4.1. Swiss Made label

In order to defend Swiss products and more precisely Swiss watches, the Swiss Federal Council enacted an “ordonnance” regarding the Swiss Made label in 1971 (P, B. 2015). It is the first time a Swiss watch was protected by law.

The “Swiss Made” label is the only real reference in Swiss watchmaking matters. The Swiss label is not only based on an intrinsic value, but also on criteria defined by law. It is a federal order that sets the conditions for a clocks and watches being eligible to receive this famous label. To obtain this Swiss certification, a watch must contain a Swiss movement (both quartz and mechanical) cased up in Switzerland, and the manufacturer has to carry out the final inspection in Switzerland. Regarding the movement, it must be assembled and inspected in Switzerland, and produced with Swiss components for at least 50% of the total value of the watch components, but without adding the cost of assembly. This rule was introduced in order to differentiate Swiss watches and increase the standard of production to make the Swiss product more exclusive from a quality point of view versus its Japanese competitors that were threating the Swiss industry at that time. Since then, it has been the most important move made by the Swiss key players and it particularly helped Switzerland moving out of the Japanese crisis.

6.4.2. A future revision: Swissness

Nowadays, the Federation of the Swiss Watch Industry wants to strengthen the criteria of the label to guarantee Swiss brand long-term credibility and value, as well as counter rising Asian competition. The aim of the Swissness revision would be to increase the rate of Swiss value from 50% to 60% for quartz watches, and from 70% to 80% for mechanical watches (FHS, 2015).

The Swissness concept is a revision of the current federal law on the protection of trademarks and of indications of origin. The Federation of the Swiss Watch Industry wants to go from the “Swiss Made” to the “Made in Switzerland” (Theodore Schneider, Breitling CEO) and this revision of the Swiss Made label goes in this direction. Because the conditions of employment of these indications in general and in Switzerland in particular were not established in details so far, the Swiss parliament adopted this revision on June 21, 2013. Therefore, Swissness introduces new criteria to determine more accurately the geographical origin of the product or service (not only for watches); the law defines to what extend a product can claim the Swiss origin label. This new legal basis is also meeting the demand of consumers around the world willing to pay more for products stamped Swiss made, and rightly manufactured in Switzerland. As a result of this and from the beginning of the administrative tasks, the watch industry supported with determination the principle of strengthening the criteria defining the Swiss Made label. The new criteria are different for different industries in manufacturing and services. In the case of the watch industry, the new law fixes a 60% minimum rate of Swiss value for any product. The adoption of the Swissness law involves the modification of the existing application “ordonnance” regulating the use of the Swiss name for watches since 1971. Therefore, the criteria for obtaining the Swiss Made label for watches are modified and strengthened. The watch industry is the only Swiss industry to benefit from such a federal order (FHS, 2015b). This new law is the logical continuation of the protection of the Swiss watch industry towards the strong Asian competition, especially from Mainland China. Reinforcing the rules to produce Swiss Made products could go hand-to-hand with the recent agreement signed in regard to the free trade policy with Switzerland that could influence companies to reduce their prices (Fehr-Bosshard, 2015). However, there is very little chance of observing a decrease in watches’ price in the future because of the increasing cost of production in the Middle Empire. That would be the drawback of this good news. In other words, if a company decides to decrease its prices because of the free trade policy and facilitation with Switzerland, it could face problems in the long-term because of the rising cost in China.

6.5. Conclusion chapter

The Great Hong Kong region clock & watch industry is the most important key player in the industry together with the Swiss one. Yet, a difference lies between production and sales. If the Great Hong Kong region is perceived as a competitor in terms of brand productions in Switzerland, it is not the case in the retail sector as it is the largest market for Swiss brands, which realize the majority of their sales there (in Hong Kong only). Chinese domestic firms aiming to compete in the low-end segment want to upgrade their production to move to the middle and high-end segments. This strategy is implemented and supported by the Chinese government. To protect its industry, Switzerland is implementing new regulations such as the “Swissness” revision in order to face rising global competition. To avoid this problem, Chinese companies are expanding through the acquisition of Swiss companies such as Corum or Eterna in order to obtain crucial technology transfers and marketing know-how. It also gives substantial added value to Chinese companies such as Citychamp Watch & Jewellery Group Ltd (formerly known as China Haidian Holding) listed in the Hong Kong Stock Exchange. The trade route between Switzerland and East Asia is the principal and most important in the world. This connection is positively and negatively affecting the Swiss industry. It allows Swiss companies to outsource part of their production to reduce costs of production. However, it gives the opportunity to create their own chain of production and provides a solid base to the competition.

7. Asian competitions faced by Switzerland: Comparison and differences (Part II)

7.1. Introduction

The emergence and development of a watchmaking industry in Japan - principally the Seiko Company - in the years 1880-1940 appears as the result of a highly successful international transfer of technology from Western countries. In particular, Swiss and American firms established joint ventures in Japan and produced quartz watches. The Japanese watch industry was highly integrated and principally based on the Hattori group, which was taken over in the 1930s by the Citizen Company: Hattori also revealed to be a leading distributor of Swiss watches, but also a purchaser of chablons to dissident houses and exporters of cases' watches. Hattori also benefited from national political support. Its relations with Japanese leaders have played a significant role in the adoption of protectionist measures against pro- importing Swiss watches in Japan until the mid-1890s.

For the Swiss watch industry, technology transfer to Japan was a failure (from a Swiss company point of view), since it gave rise to a formidable industrial and commercial competitor. It did not in fact manage to limit the transfer of basic knowledge translated to Japanese watchmakers for after-sales service in the Japanese market. The construction of an industry competitor revealed internal divisions of a highly compartmentalized Swiss watch industry, despite the cartelization of the Swiss watch industry (Donzé, 2013), and divided between the competing interests of the major exporters of finished watches, favorable to concentrated industrial ion and regulation for the chablonnage, and some small manufacturers and producers of movements, who saw this practice as a source of income and a way to fight against Hattori giant. The divisions and hesitations among Swiss watchmakers greatly explain the lack of response to Japanese competition, which was only stopped by WWII.

It is also important to consider the lessons learned from the experiences of the inter-war period by the Swiss and Japanese watchmaking companies after 1945. The Japanese watchmaking, based essentially on Hattori-Seiko and Citizen, then entered a new phase of strong growth in 1950-1960, and deeply undermined during the 1970s the Swiss dominance in the world market, with the birth of the quartz watch. The role of the Swiss watch industry in the reconstruction of its Japanese competitor, and its attitude to the commercial and technical successes of the Japanese industry probably enlightened the roots of the Swiss watchmaking crisis of the 1970s and, more generally, the history of watchmaking during the second half of the twentieth century.

Since then, Japanese watch firms have started to decline in the 1990s with the exceptions of Seiko, Citizen and a couple of other brands. They had to face the competition from Swiss luxury brands, which started differentiating their products at that time. The Japanese brands were not able to stand that competition race (Donzé, P. 2006).

7.2. Japanese competition

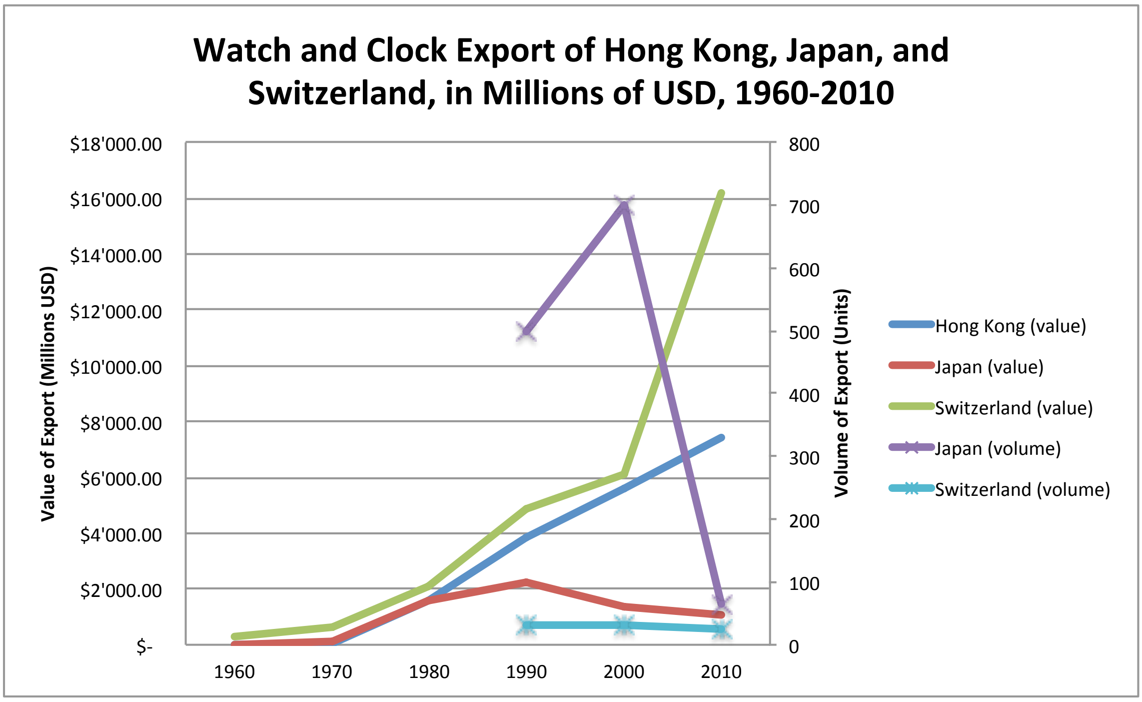
The first serious crisis that hit the Swiss watch industry happened during the 1970s-80s with the technological revolution of quartz movements (electrical battery), which almost forced the Swiss companies to go bankrupt. This crisis was at the origin of the decline of the Swiss watch industry in the 1970s, which chose to keep the traditional technology production of mechanical watches, while Japanese companies adopted this new technology and contributed to the largest number of watches produced worldwide.

The research & development on electrical watches began in the 1950s, both electro-mechanical movement and the battery system had to progress in parallel. In 1954, the Swiss engineer, Max Hetzel, was the first to develop an electronic wristwatch powered by a battery. The Bulova Company then introduced it to the consumer market in 1960. In the 1960s, both Swiss and Japanese R&Ds were working on quartz wristwatch development. The quartz battery had the capacity to reach an accurate mechanism precision. The challenge was to implement and reduce the size of such a system to a wristwatch model. Financially independent, Japanese firms were able to conduct research on their own. Citizen and Seiko were well-established companies, and had the potential to compete on a global scale. At the end of the day, Seiko was the first company to mass-produce an analog quartz watch, and such development made the Japanese watch sector the most recognized industry to produce quartz watches worldwide. Citizen and Casio benefited from their popularity thus boosting their global sales. Facing this revolution, the Swiss industry repositioned itself to the high-end segment of watch production in order to differentiate their mechanical products to the quartz and battery-powered products. To do so, the Swiss Made label helped communicating a different positioning of Swiss watches vis-à-vis Japanese competitors (Young, 1999).

Japan has been the only country to temporarily defeat the Swiss hegemony during the 1970s-80s. However, statistics show that Japan has become nowadays a mere shadow of what it was at that time. The value exported from Japan in 2013 was 16 times less than its equivalent from Switzerland, whereas it was only 6 times less in 2001 (ITC, 2015). But it is important not to neglect that a couple of companies still remains at the top of world watch classifications in terms of profit-making results. Citizen, Seiko, and Casio are still key global players having respectively 3.9%, 3.4%, and 2.1% of market shares worldwide in 2014, ranking them among the top 10 (Statisticbrain.com, 2015). The decline of Japanese watch production is paradoxically due to the quartz revolution that brought Japanese firms to the top of the watch industry. This innovation opened up the industry to new market locations, including Hong Kong and Mainland China due to the localization of low costs and skills there.

7.3. A comparison between Japan and the Great Hong Kong Region

Chart 4 - Watch and Clock Export of Hong Kong, Japan, and Switzerland (JCWA, 2015. Crédit Suisse, 2013. Donzé, 2010)



Before the 1980s, the situation was more or less the same for each country with a slight advantage for Switzerland that was exporting more (Chart 4). When the Quartz revolution occurred during the 1980s, Japan lost shares in terms of value, whereas

Switzerland and Hong Kong kept growing after 1990. Hong Kong took the opportunity to produce quartz movements, and Japan had to face rising competition and lost market shares. Switzerland had always a lower volume of production but its products were sold at higher prices over the years (Donzé, 2010). The volume of units produced by Japan sharply decreased in 2000 because of the strong competition against Great China that forced Japanese firms to delocalize their production. Japan had to find a solution to counter-balance this negative trend, and opted to produce only movements instead of finished watches.

7.3.1. Discussion of the low-end segment

The main similarity between its two competitors, Japan and Hong Kong that Switzerland had to face is that the low-end segment of production was involved. Barriers to entry were much lower than for the high-end segment, which required high-skilled labor and specific know-how to produce luxury watches. In addition, few companies were able to sell high-end watches when they entered the clock & watch market. Any company needs at least a couple of decades of experience to establish itself as a luxury watch brand manufacturer if it is not a Swiss brand. Therefore, Japanese as well as Great Hong Kong companies started to compete at the inferior levels of the market in order to have a chance to dislodge the leadership of Swiss companies. This strategy paid off as the Great Hong Kong took advantage over Japan, which was forced to change its production strategy to focus on movements rather than finished watches.

7.3.2. Competition and Swiss deficiencies

Switzerland did not protect enough watch intellectual property, and Asian competitors used this deficiency. Switzerland took counter-measures with the adoption of the Swiss Made label and now with the revision of the label to strengthen the criteria related to the “Swissness”.

Switzerland was not protected enough before Japanese companies took important market shares from Swiss companies. The same scenario happened with Chinese companies entering the industry. The main deficiency of Swiss companies was that they failed to protect their knowledge and leading role in the industry. Even though the Swiss Made label helped to defend its products, it is complicated to prevent any form of competition which will remain in the future despite the reinforcement of criteria for Swiss watch production to differentiate at the highest level possible. In other words, if Switzerland is able to protect its watches in a more efficient manner, a task which is however almost impossible, it would avoid many issues related to competition.

7.3.3. Swiss companies moved to upper markets

As Switzerland had already experienced a crisis when Japan invested in the low-end production with quartz movements, the competition with Hong Kong could not have the same origin. After the Japanese companies challenged the Swiss ones, the positioning of Swiss brands strengthened their differentiation in the high-end segment. Therefore, when the Great Hong Kong started to compete in the low-end segment, Swiss companies were already well repositioned and were not affected by this new competition. On the contrary, Swiss brands started to invest in Hong Kong and Mainland China to produce components and reduce costs. In parallel, Hong Kong became the largest retail center of Swiss watches in the world.

7.3.4. Collaboration with Hong Kong and competition against Japan

If we look at the retail segment and therefore the sale channels, Hong Kong is clearly a strong partner for Switzerland because of the high percentage of Swiss watches sold in this market. As a fact, Swiss companies such as Rolex or Omega have respectively 64 and 42 official retail stores in Hong Kong compared to 4 and 7 official retailers in Geneva (Rolex, 2015. Omega, 2015). The dependence that Switzerland has towards Hong Kong can become alarming if sale trends start decreasing in the future. Moreover, the competition coming from this region is due to the production of watches in the Guangdong Province. Therefore the relation between the two regions is not only in competing against eachother but also collaborating. When Switzerland was competiting with Japan, the situation was different as there was no collaboration on both sides. Both parties were completely independent from each others and acted as competitors.

7.3.5. Coming from one technological revolution

The Japanese competition was the reflection of a technological revolution. This innovation was developed concurrently in Switzerland and Japan. Japan has not benefited from the help of another country in terms of foreign direct investments as Hong Kong did. Domestic brands such as Seiko or Citizen were at the origin of this competition, whereas, the development of the watch industry in Hong Kong was later on mainly induced by FDI and foreign companies. The Hong Kong competition was not based as a technical innovation: quartz battery was already in existence since the 1990s (quartz movements are the main component for low-end products in which Hong Kong production was based on). But Hong Kong largely benefited from international investments. To sum up the situation, the Japanese competition was based on domestic factors that supported the development of the quartz revolution, whereas the Hong Kong competition was supported by foreign investments and not based on a technological innovation, as quartz already existed.

7.3.6. The concentration of the Japanese watch industry

The Japanese industry was highly concentrated on a few companies that generated the largest part of the national production of watches. The quartz development was made by one of these companies, Seiko. When the Japanese watch companies decided to diversify their activities and invest less in the clock & watch business in the late 1990s, the Japanese industry gradually lost shares vis-à-vis the Great Hong Kong industry that was growing year after year gathering many watch companies ready to grow. As a fact, Seiko lost two-third of its sales volume between the year 1990 and 2009. Since just a few key players were driving the national industry, the decrease in revenue happened very fast in Japan. This change of strategy by Japanese companies help to shape the success of the Great Hong Kong. But its success was also due to the high competition that occurred into the market that pushed numerous companies towards innovation. The FDI invested in the region since 1980 was a non-negligible source of financing too (Donzé, P. 2010b).

7.4. Other flows of competition

7.4.1. New competition for Japan: The Great Hong Kong

Beside the competition that Switzerland faced and is facing, other regions are competing in the watch & clock industry. We tend to forget that if the Great Hong Kong is a threat to Switzerland, it is also a menace vis-a-vis Japan and the United States. As the Great Hong Kong produces low-end products as well as both Japan and the US, competition is fierce.

Japanese firms such as Seiko, Citizen, or Casio started to delocalize production to Thailand and Malaysia in the 1990s in order to reduce production costs and be more competitive. Then, the diversification of activities of these three companies, as well as the shift of production strategy to produce only movements instead of finished watches, made the Japanese watch industry declining in terms of value exported and above all in terms of volume produced. This transition happened during the 1990s (Donzé, 2010b).

The current situation of these three companies is such that their main revenue is not generated from watch sales, which represents only 28% of Seiko's turnover for examples. It does not mean that Japanese watch industry is dying as the Casio G-Shock watch statistics show with more that 50 millions units sold before 2010; Casio has the top share of the global market for radio-controlled watches (Casio, 2012).

7.4.2. Smartwatches

The new and trendy innovation is called smartwatch. These connected wristwatches are creating a new competition in the clock & watch industry. Professionals have split opinions when it comes to predict the future of this new product range. Some see the smartwatch as a threat for the traditional products, whereas others claim that it will not affect the sales of traditional watches and companies could seize new opportunities. For example it will allow high-end brands to sell their own smartwatches at a lower price than traditional watches and thus acquire new consumers in those lower segments. However it is going to be interesting to see if the smartwatch innovation will challenge the industry, especially Switzerland that does not seem much concerned about it until now. What will be the impact of this second technological revolution (after the quartz revolution) on the industry? Is Switzerland protected enough and product differentiated to avoid a direct competition coming from these new products? The future will give the right answer. It is too early to observe its impact as the first smartwatch was launched in 2012 (Price, 2014). But a clear message is sent to the traditional industry, including Switzerland with the plan to substitute traditional watches in the future.

7.4.3. China versus Hong Kong: competition or interdependence

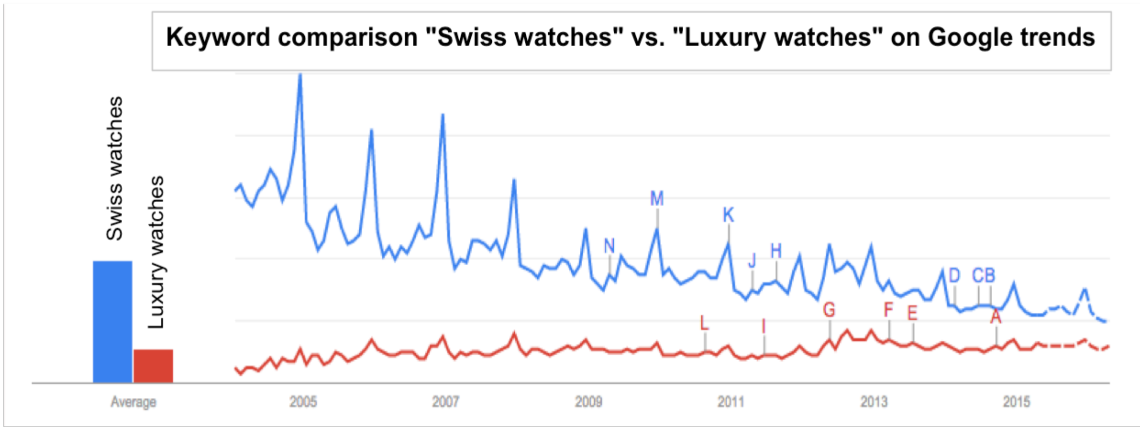
If a common belief tends to think about a competition between the city-state and Mainland China, the reality is much different. The particular interdependence between China and Hong Kong was strengthened during the process of industrial liberalization in Mainland China. Even if they are two distinct entities, they both work together and cannot be broken up in any case. Beijing wanted the control of Hong Kong so hard because the city had everything China wanted: international connection, wealth, and memberships in trade organizations. Those advantages would help China to pull out of their communist isolation and it would give incentive to modernize and industrialize the country. With the assistance of Hong Kong, China became the second largest economy in the world in less than 20 years (Makinen, 2014).

The delocalization of watch factories from Hong Kong to Mainland China should not be perceived as a « competition» won by Mainland China, but as a gradual evolution and convergence between the two sides of the border. The Hong Kong watch industry is more focused on clock & watch retail and service, sale management and delivery, whereas China (Shenzhen more precisely) concentrates on mass-production of watches and components of watches. To give an example of this collaboration, the Chinese government offers special tax reliefs for companies producing in Shenzhen and dealing with Hong Kong. Watches produced in Hong Kong and imported in China are exempted of any taxes, whereas watches coming from other countries have to pay 17% to 25% of tax duties.[3]

[3] Interview with Jeffrey Chong, Executive director at Edwin Watch Z Laboratory LTD in Hong Kong. Basel, March 25th, 2015.

7.5. Erosion of the Swiss Luxury watches image?

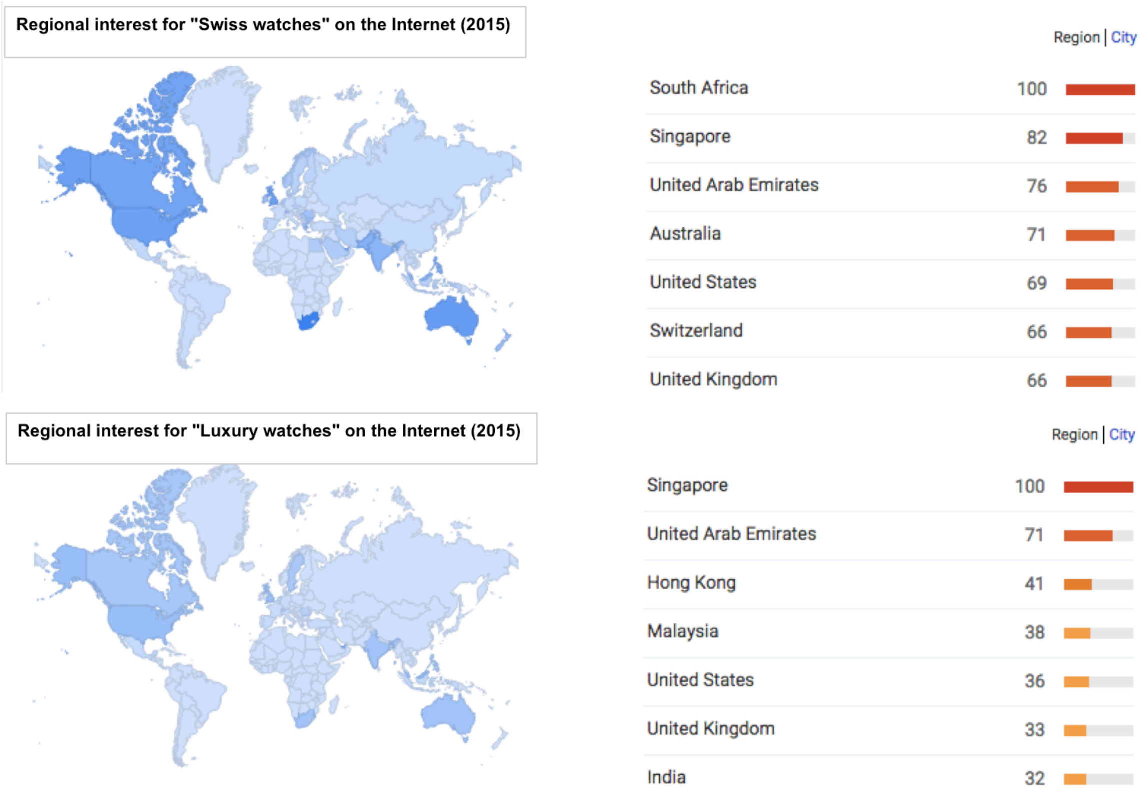
Chart 5 - Keyword comparison « Swiss watches » vs. « Luxury watches » on Google Trends (Google.com, 2015)



The Swiss watch industry is closely associated to watch quality and to its supremacy on the high-end segment of the sector. But looking at the past and current trends that concern the luxury and Swiss watches, we can question futures trends. A very interesting and reliable tool can be used to analyze those assumptions using Goggle Trends. Industry's trends can easily be connected with Internet trends by comparing sets of keywords related to the industry and understand how trends are moving forward.

Google Trends shows how regularly a specific search-term is entered, where the Y-axis corresponds to the total search-volume through distinct regions of the planet (Google.com, 2015). The chart 5 compares two keywords, "Swiss watches" and "Luxury watches". By choosing the first set of keywords, the popularity of Swiss watches is demonstrated over the years. The second set of keywords was chosen in order to have a popularity overview of watches worldwide without preference for a specific country. These two sets of keywords show two distinct trends, "Swiss watches" is clearly used less and less over time, whereas "luxury watches" is slightly increasing over the years. Does this mean that Swiss watches are no longer associated with luxury watches and that other countries are getting more popular? It is hard to give a straight answer, but one point is clear: the Swiss watches popularity is getting eroded as less people are looking for this set of keywords over the Internet. Soon, the term "luxury watches" will be written more often than "Swiss watches". To complete this assumption and to find which countries are more active regarding the term "luxury watches", the figure below gives some indications.

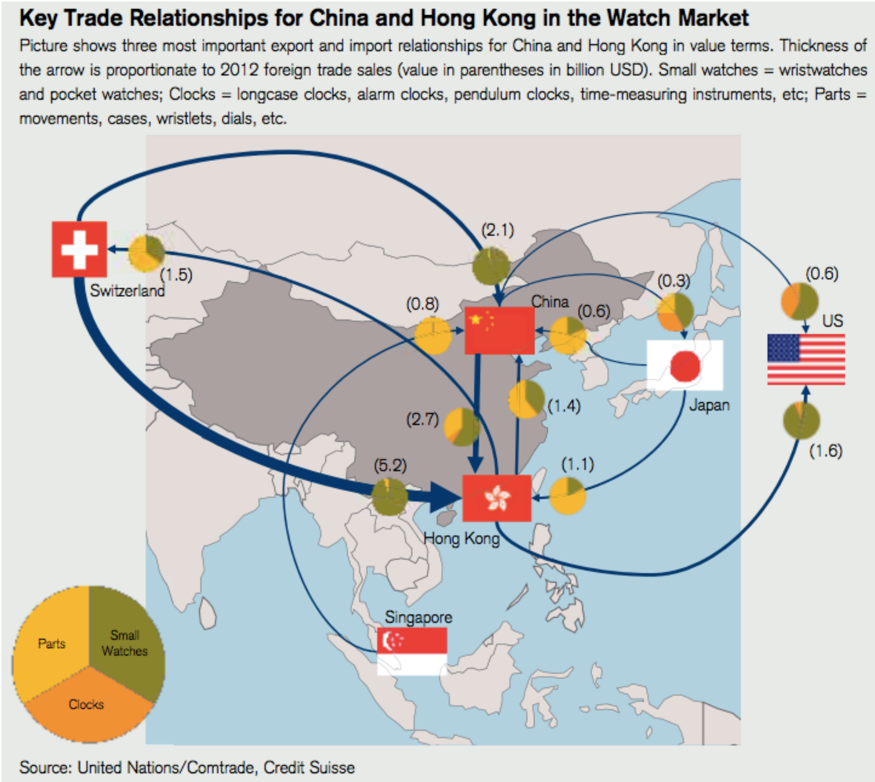
Figure 5 - Regional interest for « Swiss watches » and « Luxury watches » (Google.com, 2015)



These maps show the regional interest of the set of keywords analyzed. The result is stunning. On the one hand, the interest for “Swiss watches” originates mainly from Western countries and less from Asian countries. On the other hand, the term luxury watches is much more used in Asia compared to the rest of the world. Thus, the conclusion is that Swiss watches are declining in terms of popularity, and may be soon overtaken by the generalized term “luxury watches” that no longer refers to Swiss quality as it used to be.

7.6. Conclusion chapter

Figure 6 - Key Trade Relationships for China and Hong Kong in the Watch Market (Crédit Suisse, 2013)



To sum up the situation, we can mention all the different competitions that the clock & watch industry experienced and is experiencing at the moment. As the map above shows, we can identify the major key countries that drive the watch industry nowadays. The route between Switzerland and Hong Kong is the most important and this bilateral relationship is not a competition but tends to be more a cooperation. The Hong Kong – China route is also very important and their existing interdependence is seen as cooperation rather than competition.

Regarding competition within the industry, the Great Hong Kong region is taking important market shares from the Japanese and American industries, but essentially in the low-end segment.

The Swiss industry is not much concerned as it is positioned in the middle and high-end segments. One should not forget that the high-end positioning is partly the result of the competition between Switzerland and Japan that happened in the 1970s-80s when the Swiss industry had to undertake major changes in order to resist to Japanese competition.

Attempts to create a new competition mainly focus on technology development as the Japanese did so with electrical battery. On this occasion, multinational technology companies such as Apple Inc. or Google Inc. are currently developing smartwatches (computerized wristwatches), which could potentially threaten once again the Swiss watch industry. Considering the price ranges offered by two brands, an Apple Watch and a Tissot watch positioned in the same range, a potential competition is sketched. However, it is too early to judge whether or not this could negatively or positively influence the industry. The consumer could see this technological innovation as a completely different product that would not enter in the same competition than traditional watches as many professionals claim that smartwatches simply do not fit in the same type of market. It could be compared to the wine industry by saying that a Bordeaux wine could suffer from a new energy drink recently introduce to the market (Roulet, 2014).

First and foremost, the future of watchmaking does not seem threatened. However, it will face some new challenges in the coming years, including competition coming from other categories of luxury goods. Could the watch suddenly become outdated? The role of chronometer watches lost its weight compared to mobile phones and computers although it is more a status symbol, conveying values. But if customer behaviors are likely to change over time, as modesty and restraint would become a new tendency, the industry would face a major issue (Crédit Suisse, 2013). This is why Swiss watch companies tend to diversify their activities by investing in other sectors such as aviation and space industry with Zenith SA (Zenith Watches, 2015), or other technological sectors (Tag Heuer partnership with Google (Tag Heuer, 2015)), but that still have a link with the clock & watch industry.

8. Contribution to theoretical knowledge

The primary aim of this research project is to prove that there are substantial threats, mainly coming from East Asian countries, diminishing the incontestable leader in the clock & watch industry: Switzerland. It is contributing to theories introducing concepts of competitions in the industry and all the existing facts about trades and relationship Switzerland has with other watch producer regions.

So far most studies and analysis have shown a macro situation of the competition that Switzerland is facing, but did not go into the deep elaboration of the subject.

In this study, the author tried to clearly identify the threats and their positions as well as their potential for growth. This has led to a distinct conclusion that explains the relation that the Swiss industry has with East Asian countries in the clock & watch industry, which is not necessarily a competition but also a collaboration that is favorable and threatening for both parties at the same time. On the one hand, Switzerland has the opportunity to reduce costs by producing some parts of watches and thus be price-efficient. On the other hand, allowing Asian companies to share the know-how and production processes give rise to a potential competition that become more important year after year.

9. Contribution to empirical knowledge

Generally speaking, the research is contributing to knowledge discussing ideas about trends and presumption of the clock & watch industry worldwide.

While analyzing the competition that Switzerland faced, the weakening trend of Swiss watches notoriety over the world was demonstrated. The research proved this trend by some facts gathered on the Internet. Moreover, this dilution of notoriety is correlating with the enhancement of watch's interest in Asian countries such as Singapore, Hong Kong, or Malaysia.

The trade relation between Switzerland and China was analyzed in such a way that the implementation of the free trade policy between the two countries will not have a notable impact on trades. The deduction made in this case is a supposition that companies will not reduce their prices because of the rising cost of production in China.

This paper is also revealing existing competitions between Asian countries that are not expressed enough in studies, appointing the Sino-Japanese competition in the low-end segment of the industry for example. We often take for granted the fact that Asian countries are competing against the rest of the world, although the first competition for these regions is coming from an inter-regional point of view.

Finally, by combining two different competitions (Japanese and Chinese), the arrangement reveals some identical facts that could be useful to identify different deficiencies on the Swiss clock & watch industry.

10. Perspectives for further research

As this paper discusses different competitions in the Swiss clock & watch industry, further researches could focus on the possible threat coming from smartwatches. Professionals have different arguments about the possible impact of this new technology over the clock & watch industry in general. Therefore, many questions remain unresolved at the moment.

Another development of this research could be about the production's projection in Mainland China in several years. Many professionals talk about a delocalization to cheaper countries in order to reduce cost, but the main challenge is to delocalize the whole supply chain that has to be centralized, as it is the case now in the Great Hong Kong. However, it theoretically reduces the attractiveness of decentralization out of Mainland China.

The research offers a foreword to the analysis of the image of Swiss watches in the world. To develop this point, it would be interesting to compare the statistics of Swiss watches sold and the impact of the Swiss image in the consumer mind over the years. This analysis would be more subjective, but could reveal some issues not identified by theoretical analysis based on numbers and facts.

Last but not least, many professionals, including Jean-Claude Biver express their positivity towards the future of the Swiss clock & watch industry. However, it would be interesting to analyze a worst-case scenario regarding the impact of a strong decrease in sales of Swiss watches in the future and identify the outcomes of such a case. The comparison with the current threats expressed in this research would be evaluated afterwards.

11. Conclusion

The Swiss watch & clock industry faced and is still facing a competition coming from different regions of Asia. It is important to understand the origin of these threats potentially harmful for the Swiss industry in order to address the right priorities and to develop the industry avoiding additional complications in the future. Prior to these competitions, the Swiss industrialization was initiated by the past competition against the Americans, which forced the industry to develop and be more internationally competitive, having a positive impact on the development of the Swiss economy. It makes sense that Switzerland had to compete with other countries that were important players in the industry, thus not only United States who was a major producer of watches, but also Japan with its technological knowledge and China having a cost advantages, entered into battle with Switzerland. The interdependence between Mainland China and Hong Kong played a major role in the development of watchmaking in China, even though two distinct stages of the industry have to be differentiated in order to understand the threats coming from this region. The research could identify a positive collaboration for Switzerland on a “sales” point of view regarding Hong Kong and a menace coming from the “production” point of view regarding manufacturing and other upstream processes in Mainland China. Therefore, the situation is not alarming for the Swiss industry in the first instance. However, Swiss companies should find a solution to reduce the threat, because the Chinese government is highly supporting the upgrade of Chinese watch production; one such measure being the revision of the Swiss Made label. Moreover, the comparison of the two last major competitions, Japan and Great Hong Kong, demonstrated different weak points of the Swiss industry in which competitors found deficiencies to exploit. The lack of protection of Swiss products and know-how, as well as the introduction of technical revolution are some issues the Swiss industry faced. Identifying the particularities of each competitor such as the high concentration of companies in Japan and the cost efficiencies in China provides a great illustration of the problem. One of the most alarming concerns is about the notoriety of the image of Swiss watches around the globe, which is decreasing while luxury watches seem to gain in importance. Is this the starting point of the decline in the Swiss clock & watch industry?

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Appendix 1: Interview with Marco Sieber (CEO and Chairman of TMS Group based in Hong Kong). Baselworld Fair, 25 March 2015.

1. Did the perception of the Swiss industry regarding Hong Kong has changed between 1970s and now? Is there a vision of threat regarding this region for CH?

In terms of customers, the Great Hong Kong and more precisely Hong Kong are seen as the cash cow of the industry from the Swiss watch companies, as a key market with the biggest pool of potential customers. Thus coming from a sale prospective.

But the threat is coming from a production point of view because of cheap labor and also because of the technology to produce that is getting more and more sophisticated.

Therefore, in terms of technical capability and technology-wise Asian firms are a threat to Switzerland but from the perception and marketing point of view the threat is not alarming.

2. Is the Swiss industry taking measures to limit this competition?

First, the measures in place to counter the threat are aiming to protect the Swiss production with the Swiss Made label in order to differentiate and increase the standard of production to make the Swiss product more exclusive from a quality point of view. The Federation of the Swiss Watch Industry wants to go from the "Swiss Made" to the "Made in Switzerland[4]. In other words, they want to increase the percentage of production required in Switzerland from 70% to 80% in order to protect Swiss watches from Asian competition.

3. Is the threat more important with the competition with China and Hong Kong or during the Japanese in the 1970s?

After the painful experience of competition in Japan in the 1970s, Swiss companies learned from it to anticipate the new threat and took measures to counter. The threat that should be more serious is regarding Japan, because the Chinese market took a lot of Japanese market shares in which the segmentation is much more similar to it with

[4] Theodore Schneider's citation, Breitling's CEO

low-end products based on quartz movements but also automatic movements at affordable prices. In this case China is now copying Japanese movements but also improving sometimes like Miyota movements owned by Citizen (Japan) that are very efficiently copied by Chinese brands.

4. Is there a tendency from Hong Kong or China to upgrade to the next level and produce more high-end watches?

Hong Kong has reduced the mass of production and produced fewer amounts of pieces. Those mass production factories have moved to Mainland China in the late 1990s.
Regarding the technical capabilities, Chinese brands are learning from its competitors but they are still not yet at the same level as the global competition. Even though they have the potential to reach it. Another lack of know-how is concerning the downstream stages of the value chain in the communication channel and marketing to consumers. Swiss high-end watches are much more powerful in terms of marketing and communication whereas Asian companies are still following at the lower level. However, technology-wise they are at the same level or even more advanced than their competitors in Europe or America.

5. Can China and Hong Kong become completely independent towards Switzerland?

Chinese brands are almost becoming independent and it is just a matter of time for this to happen. The last step they need to reach is the marketing experience in order to compete with Switzerland and other mature markets. Chinese companies have bought Swiss companies to acquire the know-how and the technology, thus they have almost all the pieces of the puzzle to have their own value chain process.

6. Is China taking some market shares to Hong Kong or other countries?

From a manufacturing point of view, many Hong Kong-based companies delocalized to Mainland China and now there is no more production in Hong Kong. Hong Kong watch industry is more focused in the service, management and small production delivery. Mainland suppliers have eaten a lot of Hong Kong suppliers in the low-end segment and mass production market (Walmart being the major customer).

7. Is it only an issue of delocalization of foreign production to China, or do we observe the rise of domestic Chinese capacity and know-how in this sector?

There is an important increase of capacity coming from the Mainland Chinese brands that are becoming more and more independent and growing by their own.

8. How do you explain the acquisition of Swiss brand (Eterna, Corum) from Chinese companies?

There are several reasons why Chinese brands acquire Swiss Brand. First, technology transfer is a very important argument to have. Then, the marketing know-how also plays an important role in these acquisitions. Finally, it gives a lot of value to these Chinese companies listed on stock exchanges and increases their portfolios.

9. The transfer of technology coming from Switzerland has failed so that local firm can work by themselves?

Even though the transfer of technology coming from Switzerland was not protected enough, those local firms still have the distribution side to manage as well as the marketing process. Moreover, if they want to keep the same standards than Swiss companies, they will have to produce and keep a foot in Switzerland. But protecting the technology and know-how is very difficult, nearly impossible to protect.

10. What are the advantages to produce in China or Hong Kong?

Hong Kong is no longer a production place, it has switched to a service place in sales and management sectors.

First, the efficiency in terms of time is an advantage to produce in China. Second, The quality control is much more strict than in Switzerland because there are more people controlling the product, thus the quality of watches supplied are more secured and cost saving (Switzerland: 10 out of 100 watches are broken. China-Hong Kong: 0 to 1 out of 100 are broken). Finally, the cost of labor is cheaper in China than in HK or elsewhere in the world.

11. How transparent is the industry in Hong Kong or China? Is it more transparent in Switzerland?

The transparency of the Asian market is less transparent than the European or American one in terms of financial aspects. They are emerging markets in which it is difficult to control and have rules concerning all the points of the industry. Another lack of transparency is about the accuracy and reliability of the figures and statistics; it is very difficult to have a clear vision of the performance even though we can clearly define the major trends and key players.

12. Is there a tendency to use Hong Kong as a transit platform more than a production center?

Hong Kong is still the main hub for meeting clients, partners and shipments. Logistic is more convenient for small and medium companies as well as for high-end products. But the mass-market production is not any more transiting by Hong Kong and products are directly shipped from Shenzhen to United States mainly. Small companies do not interest shipping companies in Shenzhen, thus they go through Hong Kong to ship their production. But the large companies that are in the mass-market have facilitators and consumer service in Shenzhen.

Appendix 2: Interview with Jeffrey Chong (Executive director of Edwin Watch Z Laboratory LTD in Hong Kong). Baselworld Fair, 25 March 2015.

1. How do you see Hong Kong watch industry in 5-10 years?

Hong Kong will act as a trading center (transiting platform) for the watch industries as well as headquarters for many companies producing in China because of the know-how in the industry and attractive tax policy.

2. How do you see China watch industry in 5-10 years?

As the living standards of Chinese are increasing, costs of production are increasing too. Therefore, production companies are planning to move out of China to go to Vietnam or Thailand. There will probably be a global delocalizing trend of all the component production companies to move together out of China and choose a cheaper place to produce.

Only the really strong players will remain in China and they will focus on high-end products, whereas lower-price products will not survive there. There is already a trend in which Chinese production site are delocalizing to Vietnam or Thailand.

3. What are the Industrial zones/clusters for watch companies?

Shenzhen regroups most of the watch companies, because those companies were delocalized from Hong Kong to Shenzhen. The reason why companies are around this area is because all the components production companies are located there. Logistics issues will appear if companies decide to produce out of these areas.

4. Do you know something about Shenzhen and Hong Kong collaboration (government agreements…)?

China government offers special tax reliefs for companies producing in Shenzhen and dealing with Hong Kong. For example, watches produced in Hong Kong and imported in China are exempted of any taxes, whereas watches coming from another countries have between 17% to 25% of tax duty.

5. Other

Shops in Macau (Pawn shops) are used for money laundering. People go to these shops located next to the casinos; they buy a watch and resell it directly to the same seller but with a small commission taken by the seller.