

ÉDITIONS
LOISIRS
ET PÉDAGOGIE
apprendre

—
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The multiple lives of a watch

Secondary markets, demand revival, and firm performance: exploratory analyses in the vintage timepiece auctions market

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Introduction

In marketing research there is a more recent focus on consumption as consisting not only of a single act of purchase, i.e. when a consumer buys a good from a producer in a shop, but being a broader process which also comprises the use of the good and its ultimate disposal (Denegri-Knott & Molesworth, 2009; Gregson, Metcalfe & Crewe, 2007; Parsons, 2008). Goods can be disposed of or exchanged through multiple channels. In particular, secondary markets (e.g. auctions) are an important medium through which these activities of goods disposal or exchange occur (Denegri-Knott & Molesworth, 2009). In luxury watchmaking for instance, secondary markets



for watches have been booming over the last 20 years and represent a very important and lucrative business, with some timepieces reaching record-breaking amounts. One can think of the \$11+ million hammer value for the “Patek Philippe Henri Graves Super Complications” in 1999, or the recent record breaking Patek Philippe minute repeater wristwatch that listed with an asking price of \$700,000-\$900,000 and sold for \$7.3 million in November 2015. Therefore, understanding the whole process of goods exchange or disposal after their initial purchase from the producer is not only of theoretical relevance but also of economic importance for the original producers also even though they do not directly capture economic value in the secondary market sale (Claes, 2014; Raffaelli, 2015).

Whereas several questions can be asked around this process of goods disposal or exchange after their initial purchase, such as the personal motivations to dispose of goods (McCracken, 1990), or the idiosyncratic value that owners assign to their possessions depending on what these possessions mean to them (Belk, 1988; Price, Arnould, & Curasi, 2000), this paper more rather looks at the (unexpected) role of secondary markets in sustaining and even reviving a receding industry, the parameters affecting consumers’ valuation of secondary market goods, and the effect of past secondary market prices on producers’ subsequent value capture abilities.

There are two main motivations for this. First, although scholars are spending increasing efforts in understanding how firms, markets, practice communities, or even whole industries emerge (Navis & Glynn, 2010; Raffaelli & Glynn, 2014; Santos & Eisenhardt, 2005), they have devoted less effort analyzing the processes through which these industries decline and possibly get reborn despite calls from scholars to take a closer look at these issues (e.g. Raffaelli, 2013b; Scott, 2008). This is especially surprising since we have observed this process happening in the real world for several legacy technologies, including vinyl records, fountain pens, and independent bookstores (Raffaelli, 2015). In particular, the Swiss watch industry was on the verge of extinction in the early 1980s after the introduction of the quartz watch, but yet re-emerged from its own ashes to thrive (Glasmeier, 2000).

Second, understanding the factors that influence a new buyer’s monetary valuation of used goods in secondary markets is of critical importance for firms. Indeed in art, for instance, it is well documented how auction prices of artwork are correlated to the future value of new artwork of the artists who produced the former (Khaire & Wadhvani, 2010; Velthuis, 2003). In the watchmaking industry, this suggests that understanding what drives buyers’ willingness to pay for second hand watches in auctions should be of interest for understanding future value appropriation capabilities of watchmaking firms. That is, it is likely that past auction prices should enable

higher subsequent pricing in primary markets, which, *ceteris paribus*, contributes to more value creation and appropriation for the firm. Higher primary market prices are in turn correlated to higher resale prices in auctions making this a particularly interesting virtuous cycle.



In this paper we address these gaps by shedding more light on the process through which secondary markets for mechanical watches helped revive a “dying industry”. We first provide qualitative evidence that this is what happened and then we build an empirical model that tests whether past auctions prices indeed do affect future value capture potential by firms and that then isolates some of the parameters impacting these auction prices in the first place. This is the first research (to the best of our knowledge) that endeavors to do so on a macro scale. Luxury watchmaking offers one of the best contexts for applying this model since watches are objects that can have “multiple lives” and whose value can significantly change after the initial primary market sale.

Concretely, we gathered data from a series of qualitative interviews with key industry figures explaining how watch auctions played a critical but unexpected role in enabling a mechanical watches industry re-emergence. Then, in order to construct our empirical model, we used a subset of collected data on watch auction results from January 1988 to December 2012 that we augmented with several other printed and online sources in order to obtain organizational level data for the producers in our sample. In section two, we explain how the secondary markets for watches

helped the re-emergence of the watch industry in Switzerland. In section three, using insights from our qualitative study, we derive hypotheses concerning the impact of secondary market prices on the subsequent value capture capabilities of producers. In section four, we describe the data, the methods we used, and explain our results. We end with concluding comments in a brief discussion section.

Industry re-emergence enabled by secondary markets: the case of the luxury watchmaking industry

Leading up to the 1970s, Swiss watchmaking had been considered the premier symbol of technological supremacy and innovation for nearly two centuries (Glasmeier, 2000). Swiss watchmakers dominated the industry and the mechanical movement (Donzé, 2011) beginning in mid-18th century in Geneva. The Swiss rise on the world stage can also be attributed to the emergence of watchmaking in the Jura mountain region. This snow-capped mountainous territory of Switzerland sits along a trade route between Germany, France and Italy, and was populated by peasant cow farmers who were convinced to use their idle time during the long and cold winters to build watches.

Towns in the Jura, such as La Chaux-de-Fonds, were also home to iron and brass tradesmen who were well positioned to diversify into the craft of watchmaking. The region focused on precision timepieces at reasonable prices. Landes (1983, pp. 261-263) notes, “The first [Jura] watches were not elegant – that was left to Geneva . . . The strategy of the Swiss [Jura] mountain was based on the production of cheaper models designed to sell to a wider market.” The strategy paid off. By the late early 19th century, Swiss watchmakers had become a serious threat to their French and British rivals. By 1910, the “Swiss mechanical watch dominated the world watch industry” (Knickerbocker, 1974 in Glasmeier, 2000, p. 105).

However, their reign abruptly ended in the mid-1970s, with the onset of the “Quartz Revolution” (or “Quartz Crisis”), when the quartz movement seemingly displaced the mechanical movement.

Although the Swiss invented many of the first quartz watch prototypes, they had little interest in re-tooling their production system to accommodate their mass production (Perret, 2008). Additionally, the community of Swiss mechanical watchmakers did not see the quartz watch as an extension of their craft, “remaining largely skeptical . . . of technology designed by specialists in electronics rather than horologists”¹ (Perret, 2008: 324). The Swiss went from holding 55% percent

1 A “horologist” is a member of the profession of *horology*, the science of timekeeping.

of the world's export market (in monetary value) to roughly 30% a decade later; in export volume, the decline was correspondingly staggering, decreasing from 45% to 10% of watches produced globally (Glasmeier, 1991, p. 477).

By 1983, half of the watch industry jobs in Switzerland were gone (Landes, 1983, p. 356). Quartz technology had replaced its mechanical predecessor, representing a radical shift in technological design that caused “the Swiss to [pay] dearly for their slowness to adopt the new technology” (Landes, 1983, p. 353). In 1983, scholars and industry analysts predicted that mechanical watches, along with the Swiss communities of watchmakers who built them, would disappear (Donzé, 2011; Landes 1983). For this reason, today management scholars often cite the Swiss watch industry as a cautionary example of technological displacement and cite the impact that a competency destroying innovation can have on industry survival (Glasmeier, 1991; Lecoq, Maillat, Nemeti & Pfister, 1995; Tushman & Anderson, 1997).

Unexpectedly, however, by 2008 the Swiss watchmaking industry, led by the production of mechanical watches, had experienced a resurgence, re-emerging as the world's leading exporter of watches and reclaiming 55% of the total export value in the global watch industry.

While scholars have examined the macroeconomic, manufacturing, and identity related factors associated the reemergence of the Swiss watch industry (Donzé, 2001; Raffaelli, 2013a) little attention has been given to the role of secondary markets. Below, we explore how watch collectors and watch auction houses influenced the reemergence of Swiss mechanical watchmaking.

The Role of Collectors and Vintage Watch Auctions

The role of collectors and auction houses can be tracked back to the 1970s. According to interviews with multiple auction house executives, watch collecting in the 1970s primarily consisted of those interested in collecting vintage pocket watches. As one executive stated, “there was just a few people on the fringe.”

However, starting in the 1980s, a growing community of Italian collectors sparked initial interest in the secondary market. As another auction house executive explained, “The Italians had a watch culture for generations and they were buying these pieces especially in the early '80s. It was very much a fad – not even the richest Italians. My understanding is even middle class Italians were buying these watches and passing them on from one generation to the next.”

Led by individuals such as Osvaldo Patrizzi, a new and growing market for vintage watches began to emerge across Europe, the United States, and within Asia. Patrizzi's auction house, Antiquorum, published catalogues with technical descriptions and historical backgrounds. They catered to watch collectors as though they were buying pieces of fine art. One former colleague of Patrizzi commented: *"In the 1980s, Patrizzi needed to convince pocket watch collectors that the same mechanisms and aesthetics were also in a wristwatch. In addition, he needed to convince [people] that the wristwatch was collectable. And he convinced them. He was very good at convincing."*

As consumer interests in vintage watches continued to mount, auction hammer prices also set new records. Both combined to send a strong signal to Swiss watch producers that there may still be value associated with the "dying technology" (Raffaelli, 2013a). One auction house executive noted: *"Then you had all these collectors jump in and the auction houses noticed. That's when you started seeing [vintage] wristwatch sales occurring. The auction houses all of a sudden became enablers of watch collecting. And the more the auction houses pushed and helped drive up prices and educate clients, the more brands noticed. All of a sudden you had companies like Patek say, 'There's something special going on here'."*

Noting that vintage timepieces were achieving record setting prices at auction, several brands began reconsider the latent value of the mechanical watch. Some began re-issuing versions of their vintage pieces, a practice still common today. In turn, many of the defeated Swiss mechanical manufacturers began to reconsider how they could revive what they had assumed was a "dead technology". Several industry experts hypothesized that the vintage mechanical watch secondary market may have been an initial signal that the market for mechanical watches was still viable.

Empirical model: from secondary market prices to value capture by producers

From this qualitative analysis of interviews of key figures of the watchmaking industry, it appears clearly that watch collectors and watch auctions unexpectedly signaled to watchmakers that there was some residual interest and value in mechanical watches. Unfortunately, producers do not benefit from transactions in secondary markets but there are reasons to suspect that the value of objects in secondary markets should spillover to the original producer in terms of status and legitimacy as it is in the case of art and artists for instance (Khaire & Wadhvani, 2010; Velthuis, 2003). This means that external audiences (e.g. consumers) valuing the producer's

future goods should have an increased appreciation and willingness to pay for these goods, *ceteris paribus*. Ultimately this means that producers should be able to price their future products higher while maintaining demand at least constant. Value capture then happens when producers, who are aware of the market, do increase their futures prices accordingly.

Retail prices reflect the potential for value capture of a producer because of the following economic reasoning applied to the watchmaking context. In certain markets like commodity markets (i.e. steel, energy, flour...) prices are the result of the demand and supply mechanisms and goods are substitutable meaning that an increase in price by a firm makes consumers opt for alternate sources of supply since firms are equivalent. In those markets, there is little strategic slack in the pricing decisions and prices do not reveal value capture potential, margins are standard across competitors.

However, the creative and luxury industries (Caves, 2000) are imperfect markets meaning that firms are perceived to be different, as displaying different identities and products are not substitutable. Therefore, prices are affected by other factors than demand and supply. They result from a bargaining process of value creation and capture throughout a value chain of suppliers, producers, and customers (Brandenburger & Stuart, 1996; Makowski & Ostroy, 2001). In those markets, prices mainly result of strategic decisions made by producers and respond only partially to the supply and demand mechanism. This is for example the case in the luxury industries where in addition demand is usually inelastic to price changes and margins are very high, meaning that prices are not mainly determined by costs. In particular (especially throughout the last decade) contrary to what traditional economic theory would predict, prices for luxury watches (and luxury goods in general) have risen much faster than inflation but so has demand. This means that most of the new and more expensive production has been systematically absorbed by the market making retail prices a good indicator of value capture potential. This phenomenon of increasing prices and increasing demand has been confirmed by several producers and is quite common in luxury industries (Velthuis, 2005; White, 2002).

We have reasons to believe that value capture occurs because we were told in our interviews that industry insiders often use auction prices as a good indicator of a watchmaker's social status within the industry. This means that producers do pay attention to auction prices and some of this information should be reflected in subsequent retail prices. Research has also shown that social status is a driver of a firm's financial performance (Podolny, 1993; Shipilov & Li, 2008). That is, it is likely that past auction prices should enable higher subsequent prices in primary

markets in future time periods which *ceteris paribus* contributes to more value creation and appropriation for the firm. However no research to date did formally test this idea on a macro scale hence our following question:

Question 1: Do past auction prices enable higher subsequent value capture for watch producers?

If this turns out to be true, it would also be interesting to isolate which parameters both at the watch and watchmaker level affect the willingness to pay of consumers in those auctions. This is our *Question 2*. This is important since producers do have an influence upon those parameters in their subsequent productions and organizational actions.

Methods and results

Our methods followed an approach based on what Creswell (2003) terms a concurrent triangulation strategy, whereby multiple methods, data sources, and units of analysis are used to evaluate a set of theorized relationships within a single study. As a result, our paper includes both qualitative and quantitative data and analyses. Qualitative analyses of interview and archival data were used to inductively expose the factors most salient to changes in vintage watch buying patterns. Quantitative analyses were then used to illustrate how these changes evolved over time.

To reveal how and why the price of vintage watch prices occurred, we employed a mixed methods approach. Content analysis of archival data and semi-structured interviews was used to identify salient factors and underlying mechanisms. The purpose of the interviews was to gather information from actors in different positions in the field about our phenomenon. Our interview protocol focused on changes in the field of Swiss watchmaking from each individual's vantage point.

Both authors relied on the qualitative data to examine, more specifically, how industry actors interpreted shifts in vintage watch prices. Using a content analysis software package (NVivo10) to organize and examine the archival data and field interview transcripts, we analyzed data in an iterative process of going back and forth between conducting interviews in the field, analyzing data, and searching for emerging themes (Locke, 2001; Miles & Huberman, 1994; Strauss & Corbin, 1998). The goal of the data analysis process was to create a "chain of evidence" that linked descriptive codes found within the data with more abstract and theoretical constructs that helped us identify key constructs that could be analyzed using our quantitative data.

Data

To develop our paper's main questions and initial intuitions, we collected qualitative and quantitative data from several sources.

Qualitative data. We used a variety of qualitative data sources, including 122 semi-structured interviews with senior executives, watchmakers, distributors, retailers, industry analysts, collectors, company historians, auction house representatives, and museum curators associated with the watch industry. These data were collected as part of a broader research project conducted by the second author that aimed to understand the reemergence of the Swiss watch industry (Raffaelli, 2015; Raffaelli, 2013b). The average interview lasted 91 minutes.

The sample of interviewees was developed by relying on a “theoretical sampling” technique, whereby researchers narrow the sample of various actors in the field based on theoretical trends that emerge from data. In general, privacy and secrecy shrouds the Swiss watch industry. As one senior executive commented: “It is a small and very private community.” (Raffaelli, 2015). To overcome such access challenges, a snowball approach was used, asking respondents to suggest other individuals or company representatives we should speak to whom they believed were influential. Individuals were more willing to participate in if they knew that others had also agreed to do so, thereby making the snowball approach the most appropriate way to gain access to this closed community. The final sample included interviews with representatives of companies representing approximately three-fourths of all Swiss watch export sales from 1970 to 2014.

The second author also ran four focus groups with 42 watchmakers and watch collectors in both Switzerland and the United States. In addition, he attended Baselworld, the industry's largest annual field-configuring event for the sector (Lampel & Meyer, 2008), which attracts 104,000 participants, 1815 exhibitors from 45 countries, and 3300 journalists. To converse fluently with executives and watchmakers, he attended a watchmaking course taught by several prominent horologists at the National Association of Watch and Clock Collectors' School of Horology.

Quantitative data. In order to build our empirical model, we used a subset of collected data on luxury watches from Antiquorum auctions ranging between January 1988 and December 2012. These data were collected as part of a larger study conducted by the first author for a study on Swiss watchmaking (Claes, 2015). We chose Antiquorum for two main reasons: first, because of its critical role in the re-emergence of the mechanical watch industry by being the first auction house to start selling second hand

watches in the early 1970s. Second, because it is currently still one of the main auction houses in the world for second hand luxury watches. It roughly sells 4000 timepieces per year throughout ten auctions across three continents with venues in New York City, Geneva, and Hong Kong. With an average price of 16,000 CHF / watch (in 2012) this represents a market of 64,000,000 CHF (1 CHF ~ 1 USD)² per year with several much more expensive lots being exchanged over the counter between private collectors in between auctions.

Finally, we augmented our interviews and quantitative auction data with organizational level data coming from professional associations' websites like the *Fédération de l'industrie horlogère suisse*, brand's websites, and the Wristwatch Annual magazine in order to control for a series of different parameters in the analyses.

Research Setting

Luxury watchmaking offers one of the best empirical contexts for testing this model since watches are among the few objects that can have multiple lives and whose value can significantly change after the initial primary market sale. This is because watches' values goes far beyond the "objective" material and technical aspects and is heavily socially constructed. This means that a watch's value is deeply related to cultural factors (Beckert, 2011; Beckert & Aspers, 2011) – e.g. in luxury and watchmaking for instance some of these factors are tradition, history, or technicality (Kapferer & Bastien, 2009; Zorik & Courvoisier, 2007) – and these factors are valued quite differently across individuals, times, and geographies. Given that some of these watches can be several centuries old and that brands evolve through time, there can be a big disconnect between original list price and subsequent auction price (or even between successive auctions prices of the same piece or same model). Investigating whether some of the auction value can be in turn recaptured by the brand and looking at what factors initially impact that future auction value is therefore particularly suited to our empirical context.

Variables

Dependent Variables. There are two main dependent variables. The first one is *Portfolio Price* used to address Question 1. It is constructed from data available in the Wristwatch Annual magazine and is the mean of the portfolio prices of brands. For instance, a given brand will exhibit its collection in the magazine and display the recommended retail price. Our variable is constructed as the mean of these prices in a given year and it is thus a variable at the firm level.

² 1 CHF = 0.99 USD (mid-market prices on 16 November 2015).

To address Question 2, our second dependent variable is the *Auction Price* of watches throughout the auctions we considered. These prices are the final prices containing the Antiquorum margin (buyer’s premium), which is a percentage of the hammer price. For instance a watch hammered at 12,000 HKD will be paid 15,000 HKD by the buyer (25% buyer’s premium). From having attended one of these auctions and from what interviewees have told us we know that these are English style auctions, meaning that the highest bid gets the watch. There are roughly 100 or so attendees in the room versus 700-1000 who are not in the room and are either online, on the phone, or have already given pre-auction bid orders. These participants are then more international and not venue constrained whereas the attendees in the room are more representative of the local crowd of the venue. There are three venues, Geneva, New York, and Hong Kong. Roughly 300 to 500 pieces get sold during the one-day auction and there are 8 to 10 auctions per year.

The auction data was highly unstructured (from an IT coding perspective) and it was Python parsed from the online source and cleaned using various techniques of mainly user fed string matching as in Claes (2014) in order to extract the prices as well as all the relevant information about the brand, the functions, materials, date of make, expert estimations of the lots under consideration. The rest of this information is used as controls for our models. The reader can get an idea of the data display in Table 1. This data is available to all participants prior to and during the auction in a magazine or online catalog.



Lot 198

ROLEX REF. 116619 SUBMARINER WHITE GOLD Rolex, “Oyster Perpetual Submariner, 1000ft / 300m, Superlative Chronometer Officially Certified,” case No. V762996, Ref. 116619. Made in 2010. Very fine, center seconds, self-winding, water-resistant, 18K white gold wristwatch with date, blue ceramic bezel and an 18K liplock bracelet with Glidelock clasp. Accompanied by the original fitted box, guarantee (now void), booklets and hang tag. Limited to 500 exemplars.

Grade: AAA	Case: 2	Movement: 1*	Dial: 1-01
Estimate: 20,000-30,000 USD		155,000-230,000 HKD	18,000-26,000 CHF
Sold: 27,500 USD			

Remark: the price at which the watch was sold is only available after the auction of course.

Table 1 – Data available to buyers before and during the auction

Independent variables. For Question 1, our independent variable of interest is the *Maximum Price* reached for a watch of a given brand in a given year. We are interested

in knowing whether past auction prices influence future value capture potential for brands and we suspect a non-spurious correlation between these variables. This is because we know from our interviews that auction prices reflect/reveal a status ranking within the industry and that watchmakers pay attention to their auctions prices as well as the competitors'. From socio-economic theory we also know that prices, especially bid prices (those paid by the consumer without producer influence), reveal the consumers' assessments of producers' quality and are highly correlated to status rankings (White, 1981, 2002). From more recent research we also know that status and quality should be related to pricing potential and performance (Podolny, 1993; Shipilov & Li, 2008). We describe the controls used for this model below. We focus on the maximum price since it is the most salient one.

Question 2 is open-ended and exploratory. No specific independent variable was isolated since we are looking in a broad fashion at the drivers of auction prices. We included several product level and brand level variables in the model based on economic reasoning. At the product level we have included *Precious* which accounts for whether the watch contains at least one of the following precious materials: gold, platinum, or diamonds since this obviously plays a part in the original list price. Moreover we have included a *Lady* variable that tells us whether it is a lady's watch or not since there should be less demand for ladies' watches given that this is mainly a men's market. We also account for technical features of the watches. The variable *Quartz* is 1 if the movement is quartz and 0 if automatic or manual; this makes sense since quartz watches tend to be cheaper. Furthermore we added a *Water Resistant* variable based on the intuition that water resistant watches usually have simpler movements and thus should be cheaper. In addition we also check the effect of specific functions on the final price, such as the existence of a *Chronograph*, *Moon Phase*, *Retrograde Display*, *Equation of Time*, *Perpetual Calendar* and *Tourbillon* since these functions can heavily impact the production price. Moreover, we also included variables that account for the state of the watch such as *Watch Age*, which measures the age of the watch since inception until auction year. We also have a variable that indicates whether the watch is *Limited* or not, and we also include a variable *Documents* that indicates whether the watch comes with original certification paperwork and its box.

Additionally, we include the expert *Estimation* of the watch, which is the minimum estimation from the range offered. This is one of the most important variables since consumers rely upon it very strongly as a valuation anchor. This is because the estimation is very salient and also because it is hard to value watches, it necessitates a lot of industry knowledge and a deep understanding of the codes of the industry (Carcano & Ceppi, 2010; Claes, 2014). Interviewees have told us that although buyers are usually

watch savvy there is still leeway for improvement about their horological knowledge and firms spend a big amount of time educating consumers throughout exhibitions, private events, etc., therefore experts have a critical value in guiding the non-perfectly knowledgeable consumer. We also included the *Uncertainty* of that expert valuation defined, in percentage, as the ratio of the estimation range on the minimum estimation as in previous research (Khair & Wadhvani, 2010). A high uncertainty translates a higher doubt of the expert concerning the exact value of the watch. Since people tend to be risk averse (Tversky & Kahneman, 1974), a higher expert uncertainty could lead to a lower valuation and a preference for staying closer to the minimum bound.

In a last series of variables, we have included the all controls used for Question 1, which look at the effect of organizational level parameters on the final prices. We included the *Portfolio Price* variable as described above (but measured one year prior to the dependent variable). When used as a control for Question 1, it is considered a lagged dependent variable control (Wooldridge, 2009) which is one of the best variables to account for omitted variable bias (Godart, Shipilov et Claes, 2014). When used as an independent variable for Question 2 it checks whether the current overall average price positioning of brands affect the auction prices since one could imagine that “more expensive” brands could fetch higher auction prices even when controlling for all else. We also added whether the brand belonged to a *Conglomerate*, the *Age* of the brand, the number of *Media Mentions* of the brand in the media, and whether the brand was *Swiss* since these parameters should influence consumers’ perceptions of brands and therefore their willingness to pay.

Finally we lagged all our independent variables by one year so to avoid simultaneity biases. This means that independent variables in year t impact dependent variables in year $t+1$. We also cleaned the data so that only the wristwatches remained so to make the tests cleaner. As such *pendulettes*, wall clocks, pocket watches, desk clocks, lighters, etc. were suppressed.

Statistical analyses and results

We used an Ordinary Least Square estimation since the dependent variables are continuous. We only used the years 2008, 2009, and 2010 for the analysis and we introduced auction dummies and as well as brand dummies. In Tables 2 and 3 we can see the correlation between the variables used in the two models we used for questions 1 and 2. The correlations between independent variables are well below the 70% threshold that is usually accepted in marketing and management research. Some summary statistics are also provided in these tables.

		Mean	Min	Max	1	2	3	4	5	6	7
1	Portfolio Price	47,977.96	934.17	470,000.00	1						
2	Portfolio Price (<i>t-1</i>)	41,686.05	1,345.00	395,140.00	0.55	1					
3	Conglomerate	0.38	0	1	0.01	0.05	1				
4	Age	140.26	3	314	-0.1	-0.1	0.43	1			
5	Media Mentions	887.67	0	3909	-0.3	-0.3	-0.2	-0.2	1		
6	Swiss	0.91	0	1	0.03	0.03	-0.3	-0	0.07	1	
7	Maximum Price	768,558.32	1,124.77	5,120,000.00	0.07	0.04	-0.3	0.22	-0	0.2	1

Table 2 – Correlation of variables of Question 1

	Mean	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1 Auction Price	16,758.78	777.69	250,895.95	1																				
2 Precious	0.6	0	1	0.1	1																			
3 Lady	0.06	0	1	-0.08	0.17	1																		
4 Quartz	0.05	0	1	-0.09	0.06	0.23	1																	
5 Water Resistant	0.65	0	1	-0.01	-0.36	-0.21	-0.04	1																
6 Chronograph	0.22	0	1	0.1	-0.2	-0.13	-0.04	0.15	1															
7 Moonphase	0.08	0	1	0.25	0.16	-0.07	-0.03	-0.04	0.01	1														
8 Retrograde Display	0.02	0	1	0.06	0.06	-0.04	-0.03	0.03	-0.03	0.13	1													
9 Equation of Time	0	0	1	0	0.01	-0.01	-0.01	0.03	-0.01	0.1	0.11	1												
10 Perpetual Calendar	0.22	0	1	0.18	-0.12	-0.07	-0.11	0.27	-0.19	0.22	0.03	0.05	1											
11 Tourbillon	0.02	0	1	0.32	0.09	-0.04	-0.03	-0.04	-0.01	-0.01	0.06	-0.01	-0.04	1										
12 Documents	0.31	0	1	0.24	0.15	-0.04	-0.06	-0.02	-0.06	0.14	0.05	0.02	-0.07	0.09	1									
13 Limited	0.16	0	1	0.07	0	-0.1	-0.07	0.14	0.02	0.04	0.07	0.04	-0.12	0.16	0.23	1								
14 Watch Age	28.29	0	187	-0.08	0.04	0.09	-0.08	-0.36	-0.06	-0.16	-0.13	-0.04	-0.01	-0.11	-0.17	-0.29	1							
15 Expert Estimation	12,078.92	250.66	256,587.98	0.94	0.12	-0.08	-0.08	-0.02	0.11	0.26	0.06	0	0.16	0.35	0.23	0.07	-0.08	1						
16 Expert Uncertainty	49.38	7.14	400	-0.22	-0.13	0.01	0.04	0.01	0.06	-0.1	-0.01	0	-0.11	-0.04	-0.17	-0.04	0.03	-0.24	1					
17 Portfolio Price	43,121.86	934.17	470,000.00	0.09	0.23	0.03	0.01	-0.1	-0.05	0.09	0.15	0.1	-0.18	0.16	0.15	0.06	-0.18	0.11	-0.06	1				
18 Conglomerate	0.39	0	1	-0.15	0.01	0.04	0.01	-0.06	0.1	0.02	-0.02	-0.04	-0.32	0.03	-0.08	0.14	-0.03	-0.15	0.06	-0.02	1			
19 Age	140.22	3	315	-0.03	0.16	0.06	-0.05	-0.22	0.02	0.03	-0.17	-0.08	-0.23	-0.05	0.08	-0.05	0.16	-0.02	-0.06	-0.08	0.45	1		
20 Media Mentions	892.35	0	3909	0.01	-0.16	-0.01	-0.01	0.17	-0.11	-0.11	-0.11	-0.04	0.51	-0.09	-0.16	-0.22	0.2	-0.01	0	-0.32	-0.26	-0.17	1	
21 Swiss	0.9	0	1	0.03	0	-0.05	-0.11	-0.01	0.03	0.05	0.04	-0.03	0.16	-0.01	-0.04	-0.17	0.13	0.03	-0.01	0.04	-0.29	-0.02	0.09	1

Table 3 – Correlation of variables of Question 2

As we can see from Table 4 it seems that the answer for Question 1 is positive. Overall past auction prices do seem to enable higher retail prices in the future as can be seen by the positive and very significant coefficient of Maximum Price in the model.

This coefficient means that for every 1000 CHF increase in maximum auction price in a given year, the average portfolio price can be increased by 30 CHF “for free”. It also seems that Swiss brands are maybe underpricing their portfolios relative to non-Swiss brands given the negative and significant coefficient of the Swiss variable. Older firms seem to price their watches higher than younger firms on average.

Portfolio Price	Coefficients	Std Errors
Portfolio Price (t-1)	-0.76***	(0.00)
Conglomerate	-9.1e+04***	(7528.18)
Age	205.79***	(10.92)
Media Mentions	-1.53***	(0.16)
Swiss	-2.8e+04***	(1195.55)
Maximum Price	0.003***	(0.00)
Auction dummies	yes	
Brand dummies	yes	
Constant	1.9e+05***	(7215.89)
Sample Size	6086	
Adjusted R2	0.977	
F stat	2972.73***	

+ p-value'0.1, * p-value'0.05, ** p-value'0.01, *** p-value'0.001

Table 4 – Regression of Portfolio Price

We see from Table 5 that several factors affect the auction price of a watch. In terms of mechanics, it seems that chronograph functions, moon phases, and perpetual calendars fetch higher prices in the auction. It is to note that a tourbillon also increases the prices (but with 1 tailed significance). The fact that the watch comes with all its documents, certifications, box, etc. and that it is limited also increases its value. Unsurprisingly, expert estimations also positively drive up the prices reached and the level of uncertainty around the price seems to benefit the watch because it also tends to drive up the final value. The number of media mentions of the brand in the media also seems to positively impact the willingness to pay of consumers and so does the age of the brand. Finally surprisingly the swissness of a brand seems to negatively affect the final price. Combining this observation with the result of Table 4 seems to suggest that Swiss brands might have been overpricing their products lately relative to the non-Swiss brands and are rectifying this bias. Let's note also that the expert estimation is the most reliable and accurate indicators of the final price and that despite controlling for this, consumers still value these parameters over and above their valuation by the expert.

Auction Price	Coefficients	Std Errors
Precious	−298.55	(284.65)
Lady	−4.84	(513.41)
Quartz	−636.10	(589.44)
Water Resistant	379.48	(312.71)
Chronograph	904.53**	(330.05)
Moonphase	952.87+	(506.02)
Retrograde Display	−361.38	(868.21)
Equation of Time	1144.03	(2608.08)
Perpetual Calendar	1678.50***	(440.77)
Tourbillon	1377.87	(933.92)
Documents	1132.58***	(296.54)
Limited	1515.07***	(384.20)
Watch Age	6.94	(6.02)
Expert Estimation	1.21***	(0.01)
Expert Uncertainty	20.35**	(6.42)
Portfolio Price	−0.00	(0.01)
Conglomerate	4713.05	(3602.69)
Age	18.66	(13.48)
Media Mentions	0.39+	(0.23)
Swiss	−3356.76*	(1487.03)
Auction dummies	yes	
Brand dummies	yes	
Constant	−5248.34	(3916.05)
Sample size	6334	
Adjusted R2	0.8972	
F stat	496.23***	

+ p-value'0.1, * p-value'0.05, ** p-value'0.01, *** p-value'0.001

Table 5 – Regression of Auction Price

Discussion and conclusion

This paper aimed at offering both some theoretical and empirical contributions but also some directly actionable practitioner insights into the drivers of watch value and valuation by consumers and experts alike. From an in depth qualitative analysis of an extensive set of interviews we isolated the fact that secondary markets unexpectedly enable the re-emergence of the mechanical watch industry. Collectors and auctions both sent signals to firms about the residual value in a mechanical watch even though it was a displaced technology in comparison to the more precise quartz watch. These signals were well received and interpreted

by firms who repositioned the industry as a luxury industry. In a second part of the paper we showed that indeed auction prices enable future value capture by producers in terms of enabling higher retail prices. We complemented this analysis by isolating product and firm level parameters that affect auction prices.

To the best of our knowledge this is the first paper to offer a macro level empirical evidence attesting of a relationship between secondary and primary market prices. The analyses should however still be more refined and more data collection is currently under way. There are a couple of takeaways from this exploratory research. For instance expert opinions matter a lot for auction prices. Watches are hard to value and there are several parameters that influence the valuation process. Understanding what are the parameters that experts value particularly would be quite interesting for firms. From Table 5 we also isolated a series of variables at the product level that seem to be valued by buyers over and above their estimation by experts. Introducing more of those or understanding why consumers like them would also be beneficial for firms and definitely calls for more research.

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LES VIES MULTIPLES D'UNE MONTRE

Cet ouvrage réunit les communications présentées en 2015 à Neuchâtel lors de la 10^e Journée de recherche en marketing horloger. Il présente également les exposés et tables rondes qui ont eu lieu à la 19^e Journée internationale du marketing horloger tenue à La Chaux-de-Fonds. Il fait suite aux autres ouvrages de la même collection qui ont pour but de faire rayonner le savoir-faire des entreprises horlogères et de leurs partenaires.

Le présent volume aborde un thème rarement traité dans la littérature : les vies multiples d'une montre – montres d'occasion, de seconde main – qu'elles aient été portées ou non. Les Anglo-Saxons les appellent *pre-owned watches*, littéralement « montres pré-possédées ». Ce thème est parfois « chaud » pour les professionnels de l'horlogerie quand il s'agit d'écouler des stocks invendus dans des circuits pas toujours officiels ; il est plus transparent quand il s'agit de ventes aux enchères, physiques tout au moins, opérées par des maisons sérieuses.

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