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An Empirical Study on M&A Performance of Luxury Industry
Based on EVA

Master's Thesis by the 2nd year student
Concentration — Corporate Finance
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**ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ
ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ**

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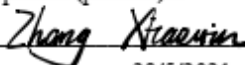
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АННОТАЦИЯ

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Название магистерской диссертации	Эмпирическое исследование результативности сделок слияний и поглощений в индустрии предметов роскоши на основе метода экономической добавленной ценности
Факультет	Высшая Школа Менеджмента
Направление подготовки	38.04.02 “Менеджмент (Профиль: Корпоративные финансы)
Год	2021
Научный руководитель	Ильина Юлия Борисовна
Описание цели, задач и основных результатов	<p>Индустрия роскоши возникла в XVIII веке, но развитие слияний и поглощений началось в XX веке, поэтому общие исследования отстают от других отраслей, возникших в тот же период. Цель этой диссертации — изучить влияние слияний и поглощений на результаты деятельности компаний-покупателей в индустрии роскоши путём разработки системы оценки EVA и определить факторы, влияющие на результаты деятельности после слияния.</p> <p>Для достижения цели исследования поставлено несколько задач (1) Изучить теории, связанные с M&A, (2) Провести обзор последних исследований по эффективности M&A, факторам, влияющим на эффективность M&A, (3) Сформулировать гипотезы, разработать методологию и модели, (4) Определить выборку и собрать данные, в качестве источников данных используются Zephyr, база данных Thomson Reuters Eikon, Statista и финансовые отчёты компаний, (5) Запустить регрессионную модель и представить результат, (6) Дать практические рекомендации.</p> <p>Рассчитав изменения показателей EVA с года до слияния до третьего года после слияния, автор также использует модель множественной линейной регрессии для анализа факторов, влияющих на показатели после слияния, и в итоге получил следующие</p>

	<p>выводы (1) Начиная с года завершения слияния и поглощения, показатели компаний-покупателей в индустрии роскоши демонстрируют чёткую тенденцию роста до третьего года после слияния, а затем стабилизируются, что доказывает долгосрочное положительное влияние слияния и поглощения на показатели компаний в индустрии роскоши, (2) Отношение Гудвилла к общим активам и возраст компании-цели положительно связаны с результатами деятельности после слияния, в то время как отношение книги к рынку, коэффициент D/E и денежные выплаты отрицательно связаны с результатами деятельности после слияния, (3) В подборке конгломератов в индустрии роскоши эмпирические результаты показывают, что влияние Гудвилла и леввериджа более выражено, чем в полной выборке.</p>
<p>Ключевые слова</p>	<p>Индустрия роскоши, эффективность слияний и поглощений, EVA, Приобретатель, Листинговая компания, Факторы влияния</p>

ABSTRACT

Master Student's Name	Zhang Xiaomin
Master Thesis Title	An Empirical Study on M&A Performance of Luxury Industry Based on EVA
Faculty	Graduate School of Management
Main field of study	38.04.02 “Management” (concentration: Master of Corporate Finance)
Year	2021
Academic Advisor’s Name	Yulia B. Ilina
Description of the goal, tasks and main results	<p>The luxury industry emerged in the 18th century but the development of M&A started in the 20th century, so the overall research lags behind other industries that emerged in the same period. The goal of this thesis is to investigate the impact of M&As on the performance of acquirers in the luxury industry by developing an EVA evaluation system and to identify the factors that influence post-merger performance.</p> <p>In order to achieve the research goal, several objectives are set: (1) Study the M&A related theories; (2) Review the latest research on M&A performance, M&A performance influencing factors; (3) Formulate hypotheses, establish methodology and models; (4) Determine the sample and collect data, Zephyr, Thomson Reuters Eikon database, Statista and financial reports of the companies are used as the data sources;(5) Run the regression model and give the result; (6) Give practical suggestions</p> <p>After calculating the changes of EVA values from the year before the merger to the third year after the merger, the author also uses a multiple linear regression model to analyze the factors affecting the post-merger performance, and finally obtains the following conclusions: (1) Starting from the year of the M&A completion, the performance of the acquirer companies in the luxury industry shows a clear trend of increasing until the third year after the M&A and then stabilizes, which proves that the M&A has a long-term positive effect on the performance of the companies in the luxury industry. (2) The goodwill to total assets ratio and acquirer's age is positively related to post-merger performance, while the book to market ratio, D/E ratio, and cash payment are negatively related to post-merger performance. (3) In the sub-</p>

	sample of the conglomerates in the luxury industry, the empirical results demonstrate that the effects of goodwill and leverage are more pronounced than in the full sample.
Keywords	Luxury industry, M&A performance, EVA, Acquirer, Listed company, Influencing factors

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Introduction

The essence of M&A is to acquire the assets, equity, control or management rights of other enterprises through cash transactions, stock transactions, etc., which makes one enterprise gain the right to dominate another enterprise. M&A allows companies to take advantage of their own favorable conditions, such as brand value, market size, capital, corporate culture, etc., so that stock assets can be converted into incremental assets and capital appreciation can be achieved.

The actual birth of the luxury industry far predates its M&A development. In the 18th century, most of the luxury brands were small-scale production owned by families, and most of the brand owners were designers or artisans who made the products back to that time. The real boom in the luxury industry actually came after the Second World War, when various high-end brands such as Dior, YSL, Givenchy, etc. emerged. The golden period of the merger wave in the luxury industry started around 1980s, when conglomerates gradually emerged to replace family operations. This, coupled with the fact that "luxury" is a relative concept and there is no classification of the luxury industry in any database, makes it more difficult to study the industry as a whole, so most scholars focus only on case studies. Overall, the research on M&A in luxury industry is far behind other industries that emerged in the same time period, and the number of related studies is much smaller.

Moreover, in recent years, the scale of transactions of personal luxury goods (PLG) companies has further expanded, such as LVMH acquired Bulgari SpA, an Italian jewelry brand for 5.2 billion dollars in 2011 and acquired Tiffany & Co., an U.S. jewelry brand in 2021 for 16.2 billion dollars¹, both became the largest transaction of the decade at that time (Roberts, 2011). But do these high-value M&As in luxury industry really bring sufficient returns to the acquirer?

Therefore, the main questions to be answered in this thesis are: What impact does merger and acquisition have on luxury industry acquirers? What factors will affect the post-merger performance of luxury industry acquirers? How to adjust EVA? What is the relationship between EVA indicators and other performance indicators?

¹ <https://www.lvmh.com/news-documents/press-releases/tiffany-and-lvmh-modify-merger-price/>

To sum up, the goal of this thesis is ***to investigate the impact of mergers and acquisitions on the performance of acquirers in the luxury industry by developing an EVA evaluation system and to identify the factors that influence post-merger performance.***

In order to achieve the research goal, several objectives are set:

- Study the M&A related theories, especially these theories related to the characteristics of M&A in the luxury goods industry
- Review latest research on M&A performance, M&A performance influencing factors
- According to the content of the literature review, formulate hypotheses, establish methodology and models
- Determine the sample and collect data
- Run the regression model and give the result
- Give practical suggestions based on the results obtained

Zephyr, Thomson Reuters Eikon database, Statista and financial reports of the companies are used as the data source to examine the change of acquirer's M&A performance, and the time period for analysis is one year before the deal to the third year after the deal. So, the completion of M&A cannot be later than December 31, 2017. And after the economic crisis in 2007-2008, a change from crisis to recovery to new normal was formed in the luxury industry, which can provide a reference for the recovery of the luxury industry after COVID-19. Therefore, this thesis screens for *M&A transactions in the luxury industry that were completed between January 1, 2008 and December 31, 2017.*

The first part of the thesis is the literature review, which focuses on the theory of M&A, its development and performance, motivations, influencing factors and research methods. The second part is an empirical analysis of the screened 39 luxury industry M&A deals that occurred during 2008-2017, based on the EVA system to analyze their M&A performance. The non-parametric Wilcoxon signed-rank test is used to analyze the pre- and post-merger changes, and multiple linear regression is used to investigate the factors affecting the change in performance. Finally, managerial application and limitations and suggestions for future research are presented.

Chapter 1 Literature Review

1.1 The concept of mergers and acquisitions

Mergers and acquisitions refer to a company obtaining control of another company or multiple companies on a voluntary, equal and paid basis. M&A will complete the merger of the ownership and property rights of the target company through cash transactions, stock transactions or mixed transactions. At present, M&A has become the most important way in the process of optimizing the allocation of resources and adjusting the industrial structure, and it has also become an important form of capitalization for large enterprises to achieve scale expansion.

Merger refers to obtaining 100% controlling rights of a target company through cash transactions or stock and securities transactions. In the end, the target company no longer has the status of a legal person or changes the legal entity. Merger is accomplished through the complete absorption of one company to another.

Acquisition refers to buying or exchanging a certain amount of shares of the target company through cash transactions or stock transactions, and acquiring a certain amount of control or 100% control of the target company. After the transaction, the target company still has an independent legal status, or it can be said that it is still an independent company and exists as a subsidiary. At present, most of the acquisition ratio is more than 50%, and in the luxury industry, the shares of the target company will often be acquired continuously until it reaches 100%.

By comparing the definitions of merger and acquisition, it can be seen that the main difference between the two definitions is whether the target company still has an independent company status after completing the transaction. When the sample is screened in this thesis, it will also be screened and explored according to the different classifications of merger and acquisition.

1.2 Six M&A waves

Corporate M&A has been developed for more than 100 years in western developed countries, mainly in the United States, and has become a more popular topic in the securities market. In the history of mankind, there have been six M&A waves.

The first merger wave (The Great Merger Movement) occurred in the United States from the late 19th century to the early 20th century. After the Great Depression of 1883,

horizontal M&As quickly began in the oil, metals, food and transportation industries. The United States Steel Corporation is representative for this time period. In 1901, U.S. Steel was formed by the M&A of ten steel companies, including Carnegie Steel Co. (founded by Andrew Carnegie in 1873) and Federal Steel Co. (founded by J.P. Morgan in 1898) (International directory of company histories. Vol. 50, 2003). The main purpose of M&A in this period was to achieve industry monopolies. Finally, horizontal M&As resulted in a high degree of industry concentration (Stigler, 1950).

The second merger wave occurred in the 1920s with the aim of achieving oligopoly. This wave was dominated by vertical M&A and a mixed merger model began to emerge. During this period, investment banks became involved in M&A activities. At the same time, during this period, political forces began to intervene in non-competitive mergers in order to avoid monopolies in the industry, such as the Clayton Antitrust Act issued by the US federal authorities in 1914². The end of this wave was marked by the stock market crash of 1929.

The third merger wave emerged in the 1960s, when the cross-industry hybrid M&A model for diversification purposes became popular, marked by M&A between unrelated companies (also known as conglomerate mergers), and also by the proliferation of hostile M&A (Pikulina, 2011). General Electric³ was the most representative company in this time period. As one of the most famous conglomerates around 1960, GE continued to expand its diversified businesses, such as electric power, aviation, lighting, health, insurance, and commercial finance. GE also became one of the few companies that did not get eliminated with the end of the conglomerate merger wave after the 1980s.

The fourth merger wave appeared in the 1980s. The number of M&A and transaction value both rose sharply, and there were a large number of leveraged buyouts. Because during this period, under the influence of Reagan's economics, companies are generally undervalued, which has brought strong merger demand to the market, and a large number of small companies have acquired large companies. In the United States, it has entered the era of corporate integration (Hogan & Huie, 1992).

² <https://www.law.cornell.edu/uscode/text/15/18>

³ <https://www.ge.com/about-us/history>

Beginning in the 1990s, under the influence of economic globalization, the fifth merger wave featuring transnational mergers began. Merger waves have become a strategy-driven economic activity, and companies formulate strategic policies for future development. Moreover, cross-border capital flows are greater, and the government has begun loosen some antitrust policies, such as the United States antitrust law (Jovanovic & Rousseau, 2001).

The sixth merger wave occurred after 2000. 2003-2006 was considered to be the active period of mergers and acquisitions in the US market. G. Alexandridis believes that the acquisition decision during this period is more rational. This is because the acquirer does not have a high degree of understanding of the target company, so it does not have high confidence in the value creation after the merger, so the premiums paid in the sixth merger wave are lower than before (Alexandridis, Mavrovitis, & Travlos, 2012).

In general, economic, regulatory and technological shocks are likely to bring about a wave of industry consolidation, which is based on sufficient capital liquidity (Harford, 2005).

1.3 Classification of M&A.

In fact, there are different criteria for classifying M&A, and the author will briefly summarize several classifications introduced in previous studies.

(1) Payment methods

Cash payment, stock payment, and mixed payment are the main payment methods in M&A process.

Cash payment: Cash, non-contingent liability and newly issued notes are all belonged to cash payment. It is the most common payment method in M&A, which is simple and fast. This method is accomplished through both cash purchases of the target's assets or the target's stock. Since a certain amount of cash needs to be obtained in a short period of time for an M&A transaction, the requirements for the acquiring company's solvency and financing ability are relatively high, which usually results in increased financial costs. Also, for the target company, there is a possibility of a heavier tax burden due to the cash received by the shareholders. Therefore, a pure cash payment is more suitable for mergers and acquisitions of small-scale companies. (Faccio & Masulis, 2005)

Stock payment: The acquiring company uses stock as a form of payment to purchase the assets or stock of the target company and eventually gain control of the target company. This transaction method mainly includes two specific ways, one is to use the acquirer company's stock to purchase the target company's assets, and the other is the way to exchange the acquirer company's stock for the target company's stock. The stock transaction method is not affected by the acquirer company's capital situation, can meet the payment needs of larger transactions, and will also avoid high financial risks. The disadvantage of a stock exchange is that the shareholding structure of the acquiring company can be affected accordingly, including the risk of dilution of the shareholding and even a counter-acquisition. Stock transactions take longer to complete than cash transactions. If the price-earnings ratio of the acquiring company is higher than that of the target company, this payment option is the most desirable. (Sankar & Leepsa, 2018)

Mixed Payment: This method is a combination of cash payment methods and non-cash payment methods, mainly through mixed forms of cash, stocks and debt to complete M&A. The frequency of use of the mixed method rose sharply after the 1990s. From 1990 to 2008, the number of mergers and acquisitions completed by the mixed payment method tripled (Boone, Lie, & Liu, 2014).

(2) Industry relevance

The most common classification of M&A is based on industry relevance, which is divided into horizontal, vertical and conglomerate.

Horizontal M&A occurs between two or more companies that produce or sell similar products or provide similar services. Both the target company and the acquiring company are in the same industry before and after the acquisition. The main purpose of horizontal M&A is to increase economies of scale, thereby reducing operating costs and increasing the market share of the firm (Rozen-Bakher, 2018). Horizontal M&A can also help companies to strengthen the specialization and cooperation in their industry, and have the possibility to use the most advanced technology and production processes in their industry, thus unifying or improving the technical standards of the industry.

Vertical M&A means that the target company and the acquiring company are not in the same industry or are in different stages of production, for example, a leather bag company acquiring a leather processing company. Vertical M&A represents the

expansion and extension of the scope of operations of companies upstream and downstream of the same supply chain, acquiring target companies that produce the same product but are at different stages of production. The advantage of vertical M&A is that it can strengthen the control of each link in the production process, thus accelerating the production process, reducing transaction costs to a certain extent, shortening the product cycle, and improving the efficiency of production and operation. (Kedia, Ravid, & Pons, 2011)

According to the author's previous summary of six merger waves, conglomerate mergers were mainly prevalent after the 1960s, and the most famous representative company was General Electric. Conglomerate mergers involve no competition or supply relationship between the acquirer and the target company. The main purpose of a conglomerate merger is to avoid the risk of a company being fixed in one industry, which is often referred to as not putting eggs in the same basket. In the case of General Electric, for example, the company diversified its business strategy during its heyday by discovering growth points in other industries through constant penetration. This type of M&A has low transaction costs (Dean, 1970).

(3) Other classifications.

The above two classifications are the most common in the M&A classification. In addition, criteria such as whether the transaction is cross-border, whether it is a public transaction, and whether it is a hostile M&A are also criteria that may be used in determining the type of M&A.

1.4 Luxury goods and luxury industry

Luxury goods are fundamentally different from mass consumer goods, which represent not only a commodity but also social status as well as scarce resources. In economics, the elasticity of demand for luxury goods is more than 1 (Varian, 1992). The main characteristics of luxury goods include high quality and high price, and the scarcity in the market. Luxury goods are often consumed with more personalized services provided by luxury companies, including experiential marketing. Therefore, in the process of consumption, people pay more attention to the emotional experience, and the use value of luxury goods is not the only demand (Atwal & Williams, 2009). The meaning of luxury goods to different groups of consumers is also different (Akther, 2014),

for example, for billionaires, buying Hermes bags can only be the act of buying a bag, while for people with ordinary income, it is a difficult goal to achieve in a short time. And more and more people think that luxury goods are the symbol of social status, and buying luxury goods is also the act of rebuilding social stratification (Eastman, Goldsmith, & Flynn, 1999).

Broadly speaking, luxury goods include not only all kinds of personal luxury goods, such as clothes, bags and accessories, but also artworks, cars, alcohol, furniture, food, hotels and so on. Narrow sense of luxury goods mainly refers to personal luxury goods (PLG).

Overall Luxury Market Globally (2018-2020, €B)	2018		2019		2020	
	Sales	Percentage	Sales	Percentage	Sales	Percentage
Personal Luxury Goods	260	22.2%	281	22.2%	217	21.7%
Luxury Cars	495	42.3%	550	43.4%	503	50.2%
Luxury Hospitality	190	16.2%	206	16.2%	85	8.5%
Fine Wines & Spirits	71	6.1%	76	6.0%	68	6.8%
Gourmet Food & Fine Dining	50	4.3%	53	4.2%	45	4.5%
High-Quality Design Furnished & Homewear	41	3.5%	42	3.3%	38	3.8%
Fine Art	41	3.5%	34	2.7%	23	2.3%
Private Jets & Yachts	21	1.8%	24	1.9%	22	2.2%
Luxury Cruises	2	0.2%	2	0.2%	1	0.1%
Total	1171		1268		1002	

Table 1 Global Luxury Market Situation, 2018-2020
Source 1 Bain & Company

According to Bain's luxury industry report from 2008 to 2020, PLG is the most stable sector among all luxury sectors, even in the face of the 2008 financial crisis, the PLG market only declined by 7.55%, while other luxury sectors except PLG declined by 12.36%.

But in the face of the massive outbreak of Covid pandemic in 2020, the PLG market declined by 22.78% as people's travel was restricted, shopping malls were forced to close for business, and the online sales channels of many luxury brands were not acting perfectly, so the continuous growth trend of the last decade was broken. In 2020, the luxury car market was the least affected, with a decline of only 8.54%. The author believes that this is related to the fact that people avoid public transportation and prefer to drive private cars during Covid, so the car purchase market is only minimally affected.

The luxury industry that will be studied in this paper is the narrow luxury industry (PLG), which is also the scope of the study that has received the most attention so far.

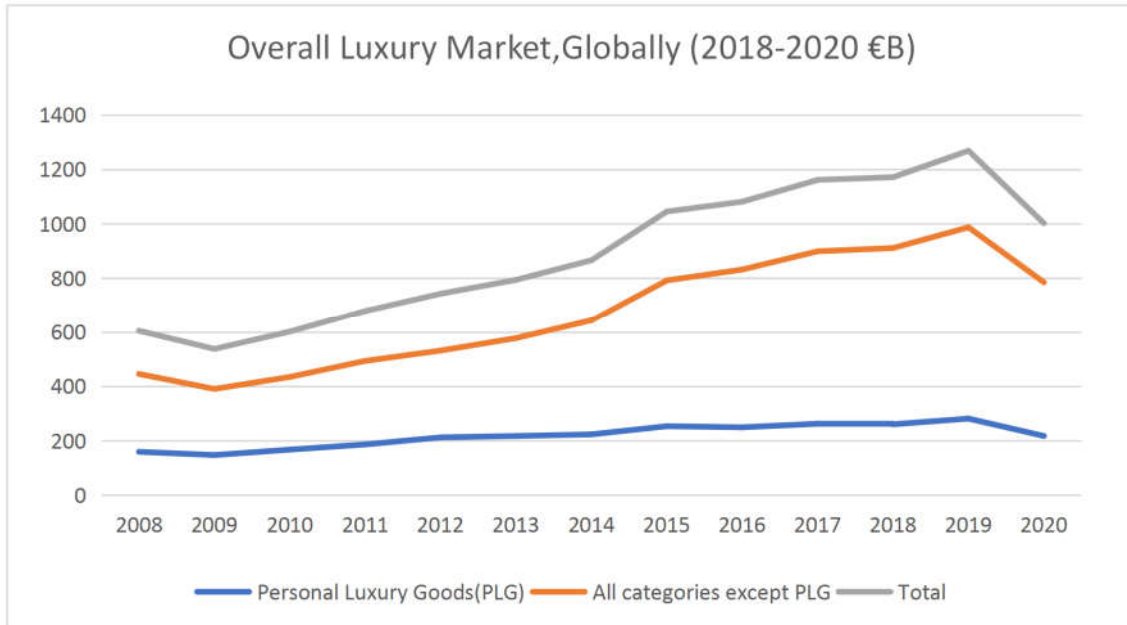


Figure 1 Luxury Industry Market Report 2008-2020
Source 2 Bain & Company

The luxury industry originated early but developed relatively late. As early as the 18th century, Vacheron Constantin watches already represented the symbol of luxury goods. The development of the luxury industry has gone through four phases, from the emergence of Europe to the development of globalization, and its development is often accompanied by the development of emerging economies, which also represents the influence of the growth rate of wealth on the consumption of luxury goods is very strong. The reason why the luxury industry would be considered a relatively young industry is that it did not really enter the stage of industrialization and did not apply professional enterprise management until around 1980s. The three major luxury groups LVMH, Kering and Richemont, which developed or reformed around 1980~1990, have also become one of the focuses of this paper which will be studied in detail later.

Phase I Centralized birth, location: Europe

From the early 19th century to the beginning of the 20th century, luxury brands began to concentrate in Europe. These brands were initially only for the royal or aristocratic classes, and their founders were often quality designers in their fields. For example, Hermes specialized in providing harnesses for the aristocracy and Louis Vuitton

provided luggage for the aristocracy. with the industrial revolution in the second half of the 19th century, more and more entrepreneurs and bankers accumulated a large amount of wealth, so the consumer base of the luxury industry expanded for a while. Most of the luxury brands at this stage were still small-scale production models based on family units.

Phase II Prosperity and Development, location: United States

Between World War II and 1970, the rising Western economy also represented a boom in the luxury industry. Haute couture began to gain popularity in the American market. This was also closely related to the technology of the textile industry in the United States at this stage. As a result, a large number of designer brands were born around 1940 to 1970.

Phase III Global expansion and mergers and acquisitions, location: Japan and other Asian markets

In the process of globalization from 1980 to 1990, the luxury industry was no longer satisfied with the European and American markets, and at the same time, the rapid development of Japanese economy made more and more brands realize the possibility of the Asia-Pacific market, and after 1970, the per capita GDP of Japan reached \$12,900. And the GDP per capita rose to 26,000 USD in just 20 years, so the demand for luxury goods also began to grow rapidly. After the global expansion, the luxury industry also began to recognize the importance of management structure, so they got rid of the family business dilemma through acquisition, mergers or going public.

Phase IV New Opportunities, location: Emerging Markets

In the 21st century, emerging markets, represented by China, began to become the key markets for the luxury industry to expand. Compared to the saturated European and American markets, the potential of emerging markets cannot be underestimated.

Luxury goods market value in China, 2016-2020					
Year	2016	2017	2018	2019	2020
\$ billion	19.2	23.2	26.5	33.3	35.3
% Growth		21.00%	13.90%	26.00%	6.00%
CAGR: 2016–2020	16.50%				

Table 2 Luxury Goods Market Value in China, 2016-2020
Source 3 Marketline

1.5 Research on M&A motives, measurement and performance

Although M&A is the preferred growth strategy of enterprises, previous studies have different opinions on whether M&A creates value for enterprises. Arindam Das reviewed 48 papers on M&A performance and found that a total of 46 measures were used to detect post-merger performance, using a total of 125 variables. This also proves that M&A performance lacks a universal definition and a relatively unified research structure (Das & Kapil, 2012). Of course, M&A performance is a multi-perspective problem and a multi-faceted structure. It is impossible to have a measurement standard that can cover every aspect, and there is no agreement on how to measure M&A performance within various disciplines. Measurement methods include subjective and objective methods, short-term and long-term methods, and so on (Meier & Zello, 2008). Even though many scholars believe that M&A cannot create value for the acquirer, M&A is indeed a source of opportunity. At the same time, the management, market, and operational synergy brought by M&A will also affect other aspects of the company, such as people, corporate culture, and technology. The success of an M&A depends on many aspects, including financial perspectives, due diligence, integration measures, internal and external factors, etc. It also needs to take into account the impact of the views of employees and customers (Agrawal, Sushil, & Jain, 2014).

1.5.1 Theories of M&A Motives

(1) Agency theory

Agency theory is the core and foundation of corporate governance theory. It is based on the assumption of information asymmetry, that is, not all participants have access to all information. Most of the contemporary operating companies are structured in such a way that the management and ownership are separated, so that the shareholders and managers form a principal-agent relationship. The shareholders are the direct beneficiaries or losers of changes in wealth, while the managers are in charge of the actual operations. When the goals of the two groups of people diverge, there will be agency costs. Agency theory suggests that managers will conduct M&A to maximize their own interests rather than those of shareholders (Michael C. & Meckling, 1976). In addition, if managers overestimate their ability to complete the acquisition at a high price but have difficulty in completing the integration of the company afterwards, the

probability of M&A failure is extremely high (Miller & Ross, 1975). This type of egotistical manager can directly harm the interests of shareholders (Roll, 1986).

(2) Synergy Theory

Synergy was introduced to economics by H. Igor Ansoff in the 1960s and is defined as the efficiency of two companies after completing an M&A that is greater than the sum of the efficiency of the two companies before the M&A. The criterion for achieving synergy is the completion of financial, managerial, and operational synergies between the merged companies.

Managerial synergy refers to the difference in managerial efficiency between the two companies of M&A, and usually the acquirer will be more efficient than the target. Therefore, by utilizing the idle resources of the acquirer into the target company, the rational use of resources can be achieved, thus producing a result of $1+1>2$ (Weston & Mansinghka, 1971).

Financial synergy mainly includes financial behaviors such as using excess cash for investment and tax benefits. In addition, acquiring a target enterprise with a lower cost of capital to reduce the acquirer's cost of capital rate and thus enhance the acquirer's solvency is also a relatively common acquisition motive (Knoll, 2008).

Operational synergy is divided into two levels: horizontal and vertical. Horizontal synergy is the complementary resources of the acquirer and the target, thus achieving economies of scale, reducing production costs and improving production efficiency. Vertical synergy refers to the specialization of enterprises in the same industry but at different stages of production to enhance the closeness of the production process and thus reduce the cost of each production step (Chatterjee, 1986).

In the study of M&A motives, previous scholars basically believe that merger motives can be divided into two categories. Category 1 is to increase the value of the acquirer, including the creation of economies of scale and synergies, as well as to reduce transaction costs. Category 2 is to increase the benefits of stakeholders represented by company managers, but the latter is controversial because it is often influenced by certain subjects, for example, when making decisions, the general employees have a significantly weaker voice than the operators (Motis, 2007). What makes author more interested is

whether developed country acquirers will have different M&A motives than developing country acquirers?

Developed countries dominated by the United States have higher disclosure requirements than emerging markets. Therefore, among the M&A motives, more attention is paid to the impact of market timing, synergies and industry shocks. And in this process, single-motive M&A is relatively rare. During the sample survey of 3,520 M&A cases in the U.S. market, it was found that more than 80% of M&A had multiple motives (Nguyen, Yung, & Sun, 2012). Synergy and efficiency are the most important driving force in the M&A process (Ollinger & Nguyen, 2003). The acquirer hopes to increase market power while achieving synergy. In labor-intensive companies, the main way to increase post-merger company revenue is to lay off employees (Pizam, 2016). And when a company merges with a company with the same business, it will produce more horizontal synergy, because the merger of two companies of the same type can remove redundant personnel and functions within the company, and has the opportunity to greatly improve efficiency. It seems that layoffs have become a common method for most companies to achieve revenue growth (Canina, 2000).

One of the motivations of M&A is to improve the company's financing ability. If a company cannot obtain funds through its own business, it will usually consider merging with other companies with lower debt levels and higher liquid assets, thereby increasing the company's financing capabilities. In addition, the tax incentives that M&A may bring is also one of the motivations of M&A.

In the research on developing countries, more attention has been paid to the influence of management's self-interest or the demands of top leadership. Compared with developed countries, M&A in developing countries is more complicated because it is relatively less transparent and less fully marketed, so the managers' self-interest can greatly influence the outcome of M&A process. In the study of M&A motives of listed companies in developing countries such as China and Nepal, the analysis also focuses on agency issues. The financial sector in developing countries shows consistency with the studies in developed countries in Europe and the US. For example, the three most important motives for the merger of Nepalese operators are to meet regulatory requirements to achieve economies of scale and scope, and to improve their efficiency

through synergies (Yin, Sandra, & Tuffour, 2019). For listed companies in non-financial sectors in developing countries, there is a need to focus on agency issues (Pathak, 2016). M&A decisions based on management arrogance actually increase the acquirers' management welfare at the expense of shareholders, meaning that those M&As based on this motive are not in the overall interest of the firm (Huang & Ye, 2018).

1.5.2 Research on M&A Performance Measurement Methods

When evaluating M&A performance, most scholars use event study method, EVA evaluation model and accounting study method. The accounting study method is to construct a performance evaluation model by studying the financial statements. The event study method focuses on the abnormal return before and after a specific event, such as M&A announcement, and this method is based on the stock price change system. EVA model is the residual return after net operating profit after tax minus the cost of invested capital, which can reflect the value created by the enterprise for shareholders in a certain time period, and it is also a common indicator of corporate value creation.

Accounting-based measures of M&A performance have been the most commonly used in studies for many years, often in conjunction with CAR and EVA to measure M&A performance, mostly using return ratios, growth measures and operating cash flows. Of course, most of the scholars have studied it through more detailed financial indicators, especially in case studies, where the financial information of specific acquirer and target companies is studied more specifically (Mira, 2014).

The event study method, which is also commonly used to measure performance, is defined as an abnormal return method and can be used to measure the change in stock price before and after a specific event, thus measuring the return to shareholders as a result of M&A. However, its use is also controversial, for example the controversy over CAR and BHAR measures is still unresolved. But anyway, it can indeed be used as a method to detect short-term abnormal returns and can be used for post-merger performance evaluation (Perepeczo, 2007).

In 1983, Stern Value Management created the EVA method (Economic Value Added), which is a new model that can maximize the value created by the company and can provide the company with comprehensive incentives (Kolar, 2018). The EVA method is a comprehensive measurement method, which adjusts a company's accounting

information according to the company's specific conditions. The advantage of the EVA method is that it solves the problem of dynamic inconsistency of the traditional Discounted Cash Flows method, so EVA is more Suitable for the author's research (Pruzhansky, 2013). With the support of this method, researchers can not only formulate benchmarks that meet performance measurement requirements, but also assess the degree of accurate market response to M&A events (Sirower & O'Byrne, 1998). Kayo, Basso, and Oliveira have also found that even when the indicators are selected properly, there will be cases where the selected variables are not statistically significant (Kayo, Basso, & Oliveira, 2005). Therefore, in the research of this thesis, the choice of variables has become one of the key issues that the author pays most attention to.

Based on the study and analysis of existing research, the author found that there is no fixed structure for measuring the performance of M&A, especially when facing different industries, it will have the impact of industry specificity. So, it also leads to the following research question of this thesis:

What impact does M&A bring to the luxury industry acquirer company?

1.5.3 Research on the influencing factors

So, what factors will have a greater impact on M&A performance? This is actually a problem that is difficult to describe simply. Just like the 125 unique variables discovered by Arindam Das' research, different industries and different perspectives will introduce more variables.

First of all, there is an optimal acquisition time point for M&A. If the optimal time is missed, the subsequent profitability of the acquirer will be lower. Successful M&A will bring positive synergy, but delay will lose synergy. This is why many acquirers want to complete the transaction quickly. At the same time, the acquisition of opaque companies can take less time, so it will bring stronger M&A performance (Thompson & Kim, 2020). Of course, the author also needs to raise a question here: the acquisition of opaque companies may speed up M&A transactions, but it may also lead to poor due diligence. Will such M&A performance really be positive? Of course, some scholars have shown different results in previous studies. Information asymmetry will bring obstacles to

transactions, so it will make the M&A process more difficult and it is difficult to guarantee the final performance (Petrovich, 2018).

In addition, family ownership is also a frequently discussed issue in M&A performance influencing factors, especially the luxury industries that the author will study are mostly family owned, so this factor is also of more interest to the author. Family ownership is believed to bring higher abnormal returns to M&A, and the abnormal returns of M&A are inversely related to family operating levels, financial institution holdings, and industry diversification, and are positively related to geographic diversification (Tanchaya, 2017).

Another influencing factor that has attracted more attention from scholars is the payment method. The current common M&A payment methods include cash, stocks, and mixed payment. However, the discussion about the post-merger impact of stocks and cash payments is still very contradictory. When conducting research on M&A deals in Poland and some Eastern European countries, (Mielcarz & Kalinowska, 2015) found that cash transactions increase the buyer's chances of obtaining a higher return on capital. But this often places high demands on the solvency and financing capabilities of enterprises. Moreover, after the merger, the abnormal returns obtained by the acquirer and the target are proportional to the cash used in the transaction (Huang & Walkling, 1987). On the contrary, Wang believed that stock payment will signal to shareholders that the company is operating well, while cash payment will bring higher financing costs. Therefore, Liu and Ma believed that stock payment has a strong positive impact on performance, while cash payment has a relatively small or even negative impact on performance. The mixed payment method is not conducive to the improvement of M&A performance. At the same time, some scholars have studied the impact of different payment methods of different types of companies on performance and found that for companies in mature industries, cash payments will bring lower shareholder profitability compared to stock payments. For growing companies, cash payments will not have a significant impact on the performance of mergers and acquisitions, and the use of stock payments will bring slightly higher profitability. For the peculiarities of declining industries, payment methods do not affect M&A performance.

Most scholars have a relatively unified understanding of the influence of geographic distance on M&A, that is, geographic distance will cause information asymmetry, and the greater the distance, the higher the degree of information asymmetry. At the same time, the increase in distance will also bring about the problem of increased M&A premium (Bick, Crook, Lynch, & Walkup, 2017). Of course, “distance” mostly refers to the influence of distance caused by cross-border transactions, so this thesis will also consider cross-border transactions as one of the factors that affect M&A performance for research. Transnational M&A will bring institutional distance, which will bring about characteristics of merger integration, resource transfer, law, and information asymmetry. Of course, formal institutional distance (explicit knowledge with norms and records) and informal institutional distance (mainly tacit knowledge, such as conventions, cultural cognition, etc.) will have different effects. Formal institutional distance will bring long-term positive effects and short-term negative effects, while informal institutional distance is the opposite.

The cultural differences brought about by cross-border transactions will also directly cause the failure of M&A. Although the strategic differences between the two companies before the merger can produce synergies and bring higher short-term performance, in reality, it is difficult to predict the M&A performance beyond a specific time period. Moreover, it is foreseeable that the cultural conflict brought about by integration is an important factor that interferes with the performance of mergers and acquisitions (Muceniaks, 2018). Especially the different cultural backgrounds between employees will bring direct misunderstandings and conflicts, which will have a negative impact on the later integration effect (Liu T.). In the case study of the Daimler-Chrysler merger in 1998, it also proved the potential huge impact of cultural distance. Although the two companies have high potential and strategic consistency, the huge differences in cultural management styles between the two companies caused poor management after the merger, which ultimately failed to achieve synergies and led to failure ending with poor performance (Kumar, 2019) (Aldaoud, 2015).

Chapter 2 Empirical Analysis of M&A Performance Based on EVA

2.1 Hypotheses Statement

According to the literature review, the author finds that the conclusions of research scholars on performance change are not entirely consistent over time, influenced by different samples and different countries. The first hypothesis proposed in this thesis for the world luxury industry is that

H.1: Mergers and acquisitions enhance the performance of firms in the luxury industry.

There are many factors affecting M&A performance that are difficult to quantify and cannot be analyzed empirically, so the authors chose three market related measures based on the existing theories to study the factors affecting M&A in the luxury industry based on the literature collected in the previous papers.

The Goodwill-to-Total-Assets Ratio (GTA)

Brand goodwill, as a type of intangible asset, is defined as an asset that can generate future revenue for a company, but is more difficult to manage than tangible assets and can create uncertainty in a company's performance (Ng & Lau, 2014). According to IFRS 38, goodwill is generated due to mergers and acquisitions and is not generated internally. Goodwill includes aspects such as corporate culture, quality of employees, and the social value of the company. It is not reflected in the target's financial statements, but can bring value to the acquirer in the future. If the goodwill to total assets ratio increases, it indicates that the acquirer may be actively acquiring the target company. The author believes that a higher goodwill to total assets ratio leads to better post-acquisition performance. Therefore, the author proposes the following hypothesis:

H.2.1: The higher the acquirer's goodwill to total assets ratio at the M&A compilation year, the better the post-merger performance of the acquirer.

The Book-to-Market ratio (BM)

The book-to-market ratio is a measure of whether a particular company's stock is overvalued or undervalued. BM above 1 means that people undervalue this company's stock, as it represents total asset value above the company's stock trading price, and BM below 1 represents total asset value below the company's stock trading price. In previous studies, (Rhodes-Kropf, Robinson, & Viswanathan, 2004) have argued that

overvaluation of the acquiring firm leads to negative post-merger performance. The author also believes that the post-merger operating performance of companies whose stocks were undervalued is positive, so the author proposes the following hypothesis:

H.2.2: The higher the acquirer's book-to-market ratio in the year before the merger, the better the post-merger performance of the firm.

The Debt-to-Equity Ratio (D/E)

As a measure of a company's financial leverage, the debt-to-equity ratio shows the ratio of equity to debt in a company's funding sources. A higher ratio represents higher leverage, which is often accompanied by higher risk. Typically, a D/E ratio less than 0.3 represents a healthy capital structure, while a D/E ratio higher than 2 represents an unhealthy capital structure in which the company borrows a large amount of money for its operations and creditors are more than twice as invested as shareholders. In the study of post-merger performance evidence using a massive sample of 65,000 firms, (Bianconi, Tan, Wang, & Yoshino, 2014) confirmed the negative effect of high pre-merger leverage on post-merger performance. So, the authors make the following hypothesis:

H.2.3: The higher the acquirer's D/E ratio in the year before the merger, the worse the post-merger performance.

The age of the target company

In searching the literature on firm characteristics, the authors found previous analyses in the literature on the impact of the target firm's age. Previous scholars have argued that the age of the target company has a negative impact on post-merger performance because the older the company is established, the more rigid its operations are (Ilyasov, 2018). Therefore, the author proposes the following hypothesis to test the effect of target company's age in luxury industry M&A.

H.2.4: The age of the target company has a negative impact on the post-merger performance of the acquirer company.

All of the above influencing factors are related to the characteristics of the firm, while deal-related factors also need to be taken into account.

The transaction method

The transaction method is also one of the factors that receive attention in M&A performance. Most scholars are more favorable to stock transactions, which are believed

to generate higher abnormal returns for M&A. Stock transactions represent the M&A firm's perception that its stock is overvalued and cash transactions represent the M&A firm's perception that its stock is undervalued.

H.3: Cash transactions will lead to better post-merger performance.

2.2 Principle of M&A performance evaluation using EVA

Economic value added (EVA) is the result of the discussion of business objectives. In the 19th and early 20th centuries, the scale of enterprises was generally small, so the goal of business operation was mostly profit maximization, which was in line with the social and economic environment at that time. After the 20th century, the development of capital market also brought about the problem of principal-agent mechanism, and more and more enterprises hired professional managers to manage and operate the enterprises, so how to maximize the interests of shareholders became the new goal of corporate management. So, in 1989, Stern Stewart consulting organization proposed the EVA method, which takes whether a company can bring more wealth to shareholders as a direct criterion to evaluate a company's performance.

The definition of EVA is the residual income after the profit of the enterprise minus the cost of all inputs, so it can be expressed as

$$EVA = NOPAT - (\text{Invested capital} * WACC)$$

Where:

(1) NOPAT = Net operating profit after taxes, but in this step, the author will also consider the EVA adjustment. So, the final expression for NOPAT which is calculated in EVA model will be:

$$NOPAT = \text{Operating Profit} * (1 - \text{tax}) \pm \text{EVA adjustment}$$

$$NOPAT = (\text{Revenue} - \text{COGS} - \text{operating expenses}) * (1 - \text{tax expense} / \text{income before tax}) \pm \text{EVA adjustment}$$

$$(2) \text{ Invested capital} = \text{Debt} + \text{shareholders' equity}$$

$$(3) WACC = K_e * E / (E + D) + K_d (1 - t) * D / (E + D)$$

Where K_e = cost of equity, K_d = cost of debt, E = firm's equity, D = firm's debt, t = corporate tax rate.

When NOPAT is greater than the invested capital, that is, when EVA is greater than 0, it means that the company can create new value for shareholders with the existing capital, and it also proves that the operating and management of the company is successful.

Combined with the definition of EVA, the EVA evaluation of the post-merger performance can be divided into three cases.

If, after the M&A, the acquirer's EVA increases significantly, it represents that the shareholders' investment has gained a higher return because of this deal, the return on capital is higher, and the M&A performance is excellent.

If there is no change or a negligible increase in the acquirer's EVA after the M&A, it represents that the shareholders' investment compensated for the transaction costs and the M&A did not generate abnormal returns, but the overall M&A performance is positive.

If the acquirer's EVA decreases after the M&A, it represents a low return on invested capital and destroys the shareholders' wealth appreciation, so the M&A performance is negative.

160 possible changes could be applied to calculate EVA. But mostly, researchers only use that common adjustments to EVA. Stern Stewart argues that financial reporting has its own flaws and the possibility of human modification. In order to remove the unreliability of financial data to the maximum extent possible, some financial accounts need to be adjusted.

(1) Value-building expenditure

Value-building expenditure adjustment is an adjustment for expenditures on advertisements, R&D and employee training, which will create value for future business and therefore increase capital employed. If the above expenditures are included in current expenses, it will expand the current cost of capital and make the profit decrease. In EVA, the above expenditures are recognized as investments in the business and need to be amortized and adjusted.

Change to profit: add back to profit

Change to invested capital: add to invested capital

(2) Provisions

In order to cope with the possible loss of assets and changes in the business in the future, a portion of funds is set aside for possible future situations, resulting in an impairment loss of assets in the current period, thus underestimating the company's ability to generate profits in the current period and causing a reduction in total capital. Therefore, in EVA, it is necessary to adjust the provisions.

Change to profit: remove from NOPAT

Change to invested capital: add back to invested capital

(3) Operating leases

Operating leases and finance leases need to be treated consistently, otherwise the company will be perceived as using operating leases to reduce capital employed in order to increase EVA.

To avoid this misunderstanding, EVA classifies all leases as financial leases.

Change to profit: add back to profit

Change to invested capital: add to invested capital

After the above accounting adjustments, the formula for calculating NOPAT and invested capital in EVA is changed as follows.

$$\text{NOPAT} = (\text{Operating Profit} + \text{Value-building expenditure} + \text{Operating leases}) * (1 - \text{tax}) - \text{Provisions}$$

$$\text{Invested capital} = \text{Non-current debt} + \text{shareholders' equity} + \text{Value-building expenditure} + \text{Provisions} + \text{Operating leases}$$

2.3 Data and sample

In this thesis, the author used Zephyr database as the preliminary data source to examine the change of acquirer's M&A performance, and the time stage is the change of EVA from one year before to the third year after the M&A.

1) To ensure the feasibility of collecting financial information of companies from public sources, so this thesis examines the object of listed acquirer.

2) To screen the type of deal: Acquisition or Merger.

3) Since the performance of the three years after the completion of M&A needs to be verified, most of the latest financial information that can be collected from the public channel comes from the annual report for 2020, so December 31, 2020 is used as the deadline for the verification of M&A performance, so the completion of M&A cannot be

later than December 31, 2017. At the same time, after the economic crisis in 2007-2008, a change from crisis to recovery to new normal was formed in the luxury industry, which can provide a reference for the recovery of the luxury industry after COVID-19, so the completed time chosen in this thesis starts on January 1, 2008. The final screening time stage is January 1, 2008-December 31, 2017.

4) Only completed transactions are selected in this thesis, and uncompleted transactions are considered as no transactions occurred.

5) NAICS 2017 (The North American Industry Classification System) is a relatively new industrial classification code in the current Zephyr database, which includes a total of 20 sectors and 1057 industries. Since the luxury industry is a relative concept, the choice of the more detailed classification of industrial code is beneficial to the author to avoid the problem of overlooking deals as much as possible. According to the product sector classification in Deloitte's Global Powers of Luxury Goods report in previous years, it mainly includes (1) Clothing and footwear (2) Bags and accessories (3) Cosmetics and fragrances (4) Jewelry and watches (5) Multiple luxury goods. since the filtering condition of (5) is difficult to achieve in NAICS 2017, this thesis selects (1)-(4) as the sector filtering index. In addition, when the author conducted literature research and industry survey, he noticed the special situation of this industry giant Kering, which had used the name Pinault-Printemps-Redoute (PPR) before 2013 to acquire the famous luxury brands Gucci and YSL as early as around 1990, but its industry classification was always Retail, so the author added the classification of retail (4522 - Department Stores) for the special case of Kering in the industry screening.

(6) Finally, I filtered Business description, English trade description, overview, industry descriptions with "LUXURY" in the deals, zephyr finally gave 83 trading results. (See Zephyr filter criteria in [Appendix 1](#))

From the 83 results given by Zephyr, the author made further screening, mainly to exclude duplicate transaction records, non-luxury companies, etc.

(1) According to the 83 transactions given by Zephyr, the author made a search for company business and eliminated 15 transactions whose main business is not related to the production and sale of luxury goods, and now there are 68 transactions.

(2) Filtering according to target name and acquirer name, taking the transactions of LVMH and Bulgari as an example, the two acquisitions are the acquisition of 50.43% and the increase of acquisition ratio from 50.43% to 100% respectively. The author classifies such transactions as the same transaction, and eliminates 5 transactions based on this criterion, and there are currently 63 transactions that qualify.

(3) Only the deals with (1) the largest transaction amount or (2) the clear transaction method or (3) the top deal number are retained for M&A generated by the same company in the same year, that is, each acquirer will only retain one deal in the same year, thus eliminating 24 deals and finally retaining 39 deals.

	Acquirer name	Target name	T(-1)	T(0)	T(1)	T(2)	T(3)
1	HENGDELI HOLDINGS LTD	ELEGANT INTERNATIONAL HOLDINGS LTD	2007	2008	2009	2010	2011
2	LVMH MOET HENNESSY LOUIS VUITTON SA	BODEGA NUMANTHIA TERMES SL	2007	2008	2009	2010	2011
3	COMPAGNIE FINANCIERE RICHEMONT SA	SHANGHAI TANG LTD	2007	2008	2009	2010	2011
4	STEVEN MADDEN LTD	SML BRANDS LLC'S ZONE 88 AND SHAKEDOWN STREET ASSETS	2008	2009	2010	2011	2012
5	COMPAGNIE FINANCIERE RICHEMONT SA	MANUFACTURE ROGER DUBUIS SA'S WATCH COMPONENTS MANUFACTURING DIVISION	2008	2009	2010	2011	2012
6	LVMH MOET HENNESSY LOUIS VUITTON SA	CHEVAL BLANC	2008	2009	2010	2011	2012
7	COMPAGNIE FINANCIERE RICHEMONT SA	NET-A-PORTER LTD	2009	2010	2011	2012	2013
8	STEVEN MADDEN LTD	BASSAN B, JEREMY	2009	2010	2011	2012	2013
9	VERITE CO., LTD	SOBAKKU, KK	2009	2010	2011	2012	2013
10	LVMH MOET HENNESSY LOUIS VUITTON SA	SAMARITAINE SA, LA	2009	2010	2011	2012	2013
11	SALVATORE FERRAGAMO SPA	FERRAGAMO INTERNATIONAL BV	2009	2010	2011	2012	2013
12	LVMH MOET HENNESSY LOUIS VUITTON SA	BULGARI SPA	2010	2011	2012	2013	2014
13	PPR SA	VOLCOM INC.	2010	2011	2012	2013	2014
14	STEVEN MADDEN LTD	TOPLINE CORPORATION, THE	2010	2011	2012	2013	2014
15	VERITE CO., LTD	SUN JEWEL CO., LTD	2010	2011	2012	2013	2014
16	PPR SA	BRIONI SPA	2011	2012	2013	2014	2015
17	SALVATORE FERRAGAMO SPA	FERRAGAMO (SINGAPORE) PTE LTD	2011	2012	2013	2014	2015
18	CORTINA HOLDINGS LTD	CORTINA WATCH PTE LTD	2011	2012	2013	2014	2015
19	LVMH MOET HENNESSY LOUIS VUITTON SA	SACKS PERFUMARIA E COSMETICOS LTDA.	2011	2012	2013	2014	2015
20	COMPAGNIE FINANCIERE RICHEMONT SA	VARIN-ETAMPAGE	2011	2012	2013	2014	2015
21	BONIA CORPORATION BHD	PARIS RCG SDN BHD	2011	2012	2013	2014	2015
22	LVMH MOET HENNESSY LOUIS VUITTON SA	LORO PIANA SPA	2012	2013	2014	2015	2016

23	KERING SA	POMELLATO SPA	2012	2013	2014	2015	2016
24	STEVEN MADDEN LTD	DOLCE VITA HOLDINGS INC.	2013	2014	2015	2016	2017
25	HOUR GLASS LTD, THE	WATCHES of SWITZERLAND PTE LTD	2013	2014	2015	2016	2017
26	TOD'S SPA	FORMAPURA SRL	2013	2014	2015	2016	2017
27	PPR SA	GUCCI GROUP NV	2013	2014	2015	2016	2017
28	COMPAGNIE FINANCIERE RICHEMONT SA	PETER MILLAR LLC	2013	2014	2015	2016	2017
29	LVMH MOET HENNESSY LOUIS VUITTON SA	SOCIÉTÉ DU DOMAINE DES LAMBRAYS SÀRL	2013	2014	2015	2016	2017
30	CORTINA HOLDINGS LTD	CORTINA WATCH SDN BHD	2014	2015	2016	2017	2018
31	STEVEN MADDEN LTD	TRENDY IMPORTS SA DE CV	2014	2015	2016	2017	2018
32	HOUR GLASS LTD, THE	HOUR GLASS SDN BHD, THE	2014	2015	2016	2017	2018
33	PPR SA	CHRISTOPHER KANE BRAND	2014	2015	2016	2017	2018
34	KERING SA	RICHARD GINORI 1735 SPA	2015	2016	2017	2018	2019
35	CORTINA HOLDINGS LTD	CORTINA WATCH CO., LTD	2015	2016	2017	2018	2019
36	COMPAGNIE FINANCIERE RICHEMONT SA	MANUFACTURE ROGER DUBUIS SA	2015	2016	2017	2018	2019
37	LVMH MOET HENNESSY - LOUIS VUITTON SA	RIMOWA GMBH	2016	2017	2018	2019	2020
38	STEVEN MADDEN LTD	SCHWARTZ & BENJAMIN INC.	2016	2017	2018	2019	2020
39	COMPAGNIE FINANCIERE RICHEMONT SA	STEFANO SERAPIAN SRL	2016	2017	2018	2019	2020

Table 3 Sample of M&A in the Luxury Industry
Source 4 Zephyr database

2.4 Adjusted EVA calculation

After the introduction of EVA accounting adjustment, the author used the acquisition which completed in 2017 of Compagnie Financiere Richemont SA, a well-known hard luxury goods company, to show the actual calculation process of EVA.

Acquirer name	Target name	Deal type	Deal status	Completed date
COMPAGNIE FINANCIERE RICHEMONT SA	STEFANO SERAPIAN SRL	Acquisition 100%	Completed	2017

Table 4 Deal example of calculating adjusted-EVA
Source 5 Zephyr database

In Millions of Euros	2016	2017	2018	2019	2020
Operating Income	2061	1764	1844	1943	1518
Net Income Before Taxes	2058	1570	1653	3168	1198
Income tax paid	370	360	432	381	267
Non-adjusted Tax rate	18.0%	22.9%	26.1%	12.0%	22.3%
Non-adjusted NOPAT	1690	1360	1362	1709	1180

Table 5 Non-adjusted NOPAT
Source 6 Author's calculations

In Millions of Euros	2016	2017	2018	2019	2020
Total Debt	882	731	4605	4697	7327
Total Equity	15047	15529	14628	17039	30377
Invested Capital (capital employed)	15929	16260	19233	21736	37704

Table 6 Capital employed
Source 7 Author's calculations

2.4.1 Accounting adjustment for NOPAT and capital employed

(1) Value-building expenditure

Value-building expenditure includes R&D, employee training and marketing expense. The return on the above expenses often takes several years, but it will be included in the operating expense all at once. Taking R&D as an example, the return time is usually 3-5 years, so the author set a 3-year amortization period. (See result in [Appendix 2.1](#))

(2) Provisions

The inconsistency between cash flow and corporate operating profit affects the evaluation of corporate operating performance, so it needs to be added to capital employed and needs to be subtracted from NOPAT. (See result in [Appendix 2.2](#) and [Appendix 2.3](#))

(3) Operating leases

Usually, Operating leases should be removed from NOPAT and also add to capital employed because in EVA, all leases are treated as finance lease. (See result in [Appendix 2.4](#))

Finally, the author got the adjusted NOPAT for EVA calculation as followed:

In Millions of Euros	2016	2017	2018	2019	2020
Operating Income	2061	1764	1844	1943	1518
Net Income Before Taxes	2058	1570	1653	3168	1198
Value-building expenditure +	82	56	2	154	129
Inventory write-downs +	44	45	44	95	78
Operating leases +	668	680	638	703	672
Adjusted net Income Before Taxes	2852	2351	2337	4120	2077
Income tax paid	370	360	432	381	267
Deferred tax -	(107)	(14)	54	(15)	(16)
Adjusted income tax paid	477	374	378	396	283
Adjusted tax rate	16.7%	15.9%	16.2%	9.6%	13.6%
Adjusted NOPAT	1716	1483	1546	1756	1311

Table 7 Adjusted NOPAT for EVA calculation

Source 8 Author's calculations

After applying the above accounting adjustments, the authors adjusted all transactions within the sample and generated the final adjusted NOPAT. (See result in [Appendix 3](#))

2.4.2 Capital employed calculation

In Millions of Euros	2016	2017	2018	2019	2020
Total Debt	882	731	4605	4697	7327
Total Equity	15047	15529	14628	17039	30377
Value-building expenditure +	82	56	2	154	129
Inventory write-downs +	44	45	44	95	78
Operating leases +	668	680	638	703	672
Deferred tax +	(107)	(14)	54	(15)	(16)
Adjusted capital employed	16616	17027	19971	22673	38567

Table 8 Adjusted capital employed calculation
Source 9 Author's calculations

2.4.3 WACC calculation

$$WACC = Ke * E / (E + D) + Kd (1 - t) * D / (E + D)$$

Where:

Ke = cost of equity

Kd = cost of debt

E = firm's equity

D = firm's debt

t = corporate tax rate.

(1) Cost of equity

CAPM model is used to calculate cost of equity, which can be expressed as followed:

$$\text{Cost of equity} = \text{Risk free rate of return} + \text{Beta} * \text{Equity Risk premium}$$

Risk free rate of return: In this thesis, the 10-year Treasury rate of the acquirer's country is used as the risk-free rate. If the data is not available, the U.S. 10-year Treasury rate will be used as the risk-free rate.

(2) Beta

Beta is the result of comparison between individual company risk and market risk, which can be expressed as $\text{Beta} = \text{Covariance} / \text{Variance}$. This thesis uses a five-year interval, one year before deal to three year after deal as the calculation period for Beta. Using the Excel Slope function, calculate the regression line which will be the "best fit" line based on known data points between the monthly average stock price of a single company and the monthly average of the S&P500 index.

(3) Equity Risk Premium

The author uses the method of Professor Damodaran from NYU Stern School of Business to calculate ERP (Equity Risk Premiums) (Damodaran, 2020).

Step 1: Estimate the risk premium for mature markets

To estimate the risk premium in mature markets, Professor Damodaran calculated the implied equity risk premium in the S&P 500 index.

Step 2: Estimate the country's default spread based on Moody's' local currency sovereign rating for the country.

Step 3: Convert the default spread into a country risk premium

For sovereign rating default spreads, the default spread is used as a measure of the additional country risk premium.

Step 4: Calculate the total equity risk premium

Add the mature market premium of step 1 and the country risk premium of step 3 to get a total equity risk premium. (See WACC calculation result in [Appendix 4](#))

2.4.4 Adjusted EVA calculation result

After computing adjusted NOPAT, adjusted capital employed and WACC, the final result of adjusted EVA for whole samples is as followed:

Acquirer name *In Millions of Euros	Adjusted EVA				
	T (-1)	T0	T1	T2	T3
HENGDELI HOLDINGS LTD	27.24	29.93	18.69	21.74	42.19
LVMH MOET HENNESSY LOUIS VUITTON SA	1041.98	1001.71	972.77	1217.02	1014.58
COMPAGNIE FINANCIERE RICHEMONT SA	(9.23)	114.19	359.32	134.41	359.95
STEVEN MADDEN LTD	7.32	15.94	26.77	33.94	39.79
COMPAGNIE FINANCIERE RICHEMONT SA	162.75	372.27	140.56	392.97	871.99
LVMH MOET HENNESSY LOUIS VUITTON SA	1044.20	1011.19	1273.06	1100.61	1566.99
COMPAGNIE FINANCIERE RICHEMONT SA	430.68	214.75	505.57	1005.89	1367.06
STEVEN MADDEN LTD	16.46	27.69	35.01	41.00	51.65
VERITE CO., LTD	(17.99)	(13.32)	(9.25)	(9.16)	(4.41)
LVMH MOET HENNESSY LOUIS VUITTON SA	1119.13	1430.49	1342.31	1815.86	1891.41
SALVATORE FERRAGAMO SPA	(41.33)	38.52	70.78	81.21	97.96
LVMH MOET HENNESSY LOUIS VUITTON SA	1288.62	1124.50	1591.58	1650.47	1931.55
PPR SA/KERING SA	(12.01)	25.74	378.39	162.10	322.10
STEVEN MADDEN LTD	27.15	34.54	40.56	50.67	35.76
VERITE CO., LTD	(14.84)	(10.61)	(10.52)	(5.35)	(4.74)
PPR SA/KERING SA	(155.06)	186.30	1.02	137.51	(136.05)
SALVATORE FERRAGAMO SPA	115.44	148.03	177.81	181.28	182.13

CORTINA HOLDINGS LTD	4.02	9.60	7.80	7.67	5.23
LVMH MOET HENNESSY LOUIS VUITTON SA	753.99	1201.14	1240.87	1550.50	1477.57
COMPAGNIE FINANCIERE RICHEMONT SA	994.92	1658.29	1988.93	1715.31	2181.58
BONIA CORPORATION BHD	5.54	5.52	6.26	6.69	4.13
LVMH MOET HENNESSY LOUIS VUITTON SA	1880.98	1961.38	2224.26	2323.94	2460.02
PPR SA/KERING SA	488.90	254.77	428.30	198.34	422.21
STEVEN MADDEN LTD	81.87	70.40	74.86	63.56	54.89
HOUR GLASS LTD, THE	21.39	17.52	16.64	13.91	10.57
TOD'S SPA	95.11	71.94	76.65	73.55	59.70
PPR SA/KERING SA	270.95	446.84	219.67	442.29	1390.12
COMPAGNIE FINANCIERE RICHEMONT SA	2049.06	1824.06	2317.35	1506.42	1303.03
LVMH MOET HENNESSY LOUIS VUITTON SA	1763.21	2038.40	2085.62	2226.68	3715.33
CORTINA HOLDINGS LTD	9.95	7.82	4.75	5.98	13.34
STEVEN MADDEN LTD	78.60	83.28	69.98	59.76	73.22
HOUR GLASS LTD, THE	27.03	19.67	16.61	12.89	13.51
PPR SA/KERING SA	503.58	284.92	503.73	1447.54	2324.74
PPR SA/KERING SA	12.61	247.33	1207.94	2092.70	1925.53
CORTINA HOLDINGS LTD	2.77	0.11	1.61	7.69	12.06
COMPAGNIE FINANCIERE RICHEMONT SA	1080.18	838.00	534.58	455.87	854.66
LVMH MOET HENNESSY LOUIS VUITTON SA	2642.58	4110.32	5313.62	6248.56	3740.95
STEVEN MADDEN LTD	41.74	32.49	40.51	64.23	(76.83)
COMPAGNIE FINANCIERE RICHEMONT SA	901.89	609.18	530.01	860.82	(46.59)

Table 9 Adjusted EVA for all samples

Source 10 Author's calculations

2.4.5 Performance change trend analysis

After obtaining the five-year EVA values of the sample companies, this thesis calculates the number of companies with positive EVA, the maximum, minimum, mean and standard deviation of EVA to analyze the M&A performance of the sample companies.

	N	Minimum	Maximum	Mean	Std. Deviation
T (-1)	39	-155.06	2642.58	480.5484	693.86746
T0	39	-13.32	4110.32	552.4314	852.40421
T1	39	-10.52	5313.62	662.1789	1042.73051
T2	39	-9.16	6248.56	753.7711	1175.68955
T3	39	-136.05	3740.95	808.9461	1059.63507
Valid N (listwise)	39				

Table 10 Descriptive Statistics

Source 11 Author's calculations

From tables above, it can be seen that:

(1) Among the 39 listed companies in the luxury industry, 33 companies had EVA greater than zero in the year before M&A, with an average EVA value of 480.55 and an overall positive business performance.

(2) In the year of M&A completion, 37 companies had EVA values greater than zero, the maximum value of EVA increased from 2642.58 to 4110.32, the minimum value of EVA increased from -155.06 to -13.32, and the average value of EVA increased from 480.55 to 552.43. Compared with the year before M&A, the operating performance of completed year increased significantly. compared with the year before the merger, the operating performance in the completed year increased significantly.

(3) In the first year after M&A, the number of enterprises with EVA greater than zero decreased slightly compared to the year of M&A completion, and the maximum and average values of EVA increased compared to the year of M&A completion.

(4) In the second year after the merger, the number of enterprises with EVA greater than zero did not change, and both the maximum value and the mean value reached new highs, and the standard deviation also became larger, indicating that the EVA values among enterprises were somewhat dispersed compared to the previous years

(5) In the third year after the merger, the number of enterprises with EVA greater than zero decreased compared with the previous year, and the maximum and minimum values of EVA started to decrease.

This thesis uses the Wilcoxon Signed Rank Test to analyze the fluctuation trend of EVA values of sample companies before and after M&A to avoid the EVA outliers of one company from affecting the overall trend.

	Yearly difference	Number	Percentage	Mean Rank	Sum of Ranks	Z-value ^a	Asymp. Sig. 2-tailed ^a
T0 - T (-1)	Negative Ranks	17	43.59%	18.06	307	-1.158	.247 ^b
	Positive Ranks	22	56.41%	21.5	473		
T1 - T (-1)	Negative Ranks	15	38.46%	15.2	228	-2.261	.024 ^b
	Positive Ranks	24	61.54%	23	552		
T2 - T (-1)	Negative Ranks	11	28.21%	14.82	163	-3.168	.002 ^b
	Positive Ranks	28	71.79%	22.04	617		
T3 - T (-1)	Negative Ranks	12	30.77%	15.83	190	-2.791	.005 ^b
	Positive	27	69.23%	21.85	590		

Ranks

- a. Wilcoxon Signed Ranks Test
- b. Based on negative ranks.

Table 11 Wilcoxon Signed Ranks Test for EVA Difference
Source 12 Author's calculations

From table 9, there are 17 companies whose performance decreased in the year of M&A completion compared to the year before M&A, 15 companies whose performance decreased in the first year after M&A compared to the year before M&A, 11 companies whose performance decreased in the second year after M&A compared to the year before M&A, and 12 companies whose performance decreased in the third year after M&A compared to the year before M&A. From table 10, it can be seen that M&A performance started to stabilize after the second year.

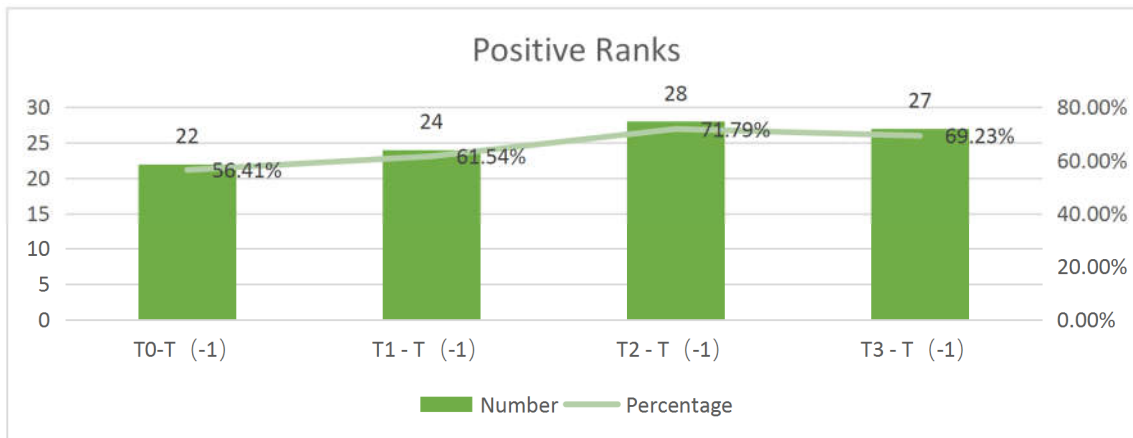


Figure 2 Positive Ranks Change
Source 13 Made by author

From the Wilcoxon Signed Rank Test results, it also can be seen that the Z-value in the year of completion of M&A compared to the year before M&A is -1.158, but it does not pass the significance test as the P-value is 0.247 and cannot be compared. The Z-value of -2.261 and P-value of 0.024 in the first year after the M&A compared to the year before M&A, which indicates good operating performance from the first year. In the second year after the merger, the Z-value was -3.168 compared to the year before the merger, and the EVA value tended to increase significantly with a p-value less than 0.05, reaching statistical significance. The operating performance in the third year after M&A is also higher than that in the year before M&A and tends to be stable.

The above empirical results show that the M&A performance starts to rise significantly in the first year after the M&A and exceeds that of the year in which the M&A is completed, and the operating performance continues to show a significant

upward trend in the second and third years after the M&A. From a long-term perspective, M&A brings some improvement to the operating performance of listed companies, but the short-term performance is not optimal.

The first hypothesis was confirmed. *Mergers and acquisitions enhance the performance of firms in the luxury industry.*

2.5 Empirical analysis

2.5.1 Research methodology

Multiple regression analysis method is an econometric statistical method to study the intrinsic relationship between dependent and independent variables. The specific steps are as follows.

(1) Establish a multiple linear regression prediction model based on the theory and analysis in the previous chapters.

(2) Analyze and test the multiple regression equation to eliminate uncorrelated variables.

As the author mentioned in the previous chapter, factors such as horizontal M&A, family ownership, and Cross-border M&A were also included in the selection of independent variables in this thesis, but due to the small sample in this thesis, none of the above factors ended up being significant, so they were eliminated in this step.

(3) Repeat the process until all variables have a significant effect on the dependent variable.

In this thesis, EVA values after M&A are taken as the dependent variables for regression analysis, and each influencing factor of M&A performance is taken as the independent variable, and the dependent and independent variables are brought into the equation to establish the regression model as follows:

$$EVA_i = \alpha + \beta_i \times X_i + \varepsilon$$

Where :

The intercept is represented by α ;

The error term is represented by ε .

2.5.2 Variable Definitions

Based on the 5 hypotheses in the previous chapter, 5 independent variables were selected. The pre- and post-merger EVA values were selected as dependent variables.

The dependent variable EVA_i represents the calculated EVA value of year i , $i = (T-1), (T+0), (T+1), (T+2), (T+3)$.

There are 6 independent variables used in this thesis which are the Goodwill-to-Total-Assets ratio(acquirer), the Book-to-Market ratio(acquirer), the Debt-to-Equity Ratio(acquirer), firm age(target), the transaction method, and industry correlation.

Name of variable	Descriptions	Type	Notation
Dependent variables			
EVA value	Calculated EVA in T+0, T+1, T+2, T+3, T-1	Numerical	EVA0, EVA1, EVA2, EVA3
Independent variables			
The Goodwill-to-Total-Assets Ratio(acquirer)	The Goodwill-to-Total-Assets Ratio= Goodwill/ Total Asset.	Numerical	GTA
The Book-to-Market ratio(acquirer)	The Book-to-Market ratio= Common shareholders' Equity/ Market Cap	Numerical	BM
The Debt-to-Equity Ratio(acquirer)	The Debt-to-Equity Ratio= Total Liabilities/ Total Shareholders' Equity	Numerical	DE
The age(target)	The time of establishment of the target company as of the year in which the acquisition was completed.	Numerical	TAGE
The transaction method	Transaction method for completing M&A, 1=cash transaction, 0=other	Binary	CASH

*Table 12 Variables Summary
Source 14 Made by author*

Through this step, the relationship between each influencing factor and EVA can be analyzed.

2.5.3 Variable correlation test

In order to examine the correlation between all variables, Pearson correlation test was performed using SPSS to avoid multicollinearity.

Correlations ^b						
		GTA	BM	DE	TAGE	CASH
GTA	Pearson Correlation	1	-.184	.206	.380*	.060
	Sig. (2-tailed)		.262	.208	.017	.715
BM	Pearson Correlation	-.184	1	-.188	-.186	.007
	Sig. (2-tailed)	.262		.252	.256	.966
DE	Pearson Correlation	.206	-.188	1	.316*	.029
	Sig. (2-tailed)	.208	.252		.050	.859
TAGE	Pearson Correlation	.380*	-.186	.316*	1	.048
	Sig. (2-tailed)	.017	.256	.050		.772
CASH	Pearson Correlation	.060	.007	.029	.048	1
	Sig. (2-tailed)	.715	.966	.859	.772	
*. Correlation is significant at the 0.05 level (2-tailed).						
b. Listwise N=39						

Table 13 Correlation matrix
Source 15 Author's calculations

According to the correlation matrix, the variables selected in this thesis are not highly correlated with each other and can be used simultaneously in the regression.

2.5.4 Regression model results

Based on the models mentioned before, the author performed multiple regression analysis and obtained the following data.

	Durbin-Watson	R	R Square	Adjusted R Square	F	Sig.(p value)
Dependent Variable: EVA0	2.007	.744	0.553	0.485	8.16	.000
Dependent Variable: EVA1	2.261	.717	0.514	0.44	6.973	.000
Dependent Variable: EVA2	2.278	.753	0.567	0.502	8.652	.000
Dependent Variable: EVA(t-1)	1.807	.744	0.554	0.486	8.194	.000
Dependent Variable: EVA4	2.071	.734	0.538	0.468	7.693	.000

Table 14 Regression summary and analysis of variance (ANOVA)
Source 16 Author's calculations

According to the results of the Durbin-Watson test it can be seen that all the Durbin-Watson values in the model with EVA value as dependent variable from (T-1) to (T+3) years are close to 2. This represents that there is no autocorrelation in the regression model this thesis uses.

R Square represents the degree of explanation of the dependent variable by the independent variables in the regression model. Adjusted R Square eliminates the effect of the number of independent variables and has better accuracy. In the model of this study, all the explanatory variables can roughly explain about 50% of the dependent variables, which is a medium degree of explanation.

Furthermore, the p value is less than 0.01, which proves that the regression model is statistically significant.

	EVA(-1)		EVA0		EVA1		EVA2		EVA3	
	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value
(Constant)	786.999***	0.000	762.65***	0.003	734.972**	0.020	632.025*	0.058	761.374**	0.014
GTA	31.196**	0.028	46.19***	0.008	54.697**	0.013	64.913***	0.006	61.645***	0.005
BM	-1.315**	0.014	-1.347**	0.035	-1.48*	0.068	-1.448*	0.091	-1.558**	0.049
DE	-12.644***	0.007	-14.843***	0.008	-16.308**	0.021	-15.253**	0.041	-8.642	0.198
TAGE	2.642	0.135	3.939*	0.067	6.414**	0.021	8.843***	0.004	5.434**	0.043
CASH	-650.433***	0.000	-772.843***	0.000	-783.717***	0.004	-880.584***	0.003	-944.846***	0.001

1% level of significance - ***, 5% level of significance - **, 10% level of significance - *

Table 15 Effect of M&A variables on EVA
Source 17 Author's calculations

The attribution model for EVA from one year prior to the acquisition to the third year after the acquisition can be expressed as follows:

$$\text{EVA}(-1)=31.20*\text{GTA}-1.32*\text{BM}-12.64*\text{DE}+2.64*\text{TAGE}-650.43*\text{CASH}+787+\varepsilon$$

$$\text{EVA}0=46.19*\text{GTA}-1.35*\text{BM}-14.84*\text{DE}+3.94*\text{TAGE}-772.84*\text{CASH}+762.65+\varepsilon$$

$$\text{EVA}1=54.70*\text{GTA}-1.48*\text{BM}-16.31*\text{DE}+6.41*\text{TAGE}-783.72*\text{CASH}+734.97+\varepsilon$$

$$\text{EVA}2=64.91*\text{GTA}-145*\text{BM}-15.25*\text{DE}+8.84*\text{TAGE}-880.58*\text{CASH}+632.03+\varepsilon$$

$$\text{EVA}3=61.65*\text{GTA}-1.56*\text{BM}-18.64*\text{DE}+5.43*\text{TAGE}-944.85*\text{CASH}+761.37+\varepsilon$$

Based on the results of the attribution analysis, the authors further elaborate on the effect of each independent variable on EVA.

The Goodwill-to-Total-Assets Ratio(acquirer)

The p-value of GTA in each year is less than 0.05, which proves that the variable is statistically significant and can explain the dependent variable. The coefficient of GTA was positive in all five years before and after the merger, representing that the GTA of the acquiring company was positively correlated with EVA, and the higher the GTA, the higher the EVA. A comparison of the absolute values of the coefficients shows that GTA

is the most influential on the post-merger performance, except for the transaction method. The author argues that this is due to the special nature of the luxury industry, where higher goodwill represents higher social status and social recognition, which will bring better post-merger performance for luxury companies.

Hypothesis 2.1 has been confirmed. *The higher the acquirer's goodwill to total assets ratio at the M&A compilation year, the better the post-merger performance of the acquirer.*

The Book-to-Market ratio(acquirer)

The p-value of BM in each year is less than 0.10, which proves that the variable is statistically significant and the coefficients are all negative. The higher the BM, the lower the EVA. Since BM above 1 means that people undervalue this company's stock, this also represents that the more undervalued the company's stock is, the lower the abnormal income from the merger.

Hypothesis 2.2 has been rejected. *The lower the acquirer's book-to-market ratio in the year before the merger, the better the post-merger performance of the firm.*

The Debt-to-Equity Ratio (acquirer)

The p-value of DE is lower than 5% in all years except the third year after the acquisition, and the coefficient is negative. This represents that a higher Debt-to-Equity ratio leads to a lower EVA value. This demonstrates that a higher Debt-to-Equity ratio not only leads to an unhealthy capital structure of the company, but also leads to difficulties in generating abnormal income after the merger.

Hypothesis 2.3 has been rejected. *The lower the acquirer's D/E ratio in the year before the merger, the worse the post-merger performance.*

The age of the target company

The p-value of TAGE in the year before the merger is greater than 0.10, but it is negligible because the EVA of the acquirer before the merger is not affected by the target company. The p-value of TAGE in all other years is less than 0.05 and the coefficient is positive, which proves that acquiring a company that has been established for a longer period of time is likely to lead to better post-merger performance.

Hypothesis 2.4 has been rejected. *The age of the target company has a positive impact on the post-merger performance of the acquirer company.*

The transaction method

Cash transactions have a significant negative effect on M&A performance and are statistically significant in all years. This demonstrates that deals completed using cash transactions do not end up with positive post-merger performance. In previous studies, the use of cash payments was often attributed to the acquirer's perception that its stock was undervalued, but the author argues that the acquirer's manager may have overestimated the value of its stock due to sentiments such as arrogance, and chose to pay in cash that would have crowded out the company's free cash flow, thus leading to poor post-merger performance.

Hypothesis 3 has been rejected. *Cash transactions will lead to worse post-merger performance.*

2.6 Sub-sample analysis

The luxury industry originated early but developed relatively late. As early as the 18th century, Vacheron Constantin watches already represented the symbol of luxury goods.⁴ The development of the luxury industry has gone through four phases, from the emergence of Europe to the development of globalization, and its development is often accompanied by the development of emerging economies, which also represents the influence of the growth rate of wealth on the consumption of luxury goods is very strong. The reason why the luxury industry would be considered a relatively young industry is that it did not really enter the stage of industrialization and did not apply professional enterprise management until around 1980s. The three major luxury groups LVMH, Kering and Richemont, which developed or reformed around 1980~1990, have also become one of the focuses of this thesis which will be studied in detail later.

To further explore the impact of each influencing factor on the giant companies, the author screened 39 deals based on the Market capitalization of the acquirer in the year of completion of the acquisition, using €10 billion of market capitalization as the criterion for screening. Finally, 20 deals were obtained, all of which were completed by LVMH, Kering and Richemont. Since the 21st transaction was the acquisition of Manufacture Roger Dubuis SA by Richemont in 2009, and the market cap of Richemont was 6.2 billion euros, the author included it in the sub-sample.

⁴ <https://www.vacheron-constantin.com/en4/manufacture/history.html>

The author uses the same model as above with EVA values before and after the M&A completed by LVMH, Kering and Richemont from 2008-2017 as the dependent variable.

	Durbin-Watson	R	R Square	Adjusted R Square	F	Sig.
Dependent Variable: EVA0	2.286	0.91	0.828	0.771	14.458	0
Dependent Variable: EVA1	2.586	0.867	0.751	0.668	9.052	0
Dependent Variable: EVA2	2.166	0.87	0.757	0.677	9.368	0
Dependent Variable: EVA3	1.13	0.754	0.569	0.426	3.964	0.017
Dependent Variable: EVA(T-1)	1.944	0.884	0.782	0.709	10.763	0

Table 16 Regression summary and analysis of variance (ANOVA) for sub-sample
Source 18 Author's calculations

According to the above table, it is observed that all the models are still statistically significant and according to the Durbin-Watson test, there is no autocorrelation of the independent variables in the models from the year before the merger to the second year after the merger. The five independent variables have a stronger explanatory power for the sub-sample than the full sample according to the increase in R Square and Adjusted R Square.

	EVA(-1)		EVA0		EVA1		EVA2		EVA3	
	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value
Sub-sample										
(Constant)	1358.279***	0	947.942**	0.013	1123.771**	0.04	894.581	0.126	1427.789**	0.028
GTA	72.944***	0.001	117.968***	0	136.794***	0	152.926***	0	109.111***	0.006
BM	-11.486**	0.021	-6.764	0.199	-10.23	0.191	-9.493	0.269	-12.148	0.187
DE	-24.62***	0.007	-40.743***	0	-45.432***	0.004	-45.661***	0.007	-23.502	0.154
TAGE	0.673	0.712	3.63*	0.093	4.982	0.118	8.429**	0.023	2.686	0.459
CASH	-270.559	0.394	-590.85	0.111	-211.013*	0.69	-538.025	0.363	-259.068	0.677
Full-sample										
(Constant)	786.999***	0.000	762.65***	0.003	734.972**	0.020	632.025*	0.058	761.374**	0.014
GTA	31.196**	0.028	46.19***	0.008	54.697**	0.013	64.913***	0.006	61.645***	0.005
BM	-1.315**	0.014	-1.347**	0.035	-1.48*	0.068	-1.448*	0.091	-1.558**	0.049
DE	-12.644***	0.007	-14.843***	0.008	-16.308**	0.021	-15.253***	0.041	-8.642	0.198
TAGE	2.642	0.135	3.939*	0.067	6.414**	0.021	8.843***	0.004	5.434**	0.043
CASH	-650.433***	0.000	772.843***	0.000	783.717***	0.004	880.584***	0.003	944.846***	0.001
1% level of significance - ***, 5% level of significance - **, 10% level of significance - *										

Table 17 Effect of M&A variables on EVA for sub- and full- sample
Source 19 Author's calculations

Based on the coefficients of the influencing factors, it can be seen that the goodwill to asset ratio has a much higher positive impact on post-merger for giant companies (conglomerates) than for the full sample.

At the same time the more leveraged the firm is before the merger, the worse the post-merger performance is, and the negative correlation is more significant for the sub-sample than for the full sample.

2.7 Main findings and discussion

This thesis employs EVA performance evaluation model to evaluate the performance of 39 luxury industry M&A cases during the 10-year period from 2008-2017 for the pre- and three-year post-merger period, and uses the Wilcoxon test for post-merger performance. The multiple linear regression model was also used for attribution analysis and the following conclusions were obtained:

The mean value of EVA of luxury industry companies increased from the year of M&A completion to the third year after the M&A compared to the year before the M&A, indicating a significant positive impact of the M&A on the long-term performance of luxury companies. This explains why more and more companies in the luxury industry have been enthusiastic about mergers and acquisitions in recent years.

The acquirer's goodwill to total assets ratio and the age of the target company are positively correlated with post-merger performance. The higher the acquirer's goodwill to total assets ratio at the M&A compilation year, the better the post-merger performance of the acquirer. Conglomerates with high goodwill to asset ratios will have more positive post-merger performance than the entire industry.

The acquirer's book-to-market ratio, the acquirer's D/E ratio and cash payment are negatively correlated with post-merger performance. The lower the acquirer's book-to-market ratio in the year before the merger, the better the post-merger performance of the firm. The negative correlation between leverage and post-merger performance of conglomerates is more pronounced. The lower the acquirer's D/E ratio in the year before the merger, the worse the post-merger performance. Cash transactions will lead to worse post-merger performance.

The age of the target company has a positive impact on the post-merger performance of the acquirer company.

2.8 Managerial implications

The literature review section identifies the advantages and disadvantages of different research approaches to M&A performance measurement and establishes a performance

measurement model that can be used in an undefined industry by identifying the independent variables that have been used before.

In the previous paragraphs of this chapter, an attribution analysis of post-merger performance in the luxury industry was conducted and hypotheses were tested. In addition to investigating the impact of selected factors on the acquirer's own post-merger performance, this thesis also takes into account that the objective of EVA is to maximize shareholders' interests, so the author gives the following recommendations for acquirers and shareholders.

For investors, the higher the goodwill to total asset ratio of a luxury company in the year of M&A completion, the more likely it is to generate positive operating performance in the later years, which makes it more worthy of investment, especially for conglomerates. On the other hand, the higher the debt-to-equity ratio of luxury companies before the completion of M&A, the higher the possibility of poor performance after the M&A, which is not worth investing in.

For luxury acquirers, M&A does generate positive post-merger performance, but the following issues need to be noted. First, acquiring a target company that has been established for a longer period of time contributes to higher post-merger performance for the acquirer. In addition, high leverage prior to the M&A can lead to negative post-merger performance. Finally, try to use non-cash payment methods, such as stock and earnouts or other combinations, at the time of the transaction.

2.9 Limitations and Recommendations

(1) Small sample size.

Empirical research findings are usually based on large samples, but since the M&A history of the luxury industry is relatively short and there is no independent industry code, the sample that can be found through the database is limited, so the sample size becomes the biggest limitation of this study. In particular, in the later stage of the investigation of the influencing factors, although the author found several factors that may affect the post-merger performance through the summary of previous studies, due to the small sample size, there were several cases that the influencing factors were not statistically significant, so several factors that had significant influence in previous studies had to be eliminated. When the authors used the Zephyr database to screen the luxury M&A sample, the

classification from Deloitte's Luxury Industry Report was used as a filter to compensate for the fact that luxury does not have a separate industry code. The luxury classification used by Deloitte is almost identical to the one used by the Bain Corporation. The author believes that for future researchers, they can use other available and acknowledged industry reports in addition to Deloitte's and the Bain's used in this thesis, so as to be able to screen more luxury industry-related transaction records from the Zephyr database and thus expand the sample.

(2) Comprehensiveness of information disclosure.

Although this thesis collected information on M&A of listed companies in the luxury industry and conducted research, the disclosure information was not very accurate and comprehensive, so it may lead to some inaccuracies or even errors in the selection of sample characteristics, thus affecting the final empirical research results.

(3) Research interval.

The author explores the long-term impact of M&A events on the company through performance changes over a five-year period. Of course, five years is only a relatively long-term concept, so perhaps in the future other researchers can expand on the basis of this thesis and extend the research interval to a relatively longer period to explore the impact of M&A on the luxury industry.

Conclusion

Investigating the impact of M&A on the performance of acquirer firms in the luxury industry is the main question that this thesis attempts to answer. In order to answer this question, the author conducts a detailed study on the theory of M&A, the influencing factors of M&A, the motivation of M&A, and the research methodology of M&A. With the help of the existing literature, the author identifies several factors that may have an impact on the post-merger performance of the luxury industry. The influencing factors are divided into two main aspects: firm characteristics and transaction characteristics.

Based on the literature review, the authors propose the main hypotheses of this study and validate the impact of M&A events on the performance of acquirer firms in the luxury industry and the factors that influence post-merger firm performance, respectively. The authors collected 39 luxury industry M&A transactions that occurred between 2008 and 2017 for an empirical study and established a multiple linear regression model, using characteristics such as the Goodwill-to-Total-Assets Ratio (acquirer), the Book-to-Market ratio(acquirer), the Debt-to-Equity Ratio(acquirer), the age(target), the transaction method as independent variables to examine the effects of the above independent variables on post-merger performance.

From the results of Wilcoxon test, it can be seen that the long-term effect of M&A on luxury industry is significant and positive. However, due to the sample size of this thesis, the short-term performance of the luxury industry cannot be effectively verified. In the attribution analysis, considering the specificity of the luxury industry, the author mainly selects the influencing factors through goodwill, market reaction and riskiness. In the empirical results, goodwill to total assets ratio and acquirer's age are positively related to post-merger performance, while the book to market ratio, D/E ratio, and cash payment is negatively related to post-merger performance. After several iterations, the five factors selected in this thesis were found to be statistically significant.

In the luxury industry, there is a clear first echelon of conglomerates, mainly LVMH, Kering and Richemont, and in order to investigate the specificity of conglomerates, the author conducted another analysis including only conglomerates (€10 billion of market capitalization as the criterion) in the sub-sample. The empirical results for the sub-

sample demonstrate that the effects of goodwill and leverage are more pronounced in the sub-sample than in the full sample. The goodwill to asset ratio has a much higher positive impact on post-merger performance and higher leverage has a higher negative impact on post-merger performance.

To conclude, the findings of this thesis conclusively demonstrate positive post-merger changes in the overall performance of the luxury industry and the main factors influencing M&A in this industry. At the same time, the time period explored in this thesis, which began with the 2008 economic crisis, has always shown a positive recovery trend in the industry, and M&A has brought positive performance changes in the industry, suggesting that luxury acquirers can still draw on the post-2008 economic crisis experience for their M&A activities even after the COVID-19 pandemic.

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Appendices

Appendix 1 Zephyr filter criteria

Product name	Zephyr		
Software version	30.0		
1.	Listed/Unlisted/Delisted companies: listed Acquirer	369,135	369,135
2.	Deal type: Acquisition, Merger	782,589	193,749
3.	Time period: on and after 01/01/2008 and up to and including 31/12/2017 (completed-confirmed, completed-assumed)	1,020,291	81,938
4.	Current deal status: Completed	1,875,309	81,937
5.	NAICS 2017 (primary codes): 314910 - Textile Bag and Canvas Mills, 315990 - Apparel Accessories and Other Apparel Manufacturing, 316210 - Footwear Manufacturing, 339910 - Jewelry and Silverware Manufacturing, 423940 - Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers, 424320 - Men's and Boys' Clothing and Furnishings Merchant Wholesalers, 424330 - Women's, Children's, and Infants' Clothing and Accessories Merchant Wholesalers, 424340 - Footwear Merchant Wholesalers, 446120 - Cosmetics, Beauty Supplies, and Perfume Stores, 4481 - Clothing Stores, 448110 - Men's Clothing Stores, 448120 - Women's Clothing Stores, 448130 - Children's and Infants' Clothing Stores, 448140 - Family Clothing Stores, 448150 - Clothing Accessories Stores, 448190 - Other Clothing Stores, 44821 - Shoe Stores, 4483 - Jewelry, Luggage, and Leather Goods Stores, 448310 - Jewelry Stores, 448320 - Luggage and Leather Goods Stores, 4522 - Department Stores, 811430 - Footwear and Leather Goods Repair (Acquirer)	9,192	982
6.	Business description, English trade description, overview, industry descriptions: Any Words("luxury") (Acquirer)	7,187	83
Boolean search: 1 And 2 And 3 And 4 And 5 And 6			
		TOTAL	83

Appendix 2 Adjusted NOPAT calculation result for example

2.1 Value-building expenditure adjustments for example

In Millions of Euros	2016	2017	2018	2019	2020
Value-building expenditure	1171	1204	1191	1428	1503
Average annual apportionment	390	401	397	476	501
Cumulative apportionment	1089	1148	1189	1274	1374
NOPAT ADJUSTMENT+	82	56	2	154	129
Cumulative impact on capital employed	82	138	140	294	423

2.2 Adjustment on deferred tax provisions for example

In Millions of Euros	2016	2017	2018	2019	2020
Deferred tax	(107)	(14)	54	(15)	(16)
Tax adjustment	107	14	(54)	15	16
Non-adjusted tax expense	370	360	432	381	267
Adjusted tax expense	477	374	378	396	283
Adjusted tax rate	16.7%	15.9%	16.2%	9.6%	13.6%

2.3 Adjustment on inventory write-downs for example

In Millions of Euros	2016	2017	2018	2019	2020
Inventory write-downs	(44)	(45)	(44)	(95)	(78)
NOPAT adjustment	44	45	44	95	78
Capital employed adjustment	44	45	44	95	78

2.4 Adjustment on operating leases for example

In Millions of Euros	2016	2017	2018	2019	2020
Operating leases	(668)	(680)	(638)	(703)	(672)
NOPAT adjustment	668	680	638	703	672
Capital employed adjustment	668	680	638	703	672

Appendix 3 Adjusted NOPAT calculation result

	Acquirer name	T (-1)	T0	T1	T2	T3
1	HENGDELI HOLDINGS LTD	48.12	56.50	43.51	64.95	100.99
2	LVMH MOET HENNESSY LOUIS VUITTON SA	2375.72	2499.23	2285.35	2856.14	3406.92
3	COMPAGNIE FINANCIERE RICHEMONT SA	846.77	1001.26	852.69	709.92	1171.03
4	STEVEN MADDEN LTD	23.42	38.01	56.39	73.77	90.19
5	COMPAGNIE FINANCIERE RICHEMONT SA	986.19	828.17	669.40	1138.10	1689.66
6	LVMH MOET HENNESSY LOUIS VUITTON SA	2499.23	2285.35	2856.14	3406.92	3718.47
7	COMPAGNIE FINANCIERE RICHEMONT SA	828.17	669.40	1138.10	1689.66	2109.02
8	STEVEN MADDEN LTD	39.73	58.94	77.10	94.26	110.17
9	VERITE CO., LTD	(9.53)	(6.28)	(0.49)	(0.59)	2.66
10	LVMH MOET HENNESSY LOUIS VUITTON SA	2285.35	2856.14	3406.92	3718.47	3879.35
11	SALVATORE FERRAGAMO SPA	(19.38)	72.34	120.48	139.89	166.47
12	LVMH MOET HENNESSY LOUIS VUITTON SA	2856.14	3406.92	3718.47	3879.35	3858.12
13	PPR SA/KERING SA	1021.51	1215.09	1467.51	1053.27	1258.95
14	STEVEN MADDEN LTD	56.39	73.77	90.19	105.41	91.60
15	VERITE CO., LTD	(6.70)	(0.52)	(0.63)	2.84	3.98
16	PPR SA/KERING SA	1215.09	1467.51	1053.27	1258.95	987.84
17	SALVATORE FERRAGAMO SPA	174.33	219.91	261.31	280.24	297.27
18	CORTINA HOLDINGS LTD	8.72	14.65	13.22	13.88	11.98
19	LVMH MOET HENNESSY LOUIS VUITTON	3406.92	3718.47	3879.35	3858.12	4023.20

	SA					
20	COMPAGNIE FINANCIERE RICHEMONT SA	1808.36	2544.34	2938.50	2960.38	3659.83
21	BONIA CORPORATION BHD	11.93	12.41	13.17	16.23	14.70
22	LVMH MOET HENNESSY LOUIS VUITTON SA	3718.47	3879.35	3858.12	4023.20	4063.58
23	PPR SA/KERING SA	1467.51	1053.27	1258.95	987.84	1135.91
24	STEVEN MADDEN LTD	110.17	95.74	102.76	92.66	84.36
25	HOUR GLASS LTD, THE	31.76	31.61	33.34	29.35	27.36
26	TOD'S SPA	139.39	105.77	102.97	105.51	95.60
27	PPR SA/KERING SA	1053.27	1258.95	987.84	1135.91	2094.43
28	COMPAGNIE FINANCIERE RICHEMONT SA	2915.23	2950.03	3638.64	2726.11	2588.94
29	LVMH MOET HENNESSY LOUIS VUITTON SA	3879.35	3858.12	4023.20	4063.58	5662.16
30	CORTINA HOLDINGS LTD	14.60	12.60	8.90	10.61	17.35
31	STEVEN MADDEN LTD	114.71	123.13	111.02	101.07	121.66
32	HOUR GLASS LTD, THE	41.82	36.61	32.23	30.04	32.76
33	PPR SA/KERING SA	1258.95	987.84	1135.91	2094.43	2918.54
34	PPR SA/KERING SA	987.84	1135.91	2094.43	2918.54	2610.34
35	CORTINA HOLDINGS LTD	12.60	8.90	10.61	17.35	22.41
36	COMPAGNIE FINANCIERE RICHEMONT SA	1938.75	1619.75	1372.47	1437.65	1723.89
37	LVMH MOET HENNESSY LOUIS VUITTON SA	4063.58	5662.16	7219.30	7885.00	5135.63
38	STEVEN MADDEN LTD	109.06	99.29	119.50	131.06	(25.08)
39	COMPAGNIE FINANCIERE RICHEMONT SA	1716.30	1483.38	1545.78	1756.23	1311.19

Appendix 4 WACC result for all samples

Acquirer name	WACC				
	Y (-1)	Y0	Y1	Y2	Y3
HENGDELI HOLDINGS LTD	7.91%	7.34%	6.09%	5.67%	6.44%
LVMH MOET HENNESSY LOUIS VUITTON SA	8.53%	8.55%	7.32%	7.59%	8.75%
COMPAGNIE FINANCIERE RICHEMONT SA	10.26%	10.59%	9.19%	9.14%	10.33%
STEVEN MADDEN LTD	9.77%	10.57%	10.48%	10.52%	10.06%
COMPAGNIE FINANCIERE RICHEMONT SA	10.15%	8.80%	8.71%	9.80%	8.89%
LVMH MOET HENNESSY LOUIS VUITTON SA	8.31%	7.10%	7.33%	8.43%	7.95%
COMPAGNIE FINANCIERE RICHEMONT SA	7.67%	7.49%	8.32%	7.43%	6.61%
STEVEN MADDEN LTD	10.66%	10.58%	10.64%	10.17%	10.19%
VERITE CO., LTD	8.92%	9.30%	11.74%	11.04%	9.25%
LVMH MOET HENNESSY LOUIS VUITTON SA	6.50%	6.60%	7.55%	7.03%	6.27%
SALVATORE FERRAGAMO SPA	8.69%	10.48%	13.50%	14.91%	14.02%
LVMH MOET HENNESSY LOUIS VUITTON SA	7.26%	8.34%	7.86%	7.03%	6.90%
PPR SA/KERING SA	5.55%	6.48%	5.87%	5.00%	5.21%
STEVEN MADDEN LTD	10.35%	10.36%	9.91%	9.96%	9.99%
VERITE CO., LTD	10.08%	12.67%	11.94%	10.04%	11.24%
PPR SA/KERING SA	7.47%	6.91%	5.90%	6.24%	5.77%

SALVATORE FERRAGAMO SPA	13.50%	14.91%	14.02%	13.49%	13.26%
CORTINA HOLDINGS LTD	4.17%	4.04%	3.40%	3.81%	4.18%
LVMH MOET HENNESSY LOUIS VUITTON SA	9.70%	9.30%	8.33%	8.27%	8.46%
COMPAGNIE FINANCIERE RICHEMONT SA	9.94%	9.02%	7.94%	9.00%	8.98%
BONIA CORPORATION BHD	8.56%	8.25%	7.22%	7.95%	8.78%
LVMH MOET HENNESSY LOUIS VUITTON SA	6.79%	6.05%	5.85%	5.65%	5.13%
PPR SA/KERING SA	5.27%	4.48%	4.62%	4.05%	3.55%
STEVEN MADDEN LTD	4.93%	4.34%	4.67%	4.78%	4.44%
HOUR GLASS LTD, THE	4.26%	5.55%	5.61%	4.97%	5.17%
TOD'S SPA	4.85%	3.66%	2.58%	2.26%	2.61%
PPR SA/KERING SA	4.39%	4.52%	3.94%	3.45%	3.40%
COMPAGNIE FINANCIERE RICHEMONT SA	7.18%	8.11%	8.00%	7.10%	7.34%
LVMH MOET HENNESSY LOUIS VUITTON SA	6.68%	6.52%	6.44%	5.87%	5.21%
CORTINA HOLDINGS LTD	2.71%	2.82%	2.46%	2.85%	2.78%
STEVEN MADDEN LTD	5.16%	5.57%	5.63%	5.20%	6.03%
HOUR GLASS LTD, THE	5.14%	5.19%	4.57%	4.81%	5.14%
PPR SA/KERING SA	4.20%	3.61%	3.14%	3.12%	3.67%
PPR SA/KERING SA	5.01%	4.42%	4.27%	5.10%	3.39%
CORTINA HOLDINGS LTD	5.79%	5.21%	5.53%	6.71%	5.45%
COMPAGNIE FINANCIERE RICHEMONT SA	5.59%	4.89%	5.12%	5.07%	3.94%
LVMH MOET HENNESSY - LOUIS VUITTON SE	4.54%	4.15%	4.77%	3.79%	2.65%
STEVEN MADDEN LTD	9.40%	8.56%	10.01%	7.31%	6.27%
COMPAGNIE FINANCIERE RICHEMONT SA	4.90%	5.13%	5.09%	3.95%	3.52%