**MASTER**

FINANCE


**MASTER´S FINAL WORK**

PROJECT


CASE STUDY: QUANTIFYING PAYOUT POLICIES'
IMPACTS ON THE VALUE OF DAVIDE
CAMPARI-MILANO N.V.


LUÍS MIGUEL GONÇALVES LOPES


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**SUPERVISION:**

PHD. PEDRO RINO VIEIRA


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**Glossary**

ASC - Accounting Standards Codification.

CAGR – Compound Annual Growth Rate.

CAPM – Capital Asset Pricing Model.

D – Debt.

DCF – Discounted Cash-Flow.

DDM – Dividend Discount Model.

E – Equity.

E (Rm) – Expected Market Return.

ECB – European Central Bank.

EMU – European Monetary Union.

EPS – Earnings Per Share.

ESOP – Employee Share Ownership Plan.

EV – Enterprise Value.

FCF – Free Cash-Flow.

FCFE – Free Cash-Flow to Equity.

FCFF – Free Cash-Flow to the Firm.

FED - Federal Reserve System.

FY – Fiscal Year.

IRES - *Imposta sul Reddito delle Società.*

JEL – Journal of Economic Literature.

Kd – Cost of Debt.

Ke – Cost of Equity.

KPI – Key Performance Indicator.

LT – Long-term.

MFW – Master's Final Work.

MM - *Franco Modigliani* and *Merton Miller.*

NI – Net Income.

NPV – Net Present Value.

RE – Retained Earnings.

Rf – Risk-free rate.

ROE – Return on Equity.

ST – Short-term.

TV – Terminal Value.

WACC – Weighted Average Cost of Capital.

WACS – Weighted Average Shares Outstanding.

# Abstract

The fast growth in share repurchases and the decrease of dividend payout rates in the late 1990s led analysts to put less weight on equity valuation tools based on firms' dividend yields. A reasonable adjustment to think of is to add to the dividend yield a share repurchase yield, for instance. However, repurchasing shares can have many more reasons of being than to be a shareholder payout method and can be much more irregular than the most commonly used payout method: dividends. In fact, many corporations that repurchase shares also issue new shares, primarily, but not exclusively, to fund employee stock options' exercises.

Given the growing and related importance of these operations, incorporating information on share repurchases into valuation models became more complicated. At the same time, the use of financial engineering as a tool for managing earnings per share (EPS) has also grown, in order to increase perceived value to attract stakeholders or to increase executives' bonuses, when these are attributed depending on metrics as such.

This case study requires students to not only analyse the impact of repurchases and issuances on EPS, but also to measure and evaluate the overall impact of cash dividends, repurchases and issuances on the firm's capital structure, equity valuation models and relevant yields.

The case was built using real world information extracted from the company's reports and announcements, as well as other public information regarding equity valuations done by real investment banking firms over the studied period, although the characters presented in the story are fictitious.

# Acknowledgements

This project marks the end of my first five academic years, and these years would not have been so special without a few important people, that surely deserve an honourable mention.

Firstly, I would like to express my gratitude to my supervisor, PhD. Pedro Rino Vieira, for the time and knowledge he put on helping me building this Master's Final Work.

Then, I would like to thank my family for the support and for providing me with the conditions to attend university.

I would also like to thank my friends and colleagues António Batista and Rafael Lima for the support and companionship.

And last but not least, a special thanks to every professor and colleague that I have shared a classroom with, either real or virtual, because all of them helped me shaping my path in one way or another.

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# Introduction

When a firm generates Free Cash Flow (FCF), its managers must decide how to use that cash. If the firm has positive NPV investment opportunities at reach, it can reinvest the cash and look forward to an increase in the value of the firm, if not, it can opt for using that excess cash to pay its shareholders, unless they decide to keep those funds as cash reserves. Depending on the nature of the firm: being it more of a value firm type than of a growth firm type will ultimately determine the tendency towards paying out to shareholders much more frequently than investing in new projects, and vice versa.

In order to pay its shareholders, the company can pay a dividend, or it can repurchase shares from current owners: these decisions constitute a firm's payout policy alternatives.

To understand the basics of payout policy, one should be aware of the most known theorem in this field: the Dividend Irrelevance theory, also known as the MM theorem, by Modigliani and Miller (1958). The theorem states that within perfect capital markets, the firm's dividend (or repurchasing) policy is irrelevant and does not affect the firm's value or the wealth of its shareholders. Therefore, logically, what influences a firm's payout policy is exactly the existence of market imperfections, such as taxes, agency costs, transaction costs, and asymmetric information between market agents. In this case study, these affirmations are proven to be correct.

However, although dividends are a tool that serves the single purpose of paying out to shareholders, it would be reductive to address repurchases on the same way. Dividends and Share Repurchases are not literal equivalents. Firms can use repurchases for many other reasons. There are plenty of other hypotheses being tested on the literature to find what leads companies' managers to initiate a share repurchasing program. Such hypotheses include altering the capital structure of the firm, preventing a takeover, thinking that the stock is undervalued in the market, or supporting stock option plans. For the case of Davide Campari-Milano N.V., in specific, the hypotheses addressed will be the last two mentioned, as there were not spotted any signs of other reasons for the firm to conduct share buybacks. In fact, the main reason for this firm to conduct repurchases on a yearly basis is its Employee Share Ownership Plan (ESOP), having had just one year, 2020, where one could allege proof of acceptance of the undervaluation hypothesis.

Therefore, this case will assess not only the impacts of Dividends and Repurchases on the studied firm, but also the impacts of the Issuances. Ultimately, the purpose of this case study is to make students familiar with the theories and real-life impacts associated with these operations, in particular the impacts they have in the firm's Capital Structure, Shareholder Value and perceived market value of the stock.

To achieve that, this case study's focus is mainly on discussing corporate finance technical tools that may be applied in the financial appraisal and valuation of a firm by analysing and working financial information from Davide Campari-Milano N.V.'s reports and announcements over the historical period of the fiscal years of 2014 to 2021.

Teaching a theory such as the MM theorem to explain how some payout policies impact a firm's equity per share value is relatively simple due to the heavy assumptions considered, however, when these assumptions are removed from the equation, that is when case studies on this topic may come in handy. This is because without those assumptions, a closed formula is very unlikely to work for every firm, as market imperfections dictate. Nevertheless, one should be able to put its accounting and valuation tools to work in order to achieve the most accurate valuation possible and get a good sense of how these corporate actions really impact the firm's fundamental value. The user of this case study will also have the opportunity to think and discuss which tools are better and worse for doing a proper valuation on this specific firm.

The information used in this case study is all real and publicly available, the characters in itself are not. Knowing that the professional goals of many Finance related areas' graduates or future graduates is to eventually land a job in a corporate finance consulting services' firm, this case has a recent graduate as its main character, Maria, that is just starting to work on a company of that nature. Regardless of that, the story was built to be as realistic as possible as it depicts many realistic office's interactions between co-workers from different seniorities and with clients.

The story starts by introducing the Maria's first task and smoothly progresses through a process of deconstructing the task in smaller bits that will make the student feel like they are progressing in understanding the job at hands, the more they read, just like the main character understands better the task the more the story evolves. Simultaneously, relatively generic questions are put to the reader. These questions are highly correlated

with the ones proposed in the Teaching Note, however, they are purposefully not exactly the same, as the case story is meant to be open for the teacher or instructor to decide which questions they want to approach, with whatever assumptions they decide to use.

This case is most suitable for Corporate Finance or Corporate Financial Planning courses and can be used at the undergraduate or graduate level. To successfully navigate the case, students need to have already grasped the basics of financial statement analysis, time value of money, equity valuation, capital structure and payout policy's methods.

Even though there are many case studies on valuation and on payout policies, separately, it is not frequent to find both of these together, which is something that this case has to offer.

The structure of this Master's Final Work can be divided in four parts, the Introduction, Case Study Story, Teaching Note, and the Conclusion.

The Case Study Story has a simple structure. It consists of an Abstract, a Background story with questions mixed inside the text, and the relevant Annexes for the student to materialize its rationale.

On the more complex side of this work lies the Teaching Note, which starts off with a "Synopsis" disclosing the "Pedagogical Objectives" and "Course Positioning" of this case. Then follows the page where I fully disclose all the "Assumptions" I made to answer all of the suggested questions. Again, these are optional, however, it would definitely be easier to use them so that the students' calculations could be more easily interpreted and classified, as I present the exact solutions under these assumptions. Although, interpretations of the calculated values may vary.

Before jumping into the solutions to the case, there is a page that displays all of the "Suggested Questions", there are nine, one of which has two parts to it. The bulk of the Teaching Note is composed by the "Solutions to the Suggested Questions". This section has a "Conceptual Framework" part to it, equivalent to a Literature Review, but specific to the topic addressed in each question, and a "Suggested Resolution" part, with the results and interpretations found using exclusively the data given in the Case Study and, of course, disclosed in the assumptions' page. In the very end of the Teaching Note, I

present the "Annex" that contain the formulas used to reach the results in the relevant displayed tables.

Lastly, I present the Conclusions to take away from this Master's Final Work, that consists mainly on understanding how and what methods work best to quantify payout policies' on the studied firm value, as well as how can these methods be applied to firms of similar nature, and a summary of the most relevant conclusions from all the individual case's suggested questions.

# Case Study

## Background Story

Fresh out of university, Maria has just been hired, in the end of 2021, to work as a Junior Business Analyst at a very reputable consulting firm, ISEG Pricing. This company hires students based on their capabilities to solve problems, since the clients' requests for projects vary widely.

As for Maria's first task, the team's line manager asked her to conduct a financial analysis on a famous Italian corporation, Davide Campari-Milano, as per a firm's shareholder request that paid a good amount of money for this project to be taken by ISEG Pricing. Knowing that, the junior analyst was now feeling pressure to take on her first ever project for a customer with such possessions, although the manager seemed very calm about this whole task.

Maria has been told to focus on conducting the approaches she finds most convenient to evaluate the intrinsic value of this firm's common stock, especially given the impacts of its payout policies, as this is a firm that, besides distributing cash dividends, has also been buying and selling their own stocks every year in the few last years.

As Maria was still processing this information, the manager added: "Just keep in mind that a firm's fundamental value comes from its perspectives of Future Cash-Flows to its shareholders and not from some basic accounting tricks just to show off". Now, she was left thinking to herself "Well, that is kind of obvious, I know that from my corporate finance classes, but why would he emphasize that? Maybe I should check if the firm is up to some financial engineering, I will just have to figure out how..."

As one of the more senior members sitting next to Maria overhears the conversation, he says "Some investors in the street just care about certain KPIs, especially EPS, as long as they are presented to them alongside with a good sales pitch and some fancy slides, but we are not a fund that aims to gather as much investors as possible, we are here to generate truthful recommendations to our customers". The manager smiles and heads back to his office. Maria smiles and turns back to her computer, as she has just gotten the answer to her question: what a lucky junior she is, she will just have to *find out if this firm is looking to artificially inflate the EPS ratio or not.*

However, that is not all. Maria knows that she should prove whether or not this firm is doing some creative accounting, but she also needs to perform a whole valuation of this firm, for which she has certainly learned a few useful tools in her school days. Nonetheless, a bit of research on the company needs to be done in order to correctly guess which of these tools apply best to this firm, since that knowledge comes from understanding the type of business or businesses the target firm is involved in. *Shall Maria opt for a Free Cash-Flow Model or a "Payout-based" Model?*

Before starting to dive into the firm's financial statements, Maria felt the need to structure a little bit more of her thought around that part of her task where the line manager asked about the "impacts of its payout policies". She finds it quite challenging to figure out how to actually quantify these operations in a firm's valuation process, so she decides to ask her more experienced co-worker about what he really means by that. As to which he replied "What it seems to me is that he wants you to *calculate the value of the firm normally and then re-calculate it as if those payout policy operations have not occurred, for comparison*, but I can't help you much more with that matter, we want to test

you. Last advice, check this function in your brand-new Bloomberg Terminal if you ever feel like comparing your valuation results with other firms' analysts: ANR (Analyst Recommendations)"

After checking out what the more senior member has just told her (Table 1) and noticing the discrepancies among different firms' analysts, Maria's immediate reaction was to ask him back "Why are these results so different from one another? And if so, how can I be so sure about my own result?" As to which he replied "They are different mostly because the assumptions used by each analyst differ a lot. You won't make the boss mad if your results differ from those you see in the table, however, *make sure you have a good reason as for why you chose the models you did and the assumptions you made.*"

Maria thanked him for the valuable insights and decided it was time to start understanding the company, as she was already getting a good feeling about the task in itself.

In order to do so, she searched and opened the company's website, diving straight into the investor's section tab. In the 2021 Campari Group's Sustainability Report, she could read that the Campari Group is a leading company in the global branded spirits industry, founded in Milan, 1860, by Gaspare Campari and some other capital informations about this firm.

Campari shows that it plans to ride the 2022 cocktail renaissance as consumers' drinking habits and social outings resume. The company maintained a strong marketing presence during lockdowns in order to promote home consumption, but the impact on the 2020 financial statements is noticeable (Tables 2 and 3).

The shares of the parent company, Davide Campari-Milano N.V. (Reuters CPRI.MI-Bloomberg CPR IM), have been listed on the Italian Stock Exchange since 2001 and, on the market's close of the 30th of December of 2021, the stock had last been traded at €12.855.

As Maria was navigating through the firm's website, she came across a very interesting minute of the annual general meeting of shareholders of Davide Campari-Milano, dated 8th of April of 2021. There, she read the agenda and noticed three listed items there that might be of her interest.

The first (discussion) reports as:

*"3.a. Policy on additions to reserves and dividends (discussion).*

*The Chairman provided an explanation of the policy on dividends.*

*Campari strives to distribute a stable amount of dividend per ordinary share during a certain number of years and revises it afterwards to reflect the Group's achievements. Special voting shares do not confer any economic rights.*

*Furthermore, the Chairman pointed out to the meeting that, as per the date on which the dividend will be made payable, the Board of Directors will be required – with due observance of the information then available – to assess whether Campari will be able to continue to pay its outstanding debts following dividend payments.*

*Should dividends be paid and Campari turn out – at a later stage – to be unable to continue to pay its outstanding debts, the managing directors may be held jointly and severally liable towards Campari for the deficit created by the dividend payments (to the extent they knew or should have foreseen –*

*when the dividend was made payable – that such situation would have occurred due to the dividend payments).*

*The Chairman proceeded with the next agenda item."*

The second (voting item) reports as:

*"5. Employee Share Ownership Plan (voting item).*

*The Chairman proposed to the meeting to approve the implementation of an Employee Share Ownership Plan (ESOP). In accordance with Article 114-bis of the Italian Financial Act, Campari drafted an information document under article 84-bis of the Regulation no. 11971 approved by CONSOB with resolution of 14th May 1999, as subsequently amended and supplemented (ESOP Information Document).*

*The purpose of the ESOP is to foster the loyalty of the employees, to strengthen their sense of belonging to Campari and its subsidiaries (the Group) and to encourage their active participation in the growth of the Group in the longterm. The ESOP is intended for all employees of Campari and its subsidiaries, both in Italy and abroad, with the exception of employees appointed as members of the Board of Directors of Campari.*

*After a three-year vesting period, and should certain conditions be met, the Rights will automatically convert into Matching Shares (on the basis of the ratio 1 Right: 1 Matching Share).*

*The Chairman announced the voting results which were the following:*

*In favour of: 1,624,132,232 (99.53%)*

*Against: 7,663,630 (0.47%)*

*Abstain: 64,502*

*After the announcement, the Chairman informed the meeting that the resolution had been adopted.*

*The Chairman then proceeded with the next agenda item."*

The third (voting item) reports as:

*"8. Authorization of the Board of Directors to repurchase shares in Campari (voting item).*

*The Chairman proposed to the meeting to authorize the Board of Directors to acquire, in one or more transactions, a maximum number of shares in the capital of Campari which, when added to the treasury shares already held by Campari will not exceed the legal limit, for a period of 18 months from 8 April 2021 to 8 October 2022.*

*The repurchase can take place for a minimum price, excluding expenses, of the nominal value of the shares concerned and a maximum price of an amount equal to 5% above the average closing price over a period of 5 days preceding the day of the agreement of acquisition of the shares.*

*The proposed authorization will replace the authorization granted by the Extraordinary Shareholders Meeting held on 27 March 2020.*

*The Chairman announced the voting results which were the following:*

*In favour of: 1,626,100,090 (99.65%)*

*Against: 5,665,444 (0.35%)*

*Abstain: 94,830*

*After the announcement, the Chairman informed the meeting that the resolution had been adopted.*

*The Chairman then proceeded with the next agenda item."*

These items had given Maria a great insight into this firm's payout policies that will certainly help her to complete this project, but also a very legitimate doubt: *"If I had voting rights in this firm, would I have voted in favor these items?" Maria asked herself.* The new joiner knew she had to get actual financial figures so that she could run some calculations and find the answers to all of her questions.

To do so, Maria used the company's financial reports, from the fiscal years of 2014 to 2021, to extract all of the firm's financials needed to her spreadsheet, including the information about the employee compensation plans in the form of stock options (Table 4).

The junior analyst has now, not only a much better sense of what the big picture looks like for the Italian firm, but also the figures needed to run her magic and prove herself. However, there is something that the manager decided to hide from his junior employee, and that is the fact that the client requesting this project is one of those voting against these two items. Maria's manager wants to be the one issuing the final opinion on this project, but he needs someone who will do an honest and reliable job, without knowing about the intentions of the client.

This client has told ISEG Pricing that he believes the only payout policy that this firm should conduct is cash dividends, unlike "This constant back and forth of issuing cheap and buying expensive shares from employees just burns shareholders' money unnecessarily". It is clear to the management of ISEG Pricing that the client wants to come back to Campari's board in the next general meeting with solid proof as to why he is right about stopping these market operations.

"Even the markets agree with me, on the 25th of February 2021, the firm put out a Notice of Annual General Meeting where it disclosed the topics that would be disclosed later on in the meeting, among which there were these corporate actions. The markets, anticipating the approval of these same actions, dumped the stock: the share opened trading on the 25th at 9.65Eur and closed at 9.38Eur on the very next day." Added the client.

As this meeting was over, Maria's manager checked Davide-Campari's closing prices on his mobile phone and saw that it took the stock only 6 days to close at a higher price than 9.65Eur. That is exactly when he realized that this is a project to be taken over by a new joiner.

This happens not because the client's thesis is not sound enough and therefore is not worth the time of a manager of ISEG Pricing, because the first part really is: operations used for this purpose do usually move money away from shareholders to employees. However, since the markets have not really shown interest in this event, that made the manager think that this client is more likely to be unhappy with the current Board of Directors and wants to find ways of criticizing them in front of the rest of the shareholders, than to actually believe that these operations are prejudicial to the Davide-Campari's

health. As a consequence, this manager decided to give Maria, the bright new junior analyst, the opportunity to crunch the numbers for him. In the end, besides Maria having gained a lot of experience conducting various types of analyses and valuations, he will be able to *look at the final data and infer if these payout policies are indeed decreasing the value of the firm, as the client alleges, or not.*

**Auxiliary Tables**

Table 1

| Firm | Target Price | Recommendation | Date |
|---|---|---|---|
| JP Morgan | 16.00 | Overweight | 12/17/2021 |
| Société Générale | 14.80 | Buy | 11/30/2021 |
| BNP Paribas Exane | 14.30 | Outperform | 11/30/2021 |
| Berenberg | 14.00 | Buy | 10/27/2021 |
| Kepler Cheuvreux | 13.60 | Buy | 10/26/2021 |
| Banca Akros (ESN) | 13.20 | Accumulate | 12/23/2021 |
| Barclays | 12.90 | Equal weight | 10/27/2021 |
| Citi | 12.80 | Neutral | 12/17/2021 |
| AlphaValue Baader Europe | 12.80 | Reduce | 12/23/2021 |
| Goldman Sachs | 12.40 | Neutral | 11/23/2021 |
| Mariaeries | 12.30 | Hold | 10/26/2021 |
| Deutsche Bank | 12.10 | Hold | 12/16/2021 |
| Mediobanca | 11.60 | Neutral | 10/27/2021 |
| Morgan Stanley | 11.60 | Equal weight | 12/09/2021 |
| Intermonte | 11.50 | Neutral | 11/19/2021 |
| Bernstein | 11.35 | Market perform | 12/22/2021 |
| Equita SIM | 11.30 | Hold | 12/20/2021 |
| Intesa Saopaolo | 11.20 | Hold | 11/25/2021 |
| HSBC | 11.10 | Hold | 10/29/2021 |
| Credit Suisse | 10.80 | Underperform | 12/08/2021 |
| RBC Capital | 10.00 | Underperform | 10/26/2021 |
| Morningstar | 9.30 | Sell | 10/26/2021 |
| Bestinver Securities | 6.90 | Sell | 12/20/2021 |

*Source: Bloomberg L.P.*

Table 2

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| Group net profit attributable to ordinary shareholders | 128,900,000 € | 175,400,175.4 € | 166,300,333.6 € | 356,401,069.2 € | 296,301,185.2 € | 308,402,542 € | 187,901,127.4 € | 284,802,993.6 € |
| Total Cash Dividends | 46,100,000 € | 45,700,046.7 € | 52,100,104.2 € | 52,100,156.3 € | 57,500,230.0 € | 57,300,286.5 € | 62,900,377.4 € | 61,600,431.2 € |
| Total shareholders' equity ('000) | 1,579,900 € | 1,745,800 € | 1,900,000 € | 1,942,600 € | 2,162,800 € | 2,388,500 € | 1,998,400 € | 2,374,800 € |
| ST Debt ('000) | 134,000 € | 474,200 € | 106,900 € | 13,900 € | 223,600 € | 626,400 € | 258,200 € | 261,600 € |
| LT Debt ('000) | 1,097,200 € | 1,282,500 € | 1,297,000 € | 1,297,300 € | 1,079,700 € | 680,800 € | 1,284,200 € | 1,271,200 € |
| Debt issued ('000) | 0 € | 603,800 € | 357,400 € | 180,900 € | 28,000 € | 417,800 € | 820,800 € | 149,100 € |
| Debt paid down ('000) | 151,200 € | 100,800 € | 721,600 € | 246,900 € | 38,900 € | 532,100 € | 608,700 € | 174,000 € |
| Cash ('000) | - | - | - | - | - | - | - | 791,300 € |
| FCFF ('000) | - | 240,500 € | - | - | - | - | - | 345,000 € |
| Average market price | 5.97 € | 6.93 € | 8.42 € | 5.40 € | 5.86 € | 8.52 € | 8.94 € | 11.41 € |
| Average price paid for the year's repurchases | 5.70 € | 6.81 € | 8.14 € | 5.85 € | 6.75 € | 8.33 € | 8.09 € | 12.00 € |

*Source: Davide Campari-Milano N.V.'s End of Fiscal Year's Financial Reports (Fiscal Years: 2014 to 2021)*

Table 3

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| WACS | 575,083,697 | 578,017,199 | 1,157,508,450 | 1,160,785,339 | 1,154,903,852 | 1,144,315,926 | 1,133,816,568 | 1,126,588,835 |
| Weighted average of ordinary shares from the potential exercise of stock options with dilutive effect | 7,262,456 | 37,876 | 740,765 | 19,237,523 | 25,018,506 | 25,539,096 | 22,437,158 | 19,696,517 |
| Weighted average of ordinary shares outstanding net of dilution | 582,346,153 | 578,055,075 | 1,158,249,215 | 1,180,022,862 | 1,179,922,358 | 1,169,855,022 | 1,156,253,726 | 1,146,285,352 |
| Shares repurchased under share repurchase program | 3,704,964 | 11,518,418 | 2,326,135 | 10,910,000 | 10,007,486 | 9,036,356 | 36,281,893 | 5,931,376 |
| Shares assigned under incentive plans | 4,940,505 | 13,678,255 | 2,705,237 | 4,541,575 | 4,078,641 | 10,314,114 | 7,792,286 | 19,015,454 |
| Outstanding shares at end of FY | 576,918,717 | 1,158,157,108 | 1,158,915,312 | 1,152,546,887 | 1,146,618,042 | 1,147,895,800 | 1,119,406,193 | 1,132,490,271 |

*Source: Davide Campari-Milano N.V.'s End of Fiscal Year's Financial Reports (Fiscal Years: 2014 to 2021)*

Table 4

| | **2014** | | **2015** | | **2016** | | **2017** | |
|---|---|---|---|---|---|---|---|---|
| | No. of shares | Average exercise price | No. Of shares | Average exercise price | No. Of shares | Average exercise price | No. Of shares | Average exercise price |
| Options outstanding at the beginning of the period | 36,571,281 | 4.18 € | 41,790,983 | 4.89 € | 27,094,753 | 5.51 € | 61,671,300 | 3.19 € |
| Options granted during the period | 12,065,972 | 6.28 € | 339,464 | 7.07 € | 7,552,509 | 8.57 € | 1,179,323 | 6.19 € |
| (Options cancelled during the period) | 1,905,765 | 5.04 € | 1,357,439 | 5.96 € | 1,037,529 | 5.73 € | 1,905,575 | 3.38 € |
| (Options exercised during the period) | 4,940,505 | 2.96 € | 13,678,255 | 3.59 € | 2,705,237 | 4.01 € | 4,541,575 | 2.25 € |
| (Options expired during the period) | | | | | 68,846 | | 1,000 | |
| Options outstanding at the end of the period | 41,790,983 | 4.89 € | 27,094,753 | 5.51 € | 30,835,650 | 6.38 € | 56,402,473 | 3.32 € |
| of which exercisable at the end of the period | 3,946,977 | 2.23 € | 3,848,851 | 3.82 € | 1,811,965 | 3.78 € | 15,128,339 | 2.63 € |

| | **2018** | | **2019** | | **2020** | | **2021** | |
|---|---|---|---|---|---|---|---|---|
| | No. Of shares | Average exercise price | No. Of shares | Average exercise price | No. Of shares | Average exercise price | No. Of shares | Average exercise price |
| Options outstanding at the beginning of the period | 56,402,473 | 3.32 € | 60,550,159 | 3.87 € | 49,289,367 | 4.13 € | 52,541,307 | 4.83 € |
| Options granted during the period | 11,298,000 | 6.25 € | 364,400 | 8.85 € | 12,474,917 | 6.41 € | 645,796 | 9.91 € |
| (Options cancelled during the period) | 3,071,673 | 3.73 € | 1,311,080 | 4.47 € | 1,430,691 | 5.29 € | 671,291 | 6.34 € |
| (Options exercised during the period) | 4,078,641 | 2.95 € | 10,314,112 | 2.72 € | 7,792,286 | 2.87 € | 19,009,546 | 3.60 € |
| (Options expired during the period) | | | | | | | 15,000 | |
| Options outstanding at the end of the period | 60,550,159 | 3.87 € | 49,289,367 | 4.13 € | 52,541,307 | 4.83 € | 33,491,266 | 5.59 € |
| of which exercisable at the end of the period | 15,198,854 | 2.64 € | 20,796,216 | 2.96 € | 15,647,473 | 3.07 € | 10,092,564 | 3.59 € |

*Source: Davide Campari-Milano N.V.'s End of Fiscal Year's Financial Reports (Fiscal Years: 2014 to 2021)*

# Teaching Note

## Synopsis

The case discusses corporate finance analytical tools and theories that may be applied in the financial appraisal and valuation of a firm by analysing and working financial information from Davide Campari-Milano N.V.'s reports and announcements over the historical period of the fiscal years of 2014 to 2021.

The story is told using a main fictional character that has just graduated and is starting its first job on a corporate financial services' firm and the interactions between characters in the story are constructed in a realistic way, although none of these characters have been inspired on any specific person.

The story starts with the main character getting its first ever task and smoothly progresses through a process of deconstructing the task in smaller bits that will make the student feel like they are progressing in understanding the job at hands, the more they read. Simultaneously, relatively generic questions are put to the reader. These questions are highly correlated with the ones proposed in the Teaching Note, however, they are purposefully not exactly the same, as the case story is meant to be open for the teacher or instructor to decide which questions they want to approach, with whatever assumptions they decide to use.

## Pedagogical Objectives

The purpose of this case study is to make students familiar with the relevant financial theories and practical impacts associated with firm's payout policies', which in this particular case means dividends distribution, share repurchases and issuances.

In specific, the impacts these operations may have in a firm's capital structure, equity valuation models, relevant yields, shareholder value and perceived market value of the stock.

## Course Positioning

This case can be used at the undergraduate or graduate level and it is most suitable for Corporate Finance or Corporate Financial Planning courses.

To successfully navigate the case, students need to have grasped the basics of financial statement analysis, time value of money, equity valuation, capital structure and payout policy's methods.

**Assumptions**

The assumptions used for modelling purposes in some of the suggested questions are presented below.

Risk-free rate of -0.177%: Inferred from the GECU10YR Index value on the 30th of December of 2021, a ten-year generic government bond index, as a proxy for the risk-free interest rate, given that the risk-free rate in the European Monetary Union (EMU), as set by the European Central Bank (ECB), only ranges up to one year. *Source for GECU10YR Index values: Bloomberg L.P.*

Market Returns of 15.263%: Expected Rate of Returns for the Italian Market (FTSE MIB INDEX), on the 30th of December of 2021. *Source: Bloomberg L.P.*

Beta of 0.632: Raw Beta taken from the Bloomberg Linear Beta function, using Y = DAVIDE CAMPARI-MILANO NV and X = FTSE MIB INDEX, with daily frequency and the following time window: 03/18/2020 to 12/31/2021. The criteria for the time window was to leave aside the big downward jump in the global markets due to the covid-19 pandemic hit, that happened between the end of February and beginning of March. *Source: Bloomberg L.P.*

Cost of Debt of 1.143%: Mid YTM of the most appropriate outstanding David Campari corporate bond, as of the 31st of December of 2021, given its time to maturity of 3.5 years (04/30/2024) as opposed to the alternatives of 6 months to maturity (04/05/2024) and 7 years to maturity (10/06/2027). *Source: Bloomberg L.P.*

Applicable Tax Rate of 24%: Italian corporate entities are subject to a corporate income tax, known as IRES, which is currently established at 24%.

The lecturer should priorly decide if the students are given these assumptions or if they are free to fabricate their own.

**Suggested Questions**

1 – Compute both Basic and Diluted EPS with a modified number of shares: add back the number of shares repurchased to the weighted average number of common shares outstanding. Compare the results before and after repurchases by calculating both the percentage of the Basic EPS and Diluted EPS that are attributed to repurchases and attributed to net income.

2 – Do you agree there was any attempt to artificially inflate the EPS ratio? Explain.

3 – Compute, for all years, the total amount paid and total amount received from the repurchasing and assignment of shares. Analyse the net cash flow (€) and net share repurchase (#).

4 – Based on the repurchase net cash flow (€) and on the cash dividend amount given, quantify the monetary change in the yearly capital structure. Use the D/E ratio to assess the relative impact of these changes.

5 – Compute the Shareholder Yield and analyse the impact of each variable on it based on your results. Calculate the Dividend Yield, Repurchase Yield and Total Yield.

6 – Calculate the Dividend Discount Model and the Total Payout Model. Comment on the results obtained.

7 – Using the FCFF method and assuming Terminal Value right after the last year of information provided, calculate the Enterprise Value and the Equity Value of the firm on the 31$^{st}$ of December of 2021. Use the historical CAGR (2015 to 2021) as the Growth Rate and the CAPM as Cost of Equity.

8 a) – Calculate the Enterprise Value and Equity Valuation for the following three cases:

- If there was no distribution of dividends in 2021
- If there were no repurchases and issuances in 2021
- If there was no distribution of dividends nor repurchases and issuances in 2021

Assume a fixed WACC, i.e., there are no changes in WACC compared to the previous question.

8 b) – Explain the impact of these payout market actions on the firm's valuation based on the results obtained and comment on the following sentence: "in perfect markets, a firm's dividend policy is irrelevant to the value of the firm".

9 – What is your recommendation on this stock? Conduct a sensitivity analysis on the key drivers of value of the firm and comment on the other financial institutions' recommendations.

**Solutions to the Suggested Questions**

Question 1 – Compute both Basic and Diluted EPS with a modified number of shares: add back the number of shares repurchased to the weighted average number of common shares outstanding. Compare the results before and after repurchases by calculating both the percentage of the Basic EPS and Diluted EPS that are attributed to repurchases and attributed to net income.

Conceptual framework:

Basic Earnings Per Share (EPS) are computed dividing the Income available to parent company common shareholders (the "numerator") by the weighted average number of common shares outstanding (the "denominator").

$$Basic\ EPS\ =\ \frac{Income\ available\ to\ common\ shareholders}{Weighted\ Average\ of\ Common\ Shares\ Outstanding}$$

The numerator may be influenced by transactions with preferred shareholders and the need to distribute income to other types of securities with participating rights, while the denominator may be affected by stock issuances and repurchases, certain stock purchase agreements, vested stock awards and certain contingent stock agreements.

The weighted average number of common shares outstanding (WACS) is calculated by multiplying the number of shares outstanding (considering issuance and buybacks of shares in each reporting period) by its time-weighted portion and then summing up the total for each reporting period in the given fiscal year.

$$WACS\ =\ \sum_{i=1}^{n}(S_i \times W_i)$$

Where "$S_i$" is the respective number of shares outstanding for each time period "i" and "$W_i$" is the respective weight assigned to each time period.

Diluted EPS gives effect to all dilutive potential common shares outstanding during the reporting period. The computation of diluted EPS is similar to the computation of basic EPS except that the denominator also includes the number of additional common shares that would have been outstanding if the dilutive potential common shares had been converted.

The potential common shares are weighted for the period the instruments were outstanding. As per the ASC 260-10-20, a potential common stock is a "security or other contract that may entitle its holder to obtain common stock during the reporting period or after the end of the reporting period".

Suggested resolution:

By observing the results from the calculations below, in Table 5, it is conclusive that the amount of share repurchases conducted by this firm does not have a great impact in both Basic and Diluted EPS ratios, which behave very similarly, due to the small amount of dilutive instruments outstanding.

There is, however, an outlier in 2020 when a lot more shares were repurchased, leading to a higher than usual "EPS % attributed to Repurchases" value.

Within the table below, the lines in white represent the data given in the case study story and the lines in grey represent the data calculated based on that same data given, as the formulas show. Every table in this section works this way, and after Table 5, every line in white can represent both data given, and values calculated from previous questions.

Table 5

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| Net Income ('000) | 128,900 € | 175,400 € | 166,300 € | 356,401 € | 296,301 € | 308,402 € | 187,901 € | 284,802 € |
| WACS | 576,918,717 | 1,158,157,108 | 1,157,508,450 | 1,160,785,339 | 1,154,903,852 | 1,144,315,926 | 1,133,816,568 | 1,126,588,835 |
| WACS Net of Dilution | 582,346,153 | 578,055,075 | 1,158,249,215 | 1,180,022,862 | 1,179,922,358 | 1,169,855,022 | 1,156,253,726 | 1,146,285,352 |
| Shares repurchased under share repurchase program | 3,704,964 | 11,518,418 | 2,326,135 | 10,910,000 | 10,007,486 | 9,036,356 | 36,281,893 | 5,931,376 |
| (1) WACS before repurchases | 578,788,661 | 589,535,617 | 1,159,834,585 | 1,171,695,339 | 1,164,911,338 | 1,153,352,282 | 1,170,098,461 | 1,132,520,211 |
| (2) Basic EPS before repurchases | 0.2227 € | 0.2975 € | 0.1434 € | 0.3042 € | 0.2544 € | 0.2674 € | 0.1606 € | 0.2515 € |
| (3) WACS net of dilution before repurchases | 586,051,117 | 589,573,493 | 1,160,575,350 | 1,190,932,862 | 1,189,929,844 | 1,178,891,378 | 1,192,535,619 | 1,152,216,728 |
| (4) Diluted EPS before repurchases | 0.2199 € | 0.2975 € | 0.1433 € | 0.2993 € | 0.2490 € | 0.2616 € | 0.1576 € | 0.2472 € |
| (5) Basic EPS | 0.22 € | 0.30 € | 0.14 € | 0.31 € | 0.26 € | 0.27 € | 0.17 € | 0.25 € |
| (6) Diluted EPS | 0.22 € | 0.30 € | 0.14 € | 0.30 € | 0.25 € | 0.26 € | 0.16 € | 0.25 € |
| (7) Basic EPS % attributed to NI | 99.36% | 98.05% | 99.80% | 99.07% | 99.14% | 99.22% | 96.90% | 99.48% |
| (8) Basic EPS % attributed to Repurchases | 0.64% | 1.95% | 0.20% | 0.93% | 0.86% | 0.78% | 3.10% | 0.52% |
| (9) Diluted EPS % attributed to NI | 99.37% | 98.05% | 99.80% | 99.08% | 99.16% | 99.23% | 96.96% | 99.49% |
| (10) Diluted EPS % attributed to Repurchases | 0.63% | 1.95% | 0.20% | 0.92% | 0.84% | 0.77% | 3.04% | 0.51% |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Question 2 – Do you agree there was any attempt to artificially inflate the EPS ratio? Explain.

Conceptual framework:

In the literature, there are several hypotheses tested on what leads companies' managers or directors to initiate a share repurchasing program, being the following the most studied: altering the capital structure of the firm, having an alternative method of cash distribution to cash dividends, preventing a takeover, seeing the own stock as undervalued in the market, and supporting stock option plans.

The usage of financial engineering to improve key financial ratios to attract investors or to compensate executive directors whose bonuses depend on such metrics is not as studied due to the difficulty on getting reliable data to prove a related hypothesis, however, stock repurchasing is in indeed frequently used by companies to increase earnings per share and perceived value.

Suggested resolution:

By just looking at the figures calculated until now, we could already answer the question by alleging that the amount of repurchases conducted by the firm do not materially influence the denominator of both EPS ratios.

However, for a clearer answer, one could also incorporate the impact of the issuances on the previously calculated ratios, instead of just repurchases, as we did before. That should yield the results in Table 6.

Given the results obtained, it is perceptible that only in three fiscal years, out of the eight being analysed, have these market operations helped improving the EPS ratio and, once again, in a very discrete manner (2017, 2018 and 2020: which were the years where more shares were repurchased than issued).

This reinforces the hypothesis that Campari does not conduct this type of corporate action in order to artificially inflate the EPS ratio: the fact that these ratios are nearly unchanged by repurchases and issuances altogether tells us that the firm actually may only intend to maintain a balance between both repurchasing and issuing operations throughout the years, i.e., repurchases are conducted to offset the dilution effects from the exercise of employee stock options.

Table 6

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| Net Income ('000) | 128,900 € | 175,400 € | 166,300 € | 356,401 € | 296,301 € | 308,402 € | 187,901 € | 284,802 € |
| WACS | 575,083,697 | 578,017,199 | 1,157,508,450 | 1,160,785,339 | 1,154,903,852 | 1,144,315,926 | 1,133,816,568 | 1,126,588,835 |
| WACS Net of Dilution | 582,346,153 | 578,055,075 | 1,158,249,215 | 1,180,022,862 | 1,179,922,358 | 1,169,855,022 | 1,156,253,726 | 1,146,285,352 |
| Shares repurchased under share repurchase program | 3,704,964 | 11,518,418 | 2,326,135 | 10,910,000 | 10,007,486 | 9,036,356 | 36,281,893 | 5,931,376 |
| Shares assigned under incentive plans | 4,940,505 | 13,678,255 | 2,705,237 | 4,541,575 | 4,078,641 | 10,314,114 | 7,792,286 | 19,015,454 |
| (11) WACS before repurchases and issuances | 573,848,156 | 575,857,362 | 1,157,129,348 | 1,167,153,764 | 1,160,832,697 | 1,143,038,168 | 1,162,306,175 | 1,113,504,757 |
| (12) Basic EPS before repurchases and issuances | 0.2246 € | 0.3046 € | 0.1437 € | 0.3054 € | 0.2552 € | 0.2698 € | 0.1617 € | 0.2558 € |
| (13) WACS net of dilution before repurchases and issuances | 581,110,612 | 575,895,238 | 1,157,870,113 | 1,186,391,287 | 1,185,851,203 | 1,168,577,263 | 1,184,743,333 | 1,133,201,274 |
| (14) Diluted EPS before repurchases and issuances | 0.2218 € | 0.3046 € | 0.1436 € | 0.3004 € | 0.2499 € | 0.2639 € | 0.1586 € | 0.2513 € |
| (5) Basic EPS | 0.22 € | 0.30 € | 0.14 € | 0.31 € | 0.26 € | 0.27 € | 0.17 € | 0.25 € |
| (6) Diluted EPS | 0.22 € | 0.30 € | 0.14 € | 0.30 € | 0.25 € | 0.26 € | 0.16 € | 0.25 € |
| (15) Basic EPS % attributed to NI * | 100.22% | 100.38% | 100.03% | 99.45% | 99.49% | 100.11% | 97.55% | 101.18% |
| (16) Basic EPS % attributed to Repurchases and Issuances | -0.22% | -0.38% | -0.03% | 0.55% | 0.51% | -0.11% | 2.45% | -1.18% |
| (17) Diluted EPS % attributed to NI * | 100.21% | 100.38% | 100.03% | 99.46% | 99.50% | 100.11% | 97.60% | 101.15% |
| (18) Diluted EPS % attributed to Repurchases and Issuances | -0.21% | -0.38% | -0.03% | 0.54% | 0.50% | -0.11% | 2.40% | -1.15% |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Question 3 – Compute, for all years, the total amount paid and total amount received from the repurchasing and assignment of shares. Analyse the net cash flow (€) and net share repurchase (#).

Suggested resolution:

Below, in Table 7, we can see that, since the average price paid for repurchasing stocks is way higher than the average price received from issuing them, the firm loses money every single year, even in the years that more issuances than repurchases were made (which should trigger curiosity in understanding how this impacts the firm's valuation and how could we measure those impacts). This is normal to occur in a firm that conducts this type of operation with the intention of rewarding their employees (by giving them deep in-the-money call options, with a certain vesting period), instead of any other reasons, such as getting good deals through an undervalued stock scenario or to improve ratios seen as relevant by their present and future stakeholders.

It is obvious that this constitutes a wealth transfer from the shareholders to the employees, as in order to maintain the ESOP functioning, i.e., having existing inventory to face the option executions from employees, it is needed to buy at the market price, which leads to yearly negative net cash flows.

However, even though this is the usual practice of the firm, we can see that, in 2020, the undervaluation hypothesis might have very well been confirmed, as the firm's decision makers could have believed that the stock was being pushed down too much due to the COVID-19 impact and a rebound would be ahead, giving them a chance to buy cheap, hence the notable expense on repurchases, in this year.

Table 7

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| Shares repurchased under share repurchase program | 3,704,964 | 11,518,418 | 2,326,135 | 10,910,000 | 10,007,486 | 9,036,356 | 36,281,893 | 5,931,376 |
| Average price paid for the year's repurchases | 5.70 € | 6.81 € | 8.14 € | 5.85 € | 6.75 € | 8.33 € | 8.09 € | 12.00 € |
| (19) Total amount paid | 21,118,295 € | 78,440,427 € | 18,934,739 € | 63,823,500 € | 67,550,531 € | 75,272,845 € | 293,520,514 € | 71,176,512 € |
| Shares assigned under incentive plans | 4,940,505 | 13,678,255 | 2,705,237 | 4,541,575 | 4,078,641 | 10,314,114 | 7,792,286 | 19,015,454 |
| Average price received for the year's share assignments (*) | 2.96 € | 3.59 € | 4.01 € | 2.25 € | 2.95 € | 2.72 € | 2.87 € | 3.60 € |
| (20) Total amount received | 14,623,895 € | 49,104,935 € | 10,848,000 € | 10,218,544 € | 12,031,991 € | 28,054,385 € | 22,363,861 € | 68,434,366 € |
| (21) Net cash flow | - 6,494,400 € | - 29,335,491 € | - 8,086,739 € | - 53,604,956 € | - 55,518,540 € | - 47,218,461 € | -271,156,654€ | - 2,742,146 € |
| (22) Net share repurchases | - 1,235,541 | - 2,159,837 | - 379,102 | 6,368,425 | 5,928,845 | - 1,277,758 | 28,489,607 | - 13,084,078 |
| (23) Difference in price | 2.74 € | 3.22 € | 4.13 € | 3.60 € | 3.80 € | 5.61 € | 5.22 € | 8.40 € |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.
(*) Average exercise price of the options exercised during the period.

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Question 4 – Based on the repurchase net cash flow (€) and on the cash dividend amount given, quantify the monetary change in the yearly capital structure. Use the D/E ratio to assess the relative impact of these changes.

Conceptual framework:

Retained earnings are the cumulative net earnings that a company has earned to date, less any distributions paid to investors. This amount changes whenever there is an entry to the accounting records that affects a revenue or expense account.

Treasury stock is the previously issued, outstanding shares of stock, which a given company repurchased or bought back from shareholders. The reacquired shares are taken out of market circulation by the company, having them at their disposition. This sort of operation is recorded on the firm's balance sheet statement under the stockholders' equity section as a contra-equity account, reducing shareholders' equity by the amount paid for the stocks. The shares can either remain in the company's possession to be sold in the future, or they can be permanently removed from market circulation.

The dividend signalling hypothesis is the idea that dividend changes reflect managers' views about a firm's future earnings prospects. Firms should not decrease the amount paid in cash dividends if they do not want an adverse reaction from the market agents, therefore, companies should also not conduct an increase on the amount of cash dividends in a given fiscal year if they do not intend to keep the same or a bigger amount of dividends in the following years. Besides that, while an increase of a firm's dividend may signal management's optimism regarding its future cash flows, it might also signal a lack of investment opportunities.

Suggested resolution:

By observing the results from the calculations below, in Table 8, it is visible that the decision of repurchasing more shares in the year of 2020, than it is usual, lead to a noticeable increase in the company's amount of shares in treasury stock and an unusual decrease in the firm's equity book.

The amount of dividends does not vary much from year to year, which is clearly a management's decision based on the dividend signalling theory, as per what is disclosed in the case study's story discussion item of the annual general meeting: "Campari strives to distribute a stable amount of dividend per ordinary share during a certain number of years and revises it afterwards to reflect the Group's achievements.".

The impact of share repurchases, issuances and dividends in the D/E ratio is generally within the 2-4% range, except for 2020, which was 11%. Thus, if we assumed a retention of equity in the abovementioned range, every year, overtime the company would certainly have a relevant decreasing impact in the D/E ratio, however, that would lead to a smaller treasury stock and would compromise the ESOPs due to a possible lack of inventory.

One should also be cautious to remember that there are many other variables impacting this ratio other than the changes resulting from these operations.

Table 8

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| Total shareholders' equity ('000) | 1,579,900 € | 1,745,800 € | 1,900,000 € | 1,942,600 € | 2,162,800 € | 2,388,500 € | 1,998,400 € | 2,374,800 € |
| (24) Total Debt ('000) | 1,231,200 € | 1,756,700 € | 1,403,900 € | 1,311,200 € | 1,303,300 € | 1,307,200 € | 1,542,400 € | 1,532,800 € |
| Net Income | 128,900,000 € | 175,400,175 € | 166,300,333 € | 356,401,069 € | 296,301,185 € | 308,401,542 € | 187,901,127 € | 284,801,994 € |
| Total Cash Dividends | 46,100,000 € | 45,700,046 € | 52,100,104 € | 52,100,156 € | 57,500,230 € | 57,300,287 € | 62,900,377 € | 61,600,431 € |
| (25) Change in Retained earnings | 82,800,000 € | 129,700,130 € | 114,200,228 € | 304,300,913 € | 238,800,955 € | 251,101,256 € | 125,000,750 € | 223,201,562 € |
| (19) Total Amount Paid | 21,118,295 € | 78,440,427 € | 18,934,739 € | 63,823,500 € | 67,550,531 € | 75,272,845 € | 293,520,514 € | 71,176,512 € |
| (20) Total Amount Received | 14,623,895 € | 49,104,935 € | 10,848,000 € | 10,218,544 € | 12,031,991 € | 28,054,385 € | 22,363,861 € | 68,434,366 € |
| (26) Change in Treasury Stock | - 6,494,400 € | - 29,335,491 € | - 8,086,739 € | - 53,604,956 € | - 55,518,540 € | - 47,218,461 € | -271,156,654€ | - 2,742,146 € |
| (27) Change in capital structure from Repurchases, Issuances and Dividends | - 52,594,400 € | - 75,035,537 € | - 60,186,843 € | -105,705,113€ | -113,018,770€ | -104,518,747€ | -334,057,031€ | - 64,342,578 € |
| (28) D/E (book) as it is | 78% | 101% | 74% | 67% | 60% | 55% | 77% | 65% |
| (29) D/E (book) without Payout | 75% | 96% | 72% | 64% | 57% | 52% | 66% | 63% |
| (29) - (28) | 3% | 4% | 2% | 3% | 3% | 2% | 11% | 2% |
| (22) Net share repurchases | - 1,235,541 | - 2,159,837 | - 379,102 | 6,368,425 | 5,928,845 | - 1,277,758 | 28,489,607 | - 13,084,078 |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Question 5 – Compute the Shareholder Yield and analyse the impact of each variable on it based on your results. Calculate the Dividend Yield, Repurchase Yield and Total Yield.

Conceptual framework:

Coined by William W. Priest in a paper named "The Case for Shareholder Yield as a Dominant Driver of Future Equity Returns" as a way to deliver a more complete view of how companies allocate and distribute cash rather than considering dividends alone (as in the dividend yield), the shareholder yield captures the three ways in which the management of a public company can distribute cash to shareholders: cash dividends, net share repurchases and debt reduction.

In a 1996 paper called "Stock Market Valuation Indicators: Is This Time Different?", Cole, Helwege, and Laster used net share repurchases, i.e., repurchases less funds raised through issuance to construct a repurchase yield. Here, I will be using the same concept, but changing its name to Wealth Transfer Yield, while the Repurchase Yield itself will not take into account the issuances.

Suggested resolution:

By observing the results from the calculations in Table 9, we can infer that the shareholder yield was the highest in 2014 and the lowest in 2015. In both cases due to the "Net debt paydown" variable, since cash dividends have maintained relatively small and stable amount throughout the years and the net cash flow from repurchases and issuances have been even smaller.

As the years went by, the market capitalization of the firm started to increase and therefore pushing the shareholder yield closer to 0%, with the exception, of course, of 2020, due to the very large amount of debt issued and money spent on repurchases.

Furthermore, 2020 was also the year where there was a bigger wealth transfer yield, which is normal due to the unusual larger amount of repurchases made in that year and the fairly high difference between the yearly average price paid for issuing stocks and the average price received from issuing them, leading to a relatively large negative net cash flow.

Table 9

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| Debt paid down | 151,200,000 € | 100,800,000 € | 721,600,000 € | 246,900,000 € | 38,900,000 € | 532,100,000 € | 608,700,000 € | 174,000,000 € |
| Debt issued | 0 € | 603,800,000 € | 357,400,000 € | 180,900,000 € | 28,000,000 € | 417,800,000 € | 820,800,000 € | 149,100,000 € |
| (30) Net debt paydown | 151,200,000 € | -503,000,000 € | 364,200,000 € | 66,000,000 € | 10,900,000 € | 114,300,000 € | -212,100,000 € | 24,900,000 € |
| (21) Net cash flow | - 6,494,400 € | - 29,335,491 € | - 8,086,739 € | - 53,604,956 € | - 55,518,540 € | - 47,218,461 € | -271,156,654 € | - 2,742,146 € |
| Total Cash Dividends | 46,100,000 € | 45,700,046 € | 52,100,104 € | 52,100,156 € | 57,500,230 € | 57,300,287 € | 62,900,377 € | 61,600,431 € |
| (31) Shareholder yield | 5.56% | -12.15% | 4.19% | 1.03% | 0.19% | 1.28% | -4.15% | 0.65% |
| (32) Shareholder yield without net debt paydown | 1.15% | 0.41% | 0.45% | -0.02% | 0.03% | 0.10% | -2.05% | 0.46% |
| Average market price | 5.97 € | 6.93 € | 8.42 € | 5.40 € | 5.86 € | 8.52 € | 8.94 € | 11.41 € |
| WACS | 575,083,697 | 578,017,199 | 1,157,508,450 | 1,160,785,339 | 1,154,903,852 | 1,144,315,926 | 1,133,816,568 | 1,126,588,835 |
| (33) Average Market capitalization ('000) | 3,433,250 € | 4,005,659 € | 9,746,221 € | 6,268,241 € | 6,767,737 € | 9,749,572 € | 10,136,320 € | 12,854,379 € |
| (34) Dividend Yield | 1.34% | 1.14% | 0.53% | 0.83% | 0.85% | 0.59% | 0.62% | 0.48% |
| (19) Amount Paid from Shares Repurchased | 21,118,295 € | 78,440,427 € | 18,934,739 € | 63,823,500 € | 67,550,531 € | 75,272,845 € | 293,520,514 € | 71,176,512 € |
| (35) Repurchase Yield | 0.62% | 1.96% | 0.19% | 1.02% | 1.00% | 0.77% | 2.90% | 0.55% |
| (36) Total Yield | 1.96% | 3.10% | 0.73% | 1.85% | 1.85% | 1.36% | 3.52% | 1.03% |
| (37) Wealth Transfer Yield | 0.19% | 0.73% | 0.08% | 0.86% | 0.82% | 0.48% | 2.68% | 0.02% |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Question 6 – Calculate the Dividend Discount Model and the Total Payout Model. Comment on the results obtained.

Conceptual framework:

The dividend discount model (DDM) is a widely known method used to value a company's stock based on the present value of its future dividends. It assumes a constant growth rate for dividends, which may not be realistic for many companies, such as Davide Campari. This model totally ignores factors that may impact a company's value, such as changes in its industry or market conditions. The model is simple and easy to use and while it has some limitations, it may still be a useful tool for investors and analysts when used in conjunction with other valuation methods, namely to value stocks with a constant and material track record of reliance on dividend payouts. Most of the companies that distribute dividends do it on a "constant" manner, due to the dividend signalling theory, but not many do so on a size that would lead the investor to take advantage of using the DDM.

The total payout model, on the other hand, is a valuation method that considers both the dividends and the share buybacks as a way to return cash to shareholders. The total payout model assumes that the company will continue to pay dividends and buy back shares at a constant rate in the future, and the value of the stock will be derived from the present value of the expected cash flows from dividends and buybacks.

Besides the drawdowns this model has in common with the DDM, regarding the dividends factor, this one also has to face the reality of being even harder to estimate the amount of money that a company will spend on share buybacks in the future than it is to guess the monetary quantity of dividends distributed. The usage of this model would be good in a company that besides having a constant and material track record of dividend payments, also has a constant and material track record of share buybacks. More uncertainty is added to this model due to the fact that there are many motivations that could lead to a share repurchasing program, some of which are seasonal, for instance due to the undervaluation hypothesis: management decides to build up inventory on its own stock based on a conviction that the stock is undervalued at a given moment in time. That "seasonality" cannot be captured by a model that assumes constant growths. However, a firm that conducts share buybacks for the only purpose of financing its Employee Stock Option Plans can be a better fit for such a model.

Suggested resolution:

As shown in Table 10, it is inferable that both models are way off compared to the market price. This happens because, due to the "growing" nature of this firm, its stock value is intended by the investors to be much more than just the dividends and repurchases that are distributed to the shareholders.

This firm has shown a very interesting and organic growth rate throughout the years, which results from continuous bets in NPV>0 investments, that lead to increasingly higher levels of Free Cash Flow to the Firm and therefore higher equity valuations.

The Total payout model is clearly more complete than the DDM, but both will not capture the growth rate abovementioned. Besides that, it is worth noting that these models also do not account for share issuances

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and net debt paydown, which we have seen that are important variables to take into account in measuring a firm's performance.

Table 10

| Beta | 0.6320 |
|---|---|
| Risk-free rate | -0.177% |
| E(Rm) | 15.263% |
| (38) CAPM = Ke | 9.58% |
| Net Income 2021 ('000) | 284,802 € |
| Total shareholders' equity 2021 ('000) | 2,374,800 € |
| (39) ROE | 0.120 |
| Total Cash Dividends 2021 | 61,600,431 € |
| WACS 2021 | 1,126,588,835 |
| (40) Dividends per share | 0.055 |
| Total Cash Dividends 2021 | 61,600,431 € |
| Total Repurchases 2021 | 71,176,512 € |
| (41) Total Payout | 132,776,943 € |
| (42) Total Payout Per Share | 0.118 |
| (43) Retention Ratio for DDM | 0.784 |
| (44) Retention Ratio for Total Payout Model | 0.534 |
| (45) Sustainable growth rate for DDM | 2.59% |
| (46) Sustainable growth rate for Total Payout Model | 5.59% |
| (47) DDM (value per share) | 0.80 € |
| (48) Total payout model (value per share) | 3.12 € |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Question 7 – Using the FCFF method and assuming Terminal Value right after the last year of information provided, calculate the Enterprise Value and the Equity Value of the firm on the 31$^{st}$ of December of 2021. Use the historical CAGR (2015 to 2021) as the Growth Rate and the CAPM as Cost of Equity.

Conceptual framework:

The Free Cash Flow to the Firm (FCFF) method is a valuation technique that uses the firm's free cash flow as the basis for determining its intrinsic value. FCFF stands for the cash flow available to all of the firm's suppliers of capital (debt and equity) after accounting for all operating expenses and investments made.

The FCFF model is widely used in corporate finance and is considered to be the most accurate and reliable method for valuing a company, alongside the Free Cash Flow to Equity (FCFE) model. This valuation model is based on the idea that the value of a stock is given by the present value of the cash flows available to distribute to its debtholders and shareholders that this same stock is expected to generate in the future, under the going concern assumption (i.e., perpetual operations).

The main limitations of this model is that, besides being hard to forecast future free cash flows, it is probably even harder to get the correct rates to use in the model, which can be subjective and may vary depending on the investor's risk tolerance type.

It is also important to understand the concept of Terminal Value, which is the estimated value of a company's future cash flows after a specific period of time, typically used in a Discounted Cash Flow (DCF) analysis for stock valuation. It represents the value of all future cash flows after the forecast period and is calculated by assuming a constant growth rate and discount rate.

In this question, the instructions given are to compute the Terminal Value right after the last year's historical data available, i.e., 2021, for the sake of simplification, since the goal here is not to project a horizon of FCFFs.

However, it is important to note that in most valuation cases, one should have some years of forecasted FCFFs before the Terminal Value. That number of years (forecast horizon), as a rule of thumb, should normally amount to at least 25% of the overall weight of the FCFFs given in the sum of all forecasted years and the Terminal Value.

Suggested resolution:

Please find the results for the calculations requested in the tables below (Table 11 and 12), given the formulas in the annex.

Table 11

| | 2021 | TV |
|---|---|---|
| (49) Growth rate | | 6.20% |
| Kd | 1.143% | |
| (38) Ke | 9.58% | |
| Applicable tax rate | 24% | |
| (24) Total Debt | 1,532,800,000 € | |
| (33) Average Market capitalization | 12,854,379,607 € | |
| (50) WACC | | 8.653% |
| (51) D/ Avg Mkt. Cap. | 11.9% | |
| (52) FCFF ('000) | 345,000 € | 14,926,282 € |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Table 12

| | Equity Valuation |
|---|---|
| (52) Enterprise Value | 14,926,281,884 € |
| LT Debt | 1,271,200,000 € |
| ST Debt | 261,600,000 € |
| Cash | 791,300,000 € |
| (53) Equity Value | 14,184,781,884 € |
| (54) Equity Value per share | 12.525 € |
| (22) Net share repurchases | - 13,084,078 |
| Shares repurchased under share repurchase program | 5,931,376 |
| Shares assigned under incentive plans | 19,015,454 |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Question 8 a) – Re-calculate the Enterprise Value and Equity Valuation for the following three cases:

- If there was no distribution of dividends in 2021
- If there were no repurchases and issuances in 2021
- If there was no distribution of dividends nor repurchases and issuances in 2021

Assume a fixed WACC, i.e., there are no changes in WACC compared to the previous question.

Suggested resolution:

- If there was no distribution of dividends in 2021:

$New\ Cash\ =\ Cash\ +\ Total\ Cash\ Dividends$

OR

$New\ Equity\ Value\ per\ share\ =\ Equity\ Value\ per\ share\ +\ Dividends\ per\ share$

- If there were no repurchases and issuances in 2021:

$New\ Cash\ =\ Cash\ -\ Change\ in\ treasury\ stock$

$$New\ Equity\ Value\ per\ share\ =\ \frac{Equity\ Value}{[Outstanding\ shares\ at\ the\ end\ of\ Fiscal\ Year + Net\ share\ repurchase\ (\#)]}$$

Since the net change in treasury stock was negative this year, in a "what-if it did not happen scenario", this amount should be re-added to the Cash account.

Likewise, since the quantity of net share repurchases was negative, its amount should be added to the outstanding shares at the end of the respective fiscal year, under the same scenario.

- If there was no distribution of dividends nor repurchases and issuances in 2021:

$New\ Cash\ =\ Cash\ +\ Total\ Cash\ Dividends\ -\ Change\ in\ treasury\ stock$

$$New\ Equity\ Value\ per\ share\ =\ \frac{Equity\ Value}{[Outstanding\ shares\ at\ the\ end\ of\ Fiscal\ Year + Net\ share\ repurchase\ (\#)]}$$

Please find the results for the calculations requested, in the table below (Table 13), given the formulas above and in the annex.

Table 13

| | Equity Valuation | Equity Valuation (if there was no distribution of dividends) | Equity Valuation (if there were no repurchases & issuances) | Equity Valuation (if there were no dividends nor repurchases & issuances) |
|---|---|---|---|---|
| (52) Enterprise Value | 14,926,281,884 € | 14,926,281,884 € | 14,926,281,884 € | 14,926,281,884 € |
| LT Debt | 1,271,200,000 € | 1,271,200,000 € | 1,271,200,000 € | 1,271,200,000 € |
| ST Debt | 261,600,000 € | 261,600,000 € | 261,600,000 € | 261,600,000 € |
| Cash (Using Suggested Resolution's Formulas) | 791,300,000 € | 852,900,431 € | 794,042,146 € | 855,642,578 € |
| (53) Equity Value | 14,184,781,884 € | 14,246,382,315 € | 14,187,524,031 € | 14,249,124,462 € |
| Equity Value per share (Using Suggested Resolution's Formulas) | 12.525 € | 12.580 € | 12.674 € | 12.729 € |

| | |
|---|---|
| Total Cash Dividends | 61,600,431 € |
| (21) Net cash flow | - 2,742,146 € |
| Outstanding shares at end of FY | 1,132,490,271 |
| (22) Net share repurchases | - 13,084,078 |
| Shares repurchased under share repurchase program | 5,931,376 |
| Shares assigned under incentive plans | 19,015,454 |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

Question 8 b) – Explain the impact of these payout market actions on the firm's valuation based on the results obtained and comment on the following sentence: "in perfect markets, a firm's dividend policy is irrelevant to the value of the firm".

Conceptual framework:

Modigliani and Miller's Dividend Irrelevance theory, also known as the MM theorem, is a theory in finance that states that the value of a firm is not affected by its dividend policy. This theory was first proposed by Franco Modigliani and Merton Miller (MM) in their 1958 paper "The Cost of Capital, Corporation Finance and the Theory of Investment".

The MM theorem states that the value of a firm is determined by its ability to generate cash flow and its expected growth rate, regardless of whether it pays dividends or not. According to the theory, investors can replicate the cash flows from dividends by selling shares of stock, so dividends are irrelevant to the value of the firm (if an investor is paid a lower dividend than what he expected, he has the option of selling part of his shares to get the exact cash amount he desires and if a company pays dividend higher than what he expected, he has the option of reinvesting the excess cash flow received in the stock).

This theory argues that the market is efficient and that investors can adjust their portfolios to their preferences for dividends, so the firm does not have to pay dividends to be attractive to investors. It also argues that if a firm has excess cash, it can use it to invest in growth opportunities or to repurchase shares, which will increase its value.

However, it is important to note that the MM theorem has several assumptions, such as perfect capital markets, no taxes, no transaction costs, and no agency costs. The theory also assumes that investors can borrow and lend at the same rate and that they are indifferent to the timing of cash flows.

Suggested resolution:

It would not make sense to go through this topic without mentioning Modigliani and Miller's Dividend Irrelevance theory, which, among other things, affirms that investors can replicate the cash flows from dividends by selling shares of stock, so dividends are irrelevant to the value of the firm. Indeed, we can find this result based on our calculations: if we were to add this year's dividends per share amount to the equity value per share before any dividend adjustment (Ex-dividend), we would get exactly the same value as we got in this scenario without dividend distribution (Cum-dividend).

Of course, in reality, nor the investment policies of a firm are held fixed in time nor capital markets are perfect, and it is precisely the imperfections in capital markets that should determine the firm's dividend and payout policy: if the markets were perfect, nobody would bother wasting time in putting these policies in practice.

Although the results presented for the "no dividend distribution" scenario are the same results that we would in a perfect market scenario, that surely does not mean we have proven Campari acts in a perfect market, instead, it means that we left out important variables, some of which are very hard to predict.

Note that for the remainder two scenarios, the same irrelevance theory would also apply, under the same assumptions, if we were to now analyse the repurchases singularly, but since we are also taking into account issuances on the remaining two scenarios, it does not.

For our exercise, we have only changed two variables in the firm's valuation, its cash and its shares outstanding, meaning we held fixed, across all scenarios, variables such as the change in WACC, that would come from the firm's change in its capital structure due to adjustments in retained earnings, treasury stock, the change in market's estimations of cost of equity and cost of debt and, especially, the change in the firm's expected Growth Rate. Here, the magnitude of these corporate actions would definitely play a big role: the bigger the actions, the bigger the likelihood of a greater impact in these variables.

Besides that, we should also keep in mind that tax differences across investors exist and are based on many variables such as the investor's income level, investment horizon and tax jurisdiction.

As we can see from the results found on Table 13, the equity valuation per share does not vary significantly mainly due to the small magnitude of the payout market actions in this year (which are of similar size to other years, except for 2020, as we have seen). Therefore, the first conclusion here is that the impact of the payout policies conducted by the firm on its own fundamental stock value is small. However, we are still able to draw some other conclusions that would be even more important in a scenario of higher monetary levels of repurchases, issuances and dividends distributed.

The scenario where the firm would preserve more equity value would be the one where no dividends nor repurchases and issuances were conducted, which would naturally lead to higher cash values, while also having less shares outstanding, since in 2021 there were more issuances than repurchases (negative net quantity of shares repurchased).

In the scenario where only dividends are excluded, i.e., there is no change in the shares outstanding, only in cash, that would preserve around 60 million Euros in the account. It is reasonable to infer that at cost of this relatively small amount, the company is better off in continuing to deliver dividends regularly as opposed to risk a shareholders' bad reaction from stopping it (dividend-signalling theory).

The scenario that the case study's story client wanted to happen, which is excluding only the repurchases and issuances, would actually improve the equity value per share of the firm in 2021, but not so much due to the wealth transfer in this year, which was fairly low, it was instead, again, because this was a year with way more issuances than repurchases.

However, that does not mean that the client is right, in fact, one should measure the change in the stock value based on the impact that these operations have in the firm's future cashflows, and not only based on a year's hypothetical change.

If we analyse this only as of a 2021 scenario, where the net cash flows from gathering shares to fund employees' options are negative, as they usually are, it is natural that we will find that there is a loss of equity value, however, that does not mean that these operations are bad, these are just the costs of what can be seen by the board of directors as a mix of a compensation and investment on the motivation of the firm's employees.

Theoretically, it ultimately depends on whether these operations will lead the firm to a bigger growth rate, such that the discounted future economic value earned from a higher growth rate will outweigh the present costs of conducting these operations.

Furthermore, a possible market reaction to these, will depend on whether the markets believe the same as the firm's management or not, however, given that this is a current practice of the firm, the markets not only do not react to these but they could actually react negatively if hypothetically the firm decided to stop these ESOPs and respective fundings without a proper explanation, as a similar occurrence as pictured by the dividend-signalling theory.

It is also fair to assume that a smoothing of past years' issuances and repurchases would be better to compute an equity valuation than to just pick the last year and draw scenarios, as I have suggested, because the firm seeks a continuous equilibrium between issuances and repurchases in order to have inventory to fuel ESOPs, not a yearly specific equilibrium, which really impacts the per share valuation.

On a side note, for Campari, in specific, it is not known for sure that the management executives do or do not get compensated based on metrics that are easily manipulated by the execution of buyback programs, such as the EPS ratio, but given the small relative impacts that we have seen in EPS, it is safe to say that, most likely, they do these solely in order to maximize its business growth and not for self-interest (one should always pay attention to this detail when analysing any firm).

Question 9 – What is your recommendation on this stock? Conduct a sensitivity analysis on the key drivers of value of the firm and comment on the other financial institutions' recommendations.

Suggested resolution:

The fundamental analysis performed tells us that the price of this stock, at the very end of 2021, is technically overpriced. However, before recommending a sell, we should think about what could have led the market to price the stock higher than ourselves and to do so we should check the main drivers of value here: Growth Rate and WACC, therefore, in order to achieve 12.855Eur, one would have to either increase the Growth Rate, decrease the WACC, or both.

By conducting a sensitivity analysis where we put the Growth Rate vs. the WACC or vs. the Cost of Equity (which is the most relevant variable within WACC: cost of equity is always superior to cost of debt), we can notice that a small change in these can very well make the difference. For instance, if we were to assume a growth rate of 6.26% instead of 6.20%, we would get approximately the same price as the market's, for Campari.

As 2022 started, stock prices in general started to sink, due to the FED's intentions to shift their monetary policy towards a higher interest rate environment (lower stock valuations), to combat inflation. However, this was not yet priced in on the 30th of December of 2021.

Therefore, and knowing that our Growth Rate is based on a 6-year CAGR, which is merely historic and does not take any sort of market expectation view into account besides a principle of continuity, we could allege that maybe the market in general was pricing in a higher growth rate than ourselves, and/or even that our WACC was too high in comparison to the majority of the market players, for the exact same reason.

However, this is just one of many scenarios, for instance, this difference could arise due to different perceptions of the Beta levels, or any other variables used in these models, by the market agents or even due to the fact that not everyone uses the same models.

In fact, knowing that the market price of a determined asset is simply the result of the supply and demand forces exercised by market agents over that same asset, we should conclude that not many market participants will agree with the current price of a certain financial product to the last tick, making it very unlikely that two participants will agree on the exact same assumptions, catalysts, and models.

Nonetheless, the student should be able to show the big impacts of a relatively small change in the most relevant model inputs have on the valuation of a firm through sensitivity analyses, such as the ones shown in Tables 14, 15 and 16, as well as to compare its valuation results with real world professional analysts' valuations displayed in Table 1, by giving its opinion on what position would they recommend to take on this stock, even though some relevant market players disagree with it.

## Table 14

| | | (50) Growth Rate | | | | |
|---|---|---|---|---|---|---|
| | 12.525 | 6.00% | 6.10% | 6.20% | 6.30% | 6.40% |
| | 9.78% | 10.74 € | 11.17 € | 11.63 € | 12.13 € | 12.67 € |
| | 9.68% | 11.11 € | 11.57 € | 12.06 € | 12.60 € | 13.17 € |
| (39) Cost of Equity | 9.58% | 11.51 € | 12.00 € | 12.53 € | 13.10 € | 13.72 € |
| | 9.48% | 11.93 € | 12.46 € | 13.02 € | 13.64 € | 14.31 € |
| | 9.38% | 12.39 € | 12.95 € | 13.56 € | 14.23 € | 14.96 € |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

## Table 15

| | | (50) Growth Rate | | | | |
|---|---|---|---|---|---|---|
| | 12.525 | 6.00% | 6.10% | 6.20% | 6.30% | 6.40% |
| | 8.85% | 10.66 € | 11.08 € | 11.53 € | 12.02 € | 12.55 € |
| | 8.75% | 11.07 € | 11.52 € | 12.01 € | 12.54 € | 13.11 € |
| (51) WACC | 8.65% | 11.51 € | 12.00 € | 12.53 € | 13.10 € | 13.72 € |
| | 8.55% | 11.99 € | 12.51 € | 13.09 € | 13.71 € | 14.39 € |
| | 8.45% | 12.50 € | 13.07 € | 13.69 € | 14.37 € | 15.12 € |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

## Table 16

| | (55) Equity Value per share |
|---|---|
| Beta | 12.525 |
| 0.582 | 17.676 € |
| 0.607 | 14.680 € |
| 0.632 | 12.525 € |
| 0.657 | 10.902 € |
| 0.682 | 9.634 € |

Note: The numbers in the first column of each line correspond to a formula used to calculate that line's values, in the Annex.

$(1)\ WACS\ Before\ Repurchases\ =\ WACS\ +\ Shares\ Repurchased$

$(2)\ Basic\ EPS\ Before\ Repurchases\ =\ \dfrac{Net\ Income}{WACS\ Before\ Repurchases}$

$(3)\ WACS\ Net\ of\ Dilution\ before\ repurchases\ =\ WACS\ Net\ of\ Dilution\ +$
$Shares\ repurchased\ under\ share\ repurchase\ program$

$(4)\ Diluted\ EPS\ Before\ Repurchases\ =\ \dfrac{Net\ Income}{WACS\ Net\ of\ Dilution\ before\ repurchases}$

$(5)\ Basic\ EPS\ =\ \dfrac{Net\ Income}{WACS}$

$(6)\ Diluted\ EPS\ =\ \dfrac{Net\ Income}{WACS\ Net\ of\ Dilution}$

$(7)\ Basic\ EPS\ \%\ attributed\ to\ Net\ Income\ =\ \dfrac{Basic\ EPS\ Before\ Repurchases}{Basic\ EPS}$

$(8)\ Basic\ EPS\ \%\ attributed\ to\ Repurchases\ =\ 1 - Basic\ EPS\ \%\ attributed\ to\ Net\ Income$

$(9)\ Diluted\ EPS\ \%\ attributed\ to\ Net\ Income\ =\ \dfrac{Diluted\ EPS\ Before\ Repurchases}{Diluted\ EPS}$

$(10)\ Diluted\ EPS\ \%\ attributed\ to\ Repurchases\ =$
$1 - Diluted\ EPS\ \%\ attributed\ to\ Net\ Income$

$(11)\ WACS\ Before\ Repurchases\ and\ Issuances$
$\quad\quad\quad = WACS\ +\ Shares\ Repurchased - Shares\ Issued$

$(12)\ Basic\ EPS\ Before\ Repurchases\ and\ Issuances$
$\quad = \dfrac{Net\ Income}{WACS\ Before\ Repurchases\ and\ Issuances}$

$(13)\ WACS\ Net\ of\ Dilution\ Before\ Repurchases\ =\ WACS\ Net\ of\ Dilution\ +$
$Shares\ Repurchased - Shares\ Issued$

$(14)\ Diluted\ EPS\ Before\ Repurchases\ and\ Issuances\ =\ \dfrac{Net\ Income}{WACS\ Net\ of\ Dilution\ Before\ Repurchases}$

$(15)\ Basic\ EPS\ \%\ attributed\ to\ NI * =\ \dfrac{Basic\ EPS\ Before\ Repurchases\ and\ Issuances}{Basic\ EPS}$

$(16)\ Basic\ EPS\ \%\ attributed\ to\ Repurchase\ and\ Issuance\ =\ 1 -$
$Basic\ EPS\ \%\ attributed\ to\ NI$

$(17)\ Diluted\ EPS\ \%\ attributed\ to\ NI * =\ \dfrac{Diluted\ EPS\ Before\ Repurchases\ and\ Issuances}{Diluted\ EPS}$

(18) $Diluted\ EPS\ \%\ attributed\ to\ Repurchases\ and\ Issuances\ =\ 1\ -$
$Diluted\ EPS\ \%\ attributed\ to\ NI$

(19) $Amount\ paid\ from\ shares\ repurchased\ =\ No.\ Shares\ repurchased\ \times$
$Average\ price\ paid$

(20) $Amount\ received\ from\ shares\ issued\ =\ No.\ Stock\ options\ exercised\ \times$
$Average\ price\ received$

(21) $Net\ cash\ flow\ =\ Total\ amount\ received\ -\ Total\ amount\ paid$

(22) $Net\ share\ repurchases =\ No.\ Shares\ repurchased\ -\ No.\ Shares\ issued$

(23) $Difference\ in\ price\ =\ Average\ price\ paid\ -\ Average\ price\ received$

(24) $Total\ Debt\ =\ LT\ Debt + ST\ Debt$

(25) $Change\ in\ Retained\ Earnings\ =\ NI\ -\ Cash\ Dividends$

(26) $Change\ in\ Treasury\ Stock\ =$
$Amount\ received\ from\ Shares\ Issued\ -\ Amount\ paid\ from\ Shares\ Repurchased$

(27) $Change\ in\ Capital\ Structure\ from\ Repurchases, Issuances\ and\ Dividends$
$\quad\quad =\ Change\ in\ Treasury\ Stock\ -\ Cash\ dividends$

(28) $D/E\ =\ \dfrac{Total\ Debt}{Total\ shareholders\prime\ equity}$

(29) $D/E\ without\ Payout\ =$
$$\frac{Total\ Debt}{(Total\ shareholders'equity\ -\ Change\ in\ capital\ structure\ from\ Repurchases\ and\ Stock\ Options\ Plan\ \&\ Profit\ and\ dividends)}$$

(30) $Net\ debt\ paydown\ =\ Debt\ paid\ down\ -\ Debt\ issued$

(31) $Shareholder\ Yield\ =$
$$\frac{(Cash\ Dividends + Total\ amount\ received\ from\ issuances\ -\ Total\ amount\ paid\ on\ repurchases + Net\ debt\ paydown)}{Average\ market\ capitalization}$$

(32) $Shareholder\ Yield\ without\ Net\ Debt\ Paydown\ =$
$$\frac{(Cash\ Dividends + Total\ amount\ received\ from\ issuances\ -\ Total\ amount\ paid\ on\ repurchases)}{Average\ market\ capitalization}$$

(33) $Average\ market\ capitalization\ =\ Average\ market\ price\ \times\ WACS$

(34) $Dividend\ Yield\ =\ \dfrac{Cash\ dividends}{Average\ market\ capitalization}$

(35) $Repurchase\ Yield\ =\ \dfrac{Total\ Repurchases}{Average\ market\ capitalization}$

(36) $Total\ Yield\ =\ Repurchase\ Yield + Dividend\ Yield$

$(37)\ Wealth\ Transfer\ Yield\ = \dfrac{Net\ Cash\ Flow}{Average\ market\ capitalization}$

$(38)\ Cost\ of\ Equity\ =\ Ke\ =\ CAPM\ =\ Rf\ +\ Beta\ \times\ [E(Rm)\ -\ Rf]$

$(39)\ ROE\ =\ \dfrac{NI}{Total\ shareholders'\ equity}$

$(40)\ Dividends\ per\ share\ = \dfrac{Total\ Cash\ Dividends}{WACS}$

$(41)\ Total\ Payout\ =\ Cash\ Dividends\ +\ Amount\ Paid\ in\ Repurchases$

$(42)\ Total\ Payout\ per\ share\ = \dfrac{Total\ Payout}{WACS}$

$(43)\ Retention\ Ratio\ for\ DDM\ =\ 1 - \dfrac{Total\ Cash\ Dividends}{NI}$

$(44)\ Retention\ Ratio\ for\ Total\ payout\ model\ =\ 1 - \dfrac{Total\ Payout}{NI}$

$(45)\ Sustainable\ growth\ rate\ for\ DDM\ =\ (1 - Retention\ Ratio\ for\ DDM)\ \times\ ROE$

$(46)\ Sustainable\ growth\ rate\ for\ Total\ Payout\ Model\ =\ (1 - Retention\ Ratio\ for\ Total\ payout\ model)\ \times\ ROE$

$(47)\ DDM\ =\ Div.per\ share\ Last\ year\ \times\ \dfrac{(1 + Sustainable\ growth\ rate\ for\ DDM)}{(Cost\ of\ Equity - Sustainable\ growth\ rate\ for\ DDM)}$

$(48)\ Total\ payout\ model\ =\ Total\ payout\ per\ share\ Last\ year\ \times\ \dfrac{(1 + Sustainable\ growth\ rate\ for\ Total\ Payout\ Model)}{(Cost\ of\ Equity - Sustainable\ growth\ rate\ for\ Total\ Payout\ Model)}$

$(49)\ Growth\ Rate\ =\ \left(\dfrac{FCFF\ 2021}{FCFF\ 2015}\right)^{1/6} - 1$

$(50)\ WACC\ =\ Kd\ \times\ (1 - Tax)\ \times\ \dfrac{Debt}{(Debt + Avg.Mkt\ Cap)}\ +\ Ke\ \times\ \dfrac{Avg.Mkt\ Cap}{(Debt + Avg.Mkt\ Cap)}$

$(51)\ D/Avg.Mkt\ Cap\ =\ \dfrac{Total\ Debt}{Avg.Mkt\ Cap}$

$(52)\ TV\ FCFF\ =\ Enterprise\ Value\ =\ FCFF\ 2021\ \times\ \dfrac{(1 + Growth\ Rate)}{(WACC\ 2021 - Growth\ Rate)}$

$(53)\ Equity\ Value\ =\ EV\ -\ LT\ Debt\ -\ ST\ Debt\ +\ Cash$

$(54)\ Equity\ Value\ per\ share\ =\ \dfrac{Equity\ Value}{Outstanding\ shares\ at\ the\ end\ of\ Fiscal\ Year}$

## Conclusion

First of all, this case study proves that one absolutely needs to investigate the nature of the businesses that the studied firm is involved in so that then the most adequate valuation models can be chosen.

Most importantly, although there is not a closed formula solution to quantify all of the impacts of all historical payout policies in the equity value per share of a firm (in the real world), the most realistic manner I found to measure these impacts is to draw scenarios in which one isolates and quantifies the impacts of the given corporate actions in the capital structure of the firm and its cost of capital, which will lead to changes in the fundamental value of the firm's stock. However, the one thing that cannot accurately be measured, is if the given corporate actions will lead to a higher or a lower growth rate, being the growth rate a very important variable in the equity valuation process.

The WACC was maintained fixed for the sake of simplifying the exercise, but one can use a dynamic WACC that changes along with the changes in the capital structure, on each time period, which in this case study would be every fiscal year, for instance.

For this company in specific, due to the proven prevalence of the dividend-signalling theory and the clear objective of maintaining a balanced-out number of outstanding shares, i.e., between issuances and repurchases, I can also infer that one could make projections of the pace of future issuances and repurchases, based on the past, for a more accurate outstanding shares' prediction. Furthermore, since many companies thrive to distribute constant dividends and conduct ESOPs, this is a method that could be applied to many other cases.

The downside is that there is no way to accurately isolate the future monetary benefits of ESOPs and its funding, i.e., future revenues generated solely from these operations. Making these operations look like a corporate finance project where we try to find the NPV with the correct cost, but without accurate future cash-flows.

The above was the most robust method to draw conclusions, but in this study, I have also shown that other less robust, but simpler metrics, can be useful in measuring impacts coming

from payout policies. These include: adding to the Dividend Yield, not only a Repurchase Yield, but also a Net Share Issuances & Repurchases Yield (Wealth Transfer Yield), for an easier understanding of the cost of issuing shares to the firm's own employees, instead of to the public in general, that would have to pay the market price ; using the Shareholder Yield and playing with its variables to isolate the desired payout policies' impacts to analyse.

I have also concluded that this is a firm that has not shown attempts to artificially inflate its EPS ratio, based on the calculations presented, while also being a firm that is not known to compensate their executives' bonuses based on such indicators.

On a theoretical field, it was proven that the Modigliani and Miller theory works when the perfect capital markets' assumptions are taken into account, and does not work when such assumptions are discarded, as expected.

For the last question in the case study story, one can conclude that even though the calculations prove that net cash flow from issuances and repurchases are negative, hence a lower fundamental value of the equity firm, under a FCF model, that does not mean that these operations are prejudicial. In fact, these operations may be seen, by the board of directors, as a mix of a compensation and investment on the motivation of the firm's employees, from which it is expected to generate future value: increase the growth rate, such that the discounted future economic value earned from higher revenues will outweigh the present costs of conducting these operations.

Following this rationale, and taking into account the relative small amounts of these operations and respective yearly constancy, the final answer from the manager to the client should be that indeed there is a cost associated with wealth transfer, that prejudices shareholders, but that this should be seen as an investment, such that the markets not only do not react to it, but they could react negatively if hypothetically they did decide to stop these operations without a proper explanation, as of the likes of the dividend-signalling theory.

Finally, on a more practical approach, using comparisons with real-life equity analysts' valuation results, one is able to infer that an equity valuation figure cannot be used as the absolute truth about a firm's intrinsic value, but can and should be used to give the equity analyst a solid base thesis for their possible directional investment.

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**(\*) Most of the above were not mentioned in the text of this MFW, but were relevant for its elaboration.**