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From nation-based to global competition in the watch industry (1950-2010)

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Introduction

Literature in business history offers two main interpretations for tackling the issue of sources of competitiveness. On the one hand, there is big business, whose resources and organizational facilities make it a key actor in the world economy, as has been emphasized by Chandler and his followers.[1] On the other hand, there is the perspective of industrial districts and clusters, which attaches greater importance to resources anchored in a region and to territorial economies.[2] However, there are also works which tend to transcend this opposition, one of the first being Porter’s *Competitive Advantage of Nations*, which underscored that the competitiveness of multinational enterprises (MNEs) is also related to their localization in specific clusters and nations.[3] Moreover, since the mid-1990s, several scholars working on industrial districts have researched the role of leading firms and MNEs within districts, and

1 Chandler Alfred D., *Scale and Scope: The Dynamics of Industrial Capitalism,* Cambridge: Harvard University Press, 1994.
2 Sabel Charles and Zeitlin Jonathan, “Historical alternatives to mass production: Politics, markets and technology in nineteenth-century industrialization”, *Past & Present*, Vol. 108, 1984, pp. 133-176 and Piore Michael and Sabel Charles, *The Second Industrial Divide: Possibilities of Prosperity*, New York: Cambridge University Press, 1984.
3 Porter Michael E., *The Competitive Advantage of Nations*, New York: The Free Press, 1990.

their role on overall regional dynamics.[4] In addition, other scholars stress the importance of geographically localized resources for MNEs.[5] The objective of this paper is to contribute to this discussion on the importance of localized resources for the competitiveness of firms, as well as on the concept of national industry, using the case of the watch industry during the years 1945-2010 and focusing on the four main players (Switzerland, Japan, USA and Hong Kong).

According to most scholars, the watch industry is a typical case where competition has been and still is based on nations and regions rather than enterprise, a strong focus having been placed on the struggle between the Swiss watch industry and its Japanese – or even "Asian" – rivals. The association of Hong Kong and Japanese watchmakers as firms specialized in the production of cheap quartz watches, in comparison with the Swiss, is a common view shared by the majority of Western scholars. Indeed, many of them make no distinction when referring to "Asian manufacturers".[6] For example, Tajeddini and Trueman 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."[7] Yet even if competition in this industry was mainly based on nations back in the 1950s, this paper argues that major changes occurred in the following decades and resulted in a sweeping change towards competition between global firms. Accordingly, this paper analyses the nature and the process of these changes and questions the current meaning of nations, regions and localization in the industry.

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[4] Markusen Ann (1996), "Sticky Places in Slippery Space: A Typology of Industrial Districts", *Economic Geography*, Vol. 72, No. 3, pp. 293-313, Colli Andrea (2002), "'Pocket Multinationals': Some Reflections on 'New' Actors in Italian Industrial Capitalism," in Hubert Bonin et al. (eds.), *Transnational Companies 19th-20th Centuries*, Paris: Plage, pp. 155-178 and Catalan Jordi and Ramon-Muñoz Ramon (2012), "Marshall in Iberia. Industrial Districts and Leading Firms in the Creation of Competitive Advantage in Fashion Products", *Enterprise & Society*, Vol. 14, No. 2, pp. 327-359.

[5] Dunning John H. and Lundan Sarianna M., *Multinational Enterprises and the Global Economy*, Cheltenham/Northampton: Edward Elgar, 2008, pp. 594-597.

[6] For example, see Stephens Carlene and Dennis Maggie, "Engineering time: inventing the electronic wristwatch", *The British Journal for the History of Science*, vol. 33, 2000, p. 496.

[7] Tajeddini Kayhan and Trueman Myfanwy, "The potential for innovativeness: a tale of the Swiss watch industry", *Journal of Marketing Management*, vol. 24, no. 1-2, 2008, p. 171.

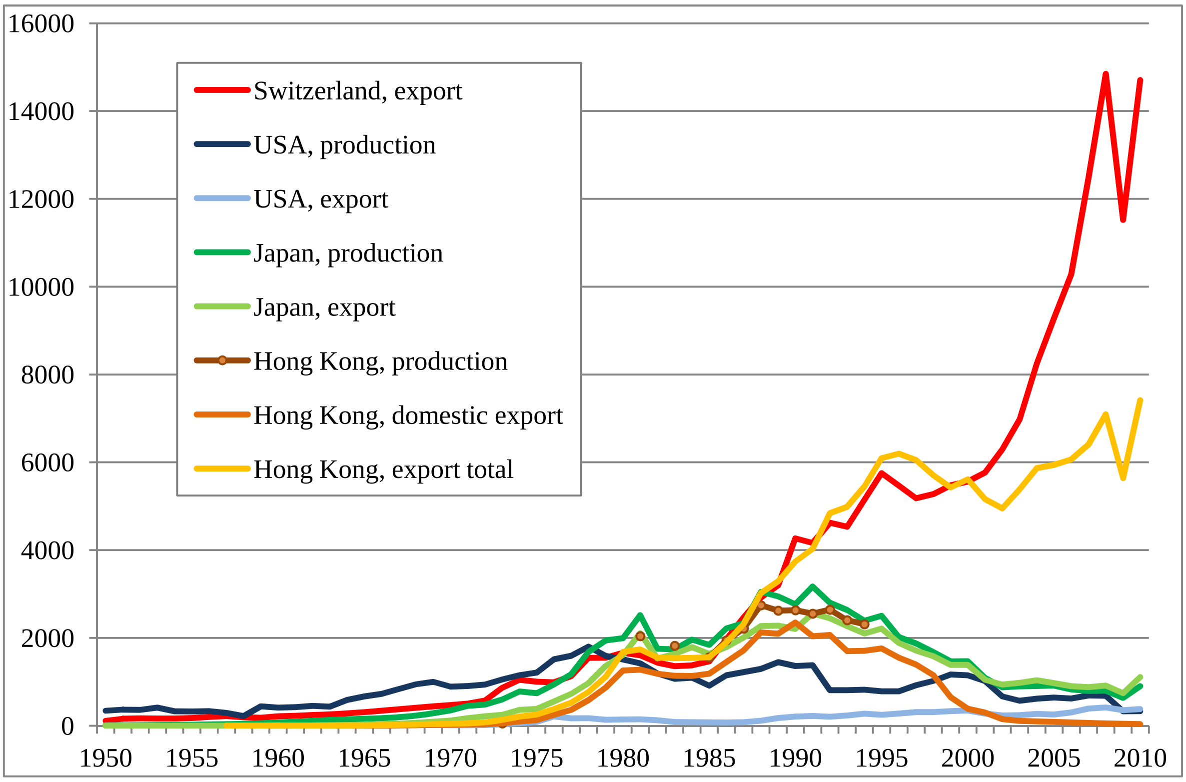
The choice of sources to tackle competitiveness in the watch industry is not neutral and greatly influences the output of the analysis. Two main kinds of data are available to scholars: foreign trade and production statistics for the various countries involved in this industry, and the ranking of the world's leading watch companies.

First, the use of statistics sheds clear light on competition between the main watchmaking nations of the world between 1950 and 2010 (see figure 1). This source makes it possible to identify three phases of development. First, the years 1950-1975 featured great stability, with the United States being the leading producing country but nearly absent from the world market (its exports amounted to a paltry 1.8% of production between 1950 and 1973) and thus not very competitive. Switzerland and Japan experienced steady growth and began to compete head on in the late 1960s. As for Hong Kong, its presence on the world market was still insignificant.

Second, the years 1975-1985 were a decade of deep upheaval, against the backdrop of the emergence of electronic watches. Whereas Switzerland was in stagnation, the American watch and clock industry entered a period of gradual decline which was to continue until 2010. This period marked the triumph of East Asia, with Japan establishing itself as the No. 1 producing and exporting nation, and of Hong Kong, which made a noteworthy entry on this market.

Third, the years 1985-2010 were devoted to the restructuring of international competitiveness, as reflected by the successful comeback of Switzerland, which repositioned its watch industry towards luxury, and the remarkable growth of Hong Kong, no longer as a basis for production (which collapsed in 1990) but for the re-export of watch products to neighboring China, where Hong Kong's entrepreneurs located their plants. As for the US, it continued to slide, as did Japan, which started to go under.

Figure 1: Production and export of watches and clocks, in millions of USD, 1950-2010



Source: *Statistique annuelle du commerce extérieur de la Suisse*, Berne : Administration fédérale des douanes (1960–2010); *Annual Survey of Manufactures*, Washington: U.S. Bureau of Census (1950-2010); *U.S. Exports*, Washington: U.S. Bureau of Census (1950-2010); *Kikai tokei nenpo*, Tokyo: MITI/METI (1950-2010); *Nihon gaikoku bokei nenpyo*, Tokyo: Ministry of Finance (1950-2010); *Hong Kong Trade Statistics Export & Re-Export*, Hong Kong: Census Department (1950-2010); *Hong Kong's Manufacturing Industries*, Hong Kong: Hong Kong Trade Development Council (1994-1996).

Note: Production for Switzerland is unknown.

Export and production statistics thus make it possible to highlight overall trends for the world watch industry and to differentiate between the development paths of different nations. Yet these data give an inaccurate overview, which only partially reflects the way in which competitiveness in this industry has actually evolved. This is because they were compiled by national authorities focusing on nation-based issues, as a result of which they offer a national vision of competitiveness. Using other sources gives a fundamentally different view.

The global ranking of the largest watch enterprises is another way to approach competitiveness in the industry. Owing to a lack of data for numerous enterprises not listed – especially in Switzerland – it is not possible to arrive at exact figures. In any case, some investment banks have compiled such rankings based on their own estimates. This paper uses the ranking of watch companies established by the bank Vontobel, the most widely used by watch industry analysts. Table 1 shows the world's 20 largest watch companies, giving the production sites for their products. Two main features can be highlighted. First, this ranking shows that a very large share of manufacturing is in the hands of a very few firms. The top 20 companies have a combined 78.4% share of world markets, while the three largest have nearly half (45.8%).

Second, there is wide geographical diversity of firms. Most are headquartered in Switzerland (9), Japan (3) or the United States (2), but some are also based in countries where the watch industry is not particularly flourishing, like France (2), Italy (1), Spain (1) and Greece (1). What is more, only one firm is based in Hong Kong, whereas this city has become one of the leading watch exporters. Accordingly, a significant distinction may be made between producing and exporting nations, on the one hand (figure 1), and the nationality of the world's largest watch companies, on the other hand (table 1). This can be explained by the fact that most of the watch companies do not produce their own parts in-house, but rather source their supplies from other companies. Among the top 20, those companies which produce their own watches are in a minority: Swatch Group, a few Swiss companies specialized in luxury goods (Rolex, Patek Philippe, Audemars Piguet, as well as some of the companies held by the Richemont, LVMH and Kering groups, but only for some specific products) and the three Japanese watchmakers. All of the other companies in the top 20 distribute – and sometimes assemble – watches bought from Swiss, Japanese and Hong Kong watchmakers. Competitiveness no longer relies on the mastery of production technology, but rather on the ability to make effective use of global supply chains, as can also be seen today in other consumer goods industries like textile and fashion.[8]

Table 1: World's 20 largest watch companies, 2012

Company	Country	Production centres	Watch sales (CHF millions)	Market share (%)
Swatch Group	Switzerland	Switzerland, France, Germany, Hong Kong, Thailand, China	6,955	18.3
Richemont	Switzerland	Switzerland	5,960	15.7
Rolex	Switzerland	Switzerland	4,500	11.8
Fossil	USA	Hong Kong, Switzerland	1,970	5.2
LVMH / Bulgari	France	Switzerland, Hong Kong	1,785	4.7
Citizen	Japan	Japan, Hong Kong, Thailand, China, Switzerland	1,490	3.9
Seiko	Japan	Japan, Hong Kong, Thailand, China, Singapore	1,295	3.4
Patek Philippe	Switzerland	Switzerland	1,150	3.0
Casio	Japan	Japan, Hong Kong, Thailand, China	800	2.1
Audemars Piguet	Switzerland	Switzerland	640	1.7
Chopard	Switzerland	Switzerland	600	1.6
Movado Group	USA	Switzerland, China, Hong Kong	465	1.2
Breitling	Switzerland	Switzerland	350	0.9
Franck Muller	Switzerland	Switzerland	300	0.8
China Haidan	Hong Kong	China, Hong Kong, Switzerland	280	0.7
Morellato & Sector	Italy	Switzerland, Hong Kong	250	0.7
Kering	France	Switzerland	250	0.7
Folli Follie	Greece	Hong Kong	250	0.7
Festina	Spain	Switzerland, Japan, Spain	250	0.7
Ulysse Nardin	Switzerland	Switzerland	220	0.6

Source: *Watch Industry*, Zurich: Vontobel Equity Research, 2013 and author's estimates for production centres

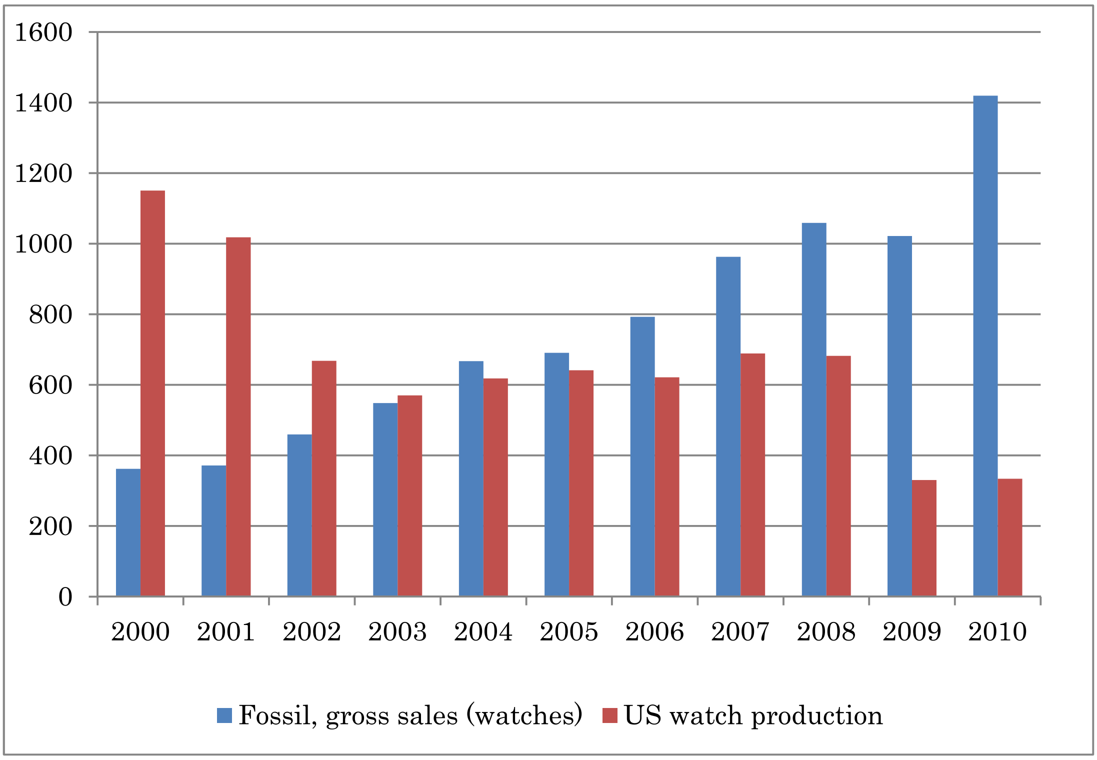
[8] Lane Christel and Probert Jocelyn, *National capitalisms, global production networks: fashioning the value chain in the UK, USA, and Germany*, Oxford: Oxford University Press, 2009 and Campagnolo Diego and Camuffo Arnaldo, "Globalization and low-technology industries: the case of Italian eyewear", in Paul L. Robertson and David Jacobson (eds.), *Knowledge Transfer and Technology Diffusion*, Cheltenham/Northampton: Edward Elgar, 2011, pp. 138-161.

This difference between production sites and the main players explains the presence within the top 20 of watch companies established in countries with a watchmaking industry which is apparently not competitive in terms of export data. The case of the United States and Fossil is undoubtedly one of the most revealing (see figure 2). This Texas-based American company was founded in 1984.[9] Even though the US has a long and rich history of watchmaking, Fossil does not have not a single link to American know-how in this field or to former watch producers. Since its foundation, it has sourced its supplies from watch companies in Hong Kong, where it opened a subsidiary in 1992, Fossil (East) Ltd., and in Switzerland, where it opened another subsidiary in 2001 (Swiss Technology Holding) in order to secure its supply of "Swiss Made" watches for its luxury brands. Fossil develops and distributes watches for its own brands (Fossil, Zodiac) and for partners from the fashion business (Burberry, Diesel, DKNY, Emporio Armani, etc.). Since the mid-1990s it has experienced breathtakingly fast growth, with gross sales reaching USD 362 million in 2000 and 1.4 billion in 2010, becoming the world's fourth largest watch company in 2012. Yet despite this success, American watch and clock production has collapsed, plummeting from USD 1.2 billion USD in 2000 to 334 million in 2010. Consequently, even though the US has one of the largest watch companies in the world, it was unable to prevent the decline of its own watch industry.

Figure 2: American watch and clock production and gross watch sales for Fossil Co., in

[9] Source: Fossil Co., annual reports, and "Fossil", *International Directory of Company Histories*, Detroit Mich. [etc.]: St. James Press, Vol. 17, 1997, pp. 189-191.

millions of USD, 2000-2010



Source: Fossil Co., annual reports, and *Annual Survey of Manufactures*, U.S. Census Bureau, http://www.census.gov/manufacturing/asm/ (last accessed: 30 August 2013).

The fundamental distinction between production sites and the nationality of the most competitive companies, which can be seen in the global watch industry at the beginning of the 21st century, is the outcome of a particular historical development. Indeed, this industry was largely organized on a national basis at the end of World War II. In the following sections, this article offers an analysis of the dynamics of this industry between the 1950s and 2010, with a view to identifying those factors which led to a radical change in the basis for competition.

1. The global watch industry in the 1950s

At the end of World War II, the global watch industry was, broadly speaking, structured along national lines. The volume of Swiss production for the 1950s amounted to nearly half of the total, while the top five nations taken together represented more than 80%. However, the figures published in table 2 are for production volume and thus do not accurately reflect the competitiveness of each nation, due to the large variety of products, with some countries like the US specializing in the production of inexpensive, low-quality mechanical watches (called "pin-lever watches" or "Roskopf watches"); others like Japan opting for quality watches; and European countries, Switzerland included, producing both kinds of watches. Nevertheless, the key point highlighted by this table is the high concentration of production in a small number of countries, where this business was considered to be a "national industry" at the time. The national roots of watchmaking are essentially due to institutional factors.

Table 2: World production of watches and watch movements, millions of units and %, 1950-1959

	Millions of units	%
Switzerland	348.4	48.2
USA	92.4	12.8
USSR	84.1	11.6
France	39.6	5.5
Japan	24.7	3.4
Other	134.1	18.5
World	723.3	100

Source: Estimates of the Federation of the Swiss Watch Industry published by Landes David S., *Revolution in Time: Clocks and the Making of the Modern World*, Cambridge: Harvard University Press, 2000 (second edition), p. 423.

At first, as far as Switzerland was concerned, the national character of the watch industry was a direct consequence of the cartel set up in the 1920s and recognized by the federal government in 1934.[10] Within this system, all enterprises involved in watchmaking in

[10] Koller Christophe, *"De la lime à la machine". L'industrialisation et l'Etat au pays de l'horlogerie. Contribution à l'histoire économique et sociale d'une région suisse*, Courrendlin : Communication suisse et

Switzerland were obliged to source their supplies of parts exclusively from other Swiss enterprises at price conditions defined by the cartel. The import of parts was strictly forbidden, except for a few French and German enterprises which had long-standing business relations with Swiss watchmakers. In addition, exports of parts and machine tools were strictly controlled, preventing Swiss watch companies from relocating their production abroad. Finally, the establishment and purchase of watch companies were subject to official authorization. This system, set up in order to maintain an industrial structure composed of small and medium-sized enterprises (SMEs), explains the national character of the Swiss watch industry in the 1950s. While Swiss watchmakers did not invest abroad, except for sales subsidiaries, unlike most of the Swiss entrepreneurs of other sectors which organized globally early on,[11] inward foreign direct investment (FDI) was extremely rare. The very few watch companies with foreign capital were subsidiaries of American watch companies, established in Switzerland to secure their supplies of parts and movements and founded before cartelization, such as Gruen Watch (1903), Bulova Watch (1911) and Benrus Watch (1927).[12] However, these enterprises represented only a tiny share of the Swiss watch industry, which numbered 1863 companies in 1950.[13] Back in the 1940s, these American subsidiaries obtained special, secret authorization to export some parts to their headquarters in the United States.[14]

In the United States, the national character of the watch industry was the twofold consequence of an "oligopolistic structure"[15] and of custom protectionism. The American watch industry

européenne, 2003 and Donzé Pierre-Yves, *History of the Swiss Watch Industry from Jacques David to Nicolas Hayek*, Berne: Peter Lang, 2011.

[11] Müller Margrit, "Internationale Verflechtung", in Halbeisen Patrick, Müller Margrit and Veyrassat Béatrice (eds.), *Wirtschaftsgeschichute der Schweiz im 20. Jahrhundert*, Basel: Schwabe, 2012, pp. 339-465.

[12] Richon Marco, *Omega Saga*, Bienne: Fondation Adrien Brandt en faveur du patrimoine Omega, 1998, pp. 422-468.

[13] Convention patronale, *Recensement 2007*, La Chaux-de-Fonds : CP, 2008, p. 13.

[14] Donzé Pierre-Yves "The Swiss Watch Cartel and the Control of Technology Flows toward Rival Nations, 1930-1960", in Donzé Pierre-Yves and Nishimura Shigehiro (eds.), *Organizing Global Technology Flows: Institutions, Actors, Processes*, New York: Routledge, 2013, forthcoming

[15] Glasmeier Amy K., *Manufacturing Time: Global Competition in the Watch Industry, 1795-2000*, New York: The Guilford Press, 2000, p. 178.

in the 1950s was essentially limited to three companies: Bulova, Hamilton and Timex. These firms benefited from growing custom protectionism from the interwar years onwards, which became more pronounced in the 1950s. After World War II, the strategic importance of the watch industry on military grounds led to State backing. For example, Hamilton was very active in the production of war material during the Korean War.[16] As for Bulova, it appointed former General Omar Bradley as Chairman of its Board of Directors in 1958.[17] As a result of this State support and protectionism, American watch companies were not very interested in foreign outlets: exports amounted to a paltry 1.3% of domestic production in 1960.[18] The only exception to this national character of the American watch industry was the company United States Time Co. (Timex),[19] which was founded in 1941 to produce war material and which focused on the mass production of low-quality mechanical watches after the war. At the end of the 1950s, it adopted an active strategy of outward FDI and began to transfer production facilities abroad, stepping up the pace over the following decade.

The case of Japan was similar to that of America, even if the products were different. The Japanese watch industry was highly concentrated: the two groups Hattori & Co. (brand Seiko) and Citizen Watch production accounted respectively for 51.4% and 31.8% of national watch production in 1960 (volume).[20] Moreover, these two companies had all their production facilities on Japanese territory, and there were no watch companies with foreign capital in Japan. In addition, Japanese watch companies benefited from custom protectionism during this period, with imports being subject to quotas until 1961. As a result, the domestic market was the main outlet for this industry, which exported only 2% of its production in 1960.[21]

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[16] Glasmeier, *Manufacturing Time*, p. 184.

[17] "Bulova Corporation", *International Directory of Company Histories*, Vol. 41, Detroit Mich. [etc.]: St. James Press, 2001, pp. 70-72.

[18] Own calculation on the basis of U.S. Commodity Exports and Imports, Washington: U.S. Census Bureau, 1960 and *Annual Survey of Manufactures*, Washington: U.S. Bureau of Census, 1960.

[19] "Timex", *International Directory of Company Histories*, Vol. 25, Detroit Mich. [etc.]: St. James Press, 1999, pp. 479–482.

[20] Own calculation on the basis of *Kikai tokei nenpou*, Tokyo: MITI, 1960 and production statistics provided by Hattori & Co. and Citizen Watch.

[21] Own calculation on the basis of *Kikai tokei nenpou*, Tokyo: MITI, 1960 and *Nihon gaikoku boeki nenpyo*, Tokyo: Ministry of Finance, 1960.

However, the main differences with the United States were the absence of production of war material and the existence of cooperation and joint research between private companies, State agencies and universities.[22] This was instrumental in strengthening the feeling of a national industry developing to compete with other nations.

Accordingly, this quick overview has made it possible to highlight the existence of watch industries in several countries. Their national character was the consequence of a virtual absence of FDI and of custom protectionism, which safeguarded the domestic market for domestic companies. The State was a major player in maintaining such a structure, either on military grounds (USA), or to support employment (Switzerland) and industrial development (Japan).

2. The first wave of FDI and its effects (1960s)

The organization of a deeply nation-based industry was challenged in the 1960s by institutional and technological factors, which broke down national borders and led to the first phase in the international division of labour.

One institutional factor which had an impact on industrial organization was the gradual phasing out of State protectionism. In Switzerland, the watch cartel was steadily dismantled between 1961 and 1965, under pressure from the largest watch companies. They wanted to develop and rationalize their means of production (M&As in Switzerland and relocation to Asia) in order to cut production costs and boost their ability to compete with American and Japanese companies, whose large-scale organizational structures enabled them to market cheaper products.[23] Moreover, the United States and European nations gradually abandoned their protectionist customs policies during this decade.[24] Consequently, the enterprises of the

[22] Donzé Pierre-Yves, "The hybrid production system and the birth of the Japanese specialized industry: Watch production at Hattori & Co. (1900-1960)", *Enterprise & Society*, Vol. 12, No. 2, 2011, pp. 356-397.
[23] Donzé, *History of the Swiss Watch Industry*, pp. 128-133.
[24] For the case of the United States, see Dirlevanger Dominique, Guex Sébastien and Pordenone, Gian-Franco, *La politique commerciale de la Suisse de la Seconde Guerre mondiale à l'entrée au GATT (1945-1966)*, Zurich:

world's leading watch nations began to face growing competition while gaining new opportunities for expansion.

As for technological factors, they mainly consisted of the implementation of mass production systems for watchmaking. They were developed in the late 1950s and spread in the 1960s, through various process innovations, such as automation of movement production. However, final assembly remained difficult to automate. These new production technologies enabled companies to plan rationalization, realize economies of scale and ramp up production, all of which were essential push factors driving foreign expansion.

These changes in the institutional and technological environment led to a first wave of FDI which affected all of the watchmaking nations. Four cases may be singled out. First, a reference must be made to the emergence of the first real MNE in the watch business, with Timex, whose production amounted to 8 million pieces in 1960 and 22 million in 1969, that is, more than the overall volume of American production for that year (estimated at 19 million pieces).[25] However, Timex production data for the period included not only watches manufactured in the United States but also those manufactured in all of its factories worldwide. In 1971, it employed a total of 7,000 persons and its main production centres abroad were based in Hong Kong and Taiwan for Asia, as well as in Scotland (Dundee), Britain (Feltham), France (Besançon), Germany (Pforzheim) and Portugal (Chaneca da Caparica) for Europe.[26] These plants mainly produced watches for domestic markets, except those in Hong Kong and Taiwan, which supplied all Asian markets.

Second, the major Swiss watch companies moved to relocate production abroad. This was particularly the case of the company Ebauches SA, created in 1926 to control the production of movement blanks, which attempted to extend its activities in Europe by successively

Chronos, 2004 (especially Chapter 4 on the "watch war").

[25] *Kokusai tokei tsushin*, 1970, p. 477 and estimates of the Federation of the Swiss Watch Industry published by Landes David S., *Revolution in Time: Clocks and the Making of the Modern World*, Cambridge: Harvard University Press, 2000 (second edition), p. 423.

[26] Blanc Jean-François, *Suisse-Hong Kong, le défi horloger. Innovation technologique et division internationale du travail,* Lausanne : Éd. d'En bas, 1988, p. 45 and *L'Impartial*, 10 November 1971.

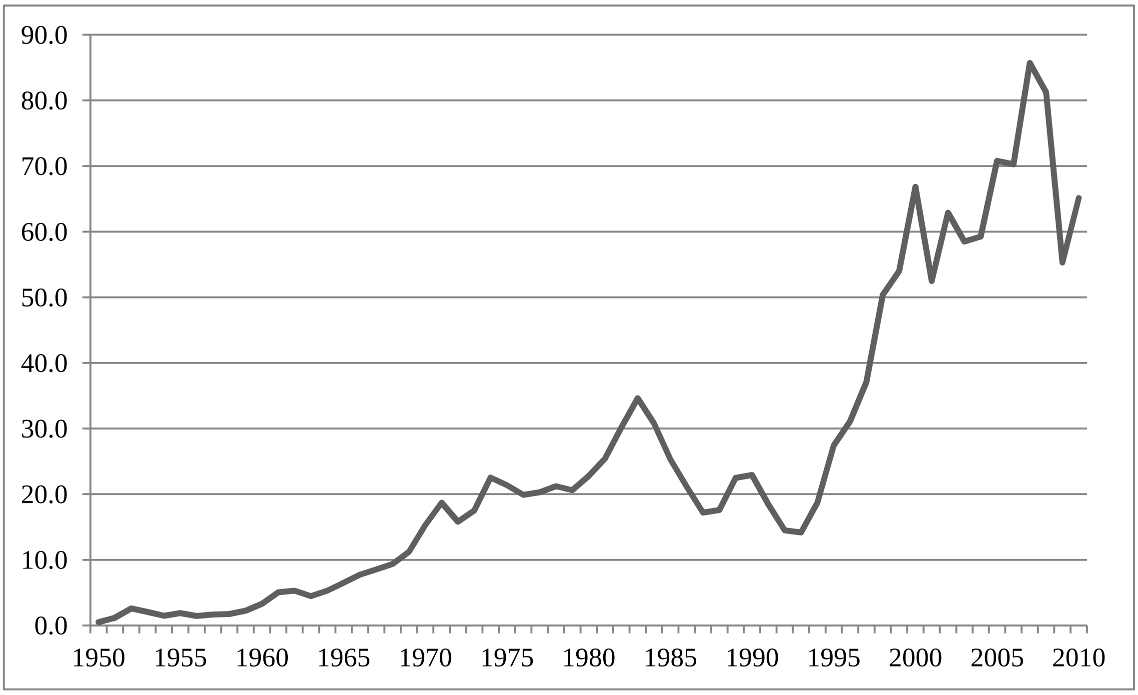
purchasing two movement blank firms: Durowe in Germany (1965) and SEFEA in France (1967).[27] In addition, the financial entreprise Chronos Holding, founded in 1966 by the ASUAG trust (which controlled Ebauches SA in particular), the Federation of the Swiss Watch Industry and seven banks took a 19.9% stake in the capital of Gruen Industries in the United States (1967).[28] Yet the foreign expansion of Swiss companies was still limited, as rationalization was first implemented domestically.

Third, Hong Kong emerged as a major venue for the production of parts and the assembly of watches for Swiss, American and Japanese companies.[29] While the technology of automated mass production was possible for watch movements – realized at the time in high-tech European, American and Japanese plants – activities relating to the production of external parts (cases, straps and dials) and final assembly were relocated to cheap labour regions, mainly in Hong Kong. As a result, the Federation of the Swiss Watch Industry intervened to improve the quality of parts made in Hong Kong. For example, in 1966 it signed a technical assistance agreement with the Federation of Hong Kong Industries.[30] Subsequently, the major Swiss watch groups invested directly in the British colony. They opened subsidiaries, such as Swiss Watch Case Center (1968) or Swiss Time Hong Kong (1969), and entered into joint ventures with industrialists and traders established in Hong Kong, like Swiss Plating Co. (1968) and Swikong Manufacturing (1971).[31] 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: 21.9% in 1961 and 60.8% by 1970.[32] The proportion of Swiss watches equipped with foreign cases rose from 3.3% in 1960

[27] *Industrie horlogère européenne : une expérience suisse : Ebauches SA – Lip, 1967-1973*, Neuchâtel : Ebauches SA, 1973.
[28] Richon, *Omega Saga*, pp. 450-454.
[29] Donzé Pierre-Yves, "The changing comparative advantages of the Hong Kong Watch Industry (1950-2010)", *Kyoto Economic Review*, No. 170, forthcoming.
[30] Swiss Federal Archives, E2200.10 Hong Kong, Agreement between the Swiss Federation of Watch Manufacturers and the Federation of Hong Kong Industries, 2 November 1966.
[31] Blanc, *Suisse-Hong Kong*, p.149.
[32] Donzé Pierre-Yves, "Le district industriel horloger suisse de la cartellisation à la globalisation. L'exemple de l'industrie de la boîte de montres au cours du XXe siècle", in Tissot Laurent e.a. (ed.) *Histoires de territoires. Les territoires industriels en question, XVIIIe - XXe siècles*, Neuchâtel: Alphil, 2010, p. 343. Subsequently, Hong

to 15.3% in 1973 (see figure 3). 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 value of Japanese imports of watch parts from Hong Kong soared, rising from 141,000 yen in 1960 to 34.8 million in 1970 and 1.3 billion by 1980.[33]

Figure 3: Proportion of Swiss watches equipped with foreign-made cases, as a %, 1950-2010



Source: own estimates based on *Swiss Foreign Trade Statistics*, Berne: Federal Customs Administration, 1950-2010.

As for the assembly of watches, it led in particular to the opening of a subsidiary of the American company Timex Corporation, which founded Timex Hong Kong Ltd. in 1967.[34] Next, the Japanese group Hattori & Co. set up a production subsidiary, Precision Engineering (1968).[35] Yet Swiss watchmakers were not absent. For low-range models (*pin-lever watch*),

Kong's strategic importance as a supplier of cases decreased in favour of Thailand (1970s-1990s) and China (since 2000).

33 *Nihon gaikoku boeki tokei*, Tokyo: Ministry of Finance, 1960–1980.

34 *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai, 1980, p. 4.

35 "Seiko gurupu no kaigai senryaku", *Noryoku kaihatsu shirizu*, vol. 87, 1982, pp. 14-15.

for example, there was the company opened by one of the biggest watch companies in Switzerland, Baumgartner Frères Granges, BFG Far East (1970).[36]

Thus, an industry based on outsourcing developed in Hong Kong during the 1960s. The number of enterprises active in watchmaking in the city jumped from 61 in 1960 to 229 in 1970.[37] Most were SMEs specialized in subcontracting and dependent on foreign big business.

Four, inward FDI in Switzerland developed, but almost exclusively in American firms. Bulova bought up two *manufactures*, Recta (1963) and Universal (1966), while Hamilton purchased Büren Watch (1966) and Benrus took a minority interest in Ulysse Nardin (1965).[38] For these companies, the objective was to enlarge their production facilities of high-quality mechanical watches for the American market, as a result of which such FDI followed a logic consistent with the strategy developed at the beginning of the 20th century.

Accordingly, the first wave of FDI which could be observed worldwide in the watch industry during the 1960s led to an initial phase of international division of labour. This new industrial organizational structure was characterized by a strong hierarchy, with decision centres in the US and Switzerland and production subsidiaries embedded in a relationship of dependency, aimed at either horizontal extension of production, as in Europe, or vertical division of labour, as in Hong Kong. The organization of the largest firms tended to transcend national boundaries, but their management and ownership were still very much locally anchored.

3. The impact of electronics (1970-1985)

The most important changes occurred in the years 1970-1985, a period during which the local roots of the watch industry declined in favour of new actors. However, this sea change was

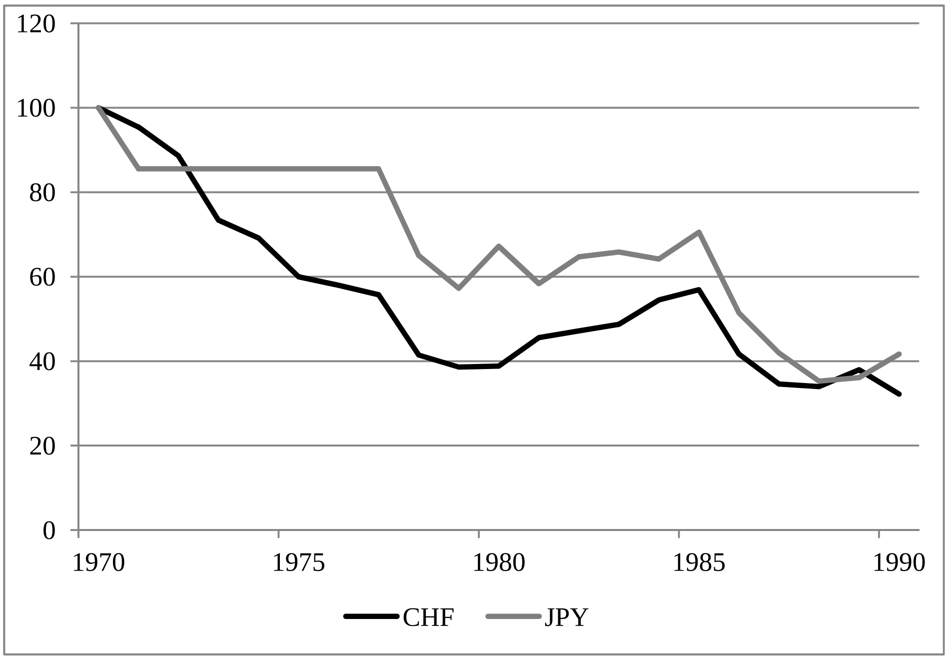
[36] Blanc, *Suisse-Hong Kong*, p.148.
[37] *Hong Kong's Manufacturing Industries*, Hong Kong: Hong Kong Government Industry Department, 1996.
[38] Richon, *Omega Saga*, pp. 450-454.

not consistent with the first phase of internationalization seen in the 1960s; rather, it marked a major break.

These years are usually known as the period of the “quartz revolution”[39], a phenomenon which has been a focus of scholars’ attention. Nevertheless, a second major development, of an institutional nature, which was of course less visible and less spectacular, also contributed to this radical change: the collapse of the Bretton Woods system after 1971 and the transition to a system of floating exchange rates. This revamping of the monetary system had a significant impact, as it considerably strengthened the value of the Swiss franc against the US dollar, especially in comparison with the Japanese yen, which remained relatively low until the Plaza Agreement (see figure 4). This monetary dimension underscored the lack of competitiveness of Swiss watch companies in relation to their Japanese rivals, encouraging the former to pursue rationalization and relocation in East Asia.

Figure 4: Exchange rate trends for the Swiss franc (CHF) and the Japanese yen (JPY) against the US dollar (100 = 1970), 1970–1990

[39] Landes, *Revolution in Time*, p. 364.



Source: For the CHF, statistics of the Swiss National Bank (www.snb.ch, accessed 7 July 2010); for JPY, *Nihon chouki toukei souran*, Tokyo: Nihon tokei kyokai, 1988, 18–8.

Yet technology was the change which had the greatest impact, in the form of the advent of quartz watches. This product innovation had various effects on industrial organization around the world. One major consequence was that it put an end to the first wave of internationalization which had begun in the 1960s and had relied essentially on the expansion of low-range watch producers. The development of quartz watches made it possible to market cheaper, more precise products than pin-lever watches, which completely lost their advantage. Two of the world's leading watchmakers, who had been key drivers of the international division of labour, left the watch business. The Swiss firm Baumgartner Frères Granges (BFG) went into recession in 1975 and closed down in 1982.[40] As for Timex, it closed nearly all its foreign plants in the second half of the 1970s and converted to subcontracting production outside watchmaking.[41]

The other American firms which played an essential role in internationalization also

[40] *L'Impartial*, 9 September 1982.
[41] "Timex", in *International Directory of Company Histories*, pp. 479–482.

experienced difficulties due to quartz watches. Bulova and Hamilton found themselves facing unsolvable problems as a result of disastrous technical choices – the diapason watch for Bulova and the electrical watch for Hamilton. The watch division of the Hamilton group was purchased in 1974 by the Société suisse pour l'industrie horlogère (SSIH, a group founded in 1930, including in particular the watch companies Omega and Tissot), who wanted to acquire Hamilton's retail network in the United States.[42] As for Bulova, it was taken over in 1976 by Stelux (see below) and sold a few years later to Loewe (1979). Its production centres in America (1978) and Switzerland (1982) were shut down.[43]

In Switzerland, this period of major changes is usually called the "watch crisis" (*crise horlogère* in French). Indeed, the volume of exports went from 24.2 million pieces in 1950 to 40.9 million in 1960 and peaked at 84.4 million in 1974, before dropping to an annual average of 31.3 million in 1982–1984.[44] As for the number of workers, it decreased from some 90,000 employees in 1970 to less than 47,000 in 1980.[45] During this decade of recession, the Swiss watch industry experienced extensive restructuring, the most well-known instance being the merger in 1983 of the SSIH and the trust which controlled the production of movements and parts, ASUAG, giving birth to a new company, the Société suisse de microélectronique et d'horlogerie (SMH, Swatch Group since 1998), on the advice of the consultant Nicolas G. Hayek. Industrial rationalization also led to the closure of many enterprises, with the number of firms in the watch business declining sharply from 1,618 in 1970 to 634 in 1985.[46] Nevertheless, foreign companies did not take advantage of this crisis to pour inward FDI into Switzerland: American firms left Switzerland and were not replaced by newcomers.

Only one major firm invested in Switzerland during this period: Stelux. This company was

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[42] Sauer Don, *Time for America. Hamilton Watch, 1892-1992*, Lititz: Sutter House, 1992, p. 242.
[43] Richon, *Omega Saga*, pp. 457-460.
[44] *Statistique du commerce de la Suisse avec l'étranger*, Berne : Administration fédérale des douanes, 1950-1984.
[45] Convention patronale, *Recensement 2007*, p. 13.
[46] Convention patronale, *Recensement 2007*, p. 13.

listed on the Hong Kong stock exchange in 1972 and adopted a very active strategy of international expansion in the 1970s.[47] This began in 1975 with the purchase of several small Swiss companies, all producing external parts: the firms Metalem SA (dials), Jean Vallon SA (cases) and Orac SA (cases), grouped together in a Bienne-based holding company, Unilux SA.[48] The objective of these acquisitions was to develop skills and know-how 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 (1975) and took a 27% stake in Bulova Watch Co., becoming the largest shareholder of the biggest American watch company (1976).[49] 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.[50] Subsequently, in the second half of the 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), for assembling electronic movements in Hong Kong intended for the American market.[51] In this way, Stelux aimed to control the entire value chain for this product, from the production of parts to the sale of watches.

During the following decades, 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

[47] *Journal de Genève*, 15 June 1976.
[48] *Journal de Genève*, 10 December 1975.
[49] *Journal de Genève*, 15 June 1976.
[50] Despite this takeover, the Swiss production susbidiary 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. Marti Laurence, "Retour sur une grève dite exemplaire. La grève de Bulova Watch Co., Neuchâtel, 1976", in Rosende, Magdalena and Benelli, Natalie (eds), *Laboratoires du travail*, Lausanne: Antipodes, 2008, pp. 39-52.
[51] *L'Impartial*, 16 February 1982.

external part making companies (1979).[52] 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 *manufacture* in Switzerland, the company Montres Universal SA, at Geneva, to gain a workshop for the production of "Swiss Made" watches.[53] Incidentally, this was not only a production issue but also an integral part of the new marketing strategy of Stelux.

The Swiss watch companies primarily pursued the international division of labour to secure the supply of external parts. The largest groups strengthened their commitment to Asia, like SSIH which in 1971 purchased in Swiss Time Hong Kong, founded two years previously by a couple of Swiss entrepreneurs.[54] In 1978, SSIH opened a second case-making plant, in Singapore, Precision Watchcase Ltd., in a joint venture with Japanese industrialists.[55] In addition, the Swiss federal government slashed customs duties for imports of Hong Kong and Singapore manufactured goods by 30%, thereby encouraging the relocation of parts manufacturing to these countries.[56] SMEs also followed this strategy, in particular case makers, who opened production subsidiaries in Asia in the 1970s. This was for example the case of Henri Paratte & Cie, who opened Parathai in Bangkok (1972), and Ruedin SA, who took a stake in Swisstime Philippines Inc. (1978).[57] Consequently, the share of Swiss watches equipped with foreign cases increased sharply during this period (see figure 3).

However, the relocation of production by Swiss companies was limited by the adoption of a federal decree on the use of the "Swiss Made" label, which obliged Swiss companies to maintain some production activities in Switzerland – primarily the production of at least half

[52] *L'Impartial*, 28 March 1979.
[53] Stelux Holdings, *Annual report*, 1999-2000, www.irasia.com/listco/hk/stelux/annual/index.htm (site accessed 28 December 2008).
[54] Blanc, *Suisse-Hong Kong*, pp. 144-145.
[55] Blanc, *Suisse-Hong Kong*, p.145.
[56] Archives of the Union des Fabricants Suisses de Boîtes, Bienne, annual report, 1972.
[57] Kleisl Jean-Daniel, *Le patronat de la boîte de montre dans la vallée de Délémont : l'exemple de E. Piquerez S.A. et de G. Ruedin S.A. à Bassecourt (1926-1982)*, Delémont: Alphil, 1999, pp. 176-177.

of all movement parts (value) and the final assembly – to qualify for this label.[58] This was a very pragmatic measure, aimed at reaping the benefits of the advantages of both the international division of labour for low value-added activities and the prestige linked to the "Swiss Made" label. For enterprises located in Switzerland, this was the beginning of a new kind of location advantage.

East Asia was the main region to take advantage of changes resulting from the advent of electronics, but the situation differed considerably between Japan and Hong Kong, contrary to what is usually stressed in literature. During this period, Japan carved out a position as the No. 1 watchmaking nation, and the watch industry was still firmly rooted in the national territory. The Japanese watch industry did not include any firms with foreign capital, and the bulk of the production was realized domestically. Like their Swiss rivals, Japanese watch companies relocated some parts production abroad, mostly in Hong Kong and Taiwan (see table 3). These were essentially external parts imported for Japanese plants. The implementation of automated mass production in Japanese watch companies led to highly integrated systems, which were difficult to partially relocate.

Table 3: Japanese import of watch movements and parts from East Asia, 1960-1980

	1960		1970		1980	
	Mvts, number	Parts, 1000 yens	Mvts, number	Parts, 1000 yens	Mvts, number	Parts, 1000 yens
Hong Kong	-	141	-	34,798	1,537,571	1,306,026
Singapore	-	-	-	90,079	847,553	850,667
South Korea	-	-	-	-	852,158	887,527
Taiwan	-	-	-	-	953,250	1,685,819
Philippines	-	-	-	-	1,222,987	44,754

Source: *Nihon gaikoku boeki nenpyo*, Tokyo: Ministry of Finance, 1960-1980.

[58] *Ordonnance du 23 décembre 1971 réglant l'utilisation du nom «Suisse» pour les montres*, Berne: Conseil fédéral, 1971.

The Hong Kong watch industry experienced a boom within this new technological context. The assembly, then the production, of analog quartz watches began in 1975, followed by digital watches (LCD and LED displays) the following year. Market share gains came at lightning speed: by 1976, Hong Kong's domestic production of four million quartz watches had made it the second largest producer in the world (volume), behind Japan (7.3 million).[59] The shift to electronic watches was very fast: 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.[60] Above all, electronic watches made it possible for Hong Kong to establish itself as a leading watch 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 (see table 2).

The industrial structure of the watch business also underwent a dramatic change. Quartz watches indeed enabled Hong Kong's entrepreneurs to overcome their technological dependency on traditional watch nations. Between 1974 and 1978, the workforce was dramatically redeployed to new sectors (see table 3). The proportion of employees in companies with foreign capital dropped from 49% in 1974 to 25% in 1978, while the overall size of the workforce remained stable. The emergence of newcomers weakened the position of foreign firms and reinforced the national character of this industry. Assembling electronic movements with imported components in Hong Kong and exporting finished watches to the world market became the new business model of this industry.

For Hong Kong watch companies, the shift to electronics let them free themselves from their historical dependency on large foreign watch firms. They were still dependent on external partners for the supply of CMOS chips and digital displays (LED, LCD). Yet these suppliers were not watch companies, but rather electronic components makers (Oki Electric, NEC, Intersil, Litronix, etc.)[61] Beyond technological issues, electronic watches played a key role in

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[59] *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai, 1980, p. 5.
[60] *Hong Kong's Manufacturing Industries*, Hong Kong: Hong Kong Government Industry Department, 1996.
[61] *Tokei no honkon shijo chosa hokokusho*, Tokyo: Nihon kikai zushutsu kumiai, 1980, p. 28.

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.[62]

4. A new basis for competitiveness: global supply chains (since 1985)

Organizational changes in the world watch industry in 1970-1985 led to the emergence of global rather than national production systems. Two main models predominated.

First came a new generation of MNEs with production facilities organized globally. Their numbers were very low, as they essentially consisted of Swatch Group (Switzerland) and the Japanese companies Seiko, Citizen and Casio. Founded in 1983 through the merger of the two largest Swiss watch groups (SSIH and ASUAG), Swatch Group engaged during the second half of the 1980s in intense rationalization of production to restore its cost-competitiveness with its Japanese rivals.[63] This strategy was marked by the opening of production subsidiaries in Thailand (1986), Malaysia (1991) and China (1996). Consequently, the number of employees in Switzerland dropped from about 80% in 1983-1985 to 71% in 1990 and 54% in 1998. Besides, the production of these Asian plants was intended to supply not only Swatch Group's assembly plants in Switzerland – as well as other Swiss companies depending on the Group's supplies – but also world markets for electronic watch movements. During 2000-2004, overall Swatch Group production of Swatch Group averaged 120 million pieces (watches and movements), that is, some 20-30 million "Swiss Made" pieces (the level of Swiss exports at that time) and 90-100 million non-Swiss pieces.[64] The latter were primarily quartz movements sold to assembly makers outside Switzerland, mainly based in Hong Kong and China, who designed watches for a large variety of customers (OEM makers).

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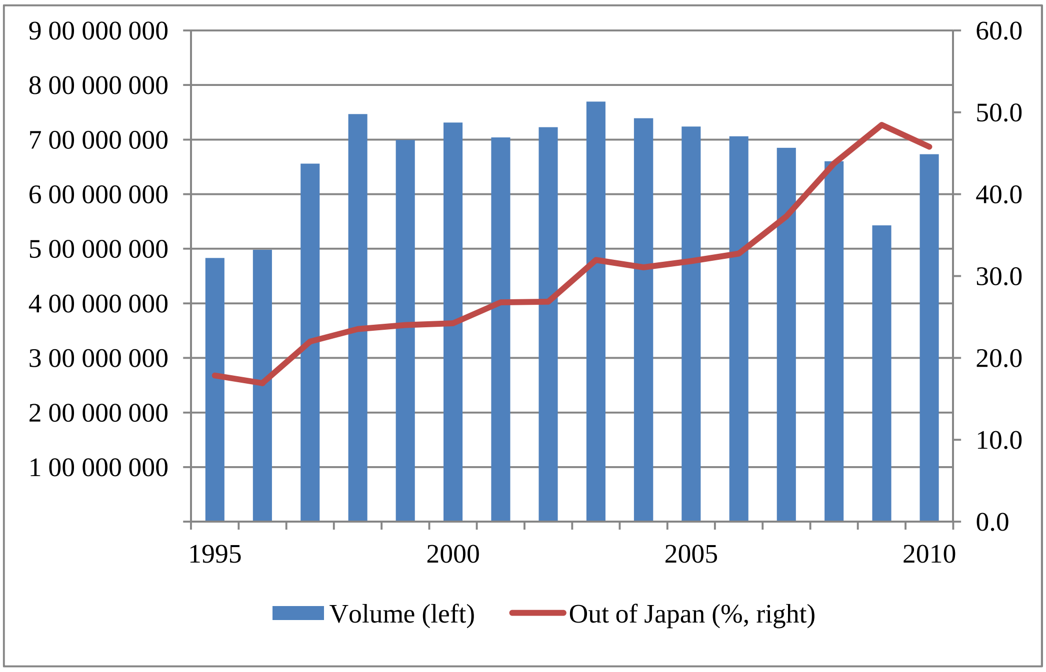
62 *L'Impartial*, 2 February 2000.
63 Donzé Pierre-Yves, *A Business History of the Swatch Group*, Basingstoke: Palgrave Macmillan, forthcoming
64 Swatch Group, *Annual Report*, 2000-2004

The Japanese watch companies show a similar profile and became global MNEs in the 1980s.[65] The case of Seiko is very representative of this transformation. This group adopted a strategy of relocating assembly and production in Asia, especially China, in order to cut costs. In 1988, the subsidiary of Seiko Instruments Inc. (SII) in Hong Kong, Precision Engineering Ltd. (founded in 1968) began outsourcing the assembly of electronic watches to a new company founded in Guangzhou, Seiko Instruments (Whampoa) Factory. A second company was opened in 1996 in Shenzhen (Sai Lai Factory), then all SIH production on Chinese soil was restructured in the late 2000s and centralized at a new plant in Guangzhou (2012). In addition, SII headquarters in Japan also opened some directly controlled production subsidiaries, in Thailand (1988), China (Dailan SII, 1989), Malaysia (1990) and South Korea (2004).[66]

Figure 5: Global production of Japanese watch companies and proportion of production in Japan as a %, 1995-2010



Source: *Nihon no tokei sangyo tokei*, Tokyo: Nihon tokei kyokai, 1995-2010.

[65] Donzé Pierre-Yves, *"Rattraper et dépasser la Suisse": Histoire de l'industrie horlogère japonaise*, Neuchâtel : Alphil-Presses universitaires suisses, 2014
[66] http://www.sii.co.jp (last access: 22 November 2012).

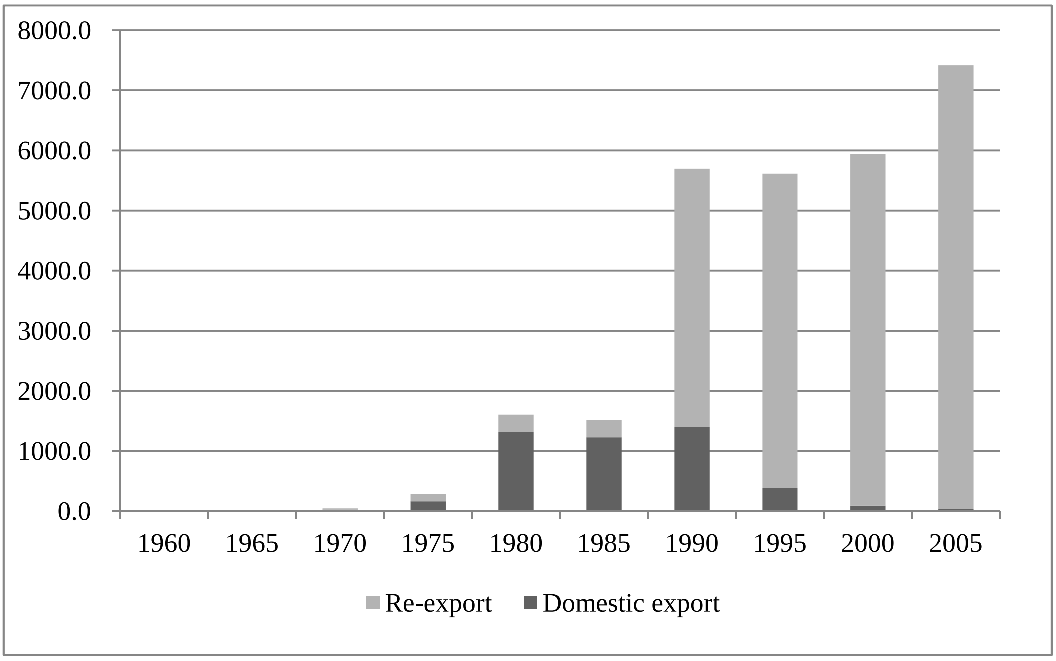
As a result of this reorganization of the watchmaking production system, a growing share of watches and movements were manufactured outside Japan. This proportion increased significantly over time, rising from 17.8% in 1995 to 24.2% in 2000 and 45.8% in 2010 (see figure 5).[67] Thus, in 2009-2010, nearly one out of two Japanese watches was made outside Japan. A second major effect of this radical change was that production volumes remained stable. Whereas production in Japan tended to decrease since 1998, the overall output of Japanese watch companies stayed more or less the same, despite the 2009 drop due to the world financial crisis, amounting to some 700 million pieces.

Second, a new organizational model appeared in the 1980s: global supply chains, with Hong Kong at their centre. The acquisition of competences in watch design during the 1960s, through the outsourcing of production of external parts for Swiss, American and Japanese watch companies, easy access to quartz movements and proximity to low-cost labour-intensive production facilities in China – where they transferred their plants in the 1990s – are all elements which enabled Hong Kong entrepreneurs to position themselves as indispensable intermediaries in the manufacturing of watches under license.[68] 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.[69] As a result, some of them invested in Europe in order to control their supply in watch movements, such as Wellgain Precision Products Ltd., which took a 50% interest in France Ebauches Microtechniques (2000),[70] or Chung Nam Watch Co., which acquired the movement maker

[67] *Nihon no tokei sangyo tokei*, Tokyo: Nihon tokei kyokai, 2010.
[68] Berger Suzanne and Lester Richard K. (eds,), *Made by Hong Kong*, Oxford: Oxford University Press, 1197.
[69] Trueb Lucien F., *The World of Watches: History, Technology, Industry*, New York: Ebner Publishing International, 2005, p. 364.
[70] *L'Impartial*, 14 March 2000.

ISA, Technotime, as well as the Swiss brand Roamer Watch (1994).[71] Consequently, the domestic production of watches entered a phase of decline. After peaking at HK$ 13.5 billion in 1990, it amounted to only 7.4 billion by 1993.[72]

Figure 6: Breakdown of Hong Kong watch exports, millions of USD, 1960–2010



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

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 out of overall exports, which was very high when Hong Kong was essentially a commercial hub (89.9% in 1960; 86% in 1965), declined dramatically from its 1970 total of 50.8%, amounting to 17.8% in 1980 and 18.9% by 1985. Yet during the second half of the 1980s, Hong Kong watch companies began to relocate production facilities to China. This transfer ended in the late 1990s and resulted in a very high growth of re-exports from Hong Kong, which rose from 36.1% in 1990 to 75.5% by 1995 and have stood at more than 90% since 2000. On the whole,

71 Trueb, *The World of Watches*, 2005, p. 364.
72 *Hong Kong's Manufacturing Industries*, Hong Kong: Hong Kong Government Industry Department, 1996.

however, these were no longer essentially watches re-exported to the entire Far East by Swiss, Japanese and American firms, as used to be the case until the 1970s, but rather products manufactured in China. Watch imports from China grew by leaps and bounds: USD 49.9 million USD in 1980, 885.5 million in 1990, 3.95 billion in 2000, and 7.43 billion in 2010).[73] While the value of these imports accounted for only 17.4% of re-exports in 1980, they amounted to 63.9% in 1990 and have represented more than 75% since 2000.

Yet the repositioning of enterprises within global value chains was not a natural 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, like Dailywin (1988), Crystal Electronic (1997), and Gordon C (1997), which gradually relocated their production centres to China.[74] Others were unable to restructure and disappeared (Betatronic, 1990; Larnol Enterprises, 1992; Beltime, 1995; Tinic Watch, 2002; etc.).[75] Finally, newcomers arrived, who took advantage of this opportunity to gain a foothold on the world market. For example, this was the case with Renley Watch Manufacturing, founded in 1983 by Stanley Lau, which is headquartered in Hong Kong and has production centres in China and Switzerland.[76] During this period, foreign entrepreneurs also settled in Hong Kong, such as the Swiss Jacques Froidevaux, who created the company Jacques Farel Ltd. (1984),[77] or the American group Fossil, founded in 1984, which possesses a subsidiary in Hong Kong for purchasing watches from some twenty local manufacturers and, since 2001, a company in Switzerland for "Swiss Made" watches (Montres Zodiac SA).[78] Lastly, these companies engaged in not only production but also marketing. Most of them specialized in private label, distribution and retailing. This is why several of them purchased Swiss brands, such as Asia Commercial Holdings Ltd., which took over Juvenia (1988), and Renley Watch, which bought up Le Phare

73 *Hong Kong Trade Statistics Import*, Hong Kong: Census Department, 1980–2010.
74 Trueb, *The World of Watches*, 2005, pp. 364–371.
75 http://www.gld.gov.hk/egazette/pdf/20020606/cgn20020606818.pdf (last access: 22 November 2012).
76 Trueb, *The World of Watches*, 2005, p. 370.
77 Trueb, *The World of Watches*, 2005, p. 370.
78 *Watch industry*, Vontobel Equity Research, 2011.

Jean d'Eve and Sultana (1991).[79]

However, even though some Hong Kong watch entrepreneurs distribute watches bearing their own brands, the key driver of their success has been OEM manufacturing activities. They supply several of the world's top 20 watch companies, such as Fossil (USA), Moretallo & Sector (Italy) and Folli Follie (Greece). Beyond these few examples, there is the fashion industry in general (Benetton, Burberry, Puma, Tommy Hilfiger, etc.), which has made watches key components of its diversification strategy since the 1990s[80] and usually sources its supplies from Hong Kong watch companies, sometimes through marketing and design companies based in Switzerland.

5. The importance of being Swiss

In the context of an industry which has globalized intensively since the late 1980s, one must wonder what place Switzerland occupies and why watch production is still strongly anchored in the country. Since 2000, Switzerland has established itself as the unchallenged No. 1 export nation, with the value of watch exports rising from USD 5.6 billion in 2000 to 14.7 billion in 2010, while Hong Kong has stagnated at an average of USD 6 billion during this decade (see figure 1). What is more, in 2012 Switzerland was home to many of the companies in the top 20: nine have their headquarters in the country, while eight others have production facilities on Swiss soil.

Switzerland's key role in the global watch industry is the consequence of an institutional factor which turned into a marketing resource during the 1990s, the "Swiss Made" legislation. At the time of its implementation in 1971, this measure designed to compensate for liberalization was aimed at keeping part of the production of Swiss watch movements in Switzerland to ensure their quality. At the time, the industry was dominated by mechanical

[79] Trueb, *The World of Watches*, 2005.
[80] Degoutte Corinne, « Stratégie de marques dans la mode : convergence ou divergence des modèles de gestion nationaux dans l'industrie du luxe (1860-2003) ? », *Entreprises et Histoire*, vol. 46, 2007, pp. 125-142.

watches (99.6% of Swiss watches exported in 1970)[81] and it was felt that only production in Switzerland was likely to maintain an image for good quality – and thus a good reputation – in the minds of business and political elites.

Yet the Swiss watch industry experienced a shift towards luxury in the 1990s, characterized by a decrease in the volume of watches exported and a steep rise in their value. After reaching a new peak of 50.9 million pieces in 1993, the volume of watch exports plummeted to 35.9 million pieces in 2000 and 31.9 million in 2010.[82] During this same period, however, the value of mechanical watches became the key driver for growth. Between 2000 and 2010, mechanical watches went from 9.7% to 19.7% of the volume of exports, but from 47.5% to 71.9% in terms of value.[83] These changes in the nature of products reflect the radical shift in their use. Swiss watches are no longer useful objects bought for their precision; rather, they have morphed into luxury fashion accessories which convey an image of tradition, excellence and authenticity.[84]

In this context, the meaning of the Swiss Made legislation changed – even if its content is still the same. Indeed, it no longer aims to maintain product quality, which can be easily achieved elsewhere in the world, but rather to guarantee the truthfulness of an essential marketing resource. Thus, the objective of possessing luxury brands in their brand portfolios has led numerous foreign watch companies to invest in Switzerland since the late 1990s, like the French luxury group Moët Hennessy Louis Vuitton (LVMH), which took over TAG Heuer and Zénith (1999); Fossil (USA), which bought up Zodiac (2001); Festina (Spain), which purchased Candino (2002); and more recently Citizen Watch (Japan), which acquired three SMEs specialized in part making (2012); and China Haidan (Hong Kong), which successively

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[81] *Statistique annuelle du commerce extérieur de la Suisse*, Berne : Administration fédérale des douanes, 1970.

[82] The historical peak of the volume of exports was reached in 1974 with 79.8 million watches, but a large proportion were low-range mechanical watches (47%), a product which collapsed after 1975. Subsequently, the volume of exports fell to a low of 28.9 million pieces (1983).

[83] *Statistique annuelle du commerce extérieur de la Suisse*, Berne : Administration fédérale des douanes, 2000-2010.

[84] Kana Sugimoto, Terasaki Shinichiro and Nagasawa Shinya, "Emotional Value Communication Strategy: case of the Swiss Watch Industry", *International Symposium on Management Engineering*, 2012, pp. 147-152.

acquired Eterna (2011) and Corum (2012).[85] Moreover, the largest Swiss companies have also been sourcing movements from China for designing cheap fashion watches under license since 2000. For example, Swatch Group actively launched out in this new business in 2005 through its subsidiary Endura, specialized in OEM watches – equipped with either Swiss or Asian movements regarding the customer's needs – which primarily developed watches for the Spanish apparel company Mango, the American shoemaker Timberland and the Japanese sportswear firm ASICS.[86] As for Richemont, in 2006 it took a 10% interest in Egana-Goldpfeil (Hong Kong), a firm specialized in licensed production of fashion watches.

Conclusion

This paper has emphasized the profound organizational change which occurred in the watch industry between 1950 and 2010, characterized by a shift from nation-based competition to a globalized industry. Yet this change was not a linear and natural process; rather, it resulted from a radical change in two kinds of factors – technological and institutional.

Two types of technological factors led to a global industrial organization. First, process innovation, with the mass production of low-range mechanical watches in the 1960s, made possible a first phase of relocation very similar to the classical model of the mechanical industry in the late 19th century, as embodied by Singer Manufacturing Company.[87] The companies Timex (USA) and BFG (Switzerland) restructured internationally and became major players in this industry thanks to their organizational capabilities. Yet this first phase of internationalization ended in failure, because it was predicated upon a product without a future.

Second, there was the key impact of electronics and quartz watches, developed in the second

[85] *Le Temps*, 11 October 2001, 18 January 2002, 2 July 2011, 6 March 2012 and 25 April 2013.
[86] *Le Temps*, 27 January 2006.
[87] Davies Robert, *Peacefully Working to Conquer the World: Singer sewing machines in foreign markets, 1854-1920*, New York: Arno Press, 1976.

half of the 1960s and mass produced from the late 1970s onwards. This product innovation enabled any entrepreneur to acquire watch movements with ease: they suddenly became accessible and extremely cheap. Since then, their production has gradually been concentrated in cheap labour areas, especially in South-East Asia, then in China since the 1990s, which has made Hong Kong entrepreneurs indispensable intermediaries and suppliers of watches for nearly the entire world market – except for the so-called "Swiss Made" watches.

As for institutional factors, these were essentially legal measures restricting FDI and relocation, like the Swiss watch cartel or customs protectionism in Japan and the United States. Yet these measures were largely abandoned in the 1960s, allowing firms to restructure internationally. Even the Swiss Made legislation was a very pragmatic measure which has enabled semi-globalization of the production of watches by Swiss companies since the 1970s.

Beyond these technological and institutional changes, the major shift in the nature of the product itself must be stressed. The advent of electronics and social change has given way to new uses for watches since the late 1980s: they have stopped being useful objects bought and carried for their precision and have become fashion accessories, either cheap (Hong Kong made) or luxurious (Swiss made). Within this paradigm shift, brand management has emerged as the key factor for success on world markets, and international competitiveness has relied since the 1990s on the ability to build and manage a brand portfolio. Nevertheless, despite this major change, territorial anchorage and regional roots remain important. The emergence of global supply chains does not mean that the world has become flat. On the contrary, Switzerland and Hong Kong appear as major nodes within these networks, even if design, production and marketing are increasingly dissociated, as can be seen in other industries like textile and fashion.[88]

[88] Lane and Probert, *National capitalisms, global production networks.*