The Changing Comparative Advantages of the Hong Kong Watch Industry, 1950–2010

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ABSTRACT

The objective of this paper is to further an understanding of the conditions of competitiveness in the global watch industry from the 1950s to 2010, taking Hong Kong as an example. Analyzing its organizational structure and its integration into the international division of labor over this period makes it possible to highlight three different phases, during which Hong Kong benefited from various competitive advantages that supported the expansion of its watch industry (i.e., subcontracting in the 1950s and 1960s; assembly of electronic watches in the 1970s and 1980s; and the implementation and use of new global value chains from the late 1980s).

Keywords: Hong Kong, Watch industry, Switzerland, Technology transfer
JEL classification Numbers: N65, L63

1 Introduction

Although Hong Kong became in the 1980s the world's second-largest producer of watches and clocks, behind Switzerland, the development of this industry and the reasons for its international competitiveness are not well known. Academic research addressing this subject can be classified into two groups.

First, there are scholars who are interested in the global watch industry and in the role of technological innovation, in relation to changes in the competitiveness of various nations (e.g., Glasmeier 2000, Stephens and Dennis 2000, Tajeddini and Trueman 2008, Tuschman 2000). Most of them explain the success of Hong Kong enterprises in terms of the mass production of low-end products—a business model made possible from the late 1970s onwards by the presence of cheap labor and easy access to core watchmaking technology, following the advent of quartz watches. This technological change supposedly ensured the success of these enterprises, while Swiss watchmakers—who had dominated the industry from the mid-19th century onwards—repositioned themselves in the luxury segment. Moreover, the association of Hong Kong and Japanese watchmakers as firms that specialize in the production of cheap quartz watches, at least in comparison to the Swiss, is a typical view shared by the majority of Western scholars, many of whom make no national distinctions when referring to "Asian manufacturers" (e.g., Stephens and Dennis 2000, p. 496). For example, Tajeddini and Trueman (2008) maintain that the Swiss watch industry "had been almost completely driven out of the low and mid-range sector of the market by low-cost, highly accurate quartz watches made in Hong Kong and Japan" (p. 171). However, even if it is self-evident that cheap labor and electronic technologies played a key role in the emergence and development of the watch industry in Hong Kong, the mechanism for this industrial growth, as well as its changing position within the international division of labor (i.e., production) and the world market (i.e., commercialization), are still largely unknown, and they definitely differ from what can be observed in Japan.[1]

Second, since the 1990s, some management researchers have examined the success of Chinese enterprises based in Hong Kong, taking the watch industry as a case study (e.g., Yu 1998). They highlight the flexibility of firm organization, a characteristic that allows these Hong Kong firms to adapt easily to market changes and liberate themselves from foreign suppliers. When viewed from this perspective, the watch industry is not analyzed in terms of global dimensions, in relation to foreign competitors; rather, the focus is on entrepreneurs as individuals, as representatives of so-called overseas Chinese businessmen.[2] Such studies tend to lack a historical view and are inadequate in garnering an understanding from a long-term perspective of the current competitiveness of Hong Kong watch companies. Nonetheless, they serve as excellent tools for business historians, together with other works on the emergence of the "global value chain" (Lane and Probert 2009), thus providing fresh insight into the history of the Hong Kong watch industry from the standpoint of global business history.

The objective of this study is to offer an analysis that incorporates both approaches, in order to emphasize the changes in the comparative advantages of the Hong Kong watch industry from the 1950s onwards, and to understand how the shift from one kind of industrial organization to another came about. A cursory glance at the value of watch and clock exports from the three main watchmaking nations shows that Hong Kong "caught up" with Japan in the 1970s. Starting in 1990—when Japan entered its so-called lost decade—Hong Kong experienced strong growth (Table 1), enabling it to almost "catch up" with

[1] For a discussion of recent changes in the Japanese watch industry, see Numagami (1996) and Hara (2002).

[2] See, for example, Carney (1998), Davies and Ma (2003). The point should also be made that most scholars in the field of management rely solely on the works of Glasmeier as a basis for understanding the Hong Kong watch industry.

Table 1. Watch and Clock Enterprises in Hong Kong, 1960–1990.

	1960	1965	1970	1975	1980	1985	1990
Enterprises (N)	61	102	229	471	1,509	1,805	1,690
Employees, total	2,433	4,556	9,773	15,783	49,454	36,692	27,154
Employees, average by firm	39.9	44.7	42.7	33.5	32.8	20.3	16.1
Employees, as a % of all manufacturing industries	1.1	1.3	1.8	2.3	5.5	4.3	3.7

Source: *Hong Kong's Manufacturing Industries*, Hong Kong: Hong Kong Government Industry Department, 1996.

Switzerland in 2000. To shed light on the trends underlying this success, it is necessary to go beyond conventional explanations put forward in the literature for the flexibility of Hong Kong's Chinese entrepreneurs or the mass production of digital watches. This study instead concentrates on the industrial structure of the Hong Kong watch industry and its position within the international division of labor and the global market. The next three sections each correspond to a particular phase of industrial organization and comparative advantage on the global market. These three sections are followed by a case study of one of these Hong Kong watch firms, the Stelux Group, and a final section provides concluding remarks.

2 From *Entrepôt* Trade to Industry (1950–75)

Starting in the early 19th century, and more specifically after the First Opium War (1839–1842), Hong Kong became known as a hub of international trade between Asia and Europe (Meyer 2000). The presence of Swiss watch traders dates back to this period, even if Asia was not a major outlet at the time (Donzé 2011a). After World War II and when the communists came to power in China, Hong Kong became the main hub for the Asian watch trade, subsequently becoming a center in the 1960s for the assembly and finishing of mechanical watches.

2.1 A Commercial Hub

In the 1950s, Hong Kong became the locale from which Swiss watch companies distributed their products throughout the Far East, sometimes through smuggling (especially to China, India, and Japan).[3] Swiss foreign trade statistics clearly show a growing volume of business, with watch exports to Hong Kong skyrocketing from CHF 40.7 million in 1950 to a peak of CHF 123 million in 1957 before falling off slightly and stagnating at an annual average of CHF 80.7 million in 1958–65—a period during which Japanese competition was increasing. Until 1965, the proverbial "lion's share" of Swiss watch exports took the form of complete watches (96.9% of the value in 1945–65), as Swiss federal legislation tightly controlled trade in parts and disassembled watches (Uttinger and Papera 1965, Donzé 2011a). Finally, this outlet was important for the Swiss watch industry: Hong Kong absorbed 6.2% of all Swiss watch exports in 1950–65, making it one of the biggest markets after the United States (25.6%).

However, as the stagnation of Swiss exports from the late 1950s onwards would suggest, international competition in Hong Kong had increased. Some American and Japanese companies had established subsidiaries in the British colony, in an attempt to benefit from growth in this market.

The first major non-Swiss watch enterprise to set up a presence in Hong Kong was the company Shriro, an American trading firm specializing in business with Asia. In 1948, it founded Shriro (China) Ltd. and engaged in the trade of Swiss watches. It imported Swiss movements from the United States, where their export was authorized by Swiss authorities, and assembled them in cases made in Hong Kong. Then, in 1951, it opened an office in Bienne, Switzerland, to procure parts.[4] This marked the first sign of Hong Kong's integration into a system of the international division of labor for the production of watches. These activities led Swiss merchants to blame Mr. Shriro for cutting prices and ruining their business. In a letter addressed to the Federal Department of Politics in 1950, the Swiss Consulate in Hong Kong admitted that "Shriro's practices are not always very orthodox and he pulled the carpet out from under Swiss importers. But Shriro is very strong and cunning, and knows nothing can be proved against him."[5] Thus, Shriro became one of the biggest distributors of Swiss watches in the Far East. He is said to have bought watches in Switzerland to the tune of some CHF 22 million in 1951, and another CHF 16 million in 1952.[6]

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[3] Centre jurassien d'archives et de recherches économiques (CEJARE), St-Imier (Switzerland), Aubry Frères SA Papers, Francis Foëx, *Histoire de la West End Watch Co*, unpublished manuscript, 1973.

[4] Swiss Federal Archives (SFA), Bern (Switzerland), E 2200.136, Letter from the Délégations réunies to Péquignot, April 11, 1951.

[5] SFA, E2200.10 Hong Kong, Letter from the Swiss Consulate to the Federal Department of Politics (Foreign Affairs), undated (1950).

[6] SFA, E2200.10 Hong Kong, Letter from Th. von Mandach, lawyer for Shriro Switzerland, to Péquignot, 15 September 1953.

Much more serious competition harmful to Swiss watch interests came from Japan, where the watch industry regained in the 1950s its full capacity for production and international competitiveness (Donzé 2011c). After the United States, Hong Kong was one of the leading markets to which Japanese watch and clockmakers exported their products—for a value of JPY 54.6 million in 1950, or 16.2% of total exports (Zaimusho 1950). To support the growth of this business, most Japanese watch companies signed distribution contracts with trading companies already based in Hong Kong, most of which benefited from retail networks throughout Southeast Asia; Gilman & Co. for Citizen Watch (in 1962)[7] and Thong Sia for Hattori & Co. (in 1963) were two such companies.[8] Later, these two companies opened their own trade subsidiaries (Hattori in 1968 and Citizen in 1970) (Ishikawa 1971).

2.2 Relocation of Production

After 1960, Hong Kong retained its role as a major watch-trade hub in Asia, absorbing 26.2% of Japanese watch and clock exports in 1970, and 24.5% in 1980,[9] compared to 9.9% and 15.9%, respectively, for Swiss exports.[10] However, the main feature of the British colony during this time was its emergence as a center for the production of parts and the assembly of finished watches. American, Japanese, and Swiss companies relocated portions of their production activities there; this transfer was made possible not only by the low cost and abundance of cheap domestic labor (pull factor), but also by the transformation of watch production technology (push factor). The spread of mass production for mechanical watches led to the standardization of parts and models, facilitating the relocation of some assembly operations abroad. In the specific case of Switzerland, an institutional factor came into play: with the phasing out of its cartel system and the strict control of exports in 1961–65, Swiss manufacturers were allowed to take advantage of the international division of labor (Donzé 2011a).

Increases in the number of watch enterprises can be seen in the 1960s, with there being 61 firms in 1960 and 229 in 1970 (Table 1). However, this growth was not due to an increase in the number of small independent workshops, as the average number of employees remained stable during the same period (i.e., approximately 40 workers per firm). Of course, these were very small companies in comparison to the Japanese watchmakers—Citizen Watch, for example,

[7] *Nihon keizai shimbun*, June 19, 1962.

[8] *Nihon keizai shimbun*, April 20, 1963.

[9] *Nihon gaikoku boeki nenpyo*, Tokyo: Zaimusho, 1970–80.

[10] *Statistique annuelle du commerce extérieur de la Suisse*, Bern: Direction générale des douanes, 1970–1980.

employed more than 4,500 persons in 1970[11]—but they were comparable to those in the Swiss watch industry, where the average number of employees in 1965 was 43.6 (Convention patronale 2007, p. 13). The Hong Kong watch companies were thus not particularly small from an international perspective, but the industry did not become highly concentrated, as was the case in both Japan and the United States. Moreover, this was only a secondary business in terms of the overall economy of the British colony, as it accounted for a scant 2% of employment in the manufacturing sector during the 1960s.

These firms created from the late 1950s onwards were highly dependent, both economically and technologically, on the world's leading watch groups. Hong Kong's watch companies during this period can be divided into two groups: part makers and watch assembly makers.

Nearly all the part makers were active in the production of external parts (e.g., cases, dials, and straps) and emerged in the late 1950s. In December 1958, the Hong Kong & Kowloon Clock & Watch Trade Merchants Association had among its members 13 case makers, six watch-glass makers, and three dial makers.[12] Within It founded a new subsidiary, Shriro Precision Engineering, with the objective of manufacturing watch parts for the American market, in order to compete with Bulova Watch, the dominant company there.[13] At the time, the United States was the main market for the export of watch parts made in Hong Kong: in 1962–64, it accounted for 77.4% of all exports, while Switzerland accounted for a paltry 4% (due to legal restrictions on the use of foreign parts) and Japan a mere 1.2%.[14]

Apart from the Shriro plant, all of these subcontractors were domestic companies. The origin of the technology transfer is unknown, but the manufacture of watch external parts in general, and watch cases in particular, involves only rudimentary technology and is usually the first activity to be relocated (Donzé forthcoming). Thus, the Hong Kong watch industry experienced strong growth starting in the mid-1960s, especially as a watch-case production center. The liberalization of the Swiss watch industry—and especially the adoption of "Swiss Made" legislation (*Ordonnance réglant l'utilisation du nom « Suisse » pour les montres*) in 1971, which stipulated that Swiss watch movements cased abroad could bear the "Swiss Made" label—played a key role in this growth.[15] At first, the Federation of the Swiss Watch Industry intervened in order to improve the quality of parts made in Hong Kong. For example, in 1966, it signed a

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[11] *Kaisha yoran*, Tokyo: Daiamondo, 1971, p. 928.

[12] SFA, E2200.10 Hong Kong, Letter of the Hong Kong & Kowloon Clock & Watch Trade Merchants Association to the Consulate of Switzerland, December 8, 1958.

[13] SFA, E2200.10 Hong Kong, Letter of the General Consul Mossaz to the Division of Commerce (Federal Department of Public Economy), March 10, 1960.

[14] *Hong Kong Trade Statistics Export & Re-Export*, Hong Kong: Census Department, 1962–64.

[15] According to this legislation, watchmakers using the "Swiss Made" label must assemble the watch in Switzerland and use at least 50% of the parts of movement (value) made in Switzerland.

technical assistance agreement with the Federation of Hong Kong Industries.[16] Subsequently, the major Swiss watch groups invested directly in the British colony: they opened subsidiaries, such as the Swiss Watch Case Center (in 1968) and Swiss Time Hong Kong (in 1969); they also entered into joint ventures with industrialists and traders established in Hong Kong, like Swiss Plating Co. (in 1968) and Swikong Manufacturing (in 1971) (Blanc 1988). Hong Kong became a key supplier for the Swiss watch industry. While Swiss imports of cases jumped from 1.6 million pieces in 1961 to 8 million in 1970, Hong Kong's share was growing fast: from 21.9% in 1961, to 60.8% by 1970 (Donzé 2010).[17] As for the Japanese watch companies, even if they did not invest directly in Hong Kong at the time, they also relied on it as a major parts supplier. The Japanese import of watch parts from Hong Kong soared from JPY 141,000 in 1960 to JPY 34.8 million in 1970 and JPY 1.3 billion by 1980.[18]

Assemblers of finished watches comprised the second type of enterprise to appear in Hong Kong. This international division of labor stemmed from a desire to minimize production costs. Mass production methods, followed by the automated manufacture of watch movements, became widespread in the 1960s. However, as it was difficult to automate assembly and casing operations, they were transferred to places where labor was cheap, such as Hong Kong or, in the case of the American market, the Virgin Islands (Oxtoby 1970). One of the first major watch companies to open a subsidiary in Hong Kong for the assembly of high-quality mechanical movements was the American company Timex Corporation, which founded Timex Hong Kong Ltd. in 1967.[19] Next, the Japanese group Hattori & Co. set up a production subsidiary, Precision Engineering (in 1968), followed a few years later by two more subsidiaries, Asian Precision (in 1974) and Epson Engineering (in 1976).[20] Swiss watchmakers were not absent in this regard: for low-range models (e.g., pin-lever watches), for example, there was BFG Far East, opened in 1970 by one of the biggest watch companies in Switzerland, Baumgartner Frères Granges (Blanc 1988), as well as a joint venture in 1971 involving four Swiss companies, Swiss Watch Manufacturing.[21] Other assembly companies fueled by Swiss capital included Asian Swiss Industrial Company (in 1969), Ronda Ltd. (in 1971), and Swiss Ebauches Production (Sepro) Ltd. (in 1973) (Blanc 1988).

[16] SFA, E2200.10 Hong Kong, Agreement between the Swiss Federation of Watch Manufacturers and the Federation of Hong Kong Industries, November 2, 1966.

[17] Subsequently, Hong Kong's strategic importance as a supplier of cases decreased in favor of Thailand (1970s–1990s) and China (since 2000).

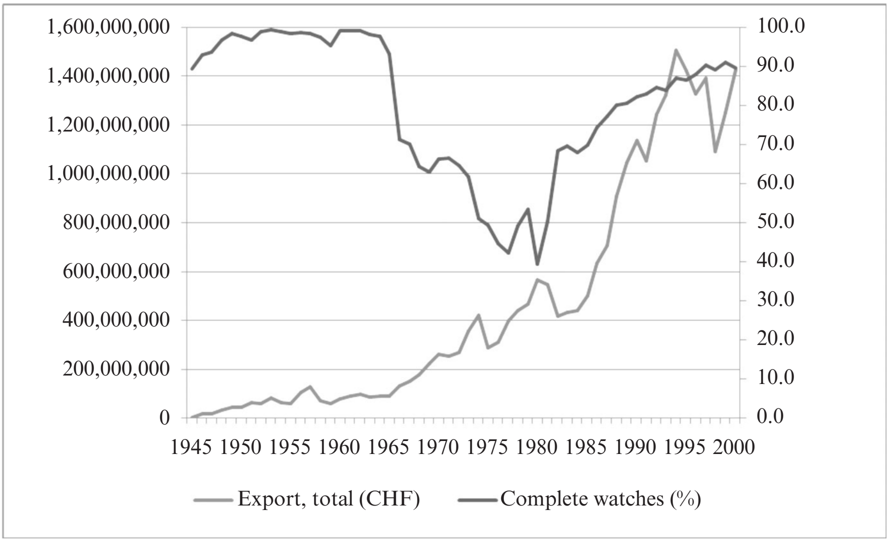
[18] *Nihon gaikoku boeki tokei*, Tokyo: Ministry of Finance, 1960–1980.

[19] *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai (1980): p. 4.

[20] "Seiko gurupu no kaigai senryaku," *Noryoku kaihatsu shirizu* 87 (1982): p. 14–15.

[21] The four shareholders of this company were Baumgartner Frères Granges (BFG), Basis Watch (Tecknau), Claro Watch (Bienne), and Ritz (Chiasso). *L'Impartial*, June 3, 1971.

Figure 1. Swiss Watch Exports to Hong Kong (in CHF), and Proportion of Complete Watches (%), 1945–2000.



Note: The years 1945–60 include direct exports to China (nearly inexistent).
Source: Federation of the Swiss Watch Industry (FHS), on the basis of official trade statistics.

These industrial implantations had a major impact on the international watch trade. First, Swiss watch exports to Hong Kong posted strong growth, increasing from CHF 87.2 million in 1965 to CHF 418.4 million by 1974. In addition, Hong Kong's market share of Swiss watch exports more than doubled during this decade, rising from 4.8% to 11.3%, owing to the growing industrial interdependency between Switzerland and Hong Kong. Complete watches, which amounted to more than 90% of the value of exports up to 1965, dropped to 51.1% in 1974 (Figure 1). In 1974, Switzerland also exported high proportions of movements (38.7%) and parts (10.2%).[22]

Second, the Japanese watch industry has had a different relationship with Hong Kong compared to that with Switzerland, characterized by a relative withdrawal from production activities. While Japanese watch exports to Hong Kong grew from JPY 49.6 million in 1960 to JPY 10.3 billion in 1970, the proportion of complete watches also increased, from 69.4% to 82.5%.[23] Thus, Switzerland and Japan used Hong Kong in very different ways, in terms of their strategies for

[22] *Statistique annuelle du commerce extérieur de la Suisse*, Bern: Direction générale des douanes, 1974.

[23] *Nihon gaikoku boeki tokei*, Tokyo: Ministry of Finance, 1960–70.

Table 2. Watch and Clock Exports of Hong Kong, Japan, and Switzerland, in Millions of USD, 1960–2010.

	1960	1970	1980	1990	2000	2010
Hong Kong	7	44	1,604	3,839	5,614	7,417
Japan	3	116	1,613	2,208	1,386	1,084
Switzerland	293	610	2,121	4,883	6,098	16,200

Note: *Hong Kong Trade Statistics Export & Re-Export*, Hong Kong: Census Department (1960–2010); *Nihon gaikoku boeki nenpyo*, Tokyo: Zaimusho (1960–2010); *Statistique annuelle du commerce extérieur de la Suisse*, Bern: Direction générale des douanes (1960–2010).
Source: All currencies were converted into USD using data from the Japanese Statistics Bureau (http://www.stat.go.jp).

internationalizing production. The Japanese watch industry is characterized by a high concentration of production within a few companies (primarily Hattori & Co., Citizen Watch, Orient Watch, and Casio), each of which implemented an integrated mass production system of high-quality watches in their plants in the 1960s that, until the advent of electronic watches, required no relocation abroad (Donzé 2011c). As Hattori & Co. (Seiko brand) and Citizen exported essentially complete watches, Hong Kong served only a commercial purpose for them.

Third, Hong Kong earned in the 1960s a reputation as one of the world's leading watchmaking nations. Its exports jumped from USD 7 million in 1960 to USD 10 million in 1965 and USD 44 million by 1970 (Table 2). In 1970, Hong Kong was still far behind Japan (USD 116.3 million) and Switzerland (USD 350 million), but it had entered a period of dynamic growth that became even more pronounced thereafter. Moreover, this growth became contingent upon a major shift in the nature of the products involved. In 1970, complete watches amounted to 68.5% of the value of Hong Kong's exports, whereas the category "complete watches" was still nonexistent in official statistics just five years previously.[24]

Nonetheless, these figures do not mean that Hong Kong shifted from being a commercial hub to being a last step (i.e., assembly) in the international division of watch production. Despite the emergence of this productive function, Hong Kong was still the leading center for the distribution of watches in Asia. Indeed, the volume of re-exported watches doubled during the 1960s (721,000 watches in 1960 vs. 1.5 million in 1970).[25] Consequently, there is a need to emphasize the functional dualism of the Hong Kong watch industry within the global watch business. Moreover, the Chinese entrepreneurs of Hong Kong were still

[24] *Hong Kong Trade Statistics Export & Re-Export*, Hong Kong: Census Department, 1965–70.
[25] *Hong Kong Trade Statistics Export & Re-Export*, Hong Kong: Census Department, 1960–70.

technologically dependent on the Swiss, American, and Japanese watchmakers for whom they only assembled and cased watches; Hong Kong firms had little to do with the development and production movements, the core technology of this industry until the late 1970s. However, the emergence of electronic watches in the early 1970s provided an opportunity to sever these ties of dependency.

3 The Impact of Electronics (1975–90)

The advent of quartz watches had a major impact on power relations within the global watch industry: by facilitating and ensuring broad access to watch movements, it considerably weakened the position of established firms and supported the emergence and subsequent growth of newcomers. Developed in the late 1960s, the first analog quartz watches were launched in 1969–72, followed shortly thereafter by digital models (from 1972–73 onwards) (Stephens and Dennis 2000). These first quartz watches were still relatively expensive, and prices fell only after the mid-1970s.[26]

The Hong Kong watch industry experienced a boom within this new technological context. The assembly and subsequent production of analog quartz watches began in 1975, followed by digital watches (i.e., liquid crystal displays [LCD] and light-emitting diode [LED] displays) the following year. Market-share gains came at lightning speed: by 1976, Hong Kong's domestic production of 4 million quartz watches had made it the second-largest producer in the world by volume, behind Japan (7.3 million).[27] The shift to electronic watches happened very quickly: they already accounted for 68.3% of the total value of Hong Kong's watch exports in 1980, then 88.2% in 1985 and 94.8% by 1990.[28] Above all, electronic watches made it possible for Hong Kong to establish itself as a leading watchmaking nation. The total value of its watch and clock exports was USD 285.8 million in 1975, USD 1.6 billion in 1980, and USD 3.8 billion in 1990 (Table 2).

The industrial structure of the watch business also underwent a dramatic change. The rise of the quartz watch market indeed enabled Hong Kong's entrepreneurs to overcome their technological dependency on traditional watchmaking nations. Between 1974 and 1978, the workforce was dramatically redeployed to new sectors (Table 3). The proportion of employees in companies with foreign capital dropped from 49% in 1974 to 25% in 1978, while the overall size

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[26] In Japan, the average production cost of a quartz watch dropped from JPY 51,921 in 1973 to JPY 5,773 in 1980. See Shintaku (1994), p. 156.

[27] *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai (1980), p. 5.

[28] *Hong Kong's Manufacturing Industries*, Hong Kong: Hong Kong Government Industry Department (1996).

Table 3. Companies With Foreign Capital in Hong Kong's Watch and Clock Industry, 1974–78.

Year	Foreign capital (millions of HKD)	Companies (N)	Employees (N)	Employees, as % of total
1974	184	12	4,643	49%
1975	188	20	5,391	71%
1976	133	22	4,676	36%
1977	135	25	4,894	32%
1978	137	27	5,024	25%

Source: *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai yushutsu kumiai (1980), p. 10.

of the workforce remained stable. The emergence of newcomers weakened the positions of foreign firms.

The official survey of enterprises shows that newcomers were primarily small and medium-sized enterprises (Table 1). The number of companies involved in the watch and clock business, which amounted to 229 in 1970, rose to 1,509 just 10 years later and peaked at 1,805 companies in 1985. Over the same period, the average number of employees per firm dropped to a mere 20.3 persons in 1985. Finally, mention should be made of the highly dynamic nature of the watch industry, which took on growing importance within the manufacturing sector of the British colony: its share of employment in manufacturing rose from 1.8% in 1970 to 5.3% in 1980.

Given the lack of sources, it is difficult to provide additional details on the nature and functions of these small firms, beyond these general figures. Among the newcomers, there were some cases of firms that had already been involved in the production of external parts since the 1960s—such as Stelux (see section 5) or Crystal Electronic (Trueb 2005)—as well as some companies with foreign capital, like Asian Swiss Industrial Co. These were exceptions, however. A survey of the Hong Kong watch industry published in 1980 by the Japan External Trade Organization (JETRO) lists its main electronic watchmakers of the time; all were new companies, essentially funded by domestic capital: Collins Industrial (in 1974), Lambda Electronics (in 1975), IC Instruments (in 1975), National Electronics & Watch Co. (in 1975), Tinic Watch (in 1978), Larnol Enterprises (in 1978), and Betatronic Industries (in 1978).[29] In 1978, each had an annual output of more than 1 million watches and followed the same

[29] *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai (1980).

business model: assembling in Hong Kong electronic movements that featured imported components, and exporting finished watches to the world market.

Even if the technological opportunities afforded by electronics made it possible for these firms to free themselves from a historical dependency on large foreign watch firms, they were still dependent on external partners for supplies of complementary metal–oxide–semiconductor (CMOS) chips and digital displays (LCD, LED). However, these suppliers were not watch companies, but rather electronic components makers—that is, firms that were not competing in the finished-goods market. By the end of the 1970s, the main suppliers of CMOS chips were Japanese (Oki Electric, NEC) and American (Intersil, Litronix). As for digital displays, they were primarily sourced from Siemens and Beckman, but also from Fairchild, Motorola, Hitachi, and Mos Technology.[30] Consequently, several of these suppliers opened sales subsidiaries in Hong Kong (e.g., Hitachi, Intersil, Siemens, and Beckman), with some relocating parts of their production processes. This was the case in 1980, for example, with Fairchild, which owned the subsidiary Fairchild Semiconductor Hong Kong; another example is a company that specialized in LCD displays, Wing Kai Electronics. As for the Swiss multinational enterprise Brown Boveri Co. (BBC)—which had no link to the watch industry in Hong Kong—it also opened in 1978 a plant for the assembly of electronic displays: BBC Electronic Hong Kong.[31] Finally, reference should be made to the particular case of Citizen Watch Co., one of the few foreign watchmakers that managed to benefit from this industrial change. In 1979, this Japanese firm adopted a new strategy based on the mass export of electronic movements to a Hong Kong-based case maker who started working in the assembly of finished watches (Seiko 1996).

Beyond technological issues, electronic watches played a key role in the emergence of Hong Kong's watchmakers, because they gave them direct access to markets—something they did not hitherto have. Marketing and distributions skills were acquired relatively quickly. In 1987, Hong Kong watch companies were represented for the first time at the Basel Fair, the largest watch distribution event in the world.[32] The mastery of finished products was a prerequisite for the strong growth of this industry from the 1990s onwards.

4 Towards Global Value Chains (from the late 1980s)

The Hong Kong watch industry entered a new phase in the late 1980s, characterized by the relocation of production to China and the creation of value-added to global value chains by entrepreneurs, as can be seen in other key sectors

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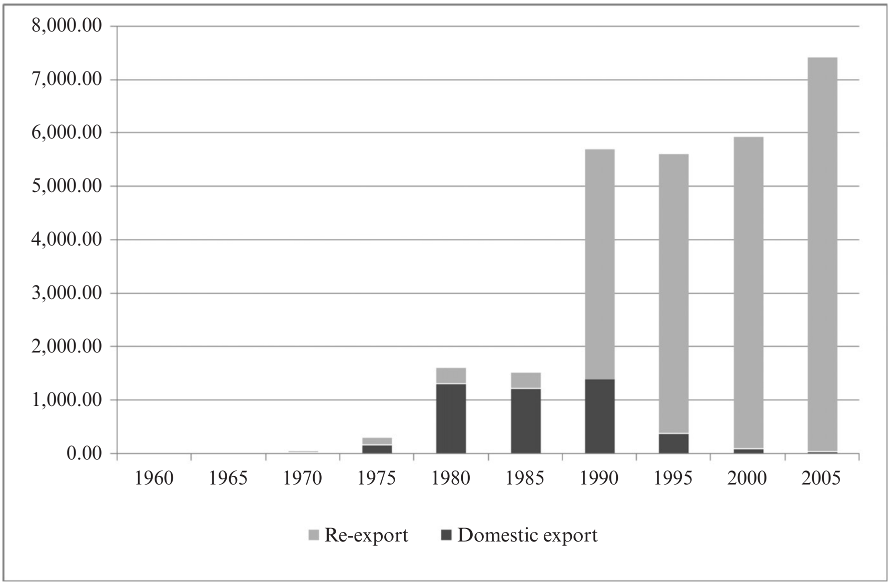
[30] *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai (1980), p. 28.

[31] *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai (1980), p. 29.

[32] *L'Impartial*, February 2, 2000.

Figure 2. Composition of Hong Kong Watch Exports, Millions of USD, 1960–2010.



Source: *Hong Kong Trade Statistics Export & Re-Export*, Hong Kong: Census Department (1960–2005).

of the Hong Kong economy (Berger and Lester 1997). Whereas headquarters, together with product design and marketing, stayed in Hong Kong, the production and assembly of watches were gradually transferred to the economic zone of Shenzhen and to Dongguan, both located in Guangdong province. However, these Chinese plants did not supply all the movements used by Hong Kong watch companies, which also purchased Swiss or Japanese movements, depending on their customers' wishes (Trueb 2005). As a result, some of them invested in Europe in order to control their supply of watch movements—such as Wellgain Precision Products Ltd., which took a 50% interest in France Ebauches Microtechniques (in 2000),[33] or Chung Nam Watch Co., which acquired the movement maker ISA, Technotime, as well as the Swiss brand Roamer Watch (in 1994) (Trueb 2005). Consequently, the domestic production of watches entered a phase of decline; after peaking at HKD 13.5 billion in 1990, it amounted to only HKD 7.4 billion by 1993.[34]

[33] *L'Impartial*, March 14, 2000.

[34] *Hong Kong's Manufacturing Industries*, Hong Kong: Hong Kong Government Industry Department (1996).

Until the mid-1980s, the growth of Hong Kong watch exports relied on the domestic production and assembly of finished watches. The share of re-exports of overall exports, which was very high when Hong Kong was essentially a commercial hub (i.e., 89.9% in 1960 and 86% in 1965), declined dramatically from its 1970 figure of 50.8%, to 17.8% in 1980 and 18.9% by 1985. During the late 1980s, Hong Kong watch companies began to relocate production facilities to China, a transfer that concluded in the late 1990s and resulted in a very high rate of growth among re-exports from Hong Kong, which increased from 36.1% in 1990 to 75.5% by 1995 and has amounted to more than 90% since 2000. On the whole, however, these were no longer essentially watches re-exported to the entire Far East by Swiss, Japanese, and American firms, as had been the case until the 1970s; rather, these were products manufactured in China. Watch imports from China grew by leaps and bounds: USD 49.9 million in 1980, USD 885.5 million in 1990, USD 3,947 million in 2000, and USD 7,431 million by 2010.[35] While the value of these imports represented only 17.4% of re-exports in 1980, they amounted to 63.9% in 1990 and have represented more than 75% since 2000.

However, the repositioning of enterprises within global value chains was not a natural, organic change. The new conditions of competitiveness it offered had various effects on firms. Some of them managed to adapt quite well to this new kind of organization, including Dailywin, Crystal Electronic, and Gordon C, which gradually relocated their production centers to China in 1988, 1997, and 1997, respectively (Trueb 2005). Others were unable to reorganize, and thus disappeared (e.g., Betatronic, in 1990; Larnol Enterprises, in 1992; Beltime, in 1995; and Tinic Watch, in 2002).[36] Finally, newcomers arrived, and they took advantage of this opportunity to gain a foothold in the world market; this was the case, for example, with Renley Watch Manufacturing, founded in 1983 by Stanley Lau, which is headquartered in Hong Kong and has production centers in China and Switzerland (Trueb 2005). During this period, foreign entrepreneurs also settled in Hong Kong, such as the Swiss Jacques Froidevaux, who created the company Jacques Farel Ltd. (in 1984) (Trueb 2005); the American group Fossil, founded in 1984, which owns a subsidiary in Hong Kong for purchasing watches from some 20 local manufacturers; and, since 2001, a company in Switzerland for "Swiss Made" watches (Montres Zodiac SA).[37] Finally, these companies have engaged not only in production but also in marketing. Most of them specialized in private-label goods, distribution, and retailing. This is why several of them purchased Swiss brands—including Asia Commercial Holdings Ltd., which took over Juvenia (in 1988), and Renley Watch, which bought up Le Phare Jean d'Eve and Sultana (in 1991) (Trueb 2005).

[35] *Hong Kong Trade Import Statistics*, Hong Kong: Census Department (1980–2010).

[36] See http://www.gld.gov.hk/egazette/pdf/20020606/cgn20020606818.pdf.

[37] *Watch industry*, Vontobel Equity Research (2011).

5 The Case of Stelux Holdings

The Stelux Group (currently Stelux International Holdings Ltd.) is a remarkable example of the continuity and adaptation exhibited by Hong Kong watch-part makers, their work for the largest watch companies in the 1960s, and the changing environment of the world market. Stelux was founded by a family of Chinese traders established in Thailand, the Wongs, and it is active in the distribution of Swiss (e.g., Mido) and Japanese (e.g., Seiko) watches in southeast Asia.

A member of this family, C.P. Wong, studied and lived in Switzerland, and later founded the company Stelux Manufacturing in 1963 in Hong Kong, for the production of watch cases, dials, and straps for watchmakers around the world. Stelux collaborated closely with Swiss firms in the 1960s. For example, it entered in 1968 into a joint venture with Thermoncompact SA for electrotyping precious metals; this venture was called Swiss Plating Co.[38] Along with trade in foreign watches, these subcontracting activities were clearly profitable. Stelux was listed on the Hong Kong Stock Exchange in 1972 and adopted a very active strategy of international expansion in the 1970s.[39] This strategy began in 1975 with the purchase of several small Swiss companies, all of which produced external parts—namely, Metalem SA (dials), Jean Vallon SA (cases), and Orac SA (cases)—grouped together in a Bienne-based holding company, Unilux SA.[40] The objective of these acquisitions was to develop among its personnel the skills and know-how needed to succeed in the field of watch design.

However, Stelux aimed not only to specialize in external-part making, but also to develop its expertise in the assembly of movements and electronic watches and in marketing. Accordingly, it opened Stelux SA in Switzerland (in 1975) and took a 27% stake in Bulova Watch Co., becoming in 1976 the largest shareholder of the biggest American watch company.[41] By acquiring this world-famous company at a time when it faced severe financial difficulties, Stelux intended to gain access to Bulova's dense network of retailers in the United States.[42] Subsequently, in the late 1970s, Selux engaged in the assembly of electronic movements. For example, in 1978, it signed a major contract with the Swiss company Ebauches Electronique Marin SA (EEM) to assemble electronic movements in Hong Kong for the American market.[43] In this way, Stelux

[38] This company was taken over by Jardine Matheson in the early 1980s.

[39] *Journal de Genève*, June 15, 1976.

[40] *Journal de Genève*, December 10, 1975.

[41] *Journal de Genève*, June 15, 1976.

[42] Despite this takeover, the Swiss production subsidiary of Bulova was closed down in 1976, and the Bulova brand was never used by Stelux. It was purchased by Citizen Watch Co. in 2006. See Marti (2008).

[43] *L'Impartial*, February 16, 1982.

aimed to control the entire value chain for this product, from the making of parts to the sale of watches.

In the decades that followed, boosted by its experience in watch design and the assembly of electronic movements, Stelux developed its commercial business of complete watches through its various brands. Three elements are worthy of note, as far as this repositioning strategy is concerned. First, Stelux restructured its production system, with the sale of Swiss external part making companies (in 1979).[44] In addition, it relocated its Asian production facilities to mainland China, as a subsidiary of Stelux Watch (Hong Kong) Ltd. Finally, in 1988, it purchased an old watch manufacturer in Geneva, Switzerland, the company Montres Universal SA, to obtain a workshop in which to produce "Swiss Made" watches.[45] Incidentally, this was not only a production issue but also one that represented an integral part of Stelux's new marketing strategy.

Second, the group's new brand strategy must be underscored, as it reflects the specific goal of owning its own brands, with the ultimate view of internalizing distribution and retailing profits; for this purpose, Stelux relied heavily on old Swiss brands. In the 1990s, it relaunched Solvil & Titus, a brand it had acquired during its first phase of investment in Switzerland (in 1976) but which had never really worked for them. Stelux also bought Pronto Watch (in 2000) and remarketed Cyma (in 2005). All these brands are still in use today for electronic watches that are assembled in China but are not sold as being "Swiss Made." In addition, Stelux completed its brand portfolio with the repositioning of the brand Universal Geneva in 2004, for which it launched various models of automatic watches—a very costly operation resulting in an accumulated deficit of HKD 129 million for the 2005–09 period.[46]

Third, Stelux established and developed a dense watch distribution and retail network in Asia, which enabled it to establish itself in 2000 as one of the main groups in this business. In 1985, it created the company City Chain Ltd. for the purpose of watch retailing; by 1998, this company had a total of 243 stores, mainly in Thailand (53), Hong Kong (50), and China (43).[47] Nonetheless, this sales network was not used exclusively for Stelux's own brands. Indeed, the group continued to subcontract for foreign firms, of which several were not watchmakers. For example, in 1995, it signed a contract with the sportswear firm Adidas to produce and sell watches worldwide (Richon 1998). During this period, Stelux also diversified its commercial activities, especially into the sale of eyeglasses, buying in 1988 a specific retailing company, Optical 88 (78 stores in Asia in 1998, and 232 by 2011).

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[44] *L'Impartial*, March 28, 1979.

[45] Stelux Holdings, *Annual report*, 1999–2000, www.irasia.com/listco/hk/stelux/annual/index.htm (site accessed June 15, 2013).

[46] Stelux Holdings, *Annual report*, 2005–2009. The last references to this subsidiary are from 2009.

[47] Stelux Holdings, *Annual report*, 1999.

Table 4. Development of Stelux Holdings, 1995–2011.				
	1995	**2000**	**2005**	**2011**
Gross sales (millions of HKD)	1,969	1,243	1,618	3,331
Hong Kong, %	–	64.0	55.7	54.9
Europe and North America, %	–	14.4	6.1	0
China, %	–	–	4.0	7.8
Other (Asia), %	–	21.6	34.2	37.3
ROE (%)	3.0	7.3	29.0	21.4
City Chain stores (CCS), total	–	291	306	403
CCS, Hong Kong	–	68	68	93
CCS, Thailand	–	55	81	100
CCS, China	–	88	88	95
CCS, Other (Asia)	–	80	69	115
Employees	–	1,853	2,451	3,512
Source: Stelux Holdings, *Annual report*, 1995–2011.				

This accumulation over time of a diversity of skills vis-à-vis external parts, assembly, design, marketing, and distribution allowed Stelux to establish itself in the mid-2000s as a leading watch distributor in China and in the entire Far East (except Japan); sales in Europe and in the United States, however, nosedived after its license to manufacture Adidas watches expired in 2005, leading to the closure of the British subsidiary in 2006.[48] In parallel, Stelux adopted a very active strategy of strengthening its position as a distributor throughout Asia. In 2005, it took over the retail company The Thong Sia Group, which held exclusive distribution rights for Seiko in Hong Kong, Malaysia, and Singapore, allowing Stelux to manage the Seiko stores in those three countries. The following year, Stelux took a 3% stake in the capital of Xinyu Hengdeli Holdings, a company listed on the Hong Kong Stock Exchange that is also the largest watch distributor in China.[49] Finally, Stelux developed its own retail network in China, opening sales

[48] In its 2006 annual report, Stelux explains that "we cannot see any competitive advantage in operating a wholly owned wholesale subsidiary after the end of the Adidas watch license in 2005" (p. 5).

[49] Large global companies dealing in luxury goods, such as Swatch Group (Switzerland) and LVMH (France), are also shareholders of this company (Donzé 2011b). However, the annual reports of the Hengdeli Group make no mention of Stelux's stake.

subsidiaries in Shanghai (in 2003), Guangdong (in 2005), and Beijing (in 2008). Its retail network went from comprising 291 stores in 2000, to 403 in 2011.

6 Conclusion

This analysis of the Hong Kong watch industry since the 1950s makes it possible to highlight the changing comparative advantages of this region in the global watch industry. At first, during the 1950s and the 1960s, geographical localization and access to cheap labor were key success factors in the emergence and growth of commercial and industrial activities related to watches. First, the arrival of the communists to power in China made Hong Kong an international hub for the watch trade in Asia, and it was used not only by Swiss and American companies, but also those from Japan. Second, the presence of abundant and cheap labor facilitated the transfer of some production activities (external part making, assembly), thus ensuring Hong Kong's integration into a system characterized by the international division of labor.

Although the conditions of international competition and the demand structure on the global market changed radically with the spread of electronic watches in the 1970s, these two comparative advantages have remained key success factors among Hong Kong watch companies. Due to their geographical localization and cultural proximity with China, these companies benefit from their "middlemen" position between production centers with cheap labor, especially in the Guangdong area, and ordering parties, mostly based in affluent countries (United States, Europe, and Japan) (Arvanatis and Wei 2012). Starting in the late 1980s, geographical localization and access to cheap labor became integrated into a single comparative advantage for the Hong Kong watch industry.

However, the growing competitiveness of Hong Kong watchmakers is not due solely to factors vis-à-vis production cost. Their control of the entire global value chain—from Chinese plants to distribution networks—provides the basis for their success. Apart from production aspects, where cost reduction is the main issue, skills acquired in design and product development have played key roles. The experience gained since the late 1960s in watch design, the manufacture of external parts (essentially cases and dials), and assembly for Swiss watch companies was obviously key to their success; these Hong Kong firms leveraged that expertise to reach their current globally competitive position. Finally, their deliberate involvement in distribution—for example, through the creation of retail networks in Asia—is another competitive advantage that does not rely on cheap labor. The control of the global value chain is undoubtedly a major source of financial profit, as all profit margins are internalized within the company; this is readily seen in the case study of Stelux.

Ultimately, it is essential to address the current comparative advantages of Hong Kong watch companies within an international context. The process of change that the Hong Kong watch industry underwent from the 1980s onwards made it complementary to the Swiss watch industry—an industry that had engineered a major shift towards luxury goods during the same period, abandoning nearly all other segments to its foreign competitors (e.g., entry level and mid-range). As a result, the main "victims" of Hong Kong's success have been Japanese watchmakers, which have faced stagnation and a decline since the 1990s. Even if they have a sufficiently firm grip on their production costs (owing to massive relocations to China), they have still been unable to adopt the product development and distribution strategies that would allow them to benefit, like their Hong Kong rivals, from the advantages conferred by control over the entire global value chain.

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