FAKULTÄT FÜR BETRIEBSWIRTSCHAFTSLEHRE
Lehrstuhl für Corporate Finance
Prof. Ernst Maug, Ph.D.

UNIVERSITÄT MANNHEIM

M A S T E R T H E S I S
Spring Term 2022
(As of 5. September 2022)

Prerequisites:
- Proficiency in Microsoft Excel and willingness to become acquainted with statistical analysis software (e.g., Stata)
- Solid command of English
- Ability to conduct own data research
- Good knowledge of methods in Corporate Finance (company valuation etc.)

Topics are either case studies or empirical studies in corporate finance. Therefore, conducting literature research in research journals and especially in books is generally less important compared to data research in newspapers, databases and/or homepages.

The thesis can be written in German or English. Specific requirements are noted in the individual topic descriptions.

Please refer to the information available on our homepage at https://www.bwl.uni-mannheim.de/maug/lehre/masterlehre/masters-thesis/ , especially the document "How to Write a Thesis".

For case studies, please regard the following references:

Company valuation:
- In general: see literature references for the course Corporate Finance 1 on our homepage
- Banks: Copeland, T. E., Koller, T., Murrin, J., 2000, Valuation, 3rd Ed., Wiley, Chapter 21
- Implementation in Excel: Benninga, S., 2008, Financial Modeling, 3rd Ed., MIT Press

Event studies:
- Lecture Slides, Corporate Finance 1, Event Study Methodology
- Example: Weston, J. F., Siu, J. A., Johnson, B. A., Takeovers, Restructuring, and Corporate Governance, 3rd Ed., Prentice Hall, Appendix B, pp. 171-185
- Formal representation: Campbell, J. Y., Lo, A. W., and MacKinlay, A. C., 1997, The Econometrics of Financial Markets, Chapter 4
- Additional Method for very (!) many events: Dittmann, I., Maug, E., Schneider, C. (2008), How Preussag became TUI: A Clinical Study of Institutional Blockholders and Restructuring in Europe, Financial Management, 37 (3), pp. 571-598

Topic 1: Microsoft acquires Activision Blizzard

Supervisor: Minrui Gong

As the Covid-19 pandemic swept the globe, sending millions of people under lockdown, tens of billions of cash got pumped into the gaming industry as people found alternatives to face-to-face interactions in the virtual worlds offered by video games. "The game industry's swimming in cash," said Professor Joost van Dreunen of New York University.

Against this backdrop, on January 18th, 2022, Microsoft (NASDAQ: MSFT) announced an acquisition of Activision Blizzard (NASDAQ: ATVI), the fifth largest video game company worldwide. Mr Satya Nadella, Chairman and CEO of Microsoft, commented: "Gaming is the most dynamic and exciting category in entertainment across all platforms today and will play a key role in the development of metaverse platforms. We're investing deeply in world-class content, community and the cloud to usher in a new era of gaming that puts players and creators first and makes gaming safe, inclusive and accessible to all." Microsoft offered to purchase 100% of Activision Blizzard's equity for 95.00 USD per share in cash, which represents a premium of 45.28% based on the latter's closing price prior to the announcement.

Founded by Bill Gates and Paul Allen in 1975, Microsoft has grown into a technology giant and become a legend in the PC industry. In 2000, along with the announcement of Microsoft's first Xbox console, Microsoft transitioned its internal Games Group into a separate division, which has been growing ever since through a series of acquisitions. After acquiring Actvision Blizzard, Microsoft Gaming is expected to rank third by revenue in the global gaming market, following Tencent and Sony. Activision Blizzard was the product of a merger between Activision Inc. and Vivendi Games in 2008. It owns some of the most popular game franchises, such as Call of Duty, World of Warcraft, Candy Crush Saga and Overwatch. Lately, the company has been involved in multiple controversies and lawsuits regarding patent infringement, sexual harassment, and employee discrimination.

The goal of this thesis is to evaluate the acquisition deal and to determine whether the terms were fair. To that end, the student should first perform a comprehensive industry analysis. Next, the student should conduct a DCF and a multiple-based valuation for Activision Blizzard, and discuss potential synergies. To assess stock market reaction around the merger announcement, the candidate is required to analyze the two companies and their competitors with event-study methods. The candidate should elaborate the results referring to relevant literature on market responses to M&A announcements.

Preliminaries: Ability to conduct company valuations and event studies in Excel.

Introductory Literature:
The announcement: https://news.microsoft.com/2022/01/18/microsoft-to-acquire-activision-blizzard-to-bring-the-joy-and-community-of-gaming-to-everyone-across-every-device/

Topic 2: Pfizer acquires Biohaven

Supervisor: Minrui Gong

Migraine, usually a throbbing pain felt in one side of the head, affects as many as 15% of the adult population in most countries. Without a cure, patients must resort to pain killers to reduce the symptoms. Many researchers believe migraine to be closely connected to the trigeminal nerve, and therefore have currently developed treatments to deactivate a molecule called CGRP or its receptor within it. The new treatments are specifically designed to act on the trigeminal pain system and are thus more effective in relieving acute migraine symptoms.

Biohaven (NYSE: BHVN), with one approved CGRP-inhibiting drug (remegepant, under the trade name NURTEC® ODT) and six others in the pipeline, has great potential in this young market. Pfizer (NYSE: PFE), having earned an enormous windfall from selling covid vaccines, seeks to diversify its business and to invest in new growth opportunities. In November 2021, Pfizer engaged with Biohaven and entered into a co-marketing agreement of two CGRP-inhibiting drugs (remegepant and zavegepant, with the latter still pending for approval at the time of the agreement). In the meantime, Pfizer purchased 2.6% of Biohaven's shares for 462.5 million USD in cash.

On May 10th, 2022, Pfizer announced it reached an agreement with Biohaven to purchase the latter's remaining shares for 148.50 USD per share, which represents a premium of 78.6% based on Biohaven's closing price prior to the announcement. Subsequently, Pfizer will spin off Biohaven's non-CGRP pipelines to a new company – New Biohaven. Biohaven's original shareholders will receive 0.5 share in the new company for each share held in the old one. In addition, Pfizer will repay Biohaven's third-party debt and redeem all redeemable preferred stocks.

The goal of this thesis is to evaluate the acquisition deal and to determine whether the terms were fair. To that end, the student should first perform a comprehensive industry analysis. Next, the student should conduct a DCF and a multiple-based valuation for Biohaven and discuss potential synergies. To assess stock market reaction around the merger announcement, the candidate is required to analyze the two companies and their competitors with event-study methods. The candidate should elaborate the results referring to relevant literature on market response around M&A announcements.

Preliminaries: Ability to conduct company valuations and event studies in Excel.

Introductory Literature:
The announcement: https://www.biohavenpharma.com/investors/news-events/press-releases/05-10-2022

Topic 3: Philip Morris acquires Swedish Match

Supervisor: Minrui Gong

Each year, more than seven million people die from tobacco use. To counter the tobacco epidemic, governments worldwide increasingly adopt measures to restrict smoking and to protect the non-smokers. Especially under pressure are the tobacco manufacturers. Instead of becoming part of the problem, some of them try to become part of the solution. In July 2021, Jacek Olczak, the CEO of Phillip Morris International (PMI; NYSE: PM), called on the UK government to impose a cigarette ban by 2030.

PMI, with its famous best-seller Marlboro, and the leading heated tobacco brand, IQOS, is among the other six largest players in the global tobacco industry under the common name Big Tobacco. Starting in 1874 from a single shop run by a London tobacconist, Philip Morris, it has grown into a multinational corporation selling products in over 180 countries. However, controversies accompanied its development. PMI has been a frequent target of lawsuits by organizations and governments. For instance, in 1999, PMI, among other eight cigarette manufacturers, was accused by the US department of Justice of fraudulently deceiving the US public of the health impact of smoking. PMI has also been constantly under fire of anti-tobacco campaigns. In 2018, activists accused PMI of “hypocrisy” as it rolled out anti-smoking ads while promoting its own tobacco alternatives at the same time.

Swedish Match (FRA: SWMC), a Stockholm-based hundred-year-old manufacturer of tobacco, matches and lighters, is the market leader in the US markets of nicotine pouch and chewing tobacco. It is a good candidate to expand PMI’s portfolio of cigarette alternatives. On November 19th, 2021, an analyst disclosed that Swedish Match might be acquired by a US bidder without naming the acquiror. On May 9th, 2022, it was reported that PMI was in talks to acquire Swedish Match. Two days later, the deal was announced. PMI offered to buy 100% of Swedish Match’s shares for 106 SEK per share in cash, which represents a rumor bid premium (a premium based on the day before the acquisition was first rumored) of 61.24% based on Swedish Match’s closing price on November 18th, 2021, or an announced bid premium of 11.58% based on its closing price on May 10th, 2022.

The goal of this thesis is to evaluate the acquisition deal and to determine whether the terms were fair. To that end, the student should first perform a comprehensive industry analysis. Next, the student should conduct a DCF and a multiple-based valuation for Swedish Match and discuss potential synergies. To assess stock market reaction around the merger announcement, the candidate is required to analyze the two companies and their competitors with event-study methods. The candidate should elaborate the results referring to relevant literature on market response around M&A announcements.

Preliminaries: Ability to conduct company valuation and event studies in Excel.

Introductory Literature:
The announcement: https://www.swedishmatch.com/Media/Pressreleases-and-news/Press-releases/2022/statement-by-the-board-of-directors-of-swedish-match-ab-in-relation-to-the-public-cash-offer-by-philip-morris-holland-holdings-b.v/

Topic 4: InPost SA IPO

Supervisor: Hamed Davari

On 27 January 2021, InPost S.A., the Polish e-commerce enablement company, got listed on Euronext Amsterdam. InPost was listed through the admission to trading of 500 million shares, which were all the outstanding shares, with the issue price set at €16.00 per share. The company's market capitalization was €8.0 billion on the day of listing. With a considerable investors demand, InPost's shares closed 15% higher than the offer price, leading to a market capitalization of €9.2 billion.

InPost S.A ("InPost") is an e-commerce enablement platform founded in 1999 by Rafal Brzoska in Poland. In contrast to standard courier delivery for goods, InPost offers a network of automated lockers — which the company calls automatic parcel machines (APMs) — located around towns and cities where customers can pick up purchases more or less at their convenience, rather than waiting for a courier to arrive. InPost operates 12,254 APMs, including over 1,100 in UK, as well as to-the-door couriers and fulfilment services to e-commerce merchants. In 2020, InPost handled 249 million parcel deliveries through its APMs, working with over 26,000 merchants. Strategically positioned in the fast-growing e-commerce ecosystem, InPost benefits from supportive market trends.

APMs claims that its locker delivery results in a reduction of CO2 emissions by two-thirds compared to to-the-door deliveries in urban areas and 90% in rural areas as well as a significant reduction in congestion. In addition, APMs provide a more convenient solution to parcel delivery for consumers, allowing for 24/7 access without the need for consumers to stay at home.

The goal of this thesis is to value InPost SA to determine whether the offer price of €16 per share was fair. To do so, the student should perform a comprehensive analysis of the industry. Then, the student should perform a fundamental valuation and a multiples-based valuation. To assess the market reactions to the announcement, the student is required to perform a study of the InPost SA competitors. The student should elaborate on the first day returns.

Preliminaries: Ability to conduct company valuations and event studies in Excel or Stata.

Introductory Literature: InPOst Prospectus

Topic 5: Does inventor mobility predict (ensue) M&As/JV/alliances?

Supervisor: **Hamed Davari**

Inventors who change their job carry knowledge, expertise, and information to their new employer. As such, inventor mobility reveals critical information about the current and future technologies of the previous employer, which enables the new employer to learn via the inventor about otherwise unknown information on synergy opportunities between itself and the inventor's previous employer or a threat of a substitute product. Therefore, the new employer would be interested in establishing a relationship with the previous employer through an acquisition or in form of a Joint venture/strategic alliance in order to benefit from the complementary technology and human capital. Alternatively, the new employer may seek to acquire the old employer to kill the new, competing technologies (Cunningham et. al, 2021). Non-compete agreements (NCA) and inevitable disclosure doctrine (IDD) are legal tools specifically designed to preempt the negative phenomenon described above by restricting inventors' mobility.

The candidate is first expected to do a comprehensive literature review on NCA and IDD in order to review their theoretical and empirical grounds in economics and finance literature and also explain how they function in the US legal system. Second, (s)he has to put together the data sets on inventor mobility, attribute them to their employers, and merge it with the data on M&A/JV/alliances activities across public firms. Finally, using the changes of NCA enforcement level across the US states in a staggered difference-in-difference design, (s)he has to find out whether inventor mobility indeed affects the likelihood of M&A/JV/alliance activities between the new employer and firms who are technologically similar to the old employer.

All the required data sources are either publicly available or accessible at the Chair of Corporate Finance. The candidate is expected to retrieve and put together all the required datasets, do a comprehensive literature review, and provide a conclusive answer to the research question.

Preliminaries: The candidate should be

- familiar with standard identification tools in econometrics, e.g., difference-in-difference
- able to work with a standard statistical software, e.g., Stata, R, etc.
- able to work with large datasets.

Introductory Literature:

Chen, D., Gao, H., & Ma, Y. (2021). Human capital-driven acquisition: Evidence from the inevitable disclosure doctrine. *Management Science*, *67*(8), 4643–4664. https://doi.org/10.1287/mnsc.2020.3707

Cunningham, C., Ederer, F., & Ma, S. (2021). Killer Acquisitions. *Journal of Political Economy*, *129*(3), 649–702. https://doi.org/10.1086/712506

Michael Ewens, Matt Marx, Founder Replacement and Startup Performance, *The Review of Financial Studies*, Volume 31, Issue 4, April 2018, Pages 1532–1565, https://doi.org/10.1093/rfs/hhx130

Topic 6: The IPO of Dr. Martens

Supervisor: Mattia Colombo

On January 29, 2021, Dr. Martens made its stock market debut on the London Stock Exchange issuing 350 million shares at an offer price of 370GBp per share. Due to the high investors' demand, Dr. Martens shares experienced a 22% increase in price on the first day of trading, leading to a total market capitalization of £4.5bn. Private equity fund Permira, which purchased Dr. Martens in 2013, will retain a majority stake of 42.9% post listing.

Dr. Martens is a British footwear and clothing brand founded in 1960 by the Griggs family. The company started as a humble work boot but was quickly adopted by youth culture as a symbol of their individual self-expression and rebellious spirit. In 2013, the Griggs family sold the majority of the shares to the private equity fund Permira and retained a 10% ownership in the company. After Permira purchased Dr. Martens, the company experienced an increase in online sales and moved the main production sites to Asia.

By the end of the fiscal year 2019, Dr. Martens sold 11 million pairs of footwear annually in more than 60 countries with a revenue of £672 million. Europe represents Dr. Martens' largest market, with a share of 43% of total revenue, followed by the Americas, 37%, and Asia, 20%. With the IPO proceeds, the company expects to expand its global presence by increasing its sales in Asia and Oceania.

The goal of this thesis is to value Dr. Martens to determine whether the offer price of 370GBp per share was fair. To do so, the student should perform a comprehensive analysis of the industry. Then the student should perform a DCF valuation and a multiples-based valuation. To assess the market reactions to the announcement, the student is required to perform an event study of Dr. Martens's competitors. Moreover, the student should elaborate on the first day return by looking at the relevant academic literature on the first day IPO returns.

Preliminaries: Ability to conduct company valuations and event studies in Excel or Stata.

Introductory Literature:

https://www.theguardian.com/business/2021/jan/29/dr-martens-stock-market-debut-ipo

https://fashionunited.uk/news/business/all-you-need-to-know-about-dr-martens-ipo/2021013153287

Topic 7: The Spin-off of Deme Group

Supervisor: Mattia Colombo

On December 2, 2021, CFE Group, a Belgian construction and civil engineering company, announced its intention to split into two separate listed entities: CFE and DEME Group. According to CFE's management, the purpose of the operation was to "*create two leading players in their respective business and help the stock market to fully recognize the true value of both entities*".

On June 30, 2022, Deme Group went public on Euronext Brussels. The offer price was set at €96 per share, leading to a market capitalization of €2.43 bn. Ackermans & Van Haaren NV, CFE Group's majority shareholder, retained the control of Deme Group with a share ownership of 62%.

Deme Group is a global marine sustainable solutions provider. The company is mainly involved in dredging activities. Recently, the firm took over the widening of the Suez and Panama canals and the construction of New Doha Port. Along its dredging activities, Deme Group builds marine infrastructure such as locks, quay walls, and tunnels. The Fehmarnbelt project, one of the world's largest immersed tunnels between Denmark and Germany, is perhaps one of the projects with the highest visibility. In 2021, Deme Group employed over 5,000 people worldwide and reported net profits of €114.6m.

The goal of this thesis is to value Deme Group and to determine whether the offer price of €96 per share was fair. To do so, the student should perform a comprehensive analysis of the industry. Then, the student should perform a fundamental valuation and a multiples-based valuation. To assess the market reactions to the announcement, the student is required to perform an event study of Deme group's competitors. Moreover, the student should elaborate on the first day return by looking at the relevant academic literature on the first day IPO returns and discuss the advantages and disadvantages of a spin-off.

Preliminaries: Ability to conduct company valuations in Excel.

Introductory Literature:

Spin-off announcement: https://www.cfe.be/files/files/pr-021221.pdf

IPO information: https://www.deme-group.com/sites/default/files/2022-05/Investor%20Presentation%2001%2006%202022__2.pdf

IPO listing news: https://live.euronext.com/en/ipo-showcase/deme-group-nv

Topic 8: Intel acquires Tower Semiconductor

Supervisor: Minrui Gong

On February 15th, 2022, Intel (NASDAQ: INTC) announced its acquisition deal of the Israeli silicon wafer and integrated circuits manufacturer Tower Semiconductor (NASDAQ: TSEM). Intel offered to buy 100% of Tower's equity for 53 USD per share, which represents a bid premium of 60% based on Tower's prior closing price. "Tower's specialty technology portfolio, geographic reach, deep customer relationships and services-first operations will help scale Intel's foundry services and advance our goal of becoming a major provider of foundry capacity globally," said Intel CEO Pat Gelsinger.

Starting from 2020, a sequence of events detonated a global chip crisis, driving semiconductor prices to record highs. While companies such as car manufacturers struggled to deliver orders, Intel saw an opportunity to challenge the Asian domination in the foundry business. In 2021, under the strategy called IDM (Integrated Device Manufacturing) 2.0, Intel embarked on expanding its foundry business with a 20 billion investment in two new fabs in Arizona. The company also plans to become a provider of foundry services for other chip makers.

Tower, with three decades of experience as a chip manufacturer and with production facilities in Israel, the US, and Italy, is a good fit for Intel's roadmap. Tower CEO Russell Ellwanger commented: "Together with Intel, we will drive new and meaningful growth opportunities and offer even greater value to our customers through a full suite of technology solutions and nodes and a greatly expanded global manufacturing footprint."

The goal of this thesis is to evaluate the acquisition deal and to determine whether the terms were fair. To that end, the student should first perform a comprehensive industry analysis. Next, the student should conduct a DCF and a multiple-based valuation for Tower and discuss potential synergies. To assess stock market reaction around the merger announcement, the candidate is required to analyze the two companies and their competitors with event-study methods. The candidate should elaborate the results referring to relevant literature on market responses to M&A announcements.

Preliminaries: Ability to conduct company valuations and event studies in Excel.

Preliminaries: The analysis requires obtaining data from Bloomberg. We recommend that the candidate has at least basic knowledge of a statistical software program (e.g., Stata) and econometrics.

Introductory Literature:
Announcement: https://www.intc.com/news-events/press-releases/detail/1527/intel-to-acquire-tower-semiconductor-for-5-4-billion